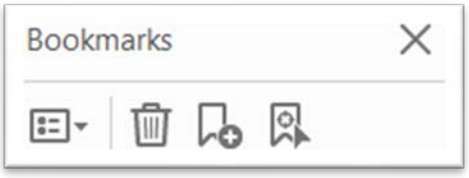
Service Bulletins

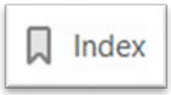
All Service Bulletins have been combined into this single Acrobat document. This allows the user to search by keyword or phrase for the desired information. There are several ways to search for letters.

1.  The arrows on the Acrobat toolbar allow you to move one page at a time or go directly to each end of the document. This is useful for multi-paged bulletins.

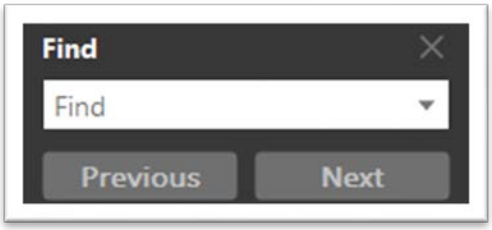
2. 

The bookmarks feature. Click on any caret  to the left of the model group name. will drop with information on that model group. Click on the number of the Service Bulletin you are looking for and it will go to that page. Use the scroll bar on the left to search up and down for bookmarks. This feature works well when used with the indexes.

3. The index contains a brief description of each Service Bulletin, the date it was released, and the corresponding part number. Use the index to view information for each bulletin, then click on the icon of the same name in the bookmarks. Click here to go to the index pages.



4. To use the search function, click here  . In the Acrobat Find dialog box enter the word or phrase you want to search for, then press Find. Acrobat will search until it finds the first occurrence of this word or phrase. To continue searching, press the F3 key on your keyboard. This can be very valuable when the user does not know which Service Bulletin contains the desired information.



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SA-035	06/03/22	Bluetooth Plug-In Module
SA-034	07/22/21	New Safety Label for Gas Fired Products
SA-033	04/02/20	CoolCloud HVAC App Technical Guide for Furnaces and Air Handlers with integrated Comfortbridge Controls
SA-032 Rev. 1	07/30/21	Broad Ocean DM3 Motor Controllers
SA-031 Rev. 1	07/23/20	**Bluetooth**® Shared Data Loader
SA-030	10/12/18	Warranty Compressor Return Packaging
SA-029	12/16/16	Incorrectly Labeled Transformers – 208/240 Volt Models (AWUF, ACNF, ARPT, ARUF, ASPT, ASUF, AVPEC, AVPTC, AWUT, DVxx, FXTQ, MBR, MBVC, APC, APD, APG, APH, DCC, DCG, DCH, DPxx, DSC, DSG DSH, DTC, DTG, DTH, GPC, GPD, GPG, GPH)
SA-028	7/12/16	Incorrectly Packaged TX5N4 Expansion Valve Kits
SA-027	2/4/16	Oil in Basepans, on Coils or on Shipping Boxes of Products
SA-026	4/20/15	Aluminum Coil Cleaning Recommendations
SA-024	11/4/14	Service Literature Update –Technical Manual Phase Out
SA-023 Rev. 1	2/9/15	Sticking TXV's on 2 and 2-1/2 Ton Split System Evaporator Coils and 15 SEER Package Units
SA-022	5/9/14	Service Genteq Eon™ Motor Programming Issue
SA-021	3/5/13	Service End Bells for Four-Wire ECM Motors
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SA-019	6/1/12	HKR Heater Kits with HKS Instructions
SA-018 Rev. 1	3/28/12	Updated LAKT Low Ambient Kit Instructions
SA-017	8/13/12	New Website for Technical Training
SA-016	3/2/12	Memory Chip Rework
SA-015	10/13/11	Memory Cards for Communicating Equipment
SA-014	6/3/11	TX5N4 TXV Kits with incorrect TXV Valves
SA-013	3/10/11	Emerson EEM Motor Speed Tap T4
SA-012	11/30/10	Quality RMA Reporting now available on the Goodman Website
SA-011	10/28/09	HVAC Leak Check Procedures
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SA-006	6/11/07	GE Contactor Part # B1360321
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SA-003	9/1/05	Dirty Sock Syndrome

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SA-002 Rev. 3	2/14/07	ECM™ Motor and End Bell Control Module Kit Cross-Reference List
SA-001 Rev. 1	7/24/08	New Service Bulletin Numbering System

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Svc Bulletin	Date	Subject
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SF-089	1/28/21	OTA (Over the Air) Update for ComfortBridge™ Furnaces when Paired with 20 Seer Inverter AC's or HP's
SF-088 Rev. 1	11/21/19	Blower Motors Not working on FER Furnaces
SF-087	10/23/19	Troubleshooting fault codes on *MES8, *MES9 furnaces
SF-086	10/1/19	Pressure Switch Wiring Reversed on the 80% FER Models
SF-085	3/13/19	CoolCloud HVAC™ App Login When Out of Cellular / Wi-Fi Range
SF-084	2/28/19	ComfortBridge™ Furnaces in Dual Fuel Applications Not Locking Out Compressor Operation Below 0°F Outdoor Temperatures
SF-083	1/10/19	*MVC80803 not making high fire pressure switch
SF-082	1/8/19	PSR-01 Collector Box Pressure Switch Relocation Kit
SF-081	1/3/19	Stainless Burner Kits
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SF-075	1/26/18	Incorrect Speed Selection Dip Switch Sticker on *MVC96/*CVC96 Furnace
SF-074 Rev. 1	1/22/18	Alternate Furnace Service Ignition Control Board
SF-073 Rev. 4	12/7/17	Furnace Control Board; flame sensed when no flame should be present
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SF-071	6/13/17	Use of Furnaces for Construction Heat
SF-070	3/23/17	Drain Port on Inducer
SF-069 Rev. 1	1/19/17	Motor Harness on Certain 80% Multi-Speed ECM Model Furnaces
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SF-064	5/1/15	34.5” Chassis High Efficiency Furnace Venting Tables
SF-063	5/1/15	Furnace S&R (Serial & Rating) Label Located on Blower Door
SF-062 Rev. 1	9/23/15	Single Stage Furnace Twinning
SF-061 Rev. 1	5/13/15	Modulating Furnace Service Part Control Board Kits PCBKF201SF & PCBKF202SF
SF-060 Rev. 1	2/16/15	Replacement of Front Collector Box Cover on AMSS920803BNAA DM92SS0803BNAA and GMSS920803BNAA Model Furnaces
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SF-057	12/11/14	RCGK Rear Collector Box Gasket Kit – 40” High Efficiency Gas Furnaces
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SF-045	5/2/11	Changes to LPM-06 LP Kit
SF-044	4/29/11	Twinning H Model Furnaces
SF-043	2/14/11	Potential Misleading Fault Code on Communicating Model Furnaces
SF-042	2/10/11	Gas Valve Diagnostics
SF-041	1/7/11	Induced Draft Furnace Heat Exchanger Inspection Procedure
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SF-039	11/16/10	High Speed Motor Noise on GCH90904CX, GCH950904CX, *MH950704CX, *MH950904CX, GKS90704CX, & GKS90904CX Furnaces
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SF-036 Rev. 2	7/11/19	Low Voltage Board Connectors
SF-035	7/9/10	Emerson UltraCheck-EZ™ Motor Tester
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SF-030	10/28/09	Dehumidification Settings for GMVC95, GCVC9, AMVC95, ACVC9, AMVC8, GMVC8 And ADVC8 Model Furnaces
SF-029	4/20/09	Lighting Instruction Labels on 90% Model Furnaces
SF-028	3/16/09	Improved Integrated Furnace Control Board PCBBF109
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SF-026	12/3/08	FTK03A Twin Kit Usage with GMH, AMH, GCH and GDH Model Furnaces
SF-025	12/3/08	Revised 90% Furnace Venting Tables
SF-024	11/12/08	Missing Identification of Eight (8) Flash Fault Code
SF-023	10/20/08	RF000129 Ignition Control Kits
SF-022	4/29/08	Updated and Revised Venting Tables for GCV91155DX, AMH950704CX, GCH90704CX, GMH950704CX and GKS90704CX Model Furnaces
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SF-018	9/6/07	Revised Venting Table for GKS90904CX** Model Furnace
SF-017	6/26/07	LPM-05 LP Gas Conversion Kits
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SF-015	3/7/07	90% Jakel Two–Stage Induced Draft Motor Overload Tripping
SF-014	2/27/07	Supply Air Infiltration on 80% Dedicated Down Flow Model Furnaces
SF-013	11/10/06	New Jakel Round Nose Induced Draft Blower Assemblies for 80% Single Stage Gas Furnaces (Not Backward Compatible)
SF-012	4/18/06	New Ignition Control Board 0130F00005S
SF-011	2/16/05	Induced Draft Motor Rubber Coupling Change for B1859001S Kit
SF-010	2/15/06	B4833000S Kit Shipped with Incorrect Induced Draft Blower
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SL-014	10/10/14	SPKT02 Kit Instruction Changes
SL-013	11/07/13	Economizer Wiring Harness Miswired
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SL-009 Rev. 1	7/2/12	Horizontal Discharge Kit
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SL-003	1/9/09	Chattering Contactors on CPH Light Commercial Package Heat Pumps
SL-002 Rev. 1	12/8/08	CPG Model Units Tripping the Rollout Switch
SL-001	7/30/08	Sagging Top Panel Insulation on 7½ and 10 Ton Light Commercial Package Units

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SP-037 Rev. 1	11/13/15	Updated Installation Instructions for IO-824 Evaporator Coil Replacement
SP-036	7/22/15	Horizontal Duct Covers for Single Phase Daikin Package Units
SP-035	1/28/15	New HKP Heater kits for Residential Package Units
SP-034	9/25/14	Miswired Economizer Plug for Residential Package Units
SP-033	6/16/14	A/GPC13/1436H41** and DP13/14CH3641AA Suction Process Tube Cracking
SP-032 Rev. 1	5/20/14	Incorrect Speed Limit Data in Genteq Eon™ Motors in APH15 and DPH 15 “M” Model Package Heat Pump Units
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SP-026	11/9/09	Cracked Drain Pans on M Model Heat Pumps and Coolers
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SP-021	11/25/08	Novar HSI-5 & HSI-6 Ignition Control
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SP-019	7/10/08	Horizontal Duct Covers Removed from Single Phase Package Units
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SP-015	6/15/07	Propeller Type Noise from Condenser Fan Blades
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SP-011	2/14/07	A/GPG15 Adapter Harness
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SP-004	2/17/06	GPC, GPH Power Supply Phasing
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SR-084	1/20/22	Rotary Compressors Require Hard Start Kit when Paired with Indoor TXV
SR-083 Rev. 1	7/13/21	Inverter PCB's – New Inverter PCB Kit numbers
SR-082	4/20/21	ComfortBridge™ Air Handlers Locking Out Heat Operation
SR-081 Rev. 1	10/29/21	D-Checker Service Tool for Unitary Inverter Units
SR-080 Rev. 1	10/07/20	Inverter Outdoor Units Reporting b0 error
SR-079	02/07/20	ComfortBridge™ AVPTC – BA Revision Air handlers Locking Out
SR-078 Rev. 1	01/30/20	GSZ140241LA Undercharged
SR-077 Rev. 1	04/16/20	AlumaFin7 "A" cabinet coil drains blocking flue on 80% "A" cabinet furnace
SR-076	3/28/19	Defrost Thermostat Relocation for Single Row 7mm Heat Pump Coils
SR-075	10/24/18	Inverter PCB's – New Pre-Programmed A/C Inverter PCB Kits
SR-074 Rev. 1	3/20/18	Incorrect Label Used on HKSX10XC Heater Kits
SR-073	10/2/17	MBR1200/1600AA** & MBVC1600/2000AA** Serial/Rating Labels
SR-072	8/7/17	Defrost Timer Change on AVZC18/20 and DZ18/20VC SEER Inverter Heat Pump Units
SR-071	4/18/17	Dip Switch Settings on Inverter DV**PEC* or AVPEC** Air Handlers
SR-070 Rev. 3	11/17/16	Inspection and Replacement of Disconnects (Part # BT1753510 & 0130A00091) on Inventory and Installed AWUF and ACNF Air Handlers
SR-069	10/20/16	Inverter PCB's – Shared Data Memory Chips
SR-068 Rev. 1	10/07/20	Crank Case Heater Kit for Inverter Split Systems
SR-067 Rev. 1	9/19/16	18 SEER Inverter Air handler DV**PEC Compatibility with EWC Ultra-Zone® UT3000 Zone Control
SR-066 Rev. 1	6/13/16	CTK03 and CTK04A Displaying Improper Outdoor Temperature
SR-065 Rev. 2	6/20/16	ACNF25**16AA and ACNF31**16AA Motor
SR-064	5/5/16	Dip Switch Settings on Inverter 18 & 20 SEER Split Systems DZ18VC0**1A*, DZ20VC0**1A, DX20VC0**1A*, AVXC200**1A* and AVZC200**1A* Models
SR-063	3/16/16	Inverter Split Systems DX20VC0361A*, AVXC200361A*
SR-062 Rev. 1	7/18/14	Suction Service Valve on GSX16*FB Models
SR-061	6/10/14	Missing Charge Amount on GSC130481CC Serial Plate
SR-060	6/3/14	Condensate Blow off on ARUF, ARPT and AVPTC Air Handlers
SR-059	4/23/14	Memory Chips for the AVPTC***14A* and DV**PTC*14A* Air Handlers
SR-058 Rev. 1	11/4/14	ASPT-ASUF Motors without Blower Off Delay
SR-057	8/28/13	Incorrect MOP and MCA listed for GSX130601B* Condensing Unit
SR-056	8/12/13	Requirements for Low Ambient Kits on Split System Coolers and Heat Pumps
SR-055	7/9/13	Potential Incorrect Fan Wiring on ASUF and ASPT Air Handlers
SR-054 Rev. 1	6/27/13	Split System Service Condenser Coils Manufactured Incorrectly
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SR-051	3/4/11	Noisy Defrost on *SZC16 and *SZC18 Units when Wired in Legacy Mode
SR-050	11/29/10	New TXV Kit TX2N4A
SR-049	11/17/10	*SXC/*SZC16/*SXC/*SZC18 Dehumidification Feature
SR-048	7/2/10	Shared Data in Communicating Split System Condensers and Heat Pumps
SR-047	7/2/10	Incorrect Aluminum Service Replacement Coils
SR-046	6/18/10	Float Switches in Secondary Drains on AWUF Air-Handlers
SR-045	5/19/10	Incomplete Defrost on the A/GSZ13024 and A/GSZ13030 Heat Pumps
SR-044 Rev. 3	8/1/12	Return of Failed all Aluminum Coils
SR-043	3/5/10	DFTD-1 Defrost Time Delay Kit
SR-042	12/4/09	Reversing Valves on *SZ14018, *SZ14024, *SZ16024 Model Heat Pumps manufactured in 2009
SR-041	9/25/09	AEPF3036/3137 Air Flow Settings with 14 and 16 SEER Outdoor Units
SR-040	8/18/09	Revised MCA/MOP for the AWUF30,36 and 37**16BA Air Handlers
SR-039	6/26/09	TX3N4 Expansion Valve Kit Containing R-22 Expansion Valves
SR-038	2/11/09	Field Repair Kit for Aluminum Coils
SR-037	1/26/09	New PCBDM130 Defrost Control Board
SR-036	1/20/09	Dunan Reversing Valves
SR-035	11/18/08	Changing Lugs on HKR-15C Heat Kit
SR-034	11/6/08	High Pressure Issue on GSH14036, SSZ/ASZ14036 and SSZ/ASZ16036 Heat Pumps
SR-033	10/14/08	TX*N* TXV kits and TXV Parts Inventory
SR-032	6/20/08	Replacement Caps for Service Valves on Split System Units
SR-031	6/20/08	Wiring Change on AEPF Air Handlers
SR-030	6/19/08	Leaking Service Valves on Split System Condensers and Heat Pumps
SR-029	5/28/08	Top Plate Kit for ARUF374316, ARUF486016 & ARUF496116 Air Handlers
SR-028	5/22/08	Improperly Wired Transformers on MBE2000 Air Handlers
SR-027	4/23/08	Crankcase Heaters for Copeland Reciprocating Compressors
SR-026	2/28/08	CAPF/CAUF3642D6BA Evaporator Coils
SR-025 Rev. 1	6/18/08	Superheat/Subcooling Calculators and Pressure/Temperature Chart
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SR-023	3/23/07	Condenser Fan Noise on the GSH130241A*, GSH130251A* and GSH130301A* Heat Pumps
SR-022	3/13/07	Charge Adjustment on ASX16*, SSX16* and GSC14* Units
SR-021 Rev. 1	5/29/08	Harmonic Compressor Noise in Split Heat Pumps
SR-020	1/15/07	Redesigned Tops and Louvers on the Goodman® and Amana® Brand Split System Units

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SR-017	9/22/06	TX5N4 Expansion Valve Kit Label Issue
SR-016	8/23/06	GSC14042 / 048 / 0601AA Discharge Tubes Cracking
SR-015 Rev. 1	1/31/08	GSC130361AA/BA and GSH130361A* Nuisance Tripping of Overcurrent Protection Device
SR-014	6/20/06	ARUF042-1B, ARPT042-1B and AR*F30301BA Air Handler Blower Noise
SR-013	6/15/06	Blower Noise on ARUF049-1B, ARPT049-1B, ADPF30421BA and AR*F36421BA Air Handlers
SR-012	5/26/06	Release of Revised IO-258B for Amana® Brand Split System Air Conditioners Equipped with Comfort Alert Module
SR-011	5/26/06	Loose Condenser Fan Motor Mounting Nuts on Amana® Brand Condensers
SR-010	4/29/06	Cleaning “White-Dust” From Amana®-Brand Condenser Coils
SR-009	4/18/06	RTG**C2A/C Heat Pumps with Defrost Issues
SR-008	4/24/06	RTG36C2A/C Units Cycling on High Head Pressure in Heat Mode
SR-007 Rev. 1	5/22/08	Crankcase Heaters for Copeland Scroll Compressors
SR-006 Rev. 1	11/7/06	Amana® Brand Service Replacement A-Coil Assemblies
SR-005	9/12/05	A90-00 and A120-00 Blower Motor Substitute
SR-004 Rev. 1	10/13/05	Hard Start Kit Information
SR-003	8/11/05	Airflow adjustment to MBE Air Handler and AMV/GMV Furnace using AFE18-60A All Fuel Kit when Matched with RTG Heat Pump
SR-002	8/3/05	MBE/MBR Air Handler Rework Update
SR-001	8/3/05	Suction Line Fitting Installation on Corporate Coils and Air Handlers

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TP-109B	August 2016	Aluminum Coil Cleaning Approved Cleaners' List
TP-108B	October 2019	Long Line Set Application R-410A - Commercial
TP-107M	September 2020	Long Line Set Application R-410A - Residential
TP-106C	May 2007	Long Line Set Application R-22

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Svc Bulletin	Date	Subject
PTAC-073	9/22/15	Whining Noise on Power Vent Motors
PTAC-072	8/13/15	Whistling Sound on PT*** G****** Model PTAC's
PTAC-071	11/18/10	Potentiometer Replacement Kits for Hydronic Units
PTAC-070	3/4/10	Potentiometer and Knob Replacement Kit
PTAC-069	12/17/07	Disposition of PTAC In-Warranty Service Parts
PTAC-068	10/19/07	Digital Control Board Replacement Procedures
PTAC-067	9/10/07	Motor & Fan Blade Replacement on A*09****MA & A*12****MA Units
PTAC-066	10/2/06	PTAC Control Board Return Policy
PTAC-065	9/27/06	RSKP0006 CONTROL BOARD REPLACEMENT KIT
PTAC-064	10/17/05	Relay Kit For ME**, MH** and PB** Model Units
PTAC-061	4/29/04	Control Board Replacement Kits for "PTH/PTC - *A, *B, *C, *D and *E" Series PTAC Units.
PTAC-060	4/29/04	Return Parts on 2004 PTAC Units
PTAC-059	12/18/03	Revised Company Warranty Claim Form Process
PTAC-058	12/12/04	Control Board Replacement Kits for " *A, *B, *C, *D, and *E" Series PTAC Units
PTAC-056	9/18/03	PTAC Control Boards
PTAC-055	8/4/03	PBE112A**B
PTAC-054	7/22/03	PTC-PTH***B***E Fan Blade Rub
PTAC-053	5/16/03	Installing new PTAC units into existing wall sleeves with internal drain kits.
PTAC-051	4/2/03	PTH15*A***D PTC15*A***D Subcooler Vibration
PTAC-048-B	8/8/01	Toll free number for PTAC technical service
PTAC-046	3/7/01	Control Board Replacement Kits for "AA, AB and AC" Series PTAC Units.
PTAC-044-B	4/4/00	Replacement Control Boards
PTAC-043-B	3/16/00	Control Board Characteristics NT Series
PTAC-041-B Rev 2	9/8/06	PTC-PTH Sealed System Repairs on All "A" Through "M" Series PTAC Units
PTAC-040-B	2/4/99	PTAC Mislabeled Control Boards
PTAC-039B-B	10/26/00	Control Board Characteristics "PTH/C***A***C"
PTAC-039A-B	4/3/00	Control Board Characteristics "AA_BA" Series
PTAC-039-B	1/5/99	Control Board Characteristics
PTAC-037-B	1/22/99	PTAC Sealed System Repair - Prior to January 1, 1996 "J" series PTAC models
PTAC-035-S	5/4/98	PTAC Sealed System Repair
PTAC-034-S	3/25/98	D9945801 PTAC Wall Thermostat
PTAC-033-S	1/26/98	Control Board Characteristics
PTAC-032-S	10/11/96	Hydronic Heat Kits HWK03 & HVK03

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Svc Bulletin	Date	Subject
PTAC-31-B	10/28/96	PTAC Cracked Basepans
PTAC-30-B	4/11/96	PTAC Thermistor Clip
PTAC-29-B	4/9/96	"J" Series PTAC Door Bezel Failures
PTAC-25	10/15/93	PTH Reversing Valves Substitution (3-Way to 4-Way)
PTAC-23A	10/18/91	Cracked Elbow and Tubing-PTC12XXXE(R), PTAC12XXG(R) Cond. Inlet
PTAC-22A	5/3/90	Failure to Heat-PTAC "E" Chassis Heatpump
PTAC-21	10/31/89	PTAC "E" Chassis Water Leakage
PTAC-20	9/20/89	Wall Sleeves- GE, Carrier, McQuay
PTAC-18	5/26/89	PTAC "E" Chassis Power Cords (230/208 Volt)
PTAC-17A	12/18/89	PTAC Warranty, 2nd-5th Year Service Rate Reductions
PTAC-16	5/29/89	PTAC "E" Model Indoor Room Thermostat Operation
PTAC-15	3/29/89	265 Volt Circuit Breakers for PTAC Units
PTAC-14	1/31/89	Indoor Thermostat Kits, RO161071
PTAC-13A	6/9/89	PTAC Power Cords- 230/208 Volt "E" Chassis
PTAC-12	4/19/89	Blower Wheel "Ticking" on the PTAC "E" Chassis
PTAC-11	8/29/88	Hydrocarbon Breakdown and Damage of Plastic PTAC Parts
PTAC-10	1/22/88	Safety Notice
PTAC-9	5/12/87	Possible Shock Hazard on PTRCA1 and PTRCB1 Remote Subbases
PTAC-8	5/12/87	Short Cycling
PTAC-7	4/29/87	Flaking Evaporator Coils- Aluminum Hydroxide, White Dust
PTAC-6	9/3/86	Soft and Hard Start Assemblies
PTAC-5	8/28/86	Conditions that Contribute to Failures on Compressors ,Overloads, Heaters
PTAC-3	12/12/85	PTAC Expansion Valve Assemblies
PTAC-2A	10/11/85	Expansion Valve Assemblies for PTAC Heat Pump Units
PTAC-1	7/26/85	All 9000 Series PTAC Heat Pump Units

SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SP – 039

DATE: March 22, 2019
TO: All Service and Parts Managers
SUBJECT: GPC1436H41DD and GPG1436040M41AB Serial/Rating Label

The serial/rating label for the GPC1436H41DD and the GPG1436040M41AB residential package units built between April 11th, 2018 and December 11th, 2018 (serial number prefix 1804 through 1812) have incorrect Minimum Circuit Ampacity (MCA) and Max Fuse Size (MOP). The MCA values for the GPC1436H41DD and GPG1436040M41AB units listed below fall within the same minimum wire gauge for a copper conductor.

GPC1436H41DD Serial Rating Label	Incorrect Value	Spec Sheet*	Correct Value
Minimum Circuit Ampacity (MCA)	21 amp	26.2	24.8 amp
Max. Fuse Size	30 amp	40 amp	40 amp

GPG1436040M41AB Serial Rating Label	Incorrect Value	Correct Value
Minimum Circuit Ampacity (MCA)	21 amp	23 amp
Max. Fuse Size	30 amp	35 amp

*NOTE: The MCA correct value listed in the table above for the GPC1436H41DD is a calculated value for the motors in this unit, while the MCA value in the spec sheet represents the motor manufacturers' Rated Load Amp values for the motors. The MCA on units produced prior to this error and as listed in the spec sheets and other documentation will remain different than this calculated MCA.

Models	Description	Serial # From	Date From	Serial # To	Date To
GPC1436H41DD	14 SEER Cooling Pkg	1804165082	4/11/2018	1812154656	12/11/2018
GPG1436040M41AB	14 SEER Gas/Electric Pkg	1804401529	4/26/2018	1811121829	11/12/2018

The table above shows the serial range and date range for each of the models involved. Units built after this range will have the correct information on the label. Units within the suspect range shipped after 3/1/2019 have been reworked at the factory, have the correct electrical data and have a brown dot on the carton travel label (see picture).



T: 888-593-9988 | F: 713-316-5541

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

Goodman is requesting all uninstalled units in distributor inventory be placed on hold until a replacement rating label is installed. Replacement rating labels can be obtained from Goodman Technical Services at TECHSERVICES@goodmanmfg.com.

Replacement rating plates will have the serial number and ETL logo sections removed so you will only be required to match the unit model to the label provided and affix the replacement rating label over the top of the existing label.

No corrective action is required for installed GPC1436H41DD or GPG1436040M41AB units with the incorrect values. If required to pass inspection Goodman can provide a replacement serial/rating label for any affected unit. Contact Technical Services at TECHSERVICES@goodmanmfg.com with the model and serial number of the affected unit.

If an installed unit experiences nuisance breaker trips, the incoming voltage should be checked to determine it is within the voltage ranges for a 208/230 volt unit and no wiring connections are loose or improperly installed. Refer to Service Manual RS6300012 or RS6300013 for the proper procedure for checking locked rotor voltage test.

For units in distributor inventory where the rating label is replaced, Goodman will provide $25/unit labor for applying the replacement rating label. Do not file claims through Warranty Express, you must complete the Dist Rework Report Form provided, listing all units in inventory where the rating label is replaced. We request that this form be returned in digital format on the spreadsheet provided rather than scanned PDF's, faxed or handwritten copies. If desired we can provide a pre-populated spreadsheet with the models and serial numbers that were shipped to a specific distributor location. Contact TECHSERVICES@goodmanmfg.com if you prefer to have this pre-populated version.

If a replacement rating label is required on an installed model listed above Goodman will provide labor at the servicers Class "A" labor rate. In the unlikely event a circuit breaker replacement is required to correct nuisance breaker trips Goodman will provide labor at the servicer's Class "B" rate plus the cost of the circuit breaker if the invoice is provided. If the breaker is changed, please ensure that the appropriate wire size is used for that application per the NEC and any pertinent state and local codes. If the label and breaker are replaced on the same day the claim will be paid at rate "B" only.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8789*** for label replacement or Authorization Code number ***8794*** for circuit breaker replacement. **The claim for the part and labor should be filed as one claim, using the Dealer's account number.** For units that have **not** been installed in the field, a list with model and serial numbers should be sent to TECHSERVICES@goodmanmfg.com for labor reimbursement.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2020.

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SERVICE BULLETIN

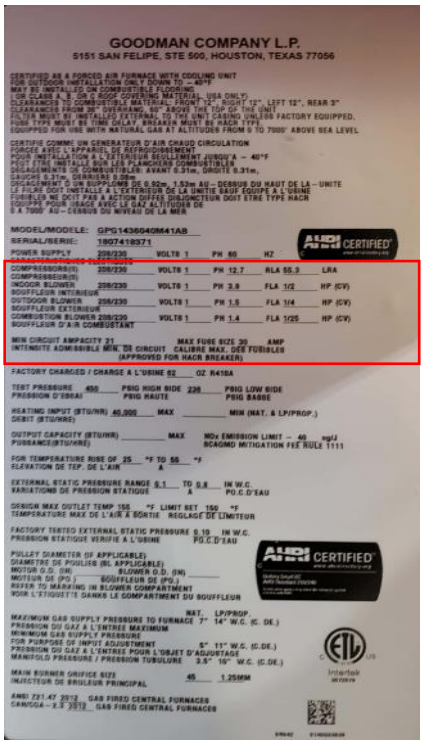


Figure 1: GPG1436040M41AB serial/rating label

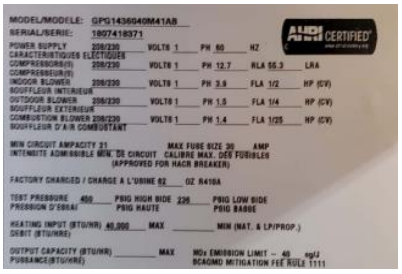


Figure 2: Model, Serial and Electrical information

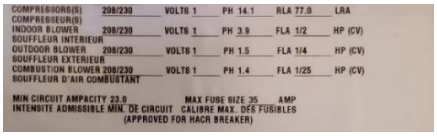


Figure 3: Replacement Label

The replacement label for the GPG1436040 units (Figure 3) is a small section of the complete label (Figure 1) and contains the correct electrical data. It should be installed below the smaller AHRI Certified logo.

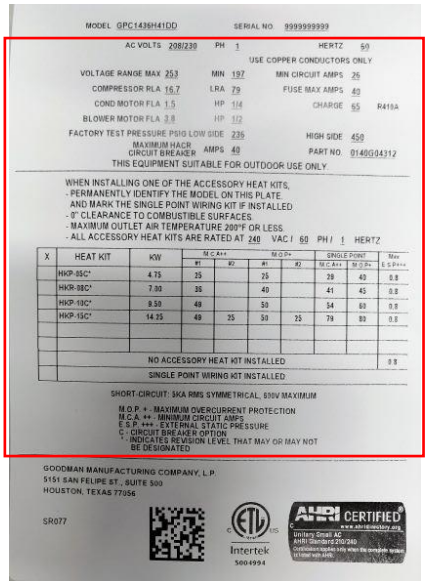


Figure 4: GPC1436H41DD serial/rating label

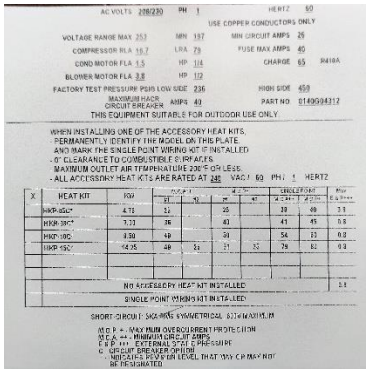


Figure 5: GPC1436H41DD replacement label

The replacement label for the GPC1436H41 units (Figure 5) is a portion of the complete label (Figure 4) and contains the calculated motor values and other electrical data. The replacement label should be installed just below the model and serial number of the existing label so they are not obscured.

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Service Bulletin

SP-038 Rev. 1

Supersedes SP-038

DATE: November 4, 2016

TO: All Service and Parts Managers

SUBJECT: Economizer Installation Wiring for Residential Package Units

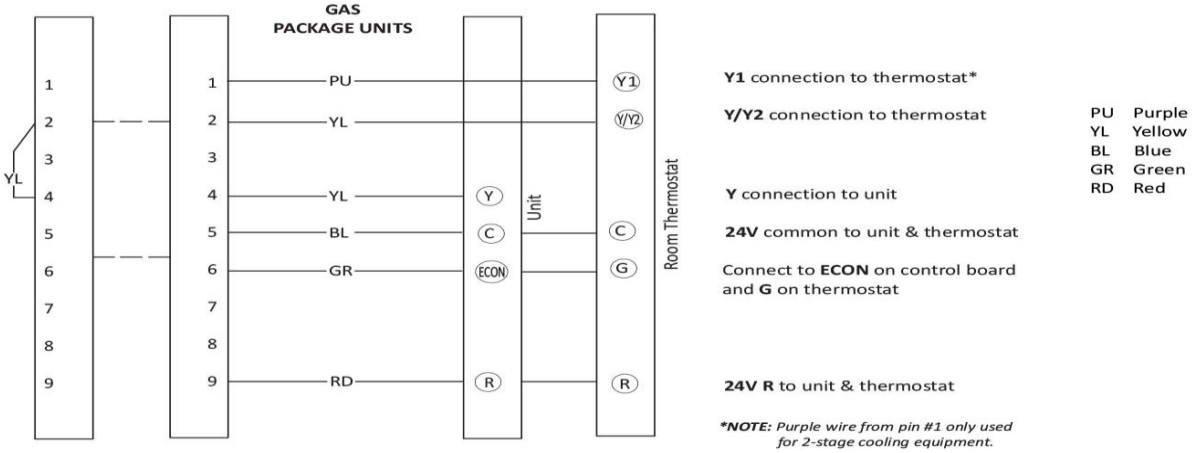
The purpose of this bulletin is to provide instructions for the installation of an economizer on “H” and “M” Series residential package units that do not have a factory installed economizer wiring harness.

The DP14GM24 – 48 and A/GPG1424 – 48 units have single-stage compressors and use a PCBAG123 single-stage control board. **Part # 0259G00214** (economizer wiring harness) would be used to connect from the control board and thermostat to the economizer 9-pin connector (see instructions below). **Part # 0259L00412** would be used for gas/electric package units with a two-stage compressor (14 SEER 5 Ton and 16 SEER units).

To connect an economizer to an “H” or “M” series package cooling unit with a single-stage compressor, use **Part # 0259G00213**. For single-stage package heat pump models, **Part # 0259G00215** would be used to connect from the control board and thermostat to the economizer 9-pin connector (see instructions below). **Part # 0259L00411** would be used for heat pump package units with a two-stage compressor (14 SEER 5 Ton and 16 SEER units).

Gas Package Units – 1-stage cooling (Wire harness Part # 0259G00214):

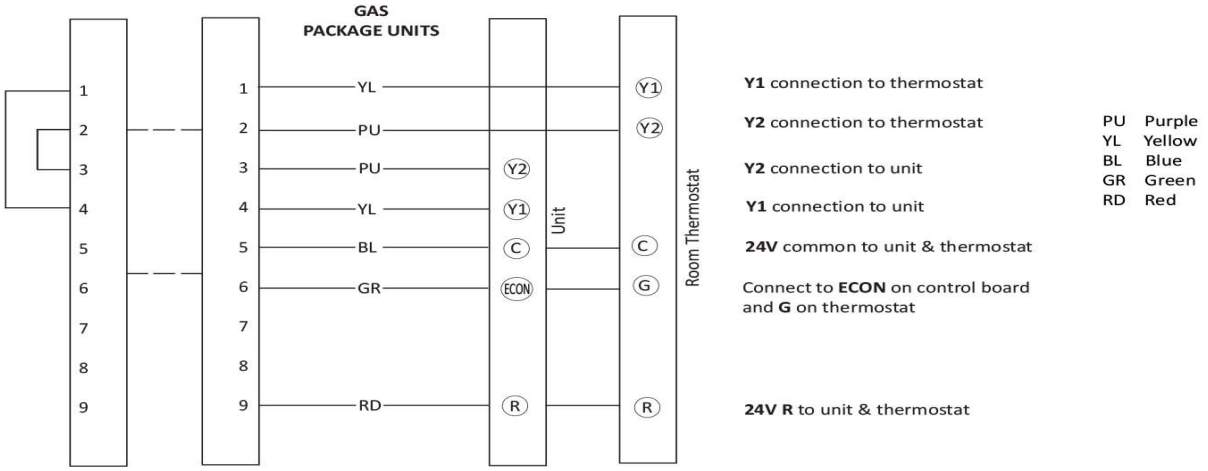
1. Connect yellow wire from harness pin #2 to the Y connection (yellow wire) from thermostat.
2. Connect yellow wire from harness pin #4 to the Y/Y2 connection on the unit (yellow wire).
3. Connect blue wire from harness pin #5 to 24V Common (blue common wire) on unit.
4. Connect green wire from harness pin #6 to ECON spade on control board.
5. Connect red wire from harness pin #9 to R terminal (red wire) on transformer.



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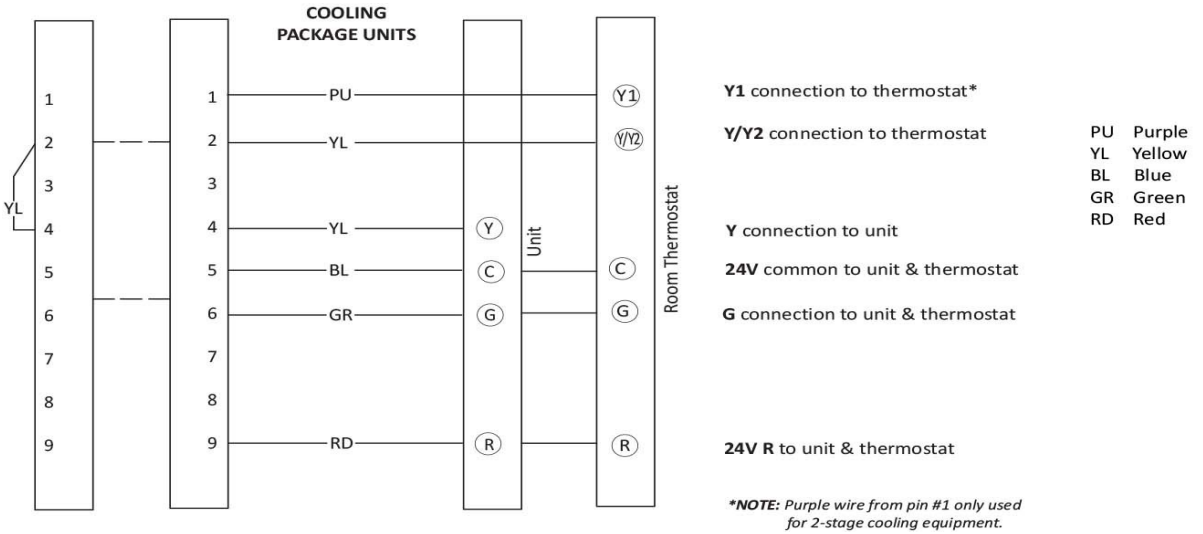
Gas Package Units – 2-stage cooling (Wire harness Part # 0259L00412):

1. Connect yellow wire from harness pin #1 to the Y1 connection from thermostat.
2. Connect yellow wire from harness pin #4 to the Y1 unit control board connection.
3. Connect purple wire from harness pin #2 to the Y2 connection from thermostat.
4. Connect purple wire from harness pin #3 to the Y2 unit control board connection.
5. Connect blue wire from harness pin #5 to 24V Common (blue common wire) on unit.
6. Connect green wire from harness pin #6 to ECON spade on control board.
7. Connect red wire from harness pin #9 to R terminal or S2 terminal (if present) on control board.



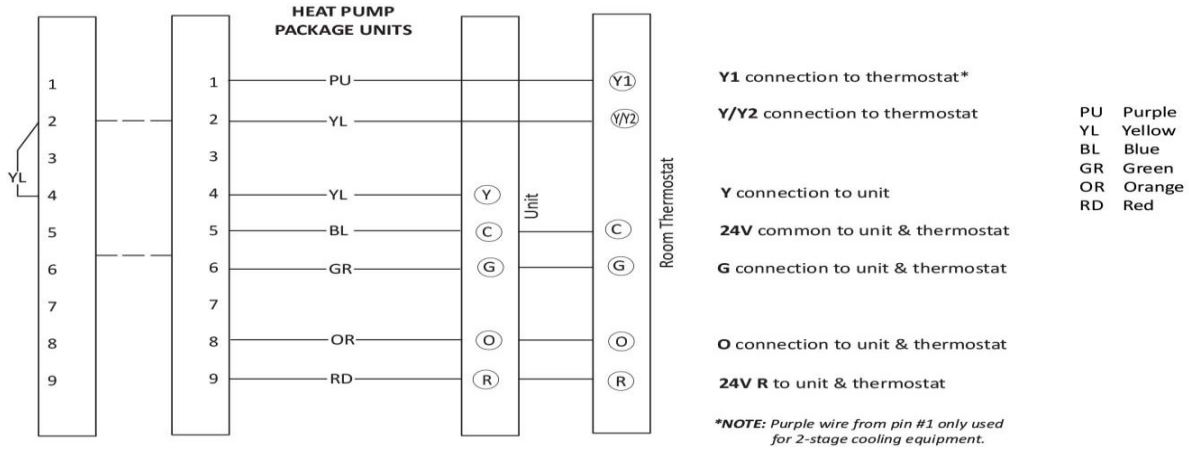
Cooling Package Units – 1-stage (Wire harness Part # 0259G00213):

1. Connect yellow wire from harness pin #2 to the Y connection from thermostat.
2. Connect yellow wire from harness pin #4 to Y connection (yellow wire) on unit.
3. Connect blue wire from harness pin #5 to 24V Common connection (blue wires) on LVTB (low voltage terminal block) or C for unit and thermostat.
4. Connect green wire from harness pin #6 to G connection (green wire) for unit and thermostat.
5. Connect red wire from harness pin #9 to R connection (red wire) for unit and thermostat.



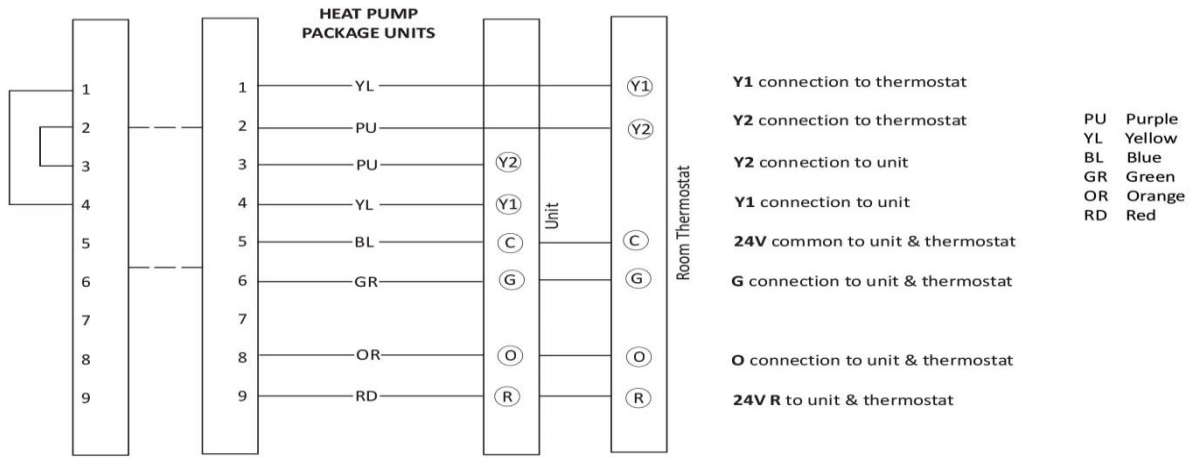
Heat Pump Package Units – 1-stage (Wire harness Part # 0259G00215):

1. Connect yellow wire from harness pin #2 to the Y connection from thermostat.
2. Connect yellow wire from harness pin #4 to Y connection on unit.
3. Connect blue wire from harness pin #5 to 24V Common connection (blue wires) on LVTB (low voltage terminal block) or C for unit and thermostat.
4. Connect green wire from harness pin #6 to G connection (green wire) for unit and thermostat.
5. Connect orange wire from harness pin #8 to O connection (orange wire) for unit and thermostat.
6. Connect red wire from harness pin #9 to R connection (red wire) for unit and thermostat.



Heat Pump Package Units – 2-stage (Wire harness Part # 0259L00411):

1. Connect yellow wire from harness pin #1 to the Y1 connection from thermostat.
2. Connect yellow wire from harness pin #4 to the Y1 connection (purple wire) on unit.
3. Connect purple wire from harness pin #2 to the Y2 connection from thermostat.
4. Connect purple wire from harness pin #3 to the Y2 connection (yellow wire) on unit.
5. Connect blue wire from harness pin #5 to 24V Common connection (blue wire) for unit and thermostat.
6. Connect green wire from harness pin #6 to G connection (green wire) for unit and thermostat.
7. Connect orange wire from harness pin #8 to O connection (orange wire) for unit and thermostat.
8. Connect red wire from harness pin #9 to R connection (red wire) for unit and thermostat.



Service Bulletin

SP-037 Rev. 1
Supersedes SP-037

DATE: November 6, 2015
TO: All Service and Parts Managers
SUBJECT: Updated Installation Instructions for IO-824 Evaporator Coil Replacement

It has recently come to our attention that the installation instructions for the evaporator coil replacement in “H” model Package Units needed to be revised to provide more clarification for proper fit up and installation of the new replacement aluminum evaporator coil. The original instructions pertained only to copper to aluminum coil replacements for units with date codes 1502 and earlier. The revised installation instructions will be more detailed relative to replacement of either copper or aluminum production coils.

If you receive or have any of the service coils listed below in your inventory that have the old IO-824 installation instructions instead of the new IO-824A installation instructions, please print a copy of the attached IO-824A instructions and replace. Or you may contact Technical Services at HACServicerSupport@goodmanmfg.com or 888-593-9988 to request an emailed copy.

Service Coils Effected

0202G00354S	0202G00550S	0202G00557S
0202G00598S	0202G00651S	0202G00665S
0202G00690S	0202G00708S	

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COPPER TO ALUMINUM EVAPORATOR COIL REPLACEMENT "H" MODEL PACKAGE UNITS INSTALLATION INSTRUCTIONS

Attention Installing Personnel

As a professional installer, you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

⚠ WARNING

HIGH VOLTAGE!

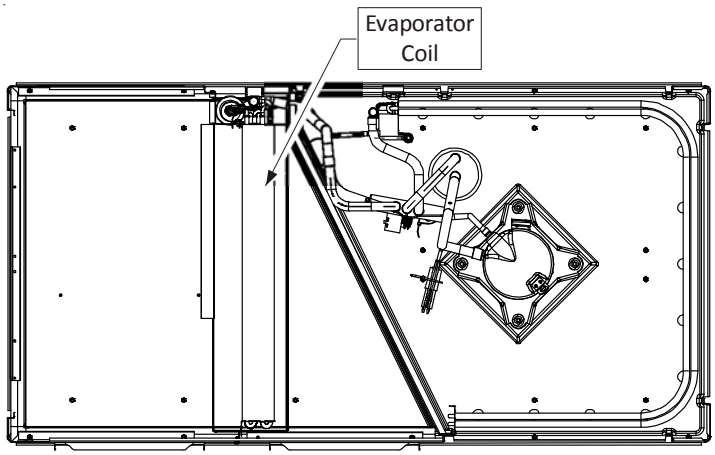
Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.



NOTE: THE PISTON FROM THE EXISTING COIL SHOULD BE USED WHEN REPLACING THE NEW COIL.

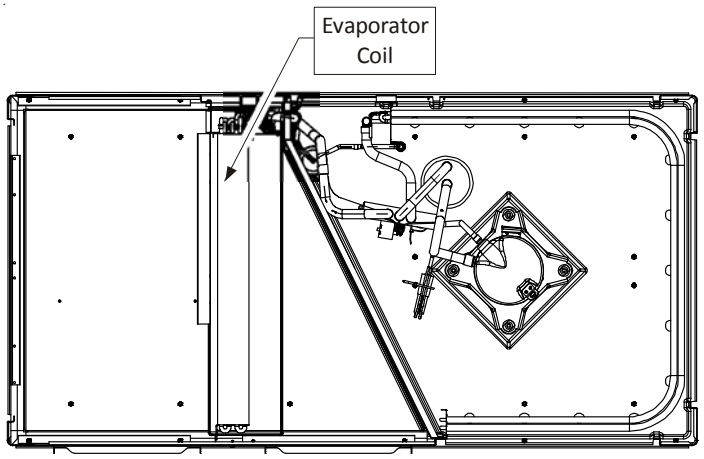
Installation Instructions

1. Disconnect line and low voltage power. Confirm with an electrical tester that there is no voltage present.
2. To gain access to the evaporator coil, remove the access and top panel(s) on the unit.
3. Recover all refrigerant from the unit in accordance with EPA regulations.
4. Coil Removal
   1. Identify the coil location for your unit.



Units with Date Code Before 1502

Figure 1 A



Units with Date Code of 1502 and Newer

Figure 1 B

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Houston, TX 77056

For units with date code of 1502 and newer

A. It is not necessary to remove the front and back filler plates.

B. Remove the single screw located on the top back left of the coil which secures it to the back filler plate as shown in Figure 2 Note A.

C. Remove the five screws located on the front right of the coil which secures it to the front filler plate as shown in Figure 3 Note A.

For units with date code before 1502

A. Both the front and back filler plates need to be used to move the coil into position as shown in Figure 1 B.

B. Remove the three screws located between the supply and return air openings of the unit which secure the back block off plate as shown in Figure 2 Note B.

C. Remove the three screws located on the right side panel which secure the front block off plate as shown in Figure 3 Note B.

D. Attach the new front and rear block off plates, provided with the kit, and secure them to the new coil.

E. Add a gasket to the edge of the front plate in the location shown in Figure 3.

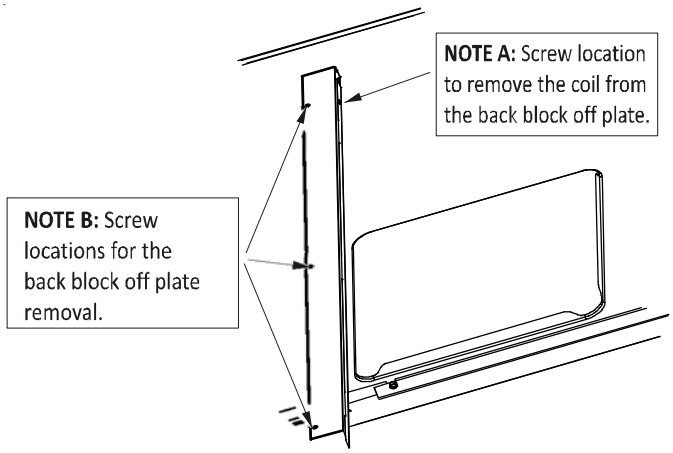


Figure 2

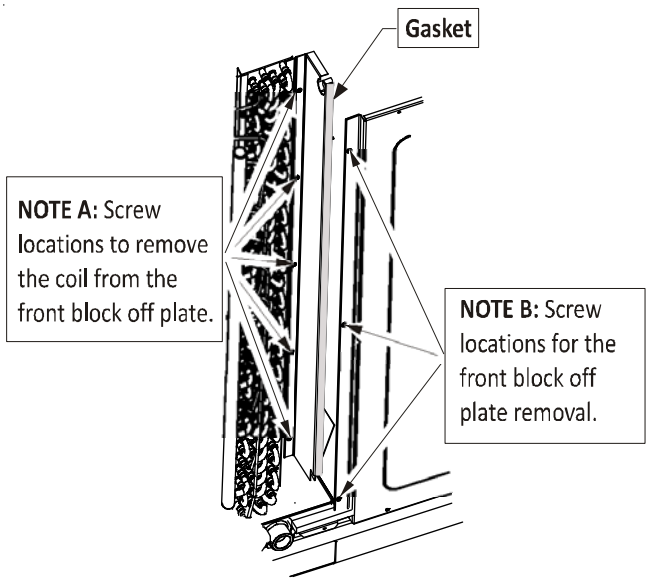


Figure 3

5. If you are replacing an existing aluminium coil proceed to Step 8.

6. As you can see in the following pictures, some re-piping is necessary. Cut the copper tubing in the area as shown in Figure 4.



Figure 4

7. Once the new aluminum evaporator coil is installed, use a swaging tool or couplings and reinsert the tubing. Make sure to turn it to the desired position needed to reconnect it as shown in Figure 5. Take care not to kink the tubing.

   Note: It will also be necessary to replace the filter drier with this sealed system repair of the unit.



Figure 5

8. Clean the joint area of any visible excess oil and or dirt. A clean cloth should be sufficient to remove the excess oil or dirt. Use heat paste or a wet rag to protect the plastic covering where the aluminum/copper connection meet.

9. Apply heat to the joint area with the torch and apply the braze alloy to complete the joint.

   Brazing Materials - Copper to Copper Joints:

   Sil-Fos used without flux (alloy of 15% silver, 80% copper, and 5% phosphorous). Recommended heat 1400°F.

10. Allow the joint to cool completely before applying pressure to verify the leak was successfully repaired.
11. Evacuate the system to 250 microns or less using the FasTest service fittings. It is necessary to use both FasTest service fittings since some compressors create a mechanical seal separating the sides of the system.
12. Charge the system by weighing the charge into the unit based on charge specifications found on the rating plate.
13. Reinstall the access and top panel(s).
14. Set thermostat to call for cooling and then heating mode of operation (if heat pump). Verify that the unit is properly operating.

Filter Drier Clamp Installation Instructions

Large Filter Drier Installation

1. Position the filter drier so that there is at least a 0.25" clearance between it and the copper tubing and/or reversing valve.
2. Place the filter drier clamp as shown in Figure 6. Use two #10 self tapping screws to secure the clamp to the partition panel.

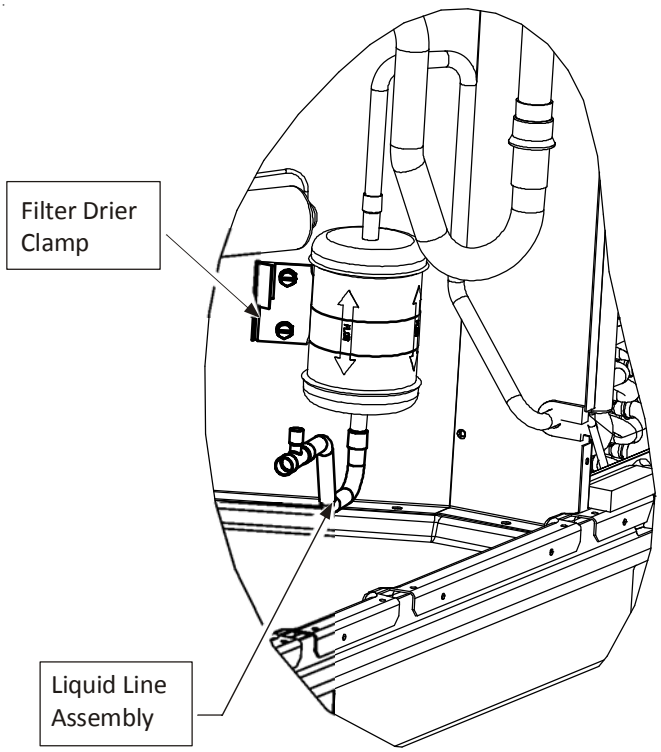


Figure 6

Small Filter Drier Installation

1. Position the filter drier so that there is at least a 0.25" clearance between it and the copper tubing.
2. Place the filter drier clamp as shown in Figure 7. Use one #10 self tapping screw to secure the clamp to the partition panel.

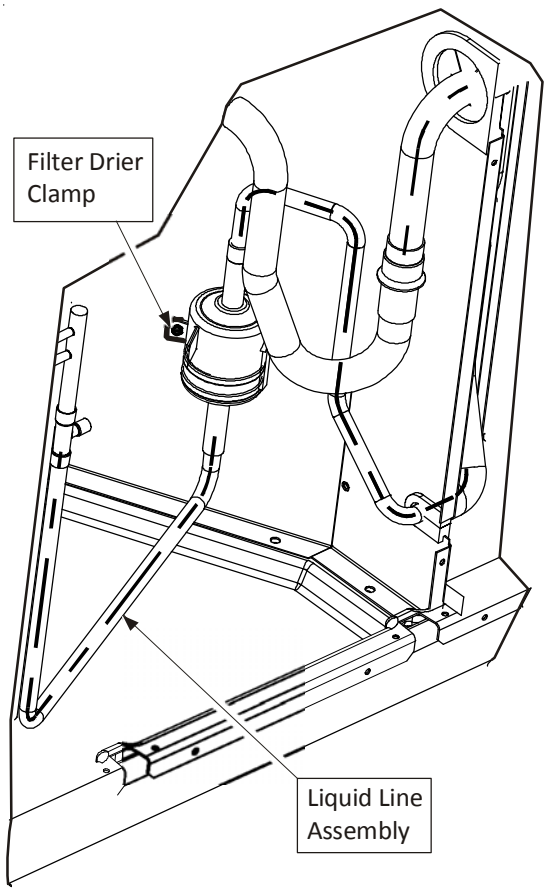


Figure 7

NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE.

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"All of our systems are designed and manufactured with the same high quality standards regardless of size or efficiency. We have designed these units to significantly reduce the most frequent causes of product failure. They are simple to service and forgiving to operate. We use quality materials and components. Finally, every unit is run tested before it leaves the factory. That's why we know. . . **There's No Better Quality."**

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- **Warranties**
- **Parts**
- **Financing Options**

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Service Bulletin

SP-036

DATE: 7/22/2015

TO: All Service and Parts Managers

SUBJECT: Horizontal Duct Covers for Single Phase Daikin Package Units

This bulletin is to inform you that the horizontal duct covers, used when converting M series single phase unit to down flow application, do not come factory installed. If installing a DP**HM/CM, DP**GM or DP**DM single phase model for down flow application you will need the accessory horizontal duct cover kit.

The horizontal duct covers are available in kit form. One kit for all medium chassis units **(Part # 20464501NGK)** and one kit for all large chassis units **(Part # 20464502NGK)**. Each kit will contain 2 insulated duct covers with the gasket installed and 12 screws for installing both covers (6 screws for each cover).

If you need the horizontal duct covers, they can be order at no charge by contacting you Customer Service Representative.

Service Bulletin

SP-035

DATE: January 28, 2015

TO: All Service and Parts Managers

SUBJECT: New HKP Heater kits for Residential Package Units

Due to new UL requirements, we have changed the heater kits for residential package application. The existing HKR-05C and HKR10C heater kits will be replaced by the new HKP-05C and HKP-10C heater kits. The release of these 2 new heater kits will complete the lineup of HKP heaters that are currently available for use in the residential package equipment, which are the HKP-15C and the HKP-20C.

These heater kits have been approved by our certification agency as substitutes for the HKR series heater kits. When installing the heater kit, please follow the instructions provided in the installation and operating instructions manual that was shipped with the unit.

If required for inspector approvals, the attached letter may be provided as a letter of equivalency.

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January 28, 2015

To whom it may concern:

Goodman recently began production of new HKP-series heater kits for use in the residential packaged units. The new HKP heater kits will be available in 5KW and 10KW sizes. These heater kits have been approved by our certification agency as substitutes for the HKR-series heater kits as follows:

- HKP-5C may be used in packaged units which list HKR-5C* on the ratings plates.
- HKP-10C may be used in packaged units which list HKR-10C* on the ratings plates.

When installing the heater kit, please follow the operating instructions provided with the unit.

If you have any questions, please feel free to contact our Technical Service Department at 888-593-9988.

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Service Bulletin

SP-034

DATE: September 25, 2014

TO: All Service and Parts Managers

SUBJECT: Miswired Economizer Plug for Residential Package Units

We recently discovered an issue with the economizer wiring harness in residential package units (DP13GM*****41/43, DP13C/HM43, and *PG13*****M41) manufactured between March 2014 and August 2014 (serial date code 1403 to 1408) when used in conjunction with the Jade economizer. There are four wires from 9-pin unit economizer plug that do not match up correctly to the 9-pin Jade economizer plug and will need to be corrected if using a Jade Economizer. If not using an economizer, this will have no effect on the units operation.

All residential package units manufactured in September 2014 (serial date code 1409 and later) have had the wiring harness corrected.

A field correction can be done by one of three options listed below A, B, or C:

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



A. Use a pin extractor tool (size .135 OD/.107 ID) to remove the pins (unit plug) and replace the wires in the appropriate pin position (refer to graphic).
B. Use a factory supplied adaptor plug (contact Chris Trussell @ Chris.Trussell@goodmanmfg.com in Tech Svc for plug).
C. Cut leads on each side of the harness (unit plug and economizer plug) and wire nut each unit wire to the appropriate economizer wire (refer to graphic).

	Unit plug	Econ plug
1	Y1-in	Y1
2	Y/Y2-in	Y2
3	G	Blank
4	Com	Y1-out
5	Y1-out	Com
6	O	G
7	Blank	Blank
8	Blank	O
9	24vac	24vac

The following is the wiring orientation for the wire change that has to be done if using option A (pin extractor method) or option C (cutting and wiring harnesses).

1. Pin 3 Green Wire from unit goes to Pin 6 Green Wire on economizer.
2. Pin 4 Blue Wire from unit goes to Pin 5 Blue Wire on economizer.
3. Pin 5 Yellow Wire from unit goes to Pin 4 Yellow Wire on economizer.
4. Pin 6 Orange Wire from unit goes to Pin 8 Orange Wire on economizer.

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Service Bulletin

SP-033

DATE: June 16, 2014

TO: All Service and Parts Managers

SUBJECT: A/GPC13/1436H41** and DP13/14CH3641AA Suction Process Tube Cracking

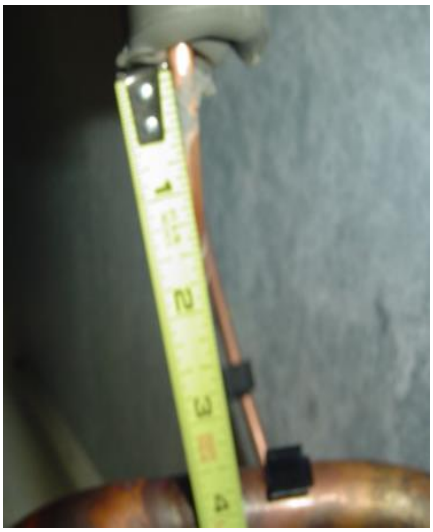
We have received a few reports of the suction process tube cracking at the suction line on the package cooling A/GPC13/1436H41** and DP13/14CH3641AA units built between October 2010 and February 6, 2014 (serial date code 1010 and 1402). We recommend when repairing this joint some form of mass dampener as described below be installed at the time of the repair to lessen any vibration that may exist in the tubing.

If needed, we now have weighted Mastic Tape (Part # 11154803) available from the Service Parts Department that can be used.

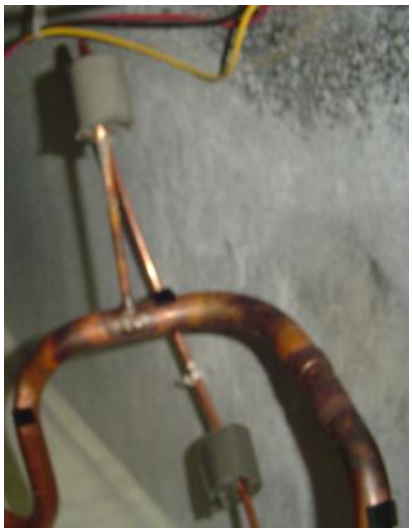
The pictures below show the locations to place the weighted mastic tape on the suction process tube. Picture #1 shows the first piece of mastic tape located 8 ½" from the back of the process tube box and picture #2 shows the second piece of mastic tape located 3 ½" from where the process tube is inserted into the suction line. Picture #3 shows what it looks like when completed.



Picture #1



Picture #2



Picture #3

Effective with February 6, 2014 (serial date code 1402) production, we have redesigned the tubing configuration to make this joint more robust and lessen the potential for this issue.

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Service Bulletin

SP-032 Rev 1
Supersedes SP-032

DATE: May 21, 2014

TO: All Service and Parts Managers

SUBJECT: Incorrect Speed Limit Data in Genteq Eon™ Motors in APH15 and DPH 15 "M" Model Package Heat Pump Units

APH15 and DPH15 "M" model package heat pump units as listed below do not have the correct speed limit data programmed into the motor. Airflow on these units will be lower than what is listed in the airflow tables in our manuals.

The serial number range for affected units is 1403019049 through 1404429820. Units shipped after May 7, 2014 have been corrected at the factory and can be identified by the "blue" dot adjacent to the traveler label. Units with serial number prefixes 1405 and later contain the correct motor programming and are unaffected.

Units in customer inventory or units installed will require new software uploaded to the motor. We began distributing motor programmers May 12, 2014 with instructions. Once you've completed the programming, please contact Scott Fondren at scott.fondren@goodmanmfg.com or HACPRODSPC@goodmanmfg.com to coordinate shipment of the programmer(s) to other locations for programming of their motors.

We are requesting that the models listed in the following chart with serial numbers between 1403019049 and 1404429820) in your inventory be put on hold until the motor software can be updated.

Certain Genteq Eon™ service motors are also affected; refer to service bulletin SA-022 for additional information.

Update, some APH1560M41CA package heat pump units in the serial range listed above contain an ECM™ motors rather than the Eon™ motor and are thus unaffected. Some DP15HM6041AA package heat pump models are most likely also affected.

Amana Models	Daikin Models
APH1524M41CA	DP15HM2441AA
APH1530M41CA	DP15HM3041AA
APH1536M41CA	DP15HM3641AA
APH1543M41CA	DP15HM4241AA
APH1549M41CA	DP15HM4841AA
APH1560M41CA	DP15HM6041AA

The following pictures show the differences between the two motors. The motor on the left in both pictures is a Regal Beloit Genteq ECM™ motor and is **NOT** affected; these motors have a painted endbell.

The motor on the right in both pictures is the Regal Beloit Genteq Eon™ motor and **is affected** by this rework; these motors have a silver unpainted endbell as shown.

If you see a motor with the painted endbell no action is required. Only motors with the silver unpainted endbell are affected. We apologize for the extra work this may cause.

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A second item you need to be aware of is the 1 HP motors in the APH1560M41CA and DP15HM6041AA model package heat pump units have large internal capacitors which appear to overpower the programmer in battery operation. If you receive an "Insufficient Voltage" message on the programmer try using the supplied 115 volt power supply shipped with the programmers.



Please report any problems you experience with reprogramming these motors to Scott Fondren at scott.fondren@goodmanmfg.com or HACPRODSPC@goodmanmfg.com.

We will pay $25.00 labor for each unit in customer inventory that requires the software upgrade.

For installed units that are reprogrammed using the factory supplied programmers we will provide labor at the servicer's Class "A" labor rate. The Class "A" installed unit labor rate will only be paid on units installed prior to June 30, 2014 as all units in distributor inventory should have been updated by this time.

Class "A" labor will also be provided for units installed prior to June 30, 2014 that are inspected where an ECM™ motor is installed that does not require reprogramming.

Due to limited availability of motor programmers, it may be necessary to replace the motor endbell (refer to following chart for endbell part #'s) to more quickly resolve the low airflow issue. If an endbell replacement is done in lieu of reprogramming, Goodman will provide Class "B" labor to replace the endbell. The Class "B" installed unit labor rate will only be paid on units installed prior to June 30, 2014 as all units in distributor inventory should have been updated by this time.

Amana Model	Daikin Model	Endbell Part #
APH1524M41CA	DP15HM2441AA	0131M00650
APH1530M41CA	DP15HM3041AA	0131M00653
APH1536M41CA	DP15HM3641AA	0131M00653
APH1543M41CA	DP15HM4241AA	0131M00660
APH1549M41CA	DP15HM4841AA	0131M00660
APH1560M41CA	DP15HM6041AA	0131M00673

For installed units claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number **8775. The claim for the part and labor should be filed as one claim, using the Dealer's account number.**

For inventory units that have **not been installed** in the field, a list a model and serial numbers must be sent to HACPRODSPC@goodmanmfg.com for labor reimbursement.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2014.

Service Bulletin

SP-031

DATE: February 5, 2014

TO: All Service and Parts Managers

SUBJECT: Availability of Replacement Draft Inducer Capacitor for Package Gas Units

In an effort to assist service personnel and reduce warranty cost, we now have a replacement capacitor available for Residential Package Gas unit draft inducers. In some instances a non-functioning draft inducer motor may be found to only have a failed capacitor rather than a defective motor. In the event of a non-functioning draft inducer motor, the capacitor functionality may be verified by using a capacitor tester.

Remove the two assembly wires from the capacitor terminals and discharge the capacitor by placing a 20 – 30 ohm resistor across the two capacitor terminals before connecting the capacitor tester. Use caution when handling the capacitor and always assume the capacitor is holding an electrical charge and is an electric shock hazard.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage,
personal injury or death.



This capacitor is found only on draft inducer assemblies supplied to Goodman by Broad Ocean and bearing Goodman part number 0131G00007(S) for single stage inducers and Goodman part number 0131G00009(S) for two-stage inducers.

The capacitor part number is DY6.186.087. This is a 2 uF 370 volt capacitor. The DY6.186.087 cannot be used on a non- Broad Ocean draft inducer or any draft inducer not originally equipped with this capacitor.

Repair part manuals will be updated to show the availability of this new service part. The DY6.186.087 is in stock and available to order from Goodman Service Parts Department.

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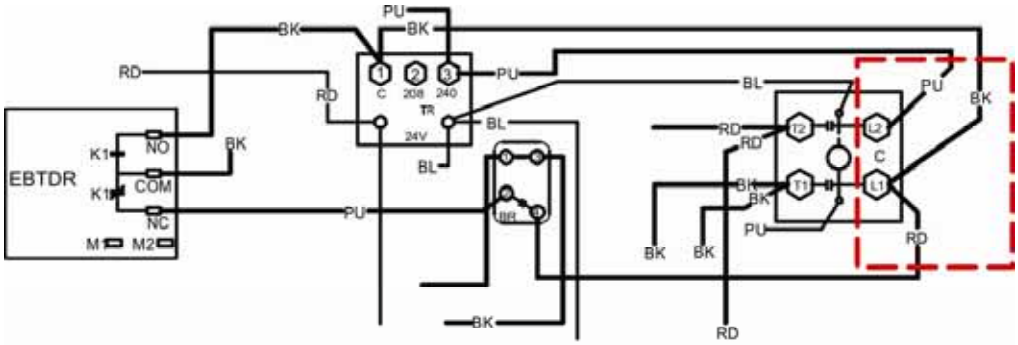
Service Bulletin

SP-030 Rev 1
Supersedes SP-030

DATE: January 12, 2011
TO: All Service and Parts Managers
SUBJECT: GPH13 and GPC13 Internal Wiring Issue

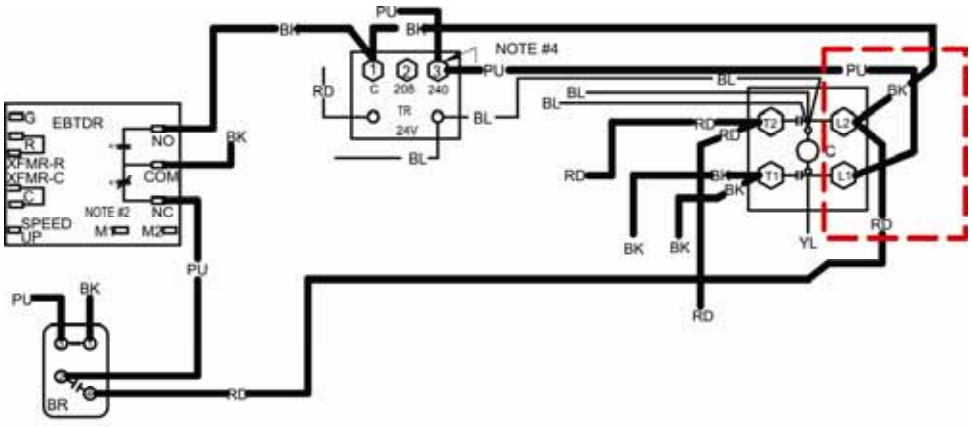
After investigation it has been determined that there is an issue with the wiring in some GPH13 model package heat pumps and GPC13 model package coolers built from September 1, 2010 (serial prefix 1009) to December 15, 2010 (serial prefix 1012) that have field installed HKR heater kits. The issue is only on models listed in the charts below which are equipped with a PSC type indoor blower motor. Under certain conditions the relay on the PCBFM131 Blower Control Board (EBTDR on the wiring diagram) could fail and weld the Normally Closed contacts closed.

The diagram below shows the correct wiring for GPH13 heat pumps. There are 3 wires that should be checked and corrected if necessary. The Purple (PU) wire should be connected to L2 on the contactor. The black (BK) and red (RD) wires should be connected to L1.



For GPH13 Heat Pumps - Wire Per Wiring Diagram 0140G01745

The diagram below shows the correct wiring for GPC13 coolers. There are 3 wires that should be checked and corrected if necessary. The Purple (PU) wire should be connected to L1 on the contactor. The black (BK) and red (RD) wires should be connected to L2.



For GPC13 Coolers - Wire Per Wiring Diagram 0140G01235

All units that were inspected per the original SP-030 bulletin should be rechecked to ensure the wiring matches the diagram above due to the fact we discovered the black (BK) wire and purple (PU) wire were reversed on some units.

All affected units in Goodman's inventory have been put on hold and are being reworked. These units can be identified by a Blue dot on the Traveler Label. The affected models are listed in the charts below.

GPH Heat Pumps	
M Models	**H Models**
GPH1324M41AB	GPH1324H41AB
GPH1330M41AB	GPH1330H41AB
GPH1336M41AB	GPH1336H41AC
GPH1342M41AB	GPH1342H41AB
	GPH1348H41BB

GPC Coolers	
M Models	**H Models**
GPC1336M41AA	GPC1324H41AB
	GPC1330H41AB
	GPC1336H41AB
	GPC1342H41AB
	GPC1348H41BA

Distributors should check their inventory for the models listed in the charts above and put on hold until they are reworked to match the diagrams on page 1 of this bulletin and installing an updated wiring diagram (Part # 0140G01745) on heat pump models if not already equipped. The diagram on the GPC coolers is correct. The diagram (Part # 0140G01745) can be ordered from Service Parts by contacting your Customer Service Representative.

For units listed in the charts on the previous page in distributor inventory, Goodman will pay $50.00 for each unit that requires reworking. For installed units listed in the charts above, Goodman will pay $100.00 for each unit that requires reworking.

Claims **must** be filed on Service Bench as Service Bulletin SP-030, Authorization Code number **8700**. For installed units, the homeowner information including phone number must be included for all claims. **The claim for the part (wiring diagram) and claim for labor should be filed as one claim by submitting the claim using the "Dealers Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department.

All claims for this program must be submitted by August 1, 2011.

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Service Bulletin

SP-029

DATE: July 7, 2010

TO: All Service and Parts Managers

SUBJECT: New 2 & 2.5 Ton ”H” Model Fan Blade

In a continuing effort to improve the sound quality of our units, we have introduced a new condenser fan blade for the GPC13/1424H** model package coolers and GPH13/1424-30H** model package heat pumps. The new condenser fan blade (**Part # 0150G00005S**) may be used as a direct replacement for the production condenser fan blade (Part # B1086775) in instances where objectionable fan noise has been reported on the models listed above.

Manufacturing will begin using the 0150G00005 condenser fan blade in production in mid-July 2010.

The 0150G00005S condenser fan blade can be ordered from Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-028

DATE: July 1, 2010

TO: All Service and Parts Managers

SUBJECT: Service Condenser Coils for Package Units

Due to Goodman no longer having the capability to manufacture older style 1.25” center condenser coils, the service replacement coils will be changing to the current style 1” center condenser coils.

In some instances, this will result in the service coil being a 1 (single) row coil versus a 2 (double) row coil and some coils will change from 3/8” to 5/16” tubing. In the case of the tubing size change on heat pump models, the defrost thermostat will have to be replaced. There is a new defrost thermostat for 5/16” tubing included with any service coil that requires a defrost thermostat change.

In some instances, these changes will result in a change to the total system refrigerant charge. In instances where there is a change to the total system refrigerant charge, there will be a label included with the new service coil that lists the updated required refrigerant charge. This label should be placed adjacent to the existing serial plate on the unit.

There may also be modifications to the existing tubing in order to complete the coil replacement. In these instances, the necessary tubing and instructions will be included with the service replacement coil.

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Service Bulletin

SP-027

DATE: December 14, 2009

TO: All Service and Parts Managers

SUBJECT: New Emerson TXV Part Numbers for Package Units

This bulletin is to inform you that we have changed TXV suppliers from Parker to Emerson. Some of the original Parker TXV part numbers still exist but in some cases the Parker TXV could not be substituted to the Emerson TXV so new part numbers were created for the Emerson TXV's that were not a direct replacement for the Parker TXV's.

This affects all A/GPH15 package heat pump models and most A/GPG15 package gas/electric models. The charts below show the package unit models affected along with the corresponding indoor and outdoor Parker and Emerson TXV part numbers.

Heat Pumps				
Model	Parker		Emerson	
	Indoor TXV	Outdoor TXV	Indoor TXV	Outdoor TXV
A/GPH1524M41	BT1369068	BT1369068	0151G00001	0151G00001
A/GPH1530M41	BT1369068	BT1369068	0151G00001	0151G00001
A/GPH1536M41	BT1369070	BT1369068	0151M00017	0151M00017
A/GPH1542M41	BT1369068	BT1369068	0151M00017	0151M00017
A/GPH1543M41	BT1369070	BT1369068	0151M00017	0151M00017
A/GPH1548M41	BT1369070	BT1369068	0151M00016	0151M00016
A/GPH1549M41	BT1369070	BT1369068	0151M00016	0151M00016
A/GPH1560M41	BT1369070	BT1369068	0151M00016	0151M00016

Gas		
Model	Parker	Emerson
	Indoor TXV	Indoor TXV
A/GPG1524***41	BT1369068	0151G00001
A/GPG1530***41	N/A (.065 Piston)	N/A (.065 Piston)
A/GPG1536***41	BT1369068	0151M00017
A/GPG1537***41	BT1369068	0151M00017
A/GPG1542***41	N/A (.072 Piston)	N/A (.072 Piston)
A/GPG1548***41	BT1369070	0151M00016
A/GPG1549***41	BT1369070	0151M00016
A/GPG1560***41	BT1369070	0151M00016

All package units with serial numbers beginning with 0910 and later were produced using Emerson TXV's.

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Service Bulletin

SP-026 Rev 1
Supersedes SP-026

DATE: November 13, 2009
TO: All Service and Parts Managers
SUBJECT: Cracked Drain Pans on M Model Heat Pumps and Coolers

Goodman® has received a report of cracked drain fittings on M model package heat pumps and coolers (APH15**M**, GPH13/15**M** and GPC13/15**M**). This is due to over-tightening of the male adapter into the drain pan and may result in the female threaded fitting on the drain pan cracking. In almost all cases the crack occurs at the 11 o'clock position looking into the female fitting of the pan, but there have been very limited cases where the fitting cracked at the 5 o'clock position.

To minimize the possibility of a crack occurring on the drain pan, we are increasing the wall thickness of the female threaded fitting on the drain pans. This change will result in a stronger fitting that is more forgiving in the event the male adapter is over-tightened. Units with a serial date code of 0911 and later will have the redesigned drain pan. The part number for the drain pan (0161G00003) will not change.

All Goodman inventory of M model package heat pumps and coolers shipped after 10/26/09 have been inspected for a cracked drain pan and repaired if necessary. The repair consists of removing the male adapter from the drain pan and gluing a 5/8" long piece of 1" schedule 20 PVC pipe over the female fitting on the drain pan, then reinstalling the male adapter in the drain pan.

Distributor inventory should be inspected for cracks at the drain connection and if cracks are detected repaired with the following kit (**PVC-10**). This repair kit (**Part # PVC-10**) consists of a quantity of ten (10) – 5/8" long pieces of 1" schedule 20 PVC pipe and instructions for the repair.

Units should be inspected closely using a light and an inspection mirror checking from the outside and inside of the drain pan. Upon inspection, if a crack is located at the 11 o'clock position, the drain pan should be repaired using the **PVC-10** repair kit. Likewise, if a crack is located at the 5 o'clock position and does not extend to the drain pan, the drain pan should be repaired.

NOTE: The recommended surface temperature of the drain pan and repair coupling should be between 40°F and 100°F when making the repair. See installation instructions shipped with the repair kit PVC-10 for detailed instructions on how to complete the repair.

If a crack is located at the 5 o'clock position and extends to the drain pan, the drain pan will need to be replaced. This may be done at the distributor location by a qualified technician or contact Technical Services for an RMA to have the unit returned to the factory to be repaired.

For distributor inventory, Goodman® will pay $25.00 for inspection of M model package heat pumps and coolers. If a repair is necessary, Goodman® will pay $50.00 for each drain pan inspected and repaired. A single warranty claim form (RF000007) must be completed for the lot being inspected and/or repaired and must reference Project Code **8691** in section 6 (Project Code) on the warranty claim form. Use the Excel spreadsheet sent with this letter to document the reworked units. The Excel spreadsheet must be emailed to Warranty Administration at warranty.claims@goodmanmfg.com for uploading into Service Bench, please no hand written or faxed copies. We need electronic Excel files to upload into Service Bench. The claim will be paid upon review by the Warranty Department.

The **PVC-10** repair kit can be ordered from Service Parts at no charge.

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Service Bulletin

SP-025

DATE: February 27, 2009

TO: All Service and Parts Managers

SUBJECT: 4 & 5 Ton Package Gas Condenser Fan Blade

We have released a new condenser fan blade (**Part # 0150G00003S**) to replace the condenser fan blade (Part # 0150M00011) in the 4 and 5 Ton model A/GPG13 and A/GPG15 model package gas units. Part # 0150M00011 condenser fan blade will still be used in the 4 and 5 ton M model GPH13, GPC13, and A/GPH15 model heat pumps.

Manufacturing began using the 0150G00003 condenser fan blade in production in mid February 2009.

The 0150G00003S condenser fan blade can be ordered from Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-024

DATE: January 12, 2009

TO: All Service and Parts Managers

SUBJECT: Chattering Contactors on GPH Model Package Heat Pumps with Economizers

We have discovered that when using an economizer with the GPH model heat pump, there is an issue when the unit initiates a defrost cycle. This only applies to GPH model package heat pumps with economizers installed. The economizer will open if the outdoor conditions allow when the heat pump initiates a defrost cycle, causing the economizer to open the "Y" circuit. Once the "Y" signal is lost to the defrost board, the defrost board will de-energize the "O" circuit and the economizer will close and energize "Y" once again. This cycle will continue until the defrost board terminates the defrost cycle.

To eliminate this issue, we have released an Isolation Relay Kit (**Part # IRKT-01**) that will need to be installed on any GPH model package heat pump when using an economizer. This kit isolates the "O" signal from the defrost board which eliminates the issue with the economizer opening during a defrost cycle. The kit contains a relay, instructions, wiring diagram supplement, and the necessary hardware to install the kit.

Heat pump economizers built prior to March 2008 have a relay that is energized by the "B" terminal from the thermostat. This style economizer will not cause the contactor cycling during defrost. Heat pump economizers built after March 2008 have a Honeywell Logic Module that uses the "O" signal from the thermostat to determine if the heat pump is in the heat or cool mode. This style economizer will need the IRKT-01 installed in the unit.

Economizers shipped after February 1, 2009 will have the IRKT-01 kit included with the economizer. Economizers that have the IRKT-01 kit included will have a label on the box stating: "Carton Contains Goodman IRKT-01 Isolation Relay Kit." If you are installing an economizer with the Honeywell Logic Module in a package heat pump and the economizer doesn't have the IRKT-01 kit included, you will need to order the IRKT-01 kit before putting the economizer into service.

For GPH model package heat pump units installed prior to February 1, 2009 with economizers that have the Honeywell Logic Module, we will pay $100.00 labor each to install the IRKT-01 Isolation Relay Kit. A warranty claim form (RF000007) must be completed for each unit and must reference Project Code **8686** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type "Epidemic" using **8686** as the "authorization" number. The claim will be paid upon review by the Warranty Department.

The Isolation Relay Kit (**Part # IRKT-01**) can be ordered from Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-023

DATE: December 16, 2008

TO: All Service and Parts Managers

SUBJECT: B1809904S Fan Timer Board Issue

Beginning in June 2008, due to the B1809904 Fan Timer Board no longer being available from the original vendor, we had to change vendors for the board. The B1809904 board was used on certain models of PG, PGB, and PGX model package units and GDP, GDPS, GDPX, GUN, AND GUS model furnaces. The boards operate in the same manner except for one feature, the current version of the (Goodman Part # B1809904**S**) board checks for a completed circuit from the MV terminals of the board through the MV terminal on the gas valve and back to ground. The previous version of the (Goodman Part # B1809904) board did not perform this check for a completed circuit.

Two different reports have been received from the field when replacing the B1809904 board. In both instances, the reports have been that the board will energize the Induced Draft Motor and the Indoor Blower Motor without a call for heat

In the first report, the heat would still operate normally on a call for heat but the Induced Draft Motor and Indoor Blower Motor would continue to run after the thermostat was satisfied. In this instance, providing the limit circuit to the B1809904S board is closed, the heat comes on with a call from the thermostat and the unit is properly grounded, you will need to check the gas valve for an internal rectifier circuit. The Honeywell VR8204M series gas valve (Goodman Part # B1282607) used on some models has the rectifier circuit that will not allow the B1809904S board to read a completed circuit through the gas valve to ground. The White Rogers 36E98 series gas valve (Goodman Part # B1282606) used on some units does not have the rectifier circuit and has not caused any issues. If the valve has been replaced with an aftermarket gas valve, the method to determine if the valve has a rectifier circuit is to set an ohmmeter on the lowest scale and ohm from the gas valve MV terminal to the common or MV/PV terminal. If this shows a completed circuit (usually from 60 – 100 ohms) the valve does not have a rectifier circuit and should not be an issue.

The second report is the Indoor Blower Motor and Induced Draft Motor runs constantly without a call for heat and a no heat situation exists with a call for heat. If you have these symptoms, check the limit circuit, the gas valve, and then for any loose connections in the limit and gas valve circuits.

Our current vendor has resolved the issue by changing the method the board uses for verifying a completed circuit to ground from the MV terminals of the B1809904S board beginning with boards with a date code of **4808** and later (see Figure 1). Our inventory of B1809904S boards prior to the **4808** date code has been reprogrammed by the vendor and can be identified by a green marker dot next to the traveler label on the box (see Figure 2) and also a green marker dot on the corner of the board (see Figure 3).

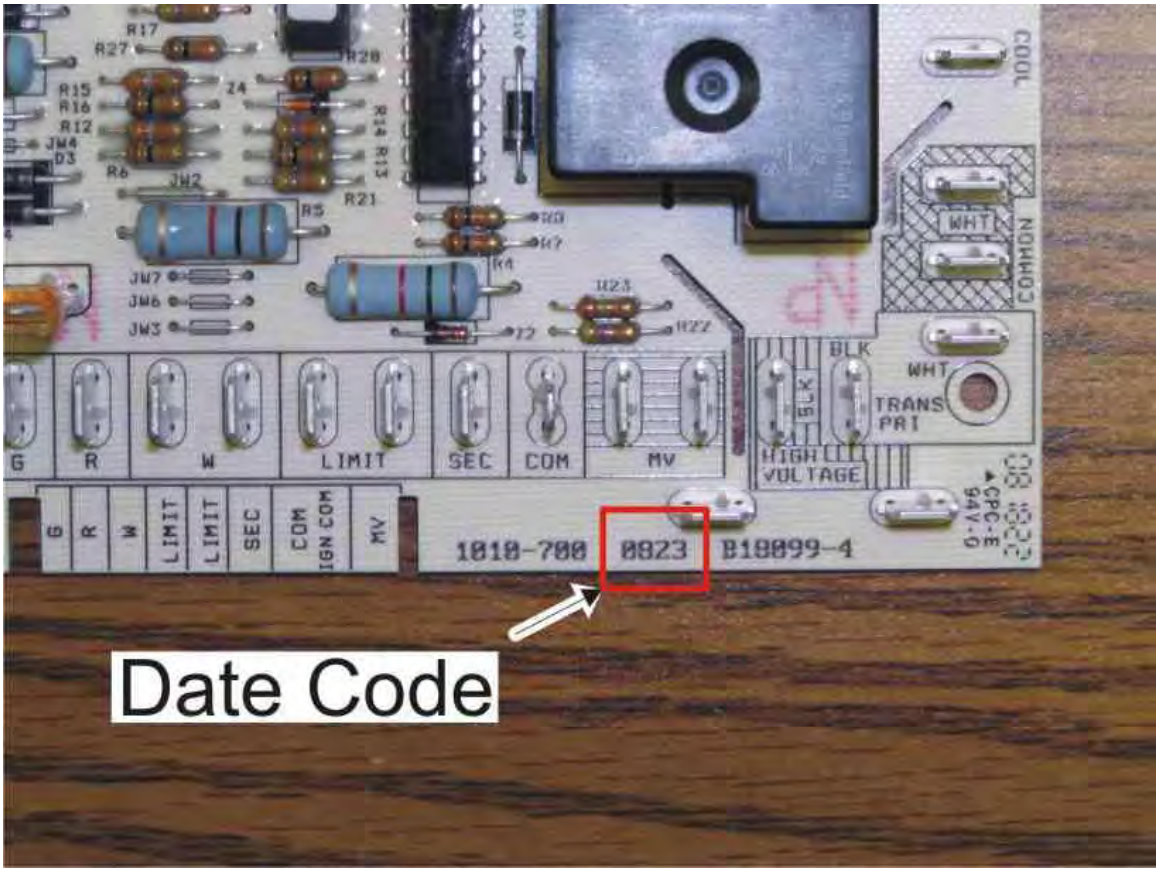


Figure 1



Figure 2

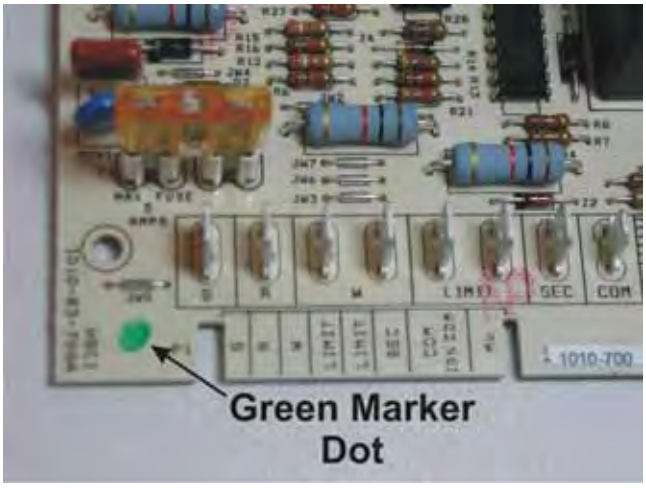


Figure 3

For distributor inventory of B1809904S boards with a date code prior to **4808,** you will need to contact your CSR to order a resistor kit (Part # **1125-40**) to correct the problem. The resistor kits include the resistor and instructions on how to install the resistor. The kits will be provided at no charge.

Service Bulletin

SP-022

DATE: November 25, 2008

TO: All Service and Parts Managers

SUBJECT: Package Unit Basepan Modifications

In a continuing effort to improve our products, we have modified the basepan for the PH048/60 and all GPH model heat pumps to provide a better method of securing the accumulator to the basepan. This applies to the Horizontal (H) model and Multi-Position (M) model package units. This modification changes the design of the accumulator mounting hole to better engage the threads on the mounting bolt of the accumulator.

Another improvement to the GPC, GPH, PC048, and PH048/60 Horizontal model package units is the addition of support blocks to the underside of the basepan. Beginning with November 2008 (serial date code 0811) production, there will be 2 foam blocks attached to the underside of the basepan with hot melt glue that will add additional support for the compressor during transit (see Figure 1). One support block is centered between the baserails beginning from the condenser coil end of the unit extending under the compressor area of the basepan. The other support block is also centered between the baserails and is centered between the fork holes in the baserails. The support blocks will not interfere with the fork holes in the baserail so the unit may still be forked from either side. It is not necessary to remove the blocks at time of installation, but they may be removed if desired.



Figure 1

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Service Bulletin

SP-021

DATE: November 17, 2008

TO: All Service and Parts Managers

SUBJECT: Novar Ignition HSI-5 & HSI-6 Ignition Control

After investigation of a field issue it was discovered that the Novar brand HSI-5 (Part # C6485807) and HSI-6 (Part # 0130G00001) ignition controls that are used in the RF000011 Ignition Control Kits, have an issue when installed in older 460 volt PGA model Amana® package gas units. The 230 volt single and three phase models do not have an issue when using either of the controls listed above.

The issue is on a call for heat the board will not energize the ignitor. The gas valve will open but no ignition occurs because the ignitor is never energized. The reason the ignitor doesn't energize is the HSI-5 and HSI-6 controls require approximately 115 volts on L1 to ground and L2 to ground when read with a voltmeter. The manner in which the PGA 460 volt models are wired has approximately 0 volts to ground on L2 and 230 volts to ground on L1 when checked with a voltmeter. This is due to the secondary of the 460/230 volt power transformer terminal "X4" being grounded with wire VT-38.

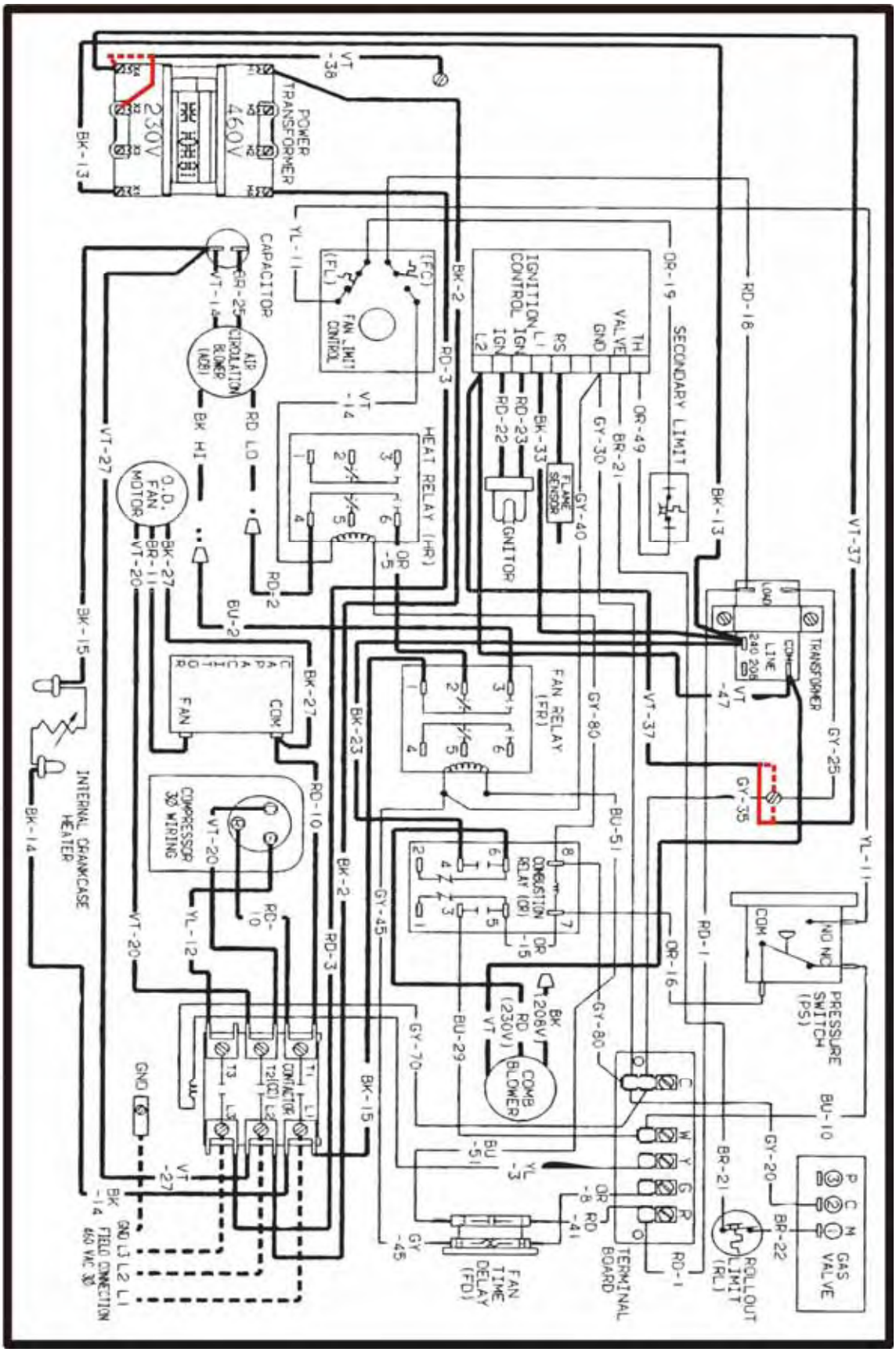
If you are replacing the original ignition control in the 460 volt model PGA unit with a RF000011 Ignition Control Kit, you will need to move the VT-38 wire that is currently on "X4" of the transformer to the "X2" terminal of the transformer. You will also need to remove the two VT-37 wires from the ground terminal and isolate them from ground by connecting them together with a wire nut or other suitable connector. This configuration will result in L1 and L2 each reading approximately 115 volts to ground when checked with a voltmeter and should resolve the issue (see wiring diagram on next page).

The models affected are listed in the chart below.

MODEL #	MFG #
PGA48B0904A	P1154117C
PGA48B1354A	P1154118C
PGA60B1154A	P1154207C
PGA60B1354A	P1154208C
PGA36B0704A	P1164613C
PGA36B0904A	P1164614C
PGA48B0904C	P1176007C
PGA48B1354C	P1176012C
PGA60B1154C	P1176105C
PGA60B1354C	P1176108C
PGA36B0704C	P1183411C
PGA36B0904C	P1183414C

Original Wire Location

New Wire Location



PGA 460 Volt with Novar Control Board

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Service Bulletin

SP-020

DATE: September 5, 2008
TO: All Service and Parts Managers
SUBJECT: Incorrect Piston in GPC1360H21

Goodman has discovered that we received some flowrator assemblies used in GPC1360H21 model package cooling units with incorrectly sized pistons. These units use a .092 piston as is marked on the outside of the flowrator assembly but some of these assemblies actually contain a .051 piston. Goodman's inventory of GPC1360H21 units has been reworked with the correct piston, but there were some units that were shipped prior to our knowledge of the issue. The serial numbers of all GPC1360H21 units that were shipped prior to the rework are listed below.

Suspect GPC1360H21 Serial Numbers							
0806085130	0806085165	0806085204	0806125841	0806125878	0806125910	0806125939	0806125969
0806085131	0806085166	0806085205	0806125844	0806125879	0806125911	0806125940	0806125970
0806085132	0806085174	0806085206	0806125846	0806125880	0806125912	0806125941	0806125971
0806085133	0806085176	0806085207	0806125847	0806125881	0806125913	0806125942	0806125972
0806085134	0806085177	0806085208	0806125849	0806125882	0806125914	0806125943	0806125973
0806085135	0806085179	0806085209	0806125850	0806125883	0806125915	0806125944	0806125974
0806085136	0806085180	0806085210	0806125851	0806125884	0806125916	0806125945	0806125977
0806085137	0806085181	0806085211	0806125852	0806125885	0806125917	0806125946	0806125978
0806085140	0806085183	0806085212	0806125853	0806125886	0806125918	0806125947	0806125979
0806085142	0806085185	0806085213	0806125855	0806125888	0806125919	0806125948	0806125980
0806085144	0806085186	0806085214	0806125856	0806125889	0806125920	0806125949	0806125981
0806085145	0806085187	0806085215	0806125857	0806125890	0806125921	0806125950	0806125982
0806085147	0806085188	0806085216	0806125858	0806125891	0806125922	0806125951	0806125983
0806085149	0806085189	0806085217	0806125859	0806125892	0806125923	0806125952	0806125984
0806085150	0806085190	0806085218	0806125861	0806125893	0806125924	0806125953	0806125985
0806085151	0806085191	0806085219	0806125862	0806125894	0806125925	0806125954	0806125986
0806085152	0806085192	0806085220	0806125864	0806125895	0806125926	0806125955	0806125987
0806085153	0806085193	0806085221	0806125866	0806125896	0806125928	0806125958	0806125992
0806085154	0806085194	0806085222	0806125868	0806125897	0806125929	0806125959	0806125993
0806085155	0806085195	0806085223	0806125869	0806125898	0806125930	0806125960	0806125994
0806085156	0806085196	0806085224	0806125870	0806125899	0806125931	0806125961	0806126002
0806085157	0806085197	0806085225	0806125871	0806125901	0806125932	0806125962	0806126013
0806085158	0806085198	0806085226	0806125872	0806125902	0806125933	0806125963	0806126038
0806085160	0806085199	0806085228	0806125873	0806125903	0806125934	0806125964	0806126040
0806085161	0806085200	0806085229	0806125874	0806125904	0806125935	0806125965	
0806085162	0806085201	0806125837	0806125875	0806125905	0806125936	0806125966	
0806085163	0806085202	0806125838	0806125876	0806125906	0806125937	0806125967	
0806085164	0806085203	0806125839	0806125877	0806125907	0806125938	0806125968	

The evaporator coil flowrator assembly will have .092 stamped on the outside of the assembly (See Figure 1), but the piston could actually be a .051 (See Figure 2). If you have an installed GPC1360H21 model unit with one of the above listed serial numbers that shows signs of a restriction (low suction pressure and high liquid pressure), check the date code stamped on the evaporator flowrator assembly (See Figure 3). If the date code is **8F05**, the piston will need to be changed from a .051 to a .092 piston.

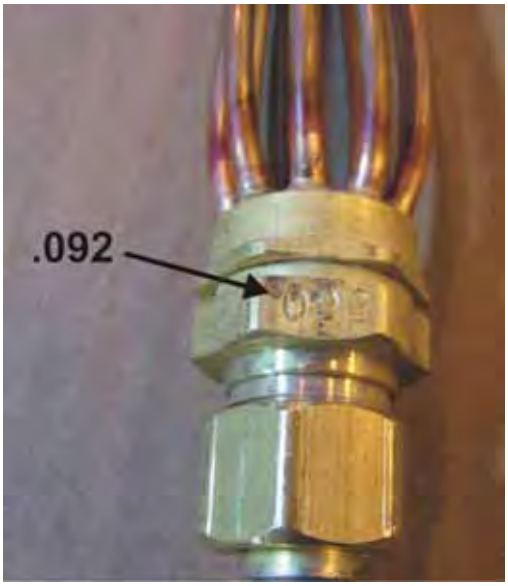


Figure 1



Figure 2

Distributors should inspect their inventory for any GPC1360H21 model units for serial numbers listed in the chart on page 1 to verify the correct piston. Check the date code stamped on the evaporator coil flowrator assembly (See Figure 3). If the serial number of the unit is on the list and the date code on the evaporator coil flowrator assembly is **8F05**, the piston will need to be replaced. Once the refrigerant has been recovered, open the flowrator assembly (See Figure 4) and remove the piston. Verify what size is stamped on the piston and replace with the correct size if necessary. Make sure to install the new piston in the direction shown in Figure 4.

If the date code is something other than 8F05, the flowrator should be correct and no further steps to verify piston size are necessary.



Figure 3

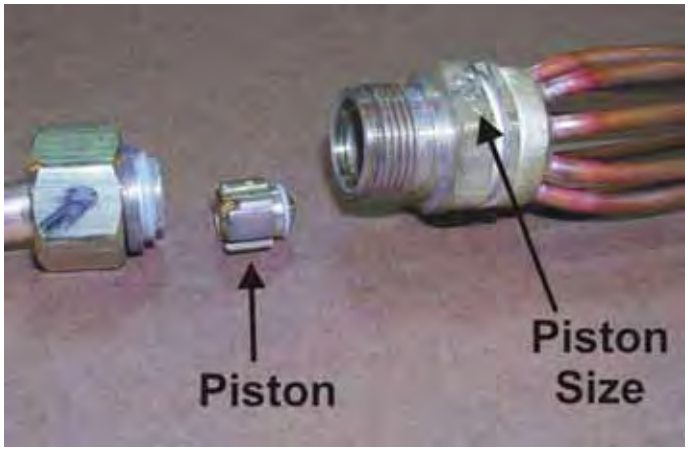


Figure 4

Goodman will pay $30.00 for inspection of each unit with a serial number listed in the chart on page 1 in distributor inventory. Goodman will pay a total of $125.00 each for units in distributor inventory with a serial number listed in the chart on page 1 that require a piston change. For units already installed in the field with a serial number listed in the chart on page 1 that have the incorrect size piston, Goodman will pay $200.00 to replace the piston.

A warranty claim form (RF000007) must be completed for each unit requiring inspection or a piston change and must reference Project Code **8683** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using **8683** as the “authorization” number. The claim will be paid upon review by the Warranty Department.

The part number for the .092 piston is B1789892 and can be ordered from Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-019

DATE: July 10, 2008

TO: All Service and Parts Managers

SUBJECT: Horizontal Duct Covers Removed from Single Phase Package Units

This bulletin, in conjunction with Marketing Bulletin G-GN-PK-072, is to inform you that beginning with July 2008 production (0807 serial numbers), the horizontal duct covers will no longer be factory installed on the A/GPG or GPH/C "M" 13 and 15 SEER single phase model package units. The horizontal duct openings will be covered by shrink wrap in a method similar to what has been used on "H" model package units. The horizontal duct covers will still be factory installed on all three phase models.

The horizontal duct covers are available in kit form, one kit for all medium chassis units **(Part # 20464501PDGK)** and one kit for all large chassis units **(Part # 20464502PDGK)**. Each kit will contain 2 insulated duct covers with the gasket installed and 12 screws for installing both covers (6 screws for each cover).

If you need the horizontal duct covers, they can be ordered at no charge by contacting your Customer Service Representative.

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Service Bulletin

SP-018

DATE: May 21, 2008

TO: All Service and Parts Managers

SUBJECT: GPH1330H21AD Package Heat Pumps Overcharged

A limited number of GPH1330H21AD model units were shipped with a 28 ounce overcharge of R-22 refrigerant. The units were incorrectly charged with 146 ounces rather than the correct charge of 118 ounces of R-22 refrigerant.

The serial number range for the GPH1330H21AD models with the overcharge is 0803093964 thru 0803154764. Please check your inventory and put on hold all serial numbers in the affected serial number range.

Units still in inventory may be reworked in either of two ways.

1. They may be reworked by the distributor in their warehouse by recovering the extra 28 ounces of R-22 refrigerant.
2. The units may also be returned to Goodman® to be reworked. If the units are to be returned to Goodman® to be reworked, an RMA must be issued to have them returned. Contact the Technical Services department to obtain an RMA.

For units that are no longer in distributor inventory, the dealer will need to be contacted and informed that the refrigerant charge will need to be corrected in the field by recovering the extra 28 ounces of R-22 refrigerant.

Units repaired in inventory will receive a $50.00 labor allowance plus recovery allowances. Installed units repaired in the field will receive a $150.00 labor allowance plus recovery allowances.

A warranty claim form (RF000007) must be completed for each unit requiring the recovery of the extra 28 ounces of R-22 refrigerant and must reference Project Code **8670** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using **8670** as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

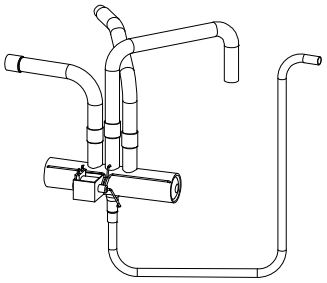
SP-017 Rev. 1
Supersedes SP-017

DATE: January 14, 2010

TO: All Service and Parts Managers

SUBJECT: Reversing Valve Assemblies for APH/GPH13-15 Package Heat Pumps

To ease the installation of replacing the reversing valves on Goodman® and Amana® brand APH/GPH13-15 SEER package heat pumps, we have set up service replacement reversing valve assemblies. All of the new reversing valve assemblies listed in the charts below utilize a Ranco brand reversing valve. Below is an example of reversing valve assembly for your reference.



The following chart lists the reversing valve assemblies and each specific model unit that it applies to. The parts listed in the charts are available through Service Parts by contacting your Customer Service Representative.

H Models	Reversing Valve Assembly Part #
GPH1324H21	0210G00304S
GPH1330H21	0210G00165S
GPH1336H21	0210G00301S
GPH1342H21	0210G00302S
GPH1348H21	0210G00300S
GPH1360H21	0210G00300S
GPH1324H41	0210G00304S
GPH1330H41	0210G00304S
GPH1336H41	0210G00306S
GPH1342H41	0210G00302S
GPH1348H41	0210G00300S
GPH1360H41	0210G00300S
GPH1424H41	0210G00304S
GPH1430H41	0210G00304S
GPH1436H41	0210G00306S
GPH1442H41	0210G00302S
GPH1448H41	0210G00300S
GPH1460H41	0210G00300S

M Models	Reversing Valve Assembly Part #
GPH1324M21/23/24**	0210G0043PS
GPH1330M21/23/24**	0210G00104S
GPH1336M21/23/24**	0210G00299S
GPH1348M21/23/24**	0210G00303S
GPH1360M21/23/24**	0210G00303S
GPH1324M41**	0210G00307S
GPH1330M41**	0210G00307S
GPH1336M41**	0210G00313S
GPH1342M41**	0210G00313S
GPH1348M41**	0210G00308S
GPH1360M41**	0210G00303S
A/GPH1524M41	0210G00305S
A/GPH1530M41	0210G00305S
A/GPH1536M41**	0210G00297S
A/GPH1542M41**	0210G00297S
A/GPH1543M41**	0210G00298S
A/GPH1548M41**	0210G00298S
A/GPH1549M41**	0210G00298S
A/GPH1560M41**	0210G00298S

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Service Bulletin

SP-016

DATE: October 17, 2007

TO: All Service and Parts Managers

SUBJECT: Sound Quality on Package Units

In response to field complaints of noise and vibration on Goodman® and Amana® brand package units, several improvements have been implemented in manufacturing. With the implementation of the improvements, the minor revision in the model number will change for each model receiving these improvements (See chart below for specific model numbers).

The following chart lists the improved condenser fan grille, condenser fan blade, and condenser motor combination that are recommended for each installed model that may be experiencing field complaints of noise or vibration.

Old Model	New Model	Blade	Motor	Grille
GPC1330H21AB	GPC1330H21AC	0150G00002S	0131M00014PS	0152G00000S*
GPC1336H21AB	GPC1336H21AC	B1086765S	0131M00014PS	0152G00000S*
GPC1342H21AB	GPC1342H21AC	B1086765S	0131M00014PS	0152G00000S*
GPH1336H21AB	GPH1336H21AC	B1086765S	0131M00014PS	**See Service Bulletin SP-015**
GPH1342H21AB	GPH1342H21AC	B1086765S	0131M00014PS	
GPC1336M21AA	GPC1336M21AB	0150G00002S	N/A	0152G00000S*
GPC1348M21AA	GPC1348M21AB	0150M00011S	N/A	0152G00000S
GPC1360M21AA	GPC1360M21AB	0150M00011S	N/A	0152G00000S
GPH1324M21AA	GPH1324M21AB	0150M00008S	0131M00014PS	0152G00000S*
GPH1330M21AA	GPH1330M21AB	0150M00008S	0131M00014PS	0152G00000S*
GPH1336M21AA	GPH1336M21AB	B1086765S	0131M00014PS	0152G00000S*
GPH1336M23AA	GPH1336M23AB	B1086765S	0131M00014PS	0152G00000S*
GPH1348M21AA	GPH1348M21AB	0150M00011S	N/A	0152G00000S
GPH1348M23AA	GPH1348M23AB	0150M00011S	N/A	0152G00000S
GPH1360M21AA	GPH1360M21AB	0150M00011S	N/A	0152G00000S
GPH1360M23AA	GPH1360M23AB	0150M00011S	N/A	0152G00000S
A/GPG1324***1BA	A/GPG1324***1BB	0150G00002S	0131M00014PS	0152G00000S*
A/GPG1330***1AB	A/GPG1330***1AC	0150G00002S	N/A	0152G00000S*
A/GPG1336***1AA	A/GPG1336***1AB	0150G00002S	0131M00014PS	0152G00000S*
GPG1336***3AA	GPG1336***3AB	0150G00002S	0131M00014PS	0152G00000S*
A/GPG1342***1AA	A/GPG1342***1AB	0150G00002S	N/A	0152G00000S*
A/GPG1348***1AB	A/GPG1348***1AC	0150M00011S	N/A	0152G00000S*
GPG1348***3AA	GPG1348***3AB	0150M00011S	N/A	0152G00000S*
A/GPG1360***1BA	A/GPG1360***1BB	0150M00011S	N/A	0152G00000S*
GPG1360***3AA	GPG1360***3AB	0150M00011S	N/A	0152G00000S*
A/GPG1536***41AA	A/GPG1536***41AB	0150G00002S	0131M00014PS	0152G00000S*
A/GPG1548***41AA	A/GPG1548***41AB	0150M00011S	N/A	0152G00000S*
A/GPG1560***41AA	A/GPG1560***41AB	0150M00011S	N/A	0152G00000S*

***Must adjust fan blade to end of shaft**

***Note:** When using the 0152G00000S dome grille on these models, the fan blade must be mounted flush with the end of the motor shaft in order to keep the blade in approximately the same position in the orifice. The 0150M00011S and 0150M00002S blades should be installed 3/4" from the motor face to the blade hub.

Condenser fan grille **Part # 0152G00000S** is a raised (dome) grille, and is required on all GPH/C Multi-Position units that use the “swept wing” design fan blade **(Part # 0150G00002S and Part # 0150G00011S)**. The dome grille will allow the “swept wing” blade to clear the “doghouse” in the “M” model heat pumps and coolers.

For models listing a blade and motor change, both parts **must** be changed. The motor listed above will not perform with the original fan blade, and the fan blade listed above will not perform with the original motor.

For each installed model listed in the chart on the previous page that requires a fan blade and a grille change, Goodman will pay $75.00. For each installed model listed in the chart on the previous page that requires a fan blade, a grille, and a motor change, Goodman will pay $100.00.

This claim can be filed on ServiceBench (preferred) as Warranty Type “Epidemic” using **8600** as the "authorization" number, or by completing a warranty claim form (RF000007) for each unit requiring service listed in this bulletin and must reference Project Code **8600** in section 6 (Project Code) on the warranty claim form. The claim will be paid upon review by the Warranty Department.

All claims for this program must be submitted by December 31, 2008.

The parts listed in the chart on the previous page are available through Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-015

DATE: June 15, 2007

TO: All Service and Parts Managers

SUBJECT: Propeller Type Noise from Condenser Fan Blades

Goodman has received reports of a propeller type sound created by the condenser fan blade on some GPH1336 & 42H21** package heat pumps. To eliminate this sound complaint Goodman has released a new condenser fan motor, fan blade and compressor sound blanket for the GPH1336H21.

If you encounter a noisy condenser fan on these models, replace the current condenser fan blade (Part # B1086775S) and the current condenser fan motor (Part # 0131M00007PS) with the new condenser fan blade (**Part # B1086765S**) and condenser motor (**Part # 0131M00014PS**). On the GPH1336 also install a compressor sound blanket part number **B1488815S**.

Manufacturing will implement the change to the models listed above in mid June 2007 (date code 0706). With this change, the minor revision will change from an AB to an AC. **NOTE:** The first run of GPH1342H21's with the changes listed above will still show the AB revision on the traveler label but will have a blue dot on the carton adjacent to the label with the letters AC written on the dot to signify these are indeed AC models. The serial plate on the unit correctly identifies these as AC models. The GPH1342H21's were also inadvertently built with sound blankets and subsequent production of this model will not include the sound blanket.

Goodman will pay a $100 labor allowance for field replacement of the condenser fan blade, condenser motor, and installing the compressor sound blanket on a installed GPH1336H21** and condenser fan blade and condenser fan motor on a installed GPH1342H21**package heat pump manufactured prior to July 2007 (serial number prefix 0706 and prior).

This claim can be filed on ServiceBench (preferred) as Warranty Type "Epidemic" using **8600** as the "authorization" number, or by completing a warranty claim form (RF000007) for each of the above listed model units experiencing the propeller type noise and must reference Project Code **8600** in section 6 (Project Code) on the warranty claim form. The claim will be paid upon review by the Warranty Department.

All claims for this program must be submitted by December 31, 2008.

These parts can be ordered through Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-014

DATE: May 11, 2007
TO: All Service and Parts Managers
SUBJECT: A/GPG Ignition Boards

This bulletin is being provided in response to field reports of weak or no spark ignition issues on A/GPG10, A/GPG12, A/GPG13, and A/GPG15 gas/electric package units.

Our investigation has determined the capacitor on the ignition control board to be the cause of the weak or no spark ignition issues. The affected ignition control boards are part numbers B1809918, PCB00123, PCBAG123, PCB00100, and PCBAG100. The service ignition control boards (Part # B1809918S, PCB00123S, PCBAG123S, and PCBAG100S) are also affected.

The affected control boards have a capacitor date code of 636, 637, and 638. Figure 1 below shows the location of the capacitor on the control board and Figure 2 shows the location of date code on the capacitor (**Note:** The date code may be on the opposite side of the capacitor depending on the installation orientation of the capacitor on the control board).



Figure 1

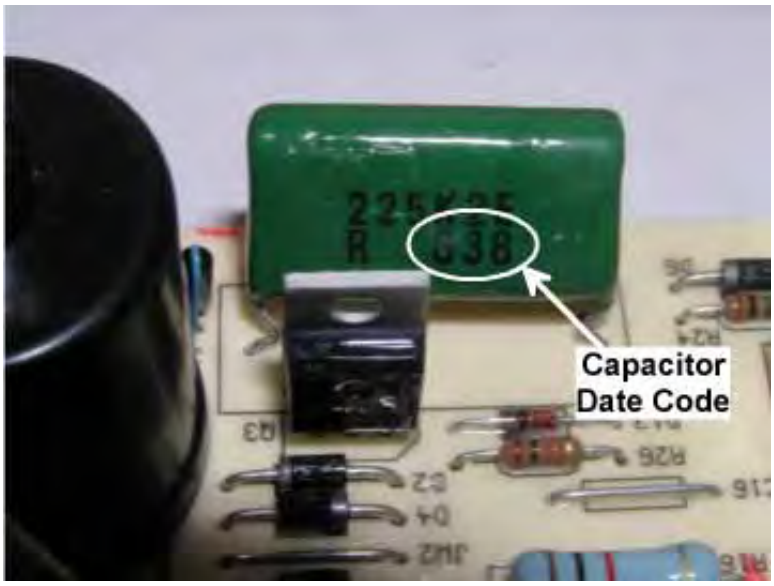


Figure 2

Distributor inventory should be checked on the above listed ignition control boards for the 636, 637, and 638 capacitor date codes. Distributors will need to contact their Customer Service Representative and reference Service Bulletin **SP-014** for an RMA to have the ignition control boards with the listed capacitor date codes returned. All affected controls must be returned by May 31, 2007. Distributors will need to reorder the quantities needed for their inventory.

All Goodman Production and Service Parts inventory of the above listed Ignition Control Boards have been inspected to ensure there are no 636, 637, or 638 capacitor date codes.

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Service Bulletin

SP-013

DATE: May 9, 2007

TO: All Service and Parts Managers

SUBJECT: Sound Baffle for Multi-position Heat Pumps and Coolers

Goodman has released a Sound Baffle Kit (Part # 0121G00235S) to improve the sound quality on the GPH13 Multi-position package heat pumps and GPC13 Multi-position package coolers. This includes 1 phase and 3 phase models.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



The sound baffle is to be installed at the top of the partition panel as shown in Figure 1 by first removing the outdoor fan grill. Next, reaching into the fan orifice, remove the two screws shown in Figure 1 from the partition panel and align the holes in the flange on the sound baffle with the holes in the partition panel and then reinstall the screws.

Units manufactured after February 2007 (serial date 0703 and later) will have the sound baffle installed from the factory.

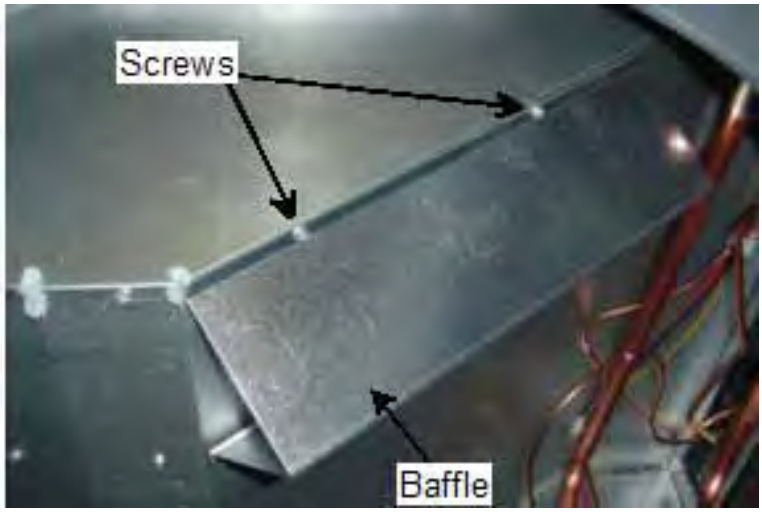


Figure 1

The Sound Baffle Kit (Part # 0121G00235S) may be ordered from Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-012

DATE: February 14, 2007

TO: All Service and Parts Managers

SUBJECT: Introduction of New HKR3 Heater Kit for GPH/C 3 Phase Package Units

The HKR3-**__A__ revision heater kits are being replaced with the HKR3-**__B__ revision heater kits to accommodate installation in the GPH/GPC “M” model 3 phase heat pumps and coolers. The B revision heater kits have longer wires to allow installation of the contactor to the mounting plate in the GPH/GPC “M” model 3 phase units.

The HKR3-**__A__ revision heater kit may be used in the GPH/GPC13**M23** model units, but you will need to replace the blue and white wires from the sequencer coil to the contactor coil with longer wires.

These wires may be field supplied by using two 18 gauge wires approximately 19” long, terminated with a ¼” female spade terminal on each end, or if you prefer, you may contact Technical Services at 888-593-9988 for the installation instructions and the 2 wires.

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Service Bulletin

SP-011

DATE: February 14, 2007

TO: All Service and Parts Managers

SUBJECT: A/GPG15 Adapter Harness

This bulletin is to inform you of the additional wiring adapter harness included with the first production of A/GPG15 model package gas/electric units. These units will be equipped with a control board (Part # PCB00100) that uses 3/16" male terminals for attaching the indoor blower motor speed taps to the board.

All subsequent units will be produced with a control board (Part # PCBAG100) with a 5 pin plug for attaching the indoor blower motor speeds. The service replacement control board (Part # PCBAG100S) will also utilize a 5 pin plug for attaching the indoor blower motor speeds. This adapter harness will not be needed for units produced with the 5 pin connector on the control board.

The adapter harness (Figure 1) consist of 4 wires, each wire being terminated on one end with a 3/16" male insulated terminal and the other end terminating in the 5 pin male plug.



Figure 1

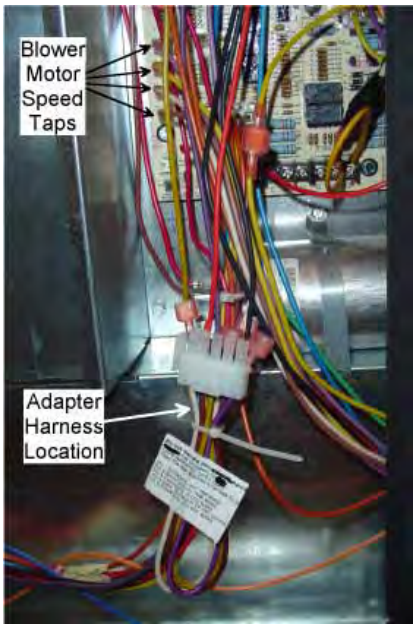


Figure 2

The adapter harness is located in the control panel and is wire tied to the existing wires as shown in Figure 2. There is a label attached to the harness stating the purpose of the harness.

Do not discard the adapter harness. The adapter harness will be necessary should the ignition control board ever need replacing in the future. If this harness is missing, contact Technical Services at 888-593-9988.

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Service Bulletin

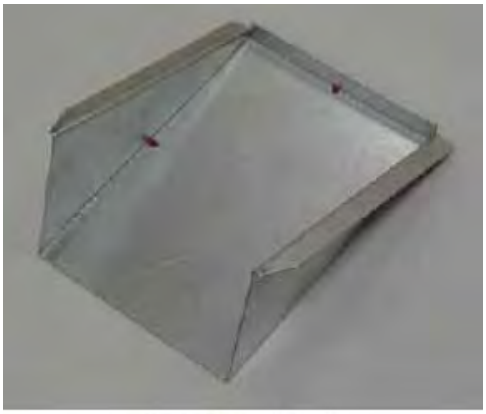
SP-010

DATE: November 29, 2006
TO: All Service and Parts Managers
SUBJECT: LVBK Issues

This letter is to inform you of 2 separate issues with the LVBK Louvered Block-off Kits.

The first issue concerns only the LVBK-02 Louvered Block-off Kits. Goodman has determined that the LVBK-02 Louvered Block-off Kits have the incorrect block-off plate. The LVBK-02 kits have the 9" block-off plate when they should have the 7" block-off plate. Distributors will need to determine the quantity of block-off plates needed (2 per kit) and call their Customer Service Representative to have the correct block-off plates shipped to them. The correct block-off plate (Part # 0254G00000) will be provided to distributors at no charge.

The second issue concerns the LVBK-01, LVBK-02, and LVBK-03 Louvered Block-off Kits. Upon investigation, Goodman has determined the lower flue hood (Figures 1 and 2) and the updated installation instructions were not added to some of the LVBK-0* kits. These kits should be inspected immediately to insure the LVBK-0* kit has the lower flue hood and the correct installation instructions (IO-650A). If the lower flue hood and correct installation instructions are not located in the kit, the RCK01 kit will need to be added to the LVBK-0*. The RCK01 includes the Lower Flue Hood and the Installation Instructions for the Lower Flue Hood. The RCK01 will be provided to distributors at no charge. Distributors will need to determine the quantity of RCK01 kits needed and call their Customer Service Representative to have the RCK01 kits shipped to them.



Lower Flue Hood
Figure 1

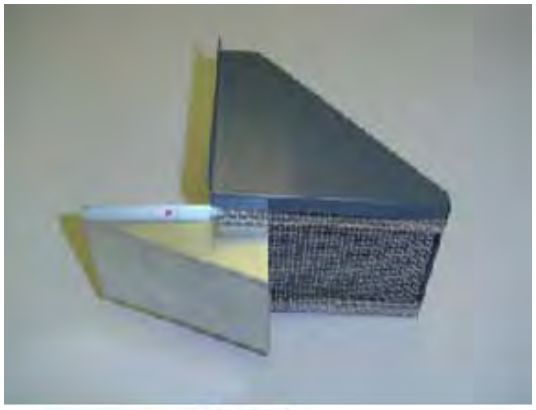


Figure 2

Any LVBK-0* kits you receive after 11/10/06 will have been reworked if necessary and relabeled as LVBK-0***A**. This is mentioned in service bulletin SP-007, but the kits did not get relabeled after they were reworked.

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Service Bulletin

SP-009 Rev. 1
Supersedes SP-009

DATE: July 10, 2006
TO: All Service and Parts Managers
SUBJECT: Vibrating/Noisy Condenser Fan Blades

We have received reports of noisy and/or vibrating condenser fan blades on the GPC1348-60 model package coolers, GPH1348-60 model package heat pumps, A/GPG1348-60 and A/GPG1260 package gas/electric units.

If you encounter any of these model units with a noisy or vibrating condenser fan blade, replace the current condenser fan blade (Part # 0150M00003P) with the new condenser fan blade (**Part # 0150G00001S)**.

When installing the new condenser fan blade, it is important to position the blade on the motor shaft as close to the motor as possible without the blade hitting the motor and still have the set screw on the flat of the shaft (approximately ¾" between the face of the motor and the fan blade hub).

Manufacturing will implement the use of the new condenser fan blade in the above mentioned models beginning the first week of July 2006.

Goodman will pay $75.00 for each installed GPC1348-60 model package coolers, GPH1348-60 model package heat pumps, A/GPG1348-60 and A/GPG1260 package gas/electric units. This only applies to the above mentioned models manufactured between October 2005 (s/n **0510**) and July 2006 (s/n **0607**) experiencing the noisy and/or vibrating condenser fan blade.

This claim can be filed on ServiceBench (preferred) as Warranty Type "Epidemic" using **SP009** as the "authorization" number, or by completing a warranty claim form (RF000007) for each unit requiring the 0150G00001S fan blade and must reference Project Code **SP009** in section 6 (Project Code) on the warranty claim form. The claim will be paid upon review by the Warranty Department.

All claims for this program must be submitted by August 1, 2007.

The new condenser fan blade (**Part # 0150G00001S)** can be ordered through Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SP-008

DATE: June 16, 2006

TO: All Service and Parts Managers

SUBJECT: Miswired Crankcase Heater and Defrost Thermostat

This letter is to inform you of the possibility of the defrost thermostat and the crankcase heater being miswired on the GPH1336H21A/AB model heat pumps. Both the defrost thermostat and crankcase heater wires are red, which was determined to be the root cause for the miswiring issue. On a limited number of the GPH1336H21A/AB units that were inspected in our warehouse, the defrost thermostat was wired to the contactor and the crankcase heater was wired to the defrost control.

This issue was corrected on GPH1336H21A/AB units with a serial number of 0604606140 and later. GPH1336H21A/AB units with a serial number prior to 0604606140 marked with a **blue dot** next to the traveler label on the box have been inspected at the factory and reworked if necessary. All GPH1336H21A/AB model heat pumps with a serial number prior to 0604606140 that do not have the blue dot next to the traveler label should be inspected at the time of installation to verify proper wiring of the defrost thermostat and crankcase heater.

To minimize the possibility of miswiring the crankcase heater wires and the defrost thermostat wires on current production GPH1336H21A/AB model heat pumps, the crankcase heater wires have been changed to orange with the defrost thermostat wires remaining red.

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Service Bulletin

SP-007

DATE: April 18, 2006
TO: All Service and Parts Managers
SUBJECT: A/GPG Flue Hood Redesigned

This letter is to inform you of the release of a redesigned flue hood for the A/GPG gas/electric package units. This new flue hood is in response to field reports of flue gasses being recirculated on a limited number of A/GPG13 gas/electric package units which have the combustion air louvers in the burner access panel. There have also been reports of flue gases being recirculated in A/GPG units that have had an LVBK kit installed. A/GPG gas/electric package units with the combustion air louvers still located in the partition panel are not affected.

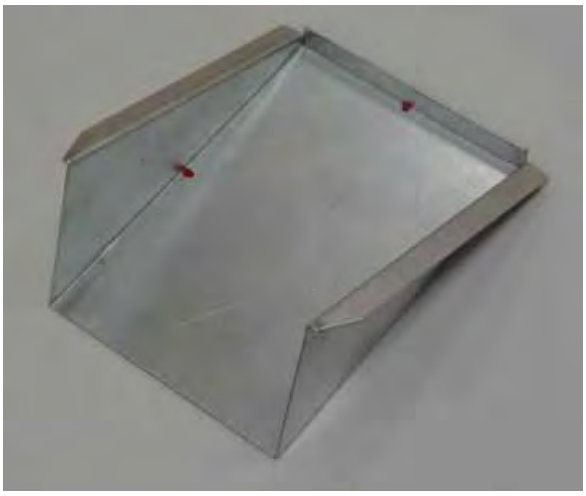
The redesign consists of adding a lower flue hood (Figure 1) to the existing flue hood to redirect the flue gasses away from the unit.

Beginning in April 2006 (s/n 0604 and later), production of A/GPG13** units will have the redesigned flue hood with the added lower flue hood packaged in the flue hood assembly.

The LVBK-01, -02, and -03 kits will also begin using the lower flue hood. The LVBK kit part numbers will change to LVBK-01A, -02A, and -03A with the addition of the lower flue hood.

For field installed units experiencing recirculation, we have created a kit (**Part # RCK01**) that consists of installation instructions and a lower flue hood that is easily added to the existing flue hood. Simply remove the flue hood from the unit, slide the lower flue hood onto the bug screen (Figures 2 and 3) and reinstall the flue hood (Figure 4).

When installing an LVBK-01, -02, -03 kit (without the lower flue hood), you will also need to install the RCK01 kit.



Lower Flue Hood
Figure 1

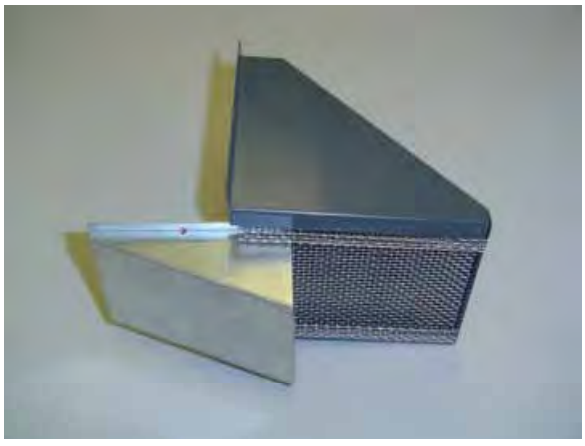
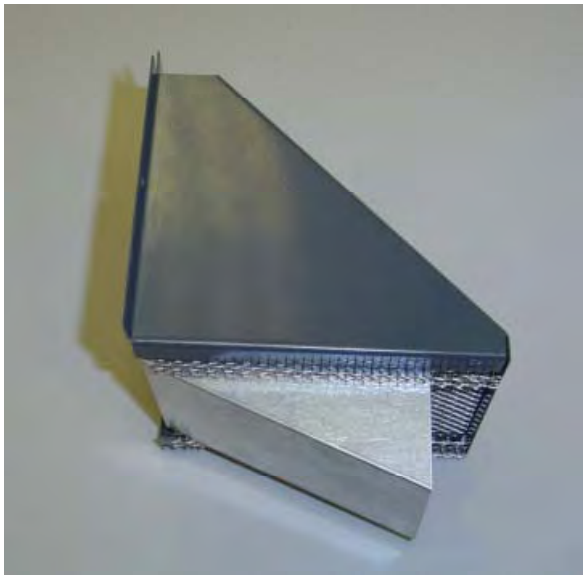


Figure 2



Completed Flue Hood
Figure 3



Flue Hood Installed
Figure 4

For distributor inventory of LVBK-01, -02, -03 kits, the RCK01 kit will need to be added to each LVBK-01, -02, -03 kit. The RCK01 kit will be provided at no cost to the distributor for each LVBK-01, -02, -03 kit in inventory.

The **RCK01** kit can be ordered from Service Parts by contacting your customer service order representative.

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Service Bulletin

SP-006

DATE: April 18, 2006
TO: All Service and Parts Managers
SUBJECT: GPH and GPC Model Wiring Issues

The purpose of this letter is to address wiring issues with the GPH model heat pumps and GPC model coolers. The first issue affects 2-4 ton GPC model coolers and 2-4 ton GPH model heat pumps. The second issue affects a limited quantity of 5 ton GPH model heat pumps.

First is the introduction of an Isolation Relay Kit **(Part # IRK001)** for 2 through 4 ton GPC13**H21**A** and GPH13**H21**A** revision model cooler and heat pump package units with an HKR electric heater kit installed. This kit is **not** for the "AB" revision models of 2 through 4 ton GPC coolers (GPC1324-48H21AB) or GPH heat pumps (GPH1324-48H21AB), these models already have a factory installed isolation relay (Blower Interlock Relay). This kit is also **not** for use on the "A" or "AA" revision models of 5 ton GPC model coolers (GPC1360H21A/AA) or GPH model heat pumps (GPH1360H21A/AA), as these models use a GE® X13 motor and do not require the isolation relay.

This isolation relay kit eliminates the need to match the unit and heater kit power supply phasing on installation. This isolation relay kit also prevents chattering contactors when the power supply breaker to the contactor is off and the power supply breaker to the HKR heater kit is on. This is an abnormal condition and does not occur when both breakers are in the closed position.

The IRK001 Isolation Relay Kit consists of an isolation relay with a **240 volt coil**, a new 9 pin heater kit harness, 2 jumper wires, a wiring diagram for heat pumps (GPH) and a wiring diagram for coolers (GPC), 2 self tapping screws, and installation instructions (IO-658).

The Isolation Relay Kit **(Part # IRK001)** can be ordered from Service Parts by contacting your customer service order representative.

Second is a wiring issue with the 9 pin heater kit wiring harness used on all GPH1360H21**A** revision model heat pumps and a limited number of GPH1360H21**AA** revision model heat pumps.

All GPH1360H21**A** revision model heat pumps and only GPH1360H21**AA** model heat pumps with a serial number of **0603796351** and prior have a red wire from pin 2 of the heater kit 9 pin wiring harness to L2 at the contactor. **This wire should be removed and discarded from the 9 pin connector and L2 at the contactor prior to applying power to these units**. This wire is not needed on the 5 ton GPH/C model units which use the GE® X13 blower motor. If the power supply to the contactor and the power supply to the HKR heater kit are not in phase and the red wire is left connected, a **direct short will occur**.

The GPH1360H21AA model heat pumps with a serial number later than **0603796351** will have a new heater kit wiring harness without the red wire in pin 2 of the 9 pin heater kit wiring harness.

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Service Bulletin

SP-005
Rev. 1

DATE: August 15, 2006
TO: All Service and Parts Managers
SUBJECT: FasTest Access Fittings and Service Tools

This letter is to inform you of the use and operation of the FasTest Access System that is used on all Goodman® and Amana® brand package gas/electric units (GPG/APG), package heat pumps and coolers (GPH/GPC).

There has been some confusion about whether the FasTest fittings are required to service these package units. The answer is no, the FasTest fitting is not required to service these units.

One benefit the Fastest fitting provides is in replacing the FasTest Core shown in figure 1 below without having to recover the refrigerant and recharging. If the FasTest Core or "O" Ring is leaking and you do not have the FasTest fitting you would simply recover the refrigerant, replace the core, then evacuate and recharge just like any other unit with a leaking Schrader Valve.

Another Benefit to the FasTest Access System is it's a full flow valve as opposed to the restricted flow conventional style Schrader valves that have been previously used. The FasTest System allows for faster refrigerant recovery times and also allows for faster system evacuation and charging times.

The FasTest Access System consists of a seat that is either soldered to the refrigerant line or fastened with a locking nut to an access fitting box. The access fitting (core) is then screwed into the seat. It is very important to note that before inserting the core into the seat, the core and seat must be free of debris and the "O" Ring **must** have a thin coating of refrigerant oil applied to it. The oil is to prevent the "O" Ring from being deformed when the core is tightened completely into the seat portion of the fitting. The core should be torqued to 8 ft. lb.

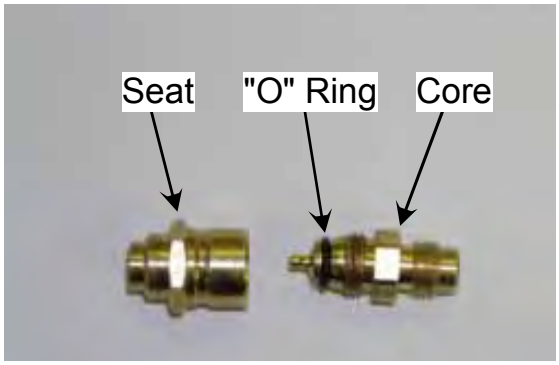


Figure 1
Disassembled FasTest Fitting

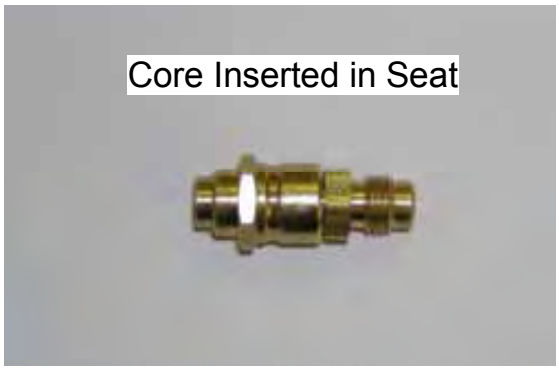


Figure 2
Assembled FasTest Fitting

As with any access fitting, it is very important to ensure that the cap and the refrigerant charging hose are free of debris before installing them on the core. This is even more important with the full flow design of the FasTest fittings than it was with the previous Schrader style valves. With the full flow design, it is easier for debris to enter the core and either lodge between the seal and the "O" Ring preventing the valve from seating, or allowing the debris to enter the refrigerant system.

We also would like to inform you of the release of the FasTest Core Removal Tool (Part # SCFT20A) and the HiFlow SnapMate Tool (Part # SCTA07H).

The Core Removal Tool (Figure 3) will allow you to replace the FasTest Access Fitting (Part # B1373315) without having to recover the refrigerant charge. First, attach the Core Removal Tool to the seat, then unscrew the core and pull to the rear of the tool. Next, shut off the valve on the Core Removal Tool and then remove core. To reinstall or replace the core with a new one, simply reverse the removal process described above.

The HiFlow SnapMate Tool (Figure 4) snaps on and off for quick access under pressure with minimal refrigerant loss due to an internal automatic valve. Simply attach the manifold hose to the SnapMate and snap the SnapMate on the access fitting on the unit. **Note:** The HiFlow SnapMate tool will also work on standard Schrader style access fittings.



Figure 3
Core Removal Tool



Figure 4
HiFlow SnapMate

The service tools and access fitting can be ordered through Service Parts by contacting your customer service order representative.

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Service Bulletin

SP-004

DATE: February 17, 2006

TO: All Service and Parts Managers

SUBJECT: GPC, GPH Power Supply Phasing

This service bulletin is to inform you of the necessity to properly polarize the incoming power supply wiring when installing electric heat in GPC1324-48H21**A** model package coolers and GPH1324-48H21**A** model package heat pumps. The 5 ton models use a GE® X13 motor and are not affected. Only the **A** revision GPC1324-48H21**A** and GPH1324-48H21**A** models are affected. The **AB** revision GPC1324-48H21**AB** model package coolers and GPH1324-48H21**AB** model package heat pumps will have an isolation relay added and will not be affected.

The issue only occurs if an HKR model electric heater kit is installed and the compressor power supply and the heater kit power supply are not in phase. If the power supplies are out of phase, an electrical short **will occur** causing the circuit breaker to trip.

The installation instruction supplement on pages 2 and 3 of this bulletin is packaged with each unit described above. One copy is in the installation literature package, and the other is placed in the heater kit compartment behind the heater kit cover. There is also a caution label placed in the heater kit compartment, and another placed over the contactor. One side of the instructions is for HKR heater kits with circuit breakers in the heater kit, and the other side is for HKR heater kits without circuit breakers in the heater kit.

You must follow the installation instructions packaged with the unit or attached to this bulletin to ensure proper phasing of the incoming electrical power supply.

The chart below lists the unit models that are affected.

MODELS				
GPH1324H21A	GPH1330H21A	GPH1336H21A	GPH1342H21A	GPH1348H21A
GPC1324H21A	GPC1330H21A	GPC1336H21A	GPC1342H21A	GPC1348H21A

CAUTION! FOLLOW DIRECTIONS BEFORE APPLYING POWER

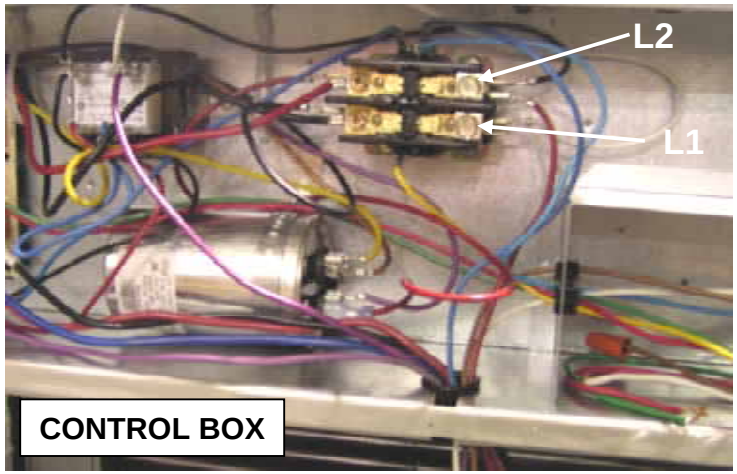
POWER SUPPLY L1 AND L2 AT UNIT CONTACTOR **MUST BE IN-PHASE** WITH POWER SUPPLY L1 AND L2 AT ELECTRIC HEAT KIT OR DIRECT SHORT **WILL OCCUR.** THESE DIRECTIONS ARE FOR UNITS WITH ELECTRIC HEAT KITS SUPPLIED WITH CIRCUIT BREAKER(S). SEE REVERSE FOR ELECTRIC HEAT KITS WITHOUT CIRCUIT BREAKERS.

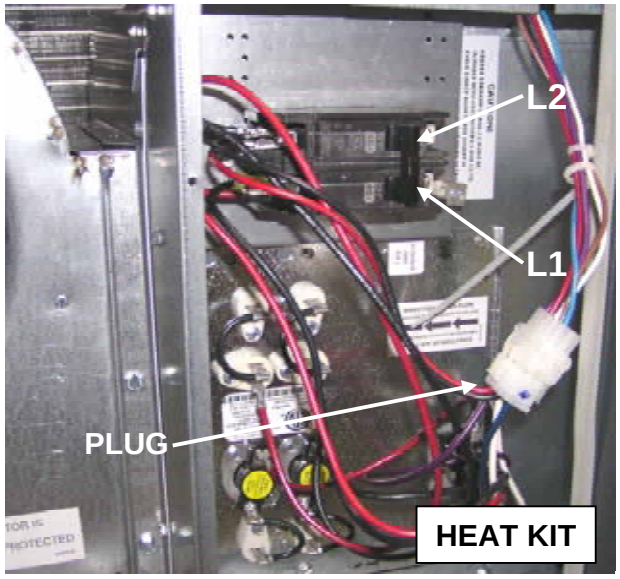
⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. TURN OFF POWER SUPPLY BREAKER AT HOUSE.
2. ENSURE ELECTRIC HEAT KIT BREAKER IS IN **OFF** POSITION.
3. CONNECT POWER TO L1 AND L2 AT UNIT CONTACTOR AND ELECTRIC HEAT BREAKER.

   NOTE: SEPARATE OVER-CURRENT PROTECTION MUST BE SUPPLIED FOR EACH POWER SOURCE.)
4. TURN ON POWER SUPPLY BREAKER AT HOUSE. **LEAVE ELECTRIC HEAT KIT BREAKER OFF.**
5. USING A VOLT METER, CHECK FOR VOLTAGE BETWEEN L1 AT THE UNIT CONTACTOR AND L1 AT THE ELECTRIC HEAT KIT BREAKER.
6. IF THE POWER SUPPLIES ARE IN-PHASE, THERE WILL BE **NO VOLTAGE** BETWEEN UNIT CONTACTOR L1 AND ELECTRIC HEAT KIT BREAKER L1.
7. IF THERE IS NO VOLTAGE, THEN THE POWER SUPPLIES ARE IN-PHASE AND THE UNIT IS WIRED CORRECTLY. *SKIP TO STEP 12*.
8. IF THE POWER SUPPLIES ARE NOT IN-PHASE, THERE WILL BE LINE VOLTAGE READ BETWEEN L1 AT UNIT CONTACTOR AND L1 AT ELECTRIC HEAT KIT BREAKER.
9. IF A VOLTAGE IS PRESENT, **TURN OFF POWER** AT HOUSE BREAKER.
10. SWAP LINES L1 AND L2 AT UNIT CONTACTOR.
11. REPEAT STEPS 4-7 ABOVE. VOLTAGE SHOULD BE ZERO.
12. AFTER VERIFYING THAT THERE IS NO VOLTAGE BETWEEN L1 AT UNIT CONTACTOR AND L1 AT ELECTRIC HEAT KIT BREAKER WITH SOURCE POWER ON, SWITCH ELECTRIC HEAT KIT BREAKER TO “ON” POSITION.
13. ***IF POWER SUPPLIES ARE NOT IN-PHASE, A DIRECT SHORT WILL OCCUR AND BREAKER(S) WILL TRIP.*** IF THIS OCCURS, TURN OFF MAIN POWER AND CHECK FOR DAMAGE TO ELECTRICAL COMPONENTS AND WIRES. IF NONE IS FOUND, REPEAT STEPS ABOVE TO CHECK POWER SUPPLY PHASING.





CAUTION! FOLLOW DIRECTIONS BEFORE APPLYING POWER

POWER SUPPLY L1 AND L2 AT UNIT CONTACTOR **MUST BE IN-PHASE** WITH POWER SUPPLY L1 AND L2 AT ELECTRIC HEAT KIT OR DIRECT SHORT **WILL OCCUR.** THESE DIRECTIONS ARE FOR UNITS WITH ELECTRIC HEAT KITS SUPPLIED WITHOUT CIRCUIT BREAKER(S). SEE REVERSE FOR ELECTRIC HEAT KITS WITH CIRCUIT BREAKERS.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing. Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

1. TURN OFF POWER SUPPLY BREAKER AT HOUSE.
2. AT HEAT KIT POWER TERMINAL BLOCK, NOTE POSITION OF RED WIRE THAT CONNECTS TO PLUG PIN #2 (PLUG IS SHOWN IN PHOTO ON REVERSE SIDE.) THE RED WIRE CONNECTS TO L2 AT THE TERMINAL STRIP.
3. REMOVE RED WIRE FROM TERMINAL STRIP AND TAPE END TO INSULATE AND PREVENT SHOCK AND/OR SHORT
4. CONNECT POWER TO L1 AND L2 AT UNIT CONTACTOR AND HEAT KIT POWER TERMINAL BLOCK. (SEPARATE OVER-CURRENT PROTECTION MUST BE SUPPLIED FOR EACH POWER SOURCE.)
5. TURN ON POWER SUPPLY BREAKER AT HOUSE.
6. USING A VOLT METER, CHECK FOR VOLTAGE BETWEEN L2 AT THE UNIT CONTACTOR AND L2 AT THE HEAT KIT POWER TERMINAL BLOCK. (SEE CONTROL BOX PHOTO ON REVERSE SIDE FOR CONTACTOR LEAD ORIENTATION.)
7. IF THE POWER SUPPLIES ARE IN-PHASE, THERE WILL BE **NO VOLTAGE** BETWEEN UNIT CONTACTOR L2 AND HEAT KIT POWER TERMINAL BLOCK L2.
8. IF THERE IS NO VOLTAGE, THEN THE POWER SUPPLIES ARE IN-PHASE AND THE UNIT IS WIRED CORRECTLY. *SKIP TO STEP 12*.
9. IF THE POWER SUPPLIES ARE NOT IN-PHASE, THERE WILL BE LINE VOLTAGE READ BETWEEN L2 AT UNIT CONTACTOR AND L2 AT HEAT KIT POWER TERMINAL BLOCK.
10. IF A VOLTAGE IS PRESENT, **TURN OFF POWER** AT HOUSE BREAKER.
11. SWAP LINES L1 AND L2 AT UNIT CONTACTOR.
12. REPEAT STEPS 4-7 ABOVE. VOLTAGE SHOULD BE ZERO.
13. AFTER VERIFYING THAT THERE IS NO VOLTAGE BETWEEN L2 AT UNIT CONTACTOR AND L2 AT HEAT KIT POWER TERMINAL BLOCK WITH SOURCE POWER ON, TURN OFF POWER AT HOUSE AGAIN, AND RE-CONNECT RED WIRE TO HEAT KIT POWER TERMINAL BLOCK AT L2.
14. TURN POWER BACK ON. UNIT IS NOW WIRED CORRECTLY.
15. ***IF POWER SUPPLIES ARE NOT IN-PHASE, A DIRECT SHORT WILL OCCUR AND BREAKER(S) WILL TRIP.*** IF THIS OCCURS, TURN OFF MAIN POWER AND CHECK FOR DAMAGE TO ELECTRICAL COMPONENTS AND WIRES. IF NONE IS FOUND, REPEAT STEPS ABOVE TO CHECK POWER SUPPLY PHASING.

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Service Bulletin

SP-003

DATE: December 6, 2005

TO: All Service and Parts Managers

SUBJECT: Replacement Condenser Fan Blade for Package Gas Units

We have received some field reports of the condenser fan blades (Part # B1086774) coming loose at the rivets that attach the blades to the spider hub. This issue may affect the following Amana® and Goodman® brand package gas/electric units:

MODELS AFFECTED	
AMANA	GOODMAN
APG12600901A	GPG12600901A
APG12601151A	GPG12601151A
APG13480701A	GPG13480701A
APG13480901A	GPG13480901A
APG13481151A	GPG13481151A
APG13600901A	GPG13600901A
APG13601151A	GPG13601151A
APG13601401A	GPG13601401A

We have released a new condenser fan blade **Part # 0150M00003P** to replace the existing fan blade Part # B1086774.

Units produced beginning mid-October 2005 will be built using the new condenser fan blade (Part # 0150M00003P).

The new condenser fan blade (Part # 0150M00003P) will be available by mid-December and can be ordered as a service replacement part by contacting your customer order representative.

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Service Bulletin

SP-002 Rev 1
Supersedes SP-002

DATE: January 6, 2006
TO: All Service and Parts Managers
SUBJECT: Condensate in APG and GPG Package Unit Heat Exchangers

In some high humidity applications with long cooling run times it is possible for condensate to accumulate in the heat exchanger during the cooling season. Small amounts of condensate will quickly evaporate during the first heating cycle. However, larger accumulations of condensate may result in the unit failing to ignite or tripping of the roll-out switch.

If you find one or more of the heat exchanger tubes are not drawing the flame into the tube correctly on the first heating attempt of the season it may be the result of condensate partially blocking the tube. If this is the case it will be necessary to remove the condensate using a shopvac or similar device. Once the tubes have been cleared, operate the unit for at least 10 minutes to thoroughly dry the tubes. The unit should operate normally the remainder of the heating season.

To prevent condensate from accumulating in the heat exchanger on APG and GPG model package gas units, we have developed a kit for each chassis size to resolve the problem.

To prevent outdoor air from being drawn through the heat exchanger when the condenser fan is in operation, the current combustion air louvers in the partition panel will be blocked off. To provide combustion air during the heating mode, a new burner access door with slots will replace the existing burner access door. Then the rain hood will be installed over the slots.

These kits are intended for use only on units experiencing the issue of condensate in the heat exchanger. Units with a date code of December 2005 (s/n - 0512) and later have been redesigned to prevent water from condensing in the heat exchanger. Only units with a date code of November 2005 (s/n - 0511) and prior are affected.

The following chart lists the different APG and GPG unit models and which kit will be needed for each model. Each kit consists of a new burner access door with slots, a rain hood, 2 block-off panels, installation instructions, and the necessary hardware to install the kit.

Kit Part Number			
LVBK-01	**LVBK-02**	**LVBK-03**	
Small Chassis	**Medium Chassis**	**Large Chassis**	
*PG1024-30***1A	*PG1036-42***1A	*PG1048-60***1A	*PG1036***3A
*PG1224-30***1A	*PG1236-42***1A	*PG1248-60***1A	*PG1048-60***3A
	*PG1324-36***1A	*PG1342-60***1A	*PG1060***4A
		*PG1336-60***3A	*PG1336-60***4A

NOTE: First * may be A (Amana) or G (Goodman).

Goodman will pay $75.00 for each kit installed in units experiencing water in the heat exchanger. A warranty claim form (RF000007) must be completed for each unit requiring the kit and must reference Service Bulletin **SP-002** in section 6 (Project Code) on the warranty claim form.

These kits can be ordered from service parts by contacting your customer order representative.

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SERVICE BULLETIN SP-001

DATE: **October 12, 2005**

TO: **All Service and Parts Managers**

SUBJECT: **Package Unit Heat Exchanger Baffle**

We have learned that some recent service replacement Heat Exchanger Assemblies part numbers 2921300S and 2921301S for package gas unit models PGB024050-1, PGB024075-1, PGB030050-1 & -1A and PGB030075-1 & -1A may have been shipped without the 3701253S Air Baffle.

This baffle was added in production as a minor improvement to the air pattern across the heat exchanger and the lack of this baffle will not adversely affect the life of the heat exchanger.

We would like for distributors to inspect their inventories of the 2921300S and 2921301S service replacement heat exchangers to determine if this baffle and instructions for mounting the baffles are included. Please contact your Order Services agent to order the 3701253S Air Baffle Kit for any heat exchanger assemblies found to be missing these items. These items will be sent to you at no charge.

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Service Bulletin

SF-029

DATE: April 9, 2009

TO: All Service and Parts Managers

SUBJECT: Lighting Instruction Labels on 90% Model Furnaces

We have received reports of the Lighting Instruction Label coming off the inside front panel on Goodman® and Amana® brand 90% model gas furnaces, and in some instances interrupting the operation of the Induced Draft Blower.

This problem appears to be more noticeable on the Amana® brand 90% model furnaces because of overspray on the back of the doors. Temporary measures were put into place beginning mid November 2008 until a new label with better adhesion could be developed. It was found that by powder coating the back of the door as well as the front we could maintain better adhesion with the existing label.

The new Lighting Instruction Label (Part # **0140F00000P**) was released into production April 9, 2009 and is available from service parts to replace any label that has come off. The new Lighting instruction Label can be identified by "REV B" following the part number located at the bottom right hand corner of the label. If you have experienced this issue with installed furnaces or furnaces in your inventory, a replacement label (Part # **0140F00000P**) can be ordered at no charge from the Service Parts Department by contacting your customer service representative.

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Service Bulletin

SF-032

DATE: January 5, 2010

TO: All Service and Parts Managers

SUBJECT: GMVC95, GCVC9, AMVC95, and ACVC9 Model Furnaces Continuous Fan Speed

The new communicating model furnaces GMVC95, GCVC9, AMVC95 and ACVC9 when installed in legacy mode (traditional thermostat wiring) are designed to provide 30% of maximum CFM during continuous fan operation but due to a missing multiplier in the shared data, these furnaces actually produce 15% of maximum CFM.

Additionally the AMVC950453BX and GMVC950453BX model furnaces may produce low CFM in a legacy first stage (W1) call for heat. This can occur when the motor senses low supply static pressure and fails to ramp up to full RPM for 1st stage.

If you have a furnace exhibiting either of these conditions, an upgrade to the software coefficients can be performed by adding a memory card to the furnace board. These memory cards are model specific and care must be taken to use the proper memory card for your furnace. Memory cards are available and should be ordered from your distributor.

WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Install the correct memory card based on your model furnace and perform the following steps to upgrade the software:

1) Turn off all power to the furnace.
2) Do not touch the memory card or integrated furnace control or any wire connected to the control prior to discharging your body's electrostatic charge to ground. Firmly touch a clean, unpainted metal surface of the furnace away from the control.
3) Install the memory card on the furnace board by plugging it in the white colored socket located next to the furnace dual displays (refer to picture on page 2)
4) Apply power to the furnace and test operation.

Note: The memory card may be removed from the control for use on another furnace of the same model or left in the control permanently. If removed, disconnect power to the furnace and discharge your body's electrostatic charge before removing the memory card. Recheck furnace operation.

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TECHNICAL SERVICE BULLETIN

SF – 090 Rev.2 Important Safety Notice

DATE: **June 7, 2022**

TO: All Service and Parts Managers

SUBJECT: Field modifications required for certain evaporator coil drain pans paired with condensing furnaces in upflow applications

*Please see Revision 2 updates, which are noted as ****UPDATE**** in applicable sections below.*

The scope of this bulletin is any coil from the model families in Table 1 (no "A" in the fifth digit) with a serial number with the first four digits between 1901 and 2101 and evaporator coil drain pans that were sold as service parts from approximately January 2019 through June 2021 regardless of coil serial number.[1]

If you are aware of any of these coils within this serial number range, either uninstalled in inventory, or already installed in the field, please read this bulletin thoroughly and take the recommended actions.

Modifications may be required for model families of 3/8" evaporator coils listed in **Table 1** below, whether these coils are uninstalled and in inventory, or already installed in system applications in the field. If the 5th character of the model number is an "A," this indicates a 7mm coil and is unaffected. No action is required and falls outside the scope of this bulletin.

Table 1
CAPE
CAPF
CAPT
CAUF
CXTQ

[1] This bulletin has been issued in connection with Goodman's voluntary recall program in cooperation with the U.S. Consumer Product Safety Commission and Health Canada. The recall repair may be performed under the procedures described in this bulletin, or consumers may register directly with Goodman and have a technician assigned to perform the repair. For more details on the recall, see https://www.cpsc.gov/Recalls/2022/Goodman-Manufacturing-Company-Recalls-Evaporator-Coil-Drain-Pans-Installed-with-Condensing-Gas-Furnaces-Due-to-Fire-Hazard.

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Instructions for coils already installed in the field

While many installations will require modifications, some specific installations require no further action. Below is a list of exemptions. If any of these exemptions are observed for a given installation, no further action is required for that specific installation.

Exemptions:

1. Any coil installed in a downflow application.
2. Any coil matched with a non-condensing (80% AFUE) gas furnace (any brand).
   ******UPDATE******
   a. ONLY applies to heat exchanger configurations where burner input is located ***at the bottom***. If burner input is located at the top of the heat exchanger (as shown in picture to the right) the furnace is ***not exempt*** and will require further action.
3. A metal reinforcement is observed below the drain pan of the coil. This indicates modifications have already been performed on the specific coil.
4. The matched furnace is a Daikin, Goodman, or Amana® brand Ultra Low NOx gas furnace.
5. The matched furnace is a Daikin, Goodman, or Amana brand condensing furnace with a constant volume (variable speed ECM) from the model number families listed below in **Table 2.**
6. The matched furnace has a Blower Guard Kit. This indicates that modifications have already been performed on the specific system.

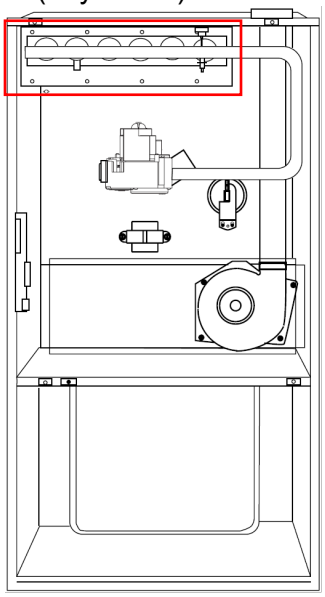


Table 2

Daikin	Goodman	Amana	Whirlpool
	GMVC95	AMVC95	WGFM295
DM96MC	GMVM96	AMVM96	WGFM296
DM96VC	GMVC96	AMVC96	
DM97MC	GMVM97	AMVM97	

If an installed coil from the models in **Table 1** is within the serial number range of 1901 to 2101 and does not meet any of these exemptions, further action is required.

For the remaining installations that require further action, the action required will either be the installation of a Blower Guard Kit or Drain Pan with Metal Reinforcement Kit. The specific system details dictate which of these actions is appropriate for a given installation. Please review the

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following sections in detail to understand which action is appropriate for a given system installation.

Blower Guard Kit

We anticipate most of the remaining in-scope installations (not exempted as defined above) will require the installation of a Blower Guard Kit. If the installation does not meet any of the previously defined exemptions, and meets BOTH the following two requirements, the required action is the installation of a Blower Guard Kit.

Installations that require Blower Guard Kit (if not exempted as defined above):

1. System with the in-scope coil/drain pan service part matched to Air Conditioner outdoor unit (not Heat Pump)
2. Daikin, Goodman, Amana, or GMC brand gas furnace in upflow applications matched with the in-scope coil/drain pan service part as listed in **Table 3** below

If you identify installations that meet these criteria, the appropriate Blower Guard Kit is denoted in **Table 3** for a given furnace model family. For more information, please refer to the installation instructions for the appropriate kit.

Table 3

Furnace model number families				**Blower Guard Kit**	
Daikin	**Goodman**	**Amana**	**GMC**	**Part #**	**IO Manual**
DK92SS	GKS9	AKSS92		BGK-1S	IO-7013
DM92SS	GMSS92	AMSS92		BGK-1S	IO-7013
	GMSS96	AMSS96	VMSS96	BGK-1S	IO-7013
DM92SE	GMES92	AMES92		BGK-1S	IO-7013
DM96SE	GMES96	AMES96	VMES96	BGK-1S	IO-7013
DM96VE	GMEC96	AMEC96		BGK-2S	IO-7012
DM96HS	GMH95	AMH95		BGK-HYB	IO-7014
DM96HE	GME95	AMEH96		BGK-HYB	IO-7014

NOTE – if drain pan deformation is observed when installing the Blower Guard Kit, then installation of the Drain Pan with Metal Reinforcement Kit is required. Refer to the section of this bulletin on the Drain Pan with Metal Reinforcement Kit for more information.

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Scan the QR code to the right or click the link below to access the Blower Guard Kit Installation training video. The training video guides the technician through the entire installation exercise from unboxing and identifying the Blower Guard Kit components through system operation validation.

DVT-142 Blower Guard Kit Installation

More information on the Blower Guard Kit:

The Blower Guard Kit consists of a pressure switch, control board, and wiring harness. The pressure switch is mounted on the back of the blower housing to confirm airflow during a call for heat. The control board is mounted next to the furnace main control board. Installing this kit will require the removal of the blower assembly from the furnace and the reinstallation of the blower assembly after the kit's pressure switch has been installed. Wiring changes and an additional wiring diagram will also be a part of this installation.

The Blower Guard Kit is not an auto-reset device. If the Blower Guard trips for any reason it must be manually reset and the reason for the trip must be identified. Failure to sense blower operation will likely be due to a sticking or failed pressure switch, board failure, wiring issue or motor failure.

Before a heating call, the Blower Guard PCB will be in an idle state with the green LED being constant. When a call for heat is received at the furnace and the gas valve is energized, the Blower Guard PCB enters "Start Up", and the green LED will begin to flash at a 1 second interval. The Blower Guard PCB must sense a closed pressure switch and motor current within 50 seconds after the gas valve is energized. If both are detected, then the Blower Guard PCB will enter the "Monitor Circulator Blower Running" state and the green LED will flash faster. If the motor current, closed pressure switch, or both are not sensed at 50 seconds after the gas valve is energized, the Blower Guard PCB will enter the permanent "Lockout" state, which is represented by a solid red LED and requires a service call.

During the start-up sequence of the furnace, if the gas valve signal is interrupted within 50 seconds, the Blower Guard PCB will enter the "Extended Relay On" state, represented by a solid orange/amber LED. In some conditions, the gas valve interruption could cause the Blower Guard PCB to enter a 10-minute lockout represented by a slow flashing orange/amber LED. Please note that during the 10-minute lockout of the Blower Guard PCB, the furnace control board may lockout the furnace for up to 1-hour. If Extended Relay State occurs repeatedly, the Blower Guard PCB may enter permanent lockout represented by a solid red LED.

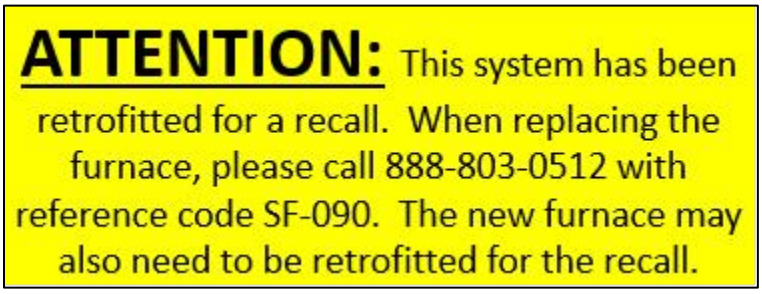
During the start-up sequence of the furnace, if the Blower Guard pressure switch is closed but motor current is not sensed, the Blower Guard PCB will enter the "Lockout Pressure Switch" state, indicated by a fast-flashing red LED. In this state, the Blower Guard PCB will remain locked out until service of the pressure switch.

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To assist the Installation/Service Technician the **Blower Guard Kit – Operation and Troubleshooting** guide is linked below. The guide will assist in the connection between the Furnace PCB and the added Blower Guard Kit components. The guide also provides additional operational and diagnostic details.

Blower Guard Kit – Operation and Troubleshooting

The Blower Guard Kit includes two copies of the label (shown below) which are to be affixed to the coil AND furnace. This label is intended to provide notification to any technician servicing this system in the future that the system has been retrofitted for a recall, and further action is necessary if the furnace is to be replaced.



Required action if this label is observed in the field, indicating a Blower Guard Kit has already been installed:

Attention: If this label is observed on an installed system, call 888-803-0512 if the furnace is being replaced. The installation of a new furnace may need to be retrofitted for the recall. Please refer to the options listed below for all new furnace installations when replacing a furnace with this label.

Drain Pan with Metal Reinforcement Kit

While we anticipate most in-scope installations will require a Blower Guard Kit, there are some installations that will require the Drain Pan with Metal Reinforcement Kit instead of a Blower Guard Kit.

If the installation does not meet any of the previously defined exemptions, and meets ANY the following requirements, the required action is the installation of a Drain Pan with Metal Reinforcement Kit.

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Installations that require Drain Pan with Metal Reinforcement Kit (if not exempted as defined above):

1. System with the in-scope coil/drain pan service part is matched to Heat Pump outdoor unit (not Air Conditioner)
   ******UPDATE******
2. In-scope coil/drain pan service part is matched with any brand other than Goodman, Amana, or Daikin condensing gas furnace or non-condensing furnace with the burners at the top of the heat exchanger as shown on page 2 and is installed in an upflow orientation. If burner location is unknown, visual verification may be required.
3. In-scope coil/drain pan service part is matched with a Goodman or Amana brand condensing gas furnace not listed in **Table 2** or **Table 3**, and is installed in an upflow orientation

******UPDATE******

Additional important information

There may be a limited number of non-condensing furnace models from other brands in which the burner input is at the top of the heat exchanger, as shown in the example image on page 2. If you encounter a furnace which fires at the top in an upflow configuration, it should be treated as in scope for the recall, and the DPKT should be installed according to table 4.

For 3/8" evaporator coils from families listed in **Table 1** (with no "A" in the fifth digit) that do not meet any exemptions, and meet any of the three requirements above, require the installation of a Drain Pan with Metal Reinforcement Kit as denoted in **Table 4** below. For installation information and more details see IO-7006.

Table 4

Drain Pan with Metal Reinforcement Kit

Coil width	Kit number
A (14" wide)	DPKT3A
B (17.5" wide)	DPKT3B
C (21" wide)	DPKT3C
D (24.5" wide)	DPKT3D

Instructions for coils in inventory that have not been installed

Inspect your inventory of coils as listed in **Table 1** (no "A" in the fifth digit) with serial numbers between 1901 & 2101. Some of these units may have an orange dot on the traveler label found on the packaging (refer to **Image 1** below).

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Image 1



If this orange dot is observed, this indicates the coil has already been modified and requires no further action.

All coils within the specified serial range missing the orange dot on the traveler label must be reworked to include the new drain pan with reinforcement as listed in **Table 4**.

1. If you have coils in inventory, acquire the appropriate kits as listed in Table 4 from Order Services. Labor will be provided at $25 per unit. You must submit an inventory rework report (attached) to warranty administration at Warrantyclaims@DaikinComfort.com using subject title (SF-090) in your email. All forms must be returned in Excel. No handwritten forms will be accepted.

Instructions for drain pans in inventory that have not been installed

For any service replacement drain pan with part numbers BT5076500DF, BT5076501DF, BT5076502DF or 0161D00089, distributors should contact their CSR to have these drain pans returned to DTTP. Replacement drain pans with those part numbers may no longer be sold or otherwise distributed for use by consumers.

Additional important information

To clarify and to minimize the time in scheduling the repair work, contractors are encouraged to initiate repair work with their customers and/or perform the repair work, even if the consumer registered online for the recall and received the repair kit from the recall administrator. The installing contractor or a qualified contractor of the homeowner's choice may perform the repair work. Contractor must hold all required licenses to service air conditioning and gas furnace equipment in your local area.

It is recommended the claim be filed immediately to avoid duplication of contact with the consumer to do the repair. Once the claim is filed in Warranty Express, the system will be marked as complete. To file the claim within Warranty Express, use the applicable code below adding labor and the BGK/DPK part number as the failed part number and leave the replacement part number filed blank if the consumer received the part from the recall administrator.

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Class “A” labor will be paid to install the Blower Guard Kit on any furnace as identified in **Table 3** matched with a coil as listed in **Table 1** if the coil serial prefix is between 1901 to 2101. Claim must be filed using Authorization Code **8721**.

If the Drain Pan with Metal Reinforcement Kit is installed, it is not necessary to install the Blower Guard Kit. Class “A” labor will be paid to replace the drain pan if it is not necessary to break into the sealed system. Claim must be filed using Authorization Code **8722**. This applies to all applications where the drain pan must be replaced.

If it is necessary to break into the sealed system to replace the drain pan with the Drain Pan with Metal Reinforcement Kit as listed in **Table 4** above, Class “D” labor will be paid. Claim must be filed using Authorization Code **8723.** This applies to drain pan replacement for all applications where the drain pan must be replaced.

Claims must be filed on Warranty Express as an Authorization type claim, using Authorization Code number *as specified above*. The claim for the part and labor should be filed as one claim, using the Dealer’s account number.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty. **Claims should be submitted within 45 days from the date of repair.**

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 089

DATE: January 28, 2021

TO: All Service and Parts Managers

SUBJECT: OTA (Over the Air) Update for **ComfortBridge™** Furnaces when Paired with 20 SEER Inverter AC's or HP's

ComfortBridge control platform furnaces will have the new advanced feature menus for dehumidification when paired with the newly released **Goodman™** and **Amana™** 20 Seer Inverter outdoor products. These new advanced feature menus are built into the Inverter board firmware and provide additional dehumidification adjustments in high humidity environments. For additional information please refer to **PMN A-PC-SP-1994 – AVXC20 Air Conditioner and AVZC20 Heat Pump Inverter**.

To take advantage of this new Inverter board firmware perform the OTA update using the **CoolCloud™** HVAC App (available from Google Play or Apple App Store). This update is only recommended for inverter models listed in *Table 1* when paired with a ComfortBridge furnace. Furnaces connected to 20 SEER Inverter outdoor products released prior to the revisions listed in *Table 1* are not supported. Furnaces connected to non-inverter outdoor product, or not connected to any outdoor unit, may be updated optionally.

Model	Rev	Brand	Type	Tonnage
AVXC200241	AG	Amana	AC	2
AVXC200361	AF			3
AVXC200481	AF			4
AVXC200601	AF			5
AVZC200241	AG	Amana	HP	2
AVZC200361	AF			3
AVZC200481	AF			4
AVZC200601	BA			5
GVXC200241	AA	Goodman	AC	2
GVXC200361	AA			3
GVXC200481	AA			4
GVXC200601	AA			5
GVZC200241	AA	Goodman	HP	2
GVZC200361	AA			3
GVZC200481	AA			4
GVZC200601	AA			5

Table 1

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

OTA Update:

Open the **CoolCloud** App. If the update is available, it will alert the user as shown in *Figure 1*. This update will allow the **ComfortBridge** indoor product to see the new dehumidification profiles in the Inverter board firmware; allowing the advanced dehumidification feature menus to be utilized in the **CoolCloud** HVAC App.

The new advanced feature menus provide added trim options allowing adjustments in 5% increments instead of 3%. The new features also give the technician added dehumidification selections of Standard, Off, A, B, & C. These details are in *Table 2*. Please contact Technical Services at TechServices@goodmanmfg.com if you have any questions.



Figure 1

New Advanced Feature Menus		
COOL SETUP		
CoolCloud™ HVAC Menu (PCB)	**USER MODIFIABLE OPTIONS**	**Notes**
COOLING TRIM FACTOR HIGH (CtH)	ADJUSTABLE FROM -15% TO +15% IN 5% INCREMENTS	HIGH TRIM
COOLING TRIM FACTOR MID (CtI)	ADJUSTABLE FROM -15% TO +20% IN 5% INCREMENTS, 30% Trim or FULL for 100% CFM	INTERMEDIATE TRIM. The Inverter system uses lower compressor speed and lower indoor unit CFM to optimize system performance. To obtain 100% CFM for home circulation, use Full Trim setting instead of Int/Low speed. This is recommended for applications with unusually cold return temperatures such as basements.
COOLING TRIM FACTOR LOW (CtL)	ADJUSTABLE FROM -15% TO +20% IN 5% INCREMENTS, 30% Trim and FULL for 100% CFM	LOW TRIM. The Inverter system uses lower compressor speed and lower indoor unit CFM to optimize system performance. To obtain 100% CFM for home circulation, use Full Trim setting instead of Int/Low speed. This is recommended for applications with unusually cold return temperatures such as basements.
DEHUMIDIFICATION ENABLE (dhE)	STD, OFF, A, B, or C	Selecting “OFF” disables dehumidification; selecting “STD”, “A”, “B” or “C” enables dehumidification. The system can have Enhanced Dehumidification operation in setting “A”, “B” or “C” based on dehumidification demand. In the Enhanced Dehumidification profile, the indoor airflow is lower than Standard Dehumidification. Setting “A” allows for the widest compressor range with lower cfm than standard dehumidification. Setting “B” limits compressor operation range and keeps high dehumidification capacity. In setting “C” the system runs fixed at 100% compressor and airflow.

Table 2

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 088 rev.1

DATE: November 21, 2019
TO: All Service and Parts Managers
SUBJECT: Blower Motors Not working on FER Furnaces

Under some higher than nominal voltage (115v) conditions customers may experience a blower motor failure on FER furnaces. Typically, this can occur at voltages in excess of 126 volts. Note not all motors are affected by this condition and will operate up to the maximum 132 volts.

In most cases if the failure occurs the motor will run for one heating or cooling cycle then fail to start on the second cycle. Cycling the high voltage to the unit will usually allow the blower to operate for one cycle then fail on the second call again.

If this condition exists, we recommend as a temporary solution selecting continuous fan on the thermostat until a replacement motor is available. This requires a thermostat that does not break the "G" call when a heating call is made (most thermostats operate this way). If the motor has stopped, you must cycle high voltage to the furnace once to put it back into operation.

In a smaller number of cases the motor may not start on the first cycle either. In this case a replacement motor will be required.

At this time, we request distributors quarantine their inventory of FER furnaces to ensure they limit customer exposure to the issue. Please reference the chart below for model numbers affected by the issue, the affected serial number prefix range is 1905 through 1910. We plan to send each distributor a list by serial number of their affected and unaffected products by November 15th.

AFFECTED MODELS			
AMANA	GOODMAN	DAIKIN	GMC
AMES80*U	GMES80*U	DM80SE*U	N/A
AMES80*X	GMES80*X	DM80SE*X	VMES80*X
AMES80*N	GMES80*N	DM80SE*N	N/A
AMES92*N	GMES92*N	DM92SE*N	N/A
AMES96*N	GMES96*N	DM96SE*N	VMES96*N
ACES80*N	GCES80*N	DC80SE*N	N/A
ACES80*X	GCES80*N	DC80SE*X	VCES80*X
ACES96*N	GCES96*N	DC96SE*N	VCES96*N
ACEC80*X	GCEC80*X	DC80VE*X	N/A
AMEC80*N	GMEC80*N	DM80VE*N	N/A
AMEC80*X	GMEC80*X	DM80VE*X	N/A
MODELS NOT AFFECTED			
96% 2 stage and 96% Ultra Low NoX furnaces models below not affected			
AMES96*U	GMES96*U	DM96SE*U	N/A
AMEC96*N	GMEC96*N	DM96VE*N	N/A
ACEC96*N	GCEC96*N	DC96VE*N	N/A

Beginning approximately 11/18/2019 we will have reflash cables in limited supplies (phase 1). This allows the affected parameter in the motor to be reset thus eliminating the condition described above. In the next several days we will begin contacting distribution to coordinate rework of your inventory. We will need you to move, uncrate and stage the affected units so our rework representative can efficiently work through your units.

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During the week of 11/25/2019 we will begin distributing “Blackbox” reflash kits (phase 2) which eliminates the need for a PC. Each week thereafter we expect to receive additional reflash kits which will be distributed to specific distributor locations as needed. We will track these kits so they can be forwarded to other distributors when your rework is completed.

For furnaces in customer inventory: Goodman will pay $40 labor for each unit that requires a reflash using the phase 1 or phase 2 tools described above. A blank Rework Spreadsheet is attached to this bulletin, additional spreadsheets are available upon request. All inventory reworked furnaces should be claimed on a single form. When submitting the rework form, please email the completed form to TECHSERVICESGOODMAN@goodmanmfg.com.

For installed furnaces: Since this condition only applies to installations with elevated supply voltages, repairs shall be done on a fix on fail basis only. In most cases the repair will be to replace the motor with a Goodman service replacement motor, however if available the reflash tool may be used in lieu of a motor replacement. Goodman will pay labor at the servicers Class “B” labor rate. These will be claimed via Warranty Express as explained below. The claim for the labor and the part should be filed together using the Dealer’s account number.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8801 for installed units***. **The claim for the labor and the part should be filed together using the Dealer’s account number.** Use Authorization Code number ***8802 for distributor inventory units***. For distributor inventory rework use the Rework Spreadsheet provided. All inventory reworked furnaces can be claimed on a single form. The completed spreadsheet will be emailed to TECHSERVICESGOODMAN@goodmanmfg.com.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2025.

Rev. 1 Update: 11/21/2019; updated model chart to include GMC and Ultra Lo NOx models, these models were included in the serialized list of affected and unaffected models provided by your CSR. 96% 2-Stage and 96% ULN furnaces are not affected as these use a different blower motor. If you did not receive this list, contact your CSR to receive a copy.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF-087

DATE: October 23, 2019

TO: All Service and Parts Managers

SUBJECT: **Troubleshooting fault codes on *MES8, *MES9 furnaces**

We have recently identified some additional fault codes associated with FER (Fan Energy Rated) furnace products. The updated fault codes will be added to the wiring diagrams and made available in the next literature revision of the Installation manuals, Spec Sheets and Service Manuals. Please use the table below until those literature revisions are available.

Affected models are shown in the following table:

FER Furnace Wiring Diagram Affected Model Number Table		
GMES80	**AMES80**	**DM80SE**
GMES92	**AMES92**	**DM92SE**
GMES96	**AMES96**	**DM96SE**

Original Fault Code List
STEADY ON = NORMAL OPERATION
OFF = CONTROL FAILURE
1 FLASH = SYSTEM LOCKOUT (RETRIES EXCEEDED)
2 FLASHES = PRESSURE SWITCH STUCK CLOSED
3 FLASHES = PRESSURE SWITCH STUCK OPEN
4 FLASHES = OPEN HIGH LIMIT
5 FLASHES = FLAME SENSED WITHOUT GAS VALVE
6 FLASHES = OPEN ROLLOUT / OPEN CONTROL FUSE
7 FLASHES = LOW FLAME SIGNAL
8 FLASHES = CHECK IGNITOR / IMPROPER GROUNDING
CONTINUOUS RAPID FLASHES = REVERSED 115 VAC POLARITY

Updated Fault Code List
STEADY ON = NORMAL OPERATION
OFF = CONTROL FAILURE
1 FLASH = SYSTEM LOCKOUT (RETRIES EXCEEDED)
2 FLASHES = PRESSURE SWITCH STUCK CLOSED
3 FLASHES = PRESSURE SWITCH STUCK OPEN
4 FLASHES = OPEN HIGH LIMIT
5 FLASHES = FLAME SENSED WITHOUT GAS VALVE
6 FLASHES = OPEN ROLLOUT
7 FLASHES = LOW FLAME SIGNAL
8 FLASHES = CHECK IGNITOR / IMPROPER GROUNDING
9 FLASHES = TWINNING FAULT
10 FLASHES = OPEN FUSE
11 FLASHES = IGNITOR OPEN
12 FLASHES = INDUCER RELAY ERROR
CONTINUOUS RAPID FLASHES = REVERSED 115 VAC POLARITY

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 086

DATE: October 01, 2019

TO: All Service and Parts Managers

SUBJECT: Pressure Switch Wiring Reversed on the 80% FER Models

The pressure switch wires from the control board were incorrectly terminated at the pressure switches on 80% FER 2 stage furnace models with serial number prefix of **1906** through serial number **1909261097**. This may cause the pressure switch to shut down the furnace prematurely due to a sensed vent blockage. The fault code will also be inaccurately displayed, an open high-pressure switch will be displayed as an open low-pressure switch. This is not a safety issue and the furnace will still operate.

As a result, the yellow wire is on the low fire pressure switch and the brown wire is on the high fire pressure switch. The high fire pressure switch terminals are 1/4" and the low fire pressure switch terminals are 3/16".

As shown on the wiring diagram, the yellow wire should be terminated on the high fire pressure switch (NO terminal), and the brown wire should be terminated on the low fire pressure switch (NO terminal).

The affected models are referenced in the table below with serial number prefix of **1906** through serial number **1909261097**:

Affected Models		
ACEC80	**GCEC80**	**DC80VE**
AMEC80	**GMEC80**	**DM80VE**

All units with serial numbers **1909262000** and greater contain the correct wiring harness and are unaffected. Units with serial number prefix **1906** through serial number **1909261097**, shipped from DTTP on 09/30/2019 or later, have been reworked and can be identified by the purple marking on the traveler label, and a purple or orange marking on the 12-pin connector at the control board. Each reworked unit shipped from DTTP will have both identifiers.

For units in Distributor Inventory with serial numbers prefix **1906** through serial number **1909261097** that do not have the purple marking on the traveler label we request distributors quarantine the furnaces so Goodman can coordinate a logistics return for rework. Please contact your Customer Service Representative for an RMA to return your affected inventory. Replacement 80% FER units must be ordered by the distributor to replace their returned inventory. If the distributor chooses not to return the affected units, they can repair in inventory per the procedure described below.

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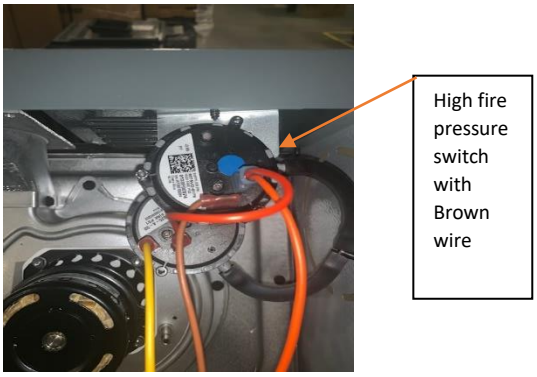
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Installers, be advised, inspect furnaces at the time of installation and if not marked with a purple marking as described above perform the repair described below.

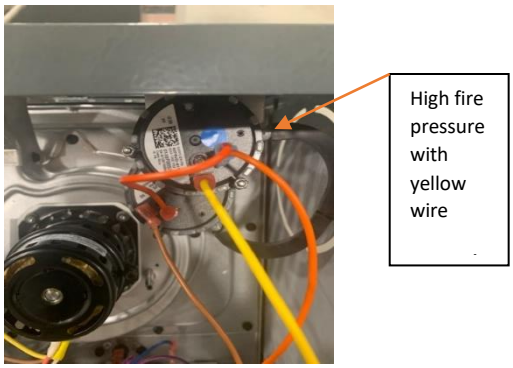
Preferred Repair:

1. Remove the Yellow wire from the low fire pressure switch and the brown from the high fire pressure switch.
2. Cut the 3/16" terminal off the yellow wire.
3. Strip the yellow wire and crimp on a new, field supplied, 1/4" insulated spade terminal, then attach it to the high fire pressure switch as shown on the diagram.
4. Cut the 1/4" terminal off the brown wire.
5. Strip the brown wire and crimp on a new, field supplied, 3/16" insulated spade terminal, then attach it to the low fire pressure switch as shown on the diagram.

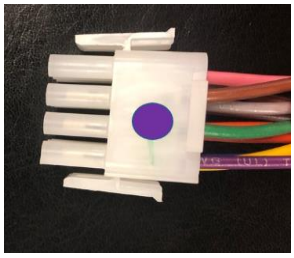
Incorrect Wiring



Correct Wiring



6. Use a paint pen or magic marker (preferably purple, to stay consistent with our color code at DTTP) to place a large marking on the Molex connector at the control board. Use the photo below as an example.



Alternate Repair: if you are unable to re-terminate the wires as described above an alternate repair is to cut the yellow and brown pressure switch wires approximately 2" from the pressure switch terminals, cross the wires and reconnect using field supplied wiring connectors.

1. Remove the Yellow wire from the low fire pressure switch and the brown from the high fire pressure switch.
2. Cut the Yellow wire and the brown wire approximately 2" from the spade terminal

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3. Use a field supplied wire connector to reconnect the yellow wire from pin 2 on the harness to the Brown wire terminated to the high fire pressure switch. The yellow wire is highlighted on the plug pin out below.
4. Use a field supplied wire connector to reconnect the brown wire from pin 12 on the harness to the yellow wire terminated to the low fire pressure switch. The brown wire is highlighted on the plug pin out below.
5. This alternative repair will result in the last two inches of the wires to not match the wiring diagram but is an acceptable method of repair.

For any affected units repaired in distributor inventory Goodman will pay $40 labor for each unit that requires correcting the wiring harness. Rework spreadsheets are available upon request so all inventory reworked furnaces can be claimed on a single form. Rework spreadsheets may be requested from TECHSERVICESGOODMAN@goodmanmfg.com.

For installed furnaces Goodman will provide labor at the servicers Class “A” labor rate.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8708 for installed units***, and use Authorization Code number ***8709 for distributor inventory units***. **The claim for the labor should be filed using the Dealer’s account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2020.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 085

DATE: March 13, 2019
TO: All Service and Parts Managers
SUBJECT: **CoolCloud HVAC™** App Login When Out of Cellular / Wi-Fi Range

From time to time, technicians may lack the ability to login to the **CoolCloud HVAC** app preventing direct connectivity to **ComfortBridge™** based furnace and air handler products. This is likely due to poor or no cellular / Wi-Fi signal at the equipment's location. This bulletin details connectivity options when a cellular or Wi-Fi signal is unavailable at the site.

- Option 1 (Proactive): When traveling to a remote site where there may not be a reliable internet connection, be sure to open the app beforehand when a reliable internet connection is available and log in. Be sure to keep the app active and running in the background on your phone until you get to the customer site.
- Option 2 (Reactive): If already on site with poor cellular signal, ask the homeowner permission to use their Wi-Fi credentials.
- Option 3 (Reactive): If Option 1 and 2 are not feasible, travel to the nearest location with good cellular or available Wi-Fi signal and log in to app.
- Option 4 (Reactive): Make adjustments utilizing control board push buttons and seven-segment displays.

Note: Once logged in, you will remain logged in for at least one week as long as you do not log out.

Once logged in to the **Cool Cloud HVAC** App and within **Bluetooth**® technology range of **ComfortBridge** equipment, proceed as normal with the pairing process as outlined in the IO manual. At this point, the updates that downloaded automatically from the cloud to the app will prompt the user if there is an update available. The user will be able to update the equipment without having cellular connectivity. You will also be able to see equipment settings, status, and error codes.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 084

DATE: February 28, 2019

TO: All Service and Parts Managers

SUBJECT: ComfortBridge™ Furnaces In Dual Fuel Applications Not Locking Out Compressor Operation Below 0°F Outdoor Temperatures

80% and 90% ComfortBridge furnaces when matched with communicating heat pumps in a dual fuel application will not lockout the compressor if the outdoor temperature is below 0°F. The board firmware converts the negative temperatures received from the outdoor sensor to a value above zero resulting in the compressor not shutting down at the selected lockout temperature. We have corrected the firmware issue and have made available an update via the CoolCloud HVAC™ App.

The CoolCloudHVAC App can be downloaded from the Google Play Store (Android Phones) or Apple App Store (iOS Phones). One of the features of the CoolCloud HVAC App is the ability to update firmware and shared data via OTA (over the air) updates. **Note:** Make sure you have a good cell signal or strong Wi-Fi signal when opening the CoolCloud HVAC App. Once you open the App, it will download the latest firmware in the background. Once you have a Bluetooth connection to the furnace, the App will prompt you that an update is available. Click update and the transfer will take place over Bluetooth. Please be patient as this could take up to 10 minutes.

This firmware update is only for installs that contain a Communicating Heat Pump, a ComfortBridge furnace, and are located in an area where outdoor temperature may drop below 0°F.

Goodman will provide labor at the servicer's Class "A" labor rate for those dual fuel applications that require this patch to correct the dual fuel sensor issue. The labor rate will only apply for units installed before April 1, 2019. For all other units the update is accomplished during initial system startup using the CoolCloud HVAC App. In these cases, the App will provide the updated firmware through the OTA App download.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8796***. **The claim for the labor should be filed using the Dealer's account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2020.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 083

DATE: January 10, 2019
TO: All Service and Parts Managers
SUBJECT: *MVC80803 not making high fire pressure switch

Goodman has received a few reports of the *MVC80803 not making the high fire pressure switch, causing the furnace to fault into an E9 error code. Not all *MVC0803 units will experience the issue and this should be treated as a fix on fail only. We are not aware of any other *MVC8 models experiencing this issue.

If you have a furnace experiencing the E9 error code, we recommend changing the pressure switch to a 0130F00509. The set points on the 0130F00509 switch are -.65 on high fire and -.35 on low fire.

Effective February 2019 (1902 serial numbers), production will change to the 0130F00509 pressure switch on the *MVC80803 models. Please contact Service Parts to order the recommended replacement part number 0130F00509.

Goodman will provide labor at the servicers Class “A” labor rate for those units that are experiencing this issue.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8761***. **The claim for the part and labor should be filed as one claim, using the Dealer’s account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2020.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 082

DATE: January 08, 2019
TO: All Service and Parts Managers
SUBJECT: PSR-01 Collector Box Pressure Switch Relocation Kit

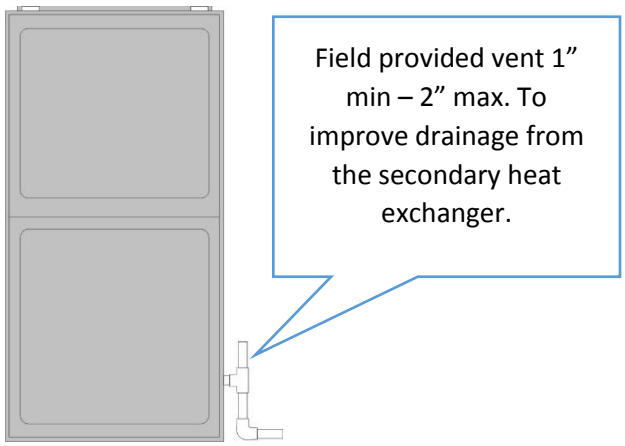
Goodman has received reports of nuisance collector box front cover pressure switch tripping open on 34.5" furnace. This occurs when the drain line is potentially double trapped and not draining correctly, or in extreme high humidity conditions. The PSR-01 kit is an available option, which provides an alternate location to connect the collector box front cover pressure switch when a furnace is exhibiting nuisance opening of the switch. The PSR-01 kit may be used on upflow / horizontal 34.5" chassis furnaces when installed in the vertical position only.

Before installing the PSR-01, please verify the following:

1. Drain line termination from side of furnace is the correct size ¾" and sloped as per I.O. manual.
2. Drain termination must vent with an anti-siphon tee before condensation goes into the condensate pump or termination drain. See example in figure below.
3. Ensure condensate hoses are sloped and draining away from the collector box.
4. Ensure condensate is draining properly from the drain trap, no blockage.
5. No double trapping of the drain line into a condensate pump or termination at a floor drain.

Contact your customer service representative to order the PSR-01 kit

Open Stand Pipe (Anti-siphon air vent example without cooling coil)



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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 081

DATE: January 03, 2019
TO: All Service and Parts Managers
SUBJECT: Stainless Burner Kits

Occasionally due to the fuel supply or environmental conditions rusting or corrosion of the furnace burners can occur. If you are using LP, please also ensure you are utilizing the correct orifice and springs provided in the LP kit for the furnace model you have.

If replacement of the original burners become necessary, we offer replacement stainless steel burners as listed below. These are a direct replacement for the **B4022700** (80% & 40" 90% furnace burner) or **0163F00017** (90% burner from the 34.5" furnace re-design in April 2014). Consult parts catalog for correct burner identification.

Each kit consist of four burners. If your furnace requires more than four burners, you will need to order two kits.

The two kits available are:

80% Burner Kit part number – **SKBSS80**

90% Burner Kit part number – **SKBSS90**

These burner kits can be ordered from Service Parts by contacting your customer service representative.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

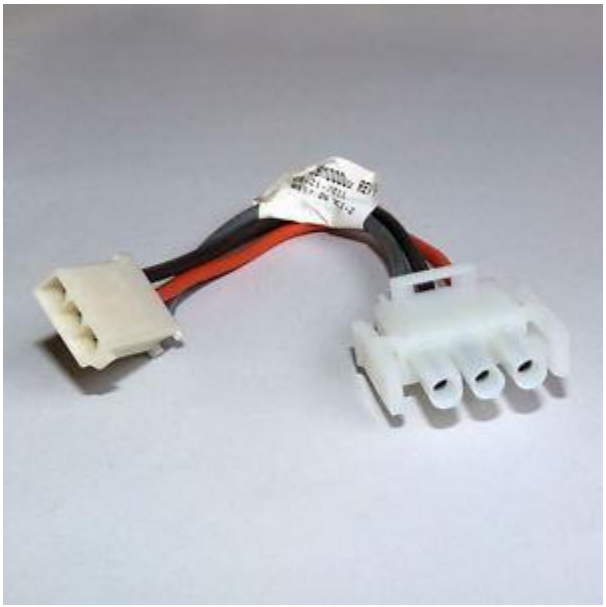
SF – 080

DATE: November 29, 2018
TO: All Service and Parts Managers
SUBJECT: Honeywell to White Rodgers Gas Valve Wiring Adaptor

Since June 2015 (1506 serial prefix), Goodman has been using Honeywell gas valves on Two-Stage 80% and 90% furnaces. Starting in July 2018 (1807 serial prefix), Goodman began transitioning to White Rodgers gas valves on these products.

In order to use the White Rodgers valve to replace a factory installed Honeywell valve, you will need to order an adaptor harness when ordering your gas valve.

If you are replacing the Honeywell gas valve (**part # 0151M00028**) with the White Rodgers gas valve (**part# 0151M00027s**), you will need the wiring adaptor harness (**part# 0259M00005**).



These parts are available through the Service Parts department. Please contact your customer service representative to order.

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SERVICE BULLETIN

SF – 079 Rev1

DATE: April 29, 2019

TO: All Service and Parts Managers

SUBJECT: **CoolCloud HVAC™** APP Technical Guide for Furnaces and Air Handlers with integrated **ComfortBridge™** Controls

With the introduction of the **ComfortBridge** control platform we are releasing this Technical Support Guide for the **CoolCloud HVAC** APP. This guide was developed for the installer and service technician.

This Technical Guide should be used in conjunction with the installation manual for furnaces and air handlers featuring integrated **ComfortBridge** controls as a resource for proper set up when using the **CoolCloud HVAC** APP. The Installation manual supersedes this Service Bulletin SF-079Rev1 unless otherwise stated.

CoolCloud HVAC APP Technical Guide for the ComfortBridge Control Platform

Part 1: Login and Registration

Part 2: Connecting to a Unit

Part 3: The System Overview Screen

Part 4: Viewing Unit Information

Part 5: Setting Up a Non-Communicating System

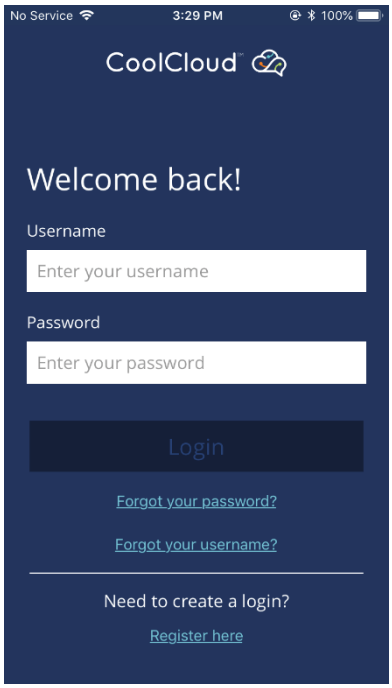
Ctrl-Click on the Hyperlink above to move directly to that section.

T: 888-593-9988 | F: 713-316-5541

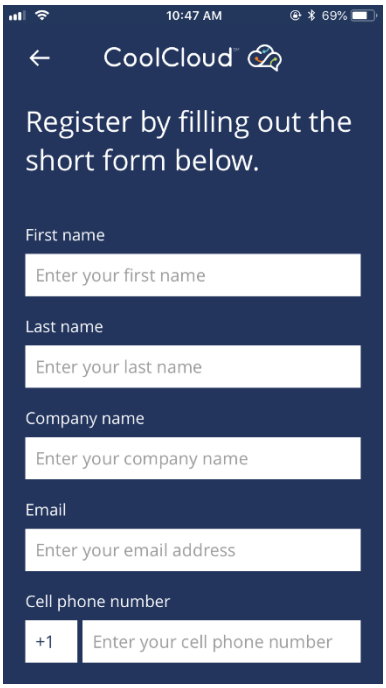
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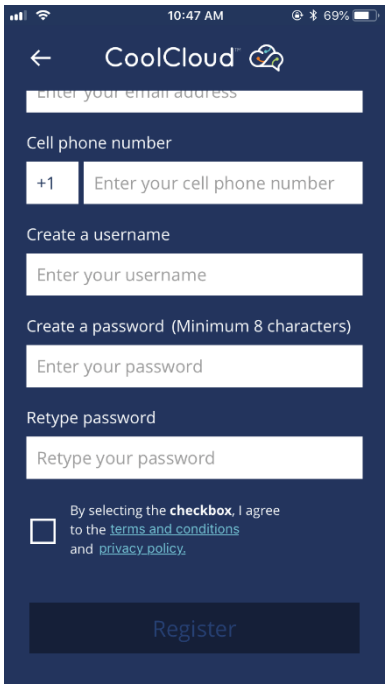
Part 1: Login and Registration Screens



Login Screen



Registration Form Top



Registration Form Bottom

When first opening the app the login screen is displayed; if the user already has an account, the login username and password can be entered at this time.

New users will first have to register for an account by providing the registration information above. Once completed and the *Register* button is depressed, a text message will be sent to the phone number provided containing a verification code. The user uses this code to verify the account. Once verified, the user will be brought back to the login screen where they can then log in with the username and password they just created.

If the password is forgotten, the user can click on the "*Forgot your password?*" button below the login button. They will be prompted to provide their username. After providing their username, a text message will be sent to the phone number associated with their account containing a verification code. The verification code along with the new password will be required to reset the account.

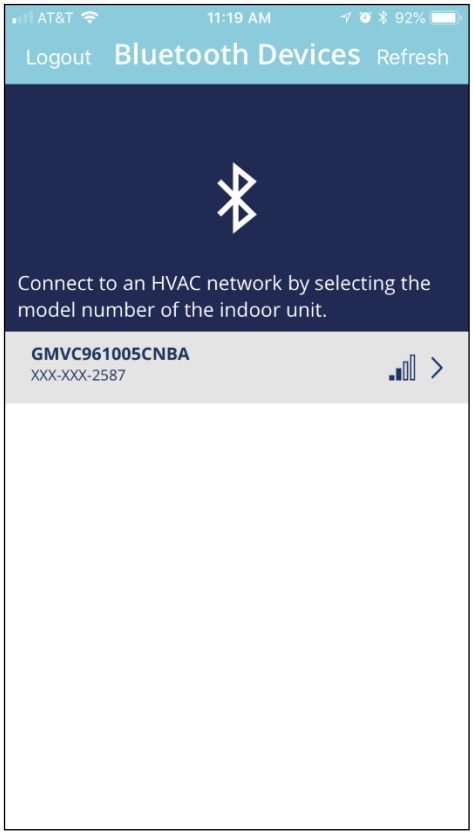
Important Note: Username information cannot be edited once selected by the user. If a user would like to make changes to the account information, a new account will need to be created.

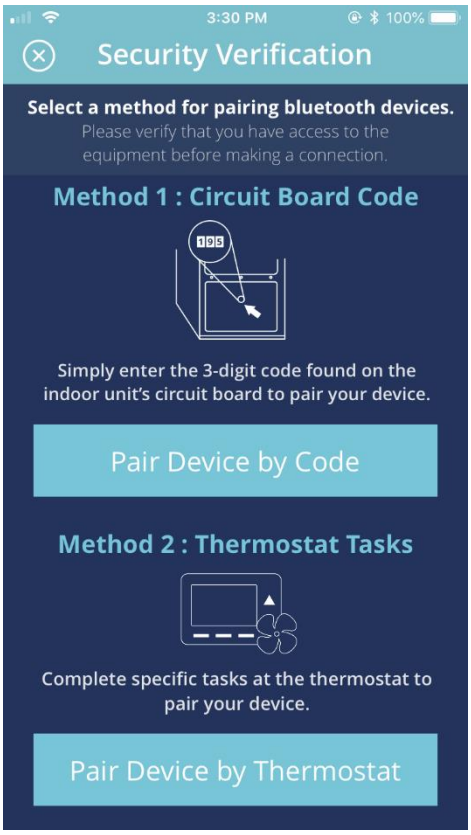
The app will keep the user logged in as long as it can connect to the internet regularly to check for updates. The login will expire after the app has not been able to connect to the internet for 7 consecutive days, requiring the user to log in again. When traveling to a site where there may not be a reliable internet connection, be sure to

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open the app before-hand somewhere where with a reliable internet connection and confirm the app has already been logged-in.

Part 2: Connecting to a Unit





After logging in, the user will be shown a list of indoor devices within **Bluetooth** range and have a connection available. Each unit can be identified by its model number and the Bluetooth board broadcast ID. A unit may not show up on the list if:

- It is out of **Bluetooth** range.
- Another user is connected to the same **Bluetooth** device.
- The indoor unit is experiencing a software issue.
- The unit is not powered on.

While rare, if the unit is experiencing software issues, the Bluetooth device may broadcast under a different name than expected. Here are three possible unexpected names and some information about the possible underlying software issues:

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Furnace or Air Handler

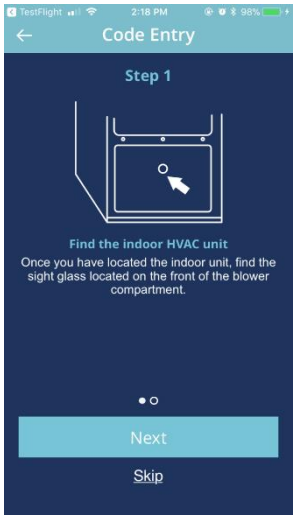
- The indoor unit is a furnace or air handler but its model number could not be retrieved.
    - In this case, the Bluetooth network will not be able to broadcast the model number and will broadcast default, unspecific values instead.
- This issue can be caused by a blower communication error or by a shared data mismatch.
    - The user should connect to the network and view the *Fault Code History* menu of the indoor unit for more information.

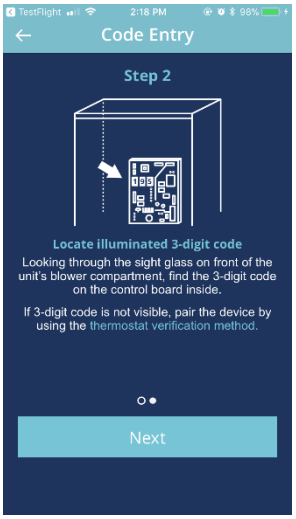
OTA Unknown

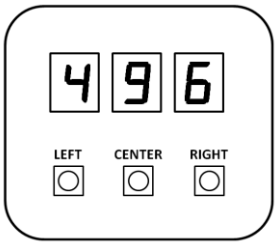
- A Bluetooth software update was attempted but was interrupted before completion.
    - The user should immediately connect and complete the software update process.

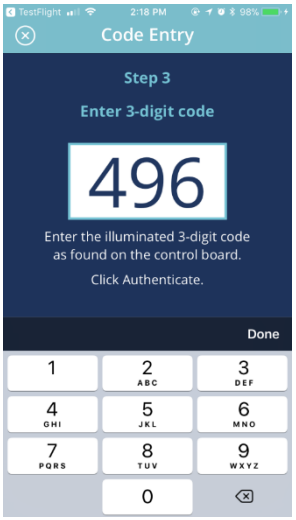
Once the user has identified the Bluetooth network (equipment) they would like to connect to, simply tap the equipment on the screen. This will push the user to the *Security Verification* screen shown on the previous page where they will be presented with two options to verify the connection.

Verification Method 1: Pair Device by Code









If the user chooses to pair using the *Pair Device by Code* method and the code on the indoor circuit board is visible, a 3-digit code will be displayed for pairing at the indoor circuit board's 7-segment display.

This is the same display used to change settings on the board through the board's three push buttons. If the code is not visible, the user can remove the front panel from the unit to see the code once the unit has been rebooted and

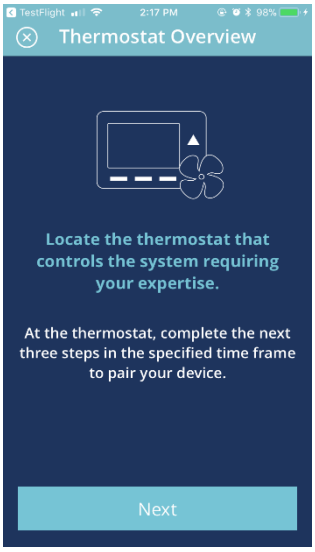
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the door switch is depressed. The *Pair Device by Thermostat* method on the following page was designed and can be used as an alternative to removing the front panel, which could reset currently active fault codes.

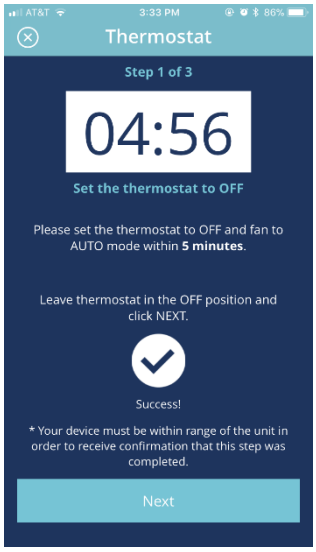
If power is interrupted to the board when the panel is removed and replaced, the device will be disconnected from Bluetooth and the user will need to restore power and wait for 30 seconds for the Bluetooth network to begin broadcasting again.

The user can make up to three consecutive inaccurate code attempts before and a new code will be displayed. Once the code is entered successfully the user will be brought to the System Overview screen.

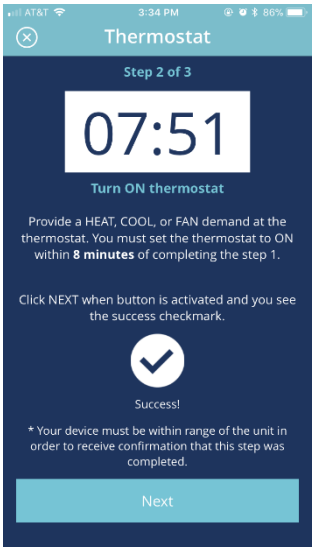
Verification Method 2: Pair Device by Thermostat



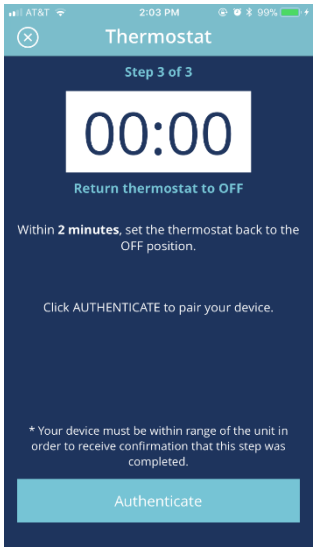
Task Screen 1



Task Screen 2



Task Screen 3



Task Screen 4

If the user chooses to connect using the *Pair Device by Thermostat* tasks method, they will need to locate the thermostat that controls the indoor unit they wish to connect to. In short, the user will have to turn the thermostat off, then on, and then off again within a certain time period. Here is a more detailed description of all the steps:

1. Select the unit you would like to connect to, select the thermostat tasks verification method, and locate the thermostat controlling the unit you are trying to connect to.
2. When ready, select "Next" (see *Task Screen 1* above) to start the first timer.
3. (*Task Screen 2* above) **Within 5 minutes**, ensure there are no calls (W, Y, G, etc.) coming from the thermostat. It may take 5 seconds for the controls to detect any changes. Once the control confirms there are no calls, the user will receive a "**Success!**" message and the "**Next**" button will become active. The user must click "**Next**" to move to the next task.
4. (*Task Screen 3* above) **Within 8 minutes**, use the thermostat to send any call to the unit. We recommend sending a G (constant fan) call as there typically aren't any on or off delays associated with these calls. It may take 5 seconds for the controls to detect any changes. Once the control confirms there is an active call,

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the user will receive a "**Success!**" message and the "**Next**" button will become active. The user must click "**Next**" to move to the next task.

5. (*Task Screen 4* above) **Within 2 minutes**, remove all calls coming from the thermostat. It may take 5 seconds for the controls to detect any changes. Once the control confirms there are no calls, the "**Authenticate**" button will become active.
6. Press "**Authenticate**" to complete the connection process.

If a user fails to complete the *Pair Device by Thermostat* task verification method on their first attempt, they will be brought back to the overview screen (*Task Screen 1*).

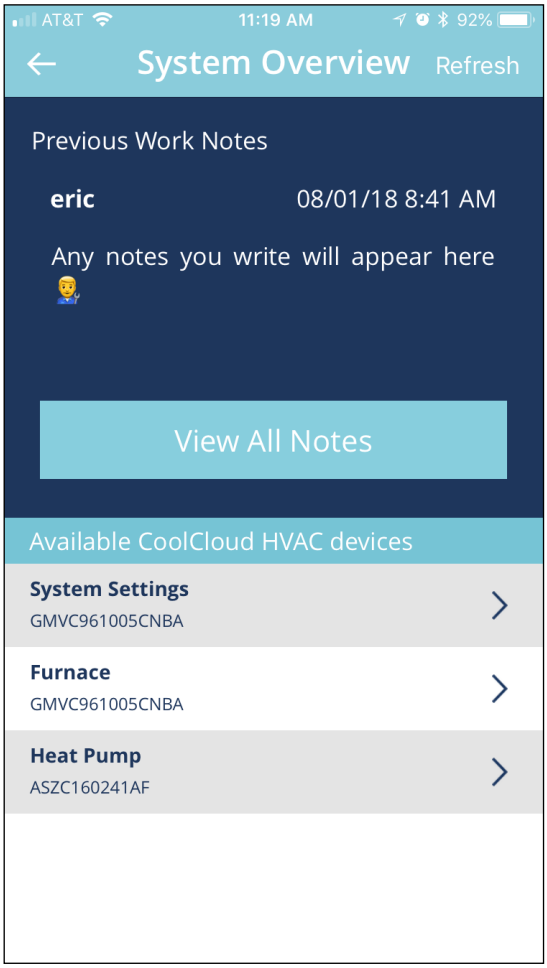
Software Updates

Once the user has successfully connected to a unit and verified their connection, they may be asked to update the software on the Bluetooth Module. They may skip any optional updates, but must apply mandatory updates before continuing. If they update the software on the Bluetooth module, they will be disconnected from the network after the update is complete.

Staying Connected

Once the user has successfully connected to a Bluetooth network, the phone app will remember that unit. The next time they want to connect to the same unit, they will not be asked to re-verify their connection. The connection will be remembered even if the indoor unit is temporarily disconnected from power or if the user updates software on the Bluetooth module.

This connection will be remembered for 8 hours or until the user connects to a different unit, whichever comes first.



Part 3: The System Overview Screen

Once the user has successfully connected to a unit and completed any software updates, they will be brought to the System Overview screen. This screen contains a list of devices connected to the system, as well as any Notes that other users may have left during previous visits to the site.

The items listed on this screen will usually appear in the same order, though this is not a guarantee. The usual order is:

1. System Settings, along with the model number of the indoor unit
2. The indoor unit type (Furnace or Air Handler) and the model number of the indoor unit
3. The outdoor unit type and the model number of the outdoor unit

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Communicating outdoor units will appear on this list as an AC or Heat Pump with the model number of the unit displayed beneath it. For example, in the screenshot on the top right we can see the heat pump unit connected to this system is a communicating heat pump with the model number ASZC160241AF.

The outdoor unit may also appear as "*Click to Setup Non-Comm Outdoor*" with "*24V Outdoor*" displayed beneath it. This means that the indoor unit could not detect a communicating outdoor unit connected to its 1-2-R-C terminal block. If a non-communicating outdoor unit is installed as part of this system, it will be necessary for the installer to manually configure the settings for this unit using its device specific menus. See Part 5: Setting Up a Non-Communicating System for more information on how to configure systems with a non-communicating outdoor unit.

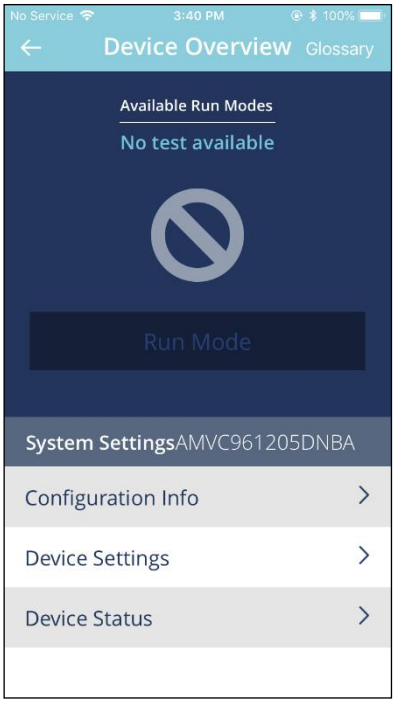
In rare cases the screen may say "It looks like the system is still booting up, please wait a few seconds and refresh this page." The user can refresh the page by selecting *Refresh* in the upper right hand side of the screen until the device list is visible.

If the user does not see the model number of the indoor unit listed here, it may be necessary to correct an active fault condition on the indoor unit. The active fault will be visible in the *FAULT CODE HISTORY* section of the app and is detailed later. The user can navigate to the *FAULT CODE HISTORY* menu for the indoor unit to find more information on the active fault along with possible solutions. Some menus may not be available until the fault condition is corrected.

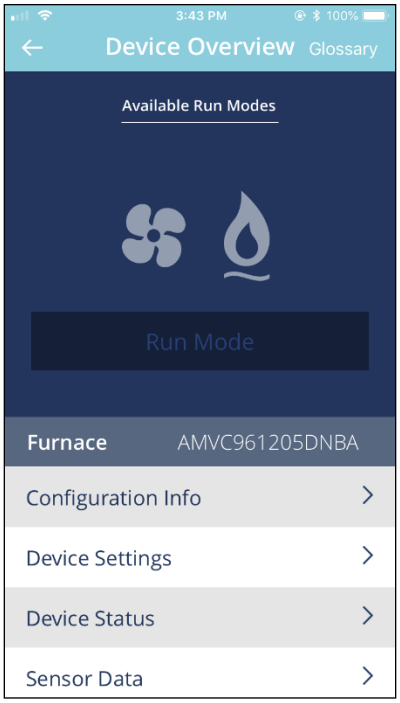
If the user installed a communicating outdoor unit, but *24V Outdoor* is being displayed beneath the outdoor unit type, then the communicating outdoor unit has not yet been detected. This may be due to a natural time delay for the communicating outdoor unit to be detected, which could last up to 90 seconds. If the outdoor unit has not been detected after 90 seconds then the user should check polarity of the communication wires between the indoor and outdoor unit (check that lines 1 and 2 on the 1-2-R-C terminal block are not swapped).

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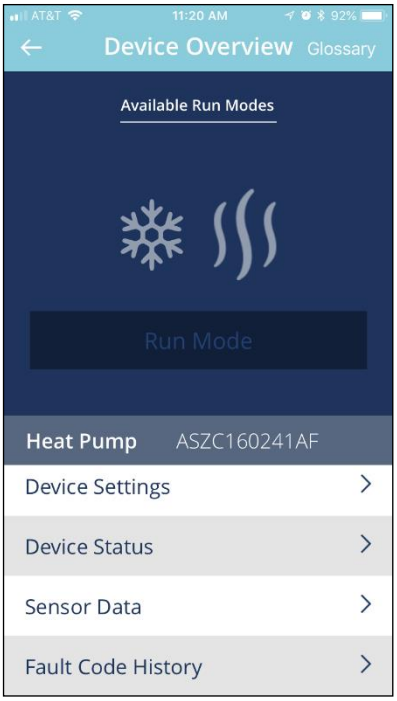
Part 4: Viewing Unit Information



Device Overview 1



Device Overview 2



Device Overview 3

Selecting any unit from the System Overview screen will take the user to the Device Overview screen. From here the user can run the unit in any available run mode or view more detailed information about the equipment.

Run Modes

Run Modes allow independent testing of specific operational modes. Each unit has a specific set of *Run Modes*, a furnace (see *Device Overview 2*) has constant fan and gas heat run modes. A heat pump (*Device Overview 3*) has cooling and heat pump heat run modes. An air handler will have the constant fan and electric heat run modes, and an air conditioner will have only the cooling run mode. Some devices, such as system settings (*Device Overview 1*), have no applicable run modes.

To run the selected unit in an available run mode, first select the desired mode and click *Run Mode* below the icon. The user can then choose a run mode capacity using the slider that appears on screen.

When activating a unit in the constant fan Run Mode, the capacity the user chooses is the percentage of maximum airflow that the unit will provide during the call. For all other run modes (gas heat, cooling, heat pump heat, and electric heat), the capacity selected represents the stage the user would like to run on the unit. All values less than or equal to 50% represent a low-stage call. All values greater than 50% represent a high-stage call. If the unit only supports single-stage operation, all values greater than 0% will activate the unit in the selected run mode.

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Non-communicating outdoor units cannot be activated using run modes on the phone app. The device overview screen will still show the run modes that would typically be available on these units, but activating these run modes from the app will not cause the outdoor unit to engage. Instead, activating these run modes will cause the indoor unit to provide the airflow that it would normally provide if the outdoor unit was running in the given mode. This can be useful for confirming the indoor unit's airflow settings for cooling and heat pump heating modes.

Once the desired capacity has been selected the user can click *Run Mode* again to start the run mode sequence.

A timer will appear on-screen counting up. This timer will continue running until the user chooses to stop the run mode or they leave the application. The user can look at unit-specific menus for the selected unit while the test mode is active but will not be able to view information about other units without stopping the run mode on the current unit first.

The user can stop the run mode by pressing the *Stop Mode* button that replaces the *Run Mode* button.

If the unit continues running in a *Run Mode* when it appears the phone app has stopped *Run Mode* operation, the user can safely disconnect their app from the unit and the run mode will expire on its own after at most 5 minutes.

Unit-Specific Menus

There are currently six unit-specific menus:

1. Configuration Info
2. Device Settings
3. Device Status
4. Sensor Data
5. Fault Code History
6. Shared Data

The user may select any available unit-specific menu to see what extra information is available for that device. The following sections will cover what kinds of information the user should expect to see under each unit-specific menu.

In general, if a user is attempting to view a unit-specific menu but it is taking a long time to load the menu or no menu loads, it is possible the user needs to either refresh the *System Overview* screen, force-close the application and reconnect to the system, or reboot power to the indoor equipment in that order.

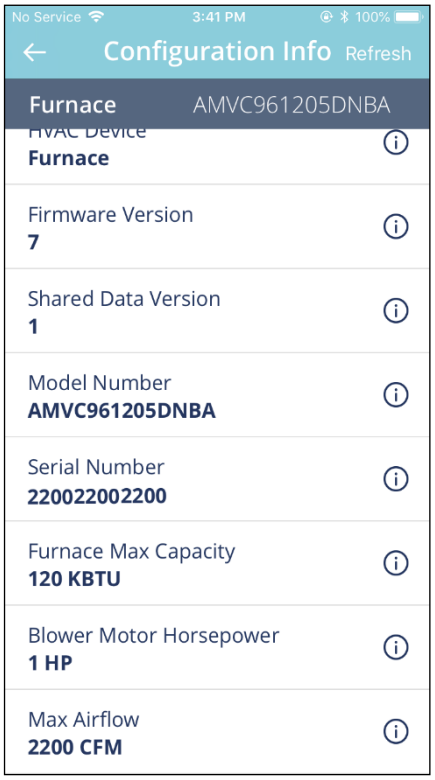
Viewing Configuration Info

Retrieving the configuration info from a particular unit will show information from the unit that does not and cannot be changed, such as the equipment model number. This is useful for confirming shared data information and determining the max airflow of the indoor unit (see *Configuration Info* menu above). If the model number of the equipment is present in the *Configuration Info* menu then the equipment control board contains valid shared data. The user may select the (i) icon to the right of each menu item to view the glossary entry for that item.

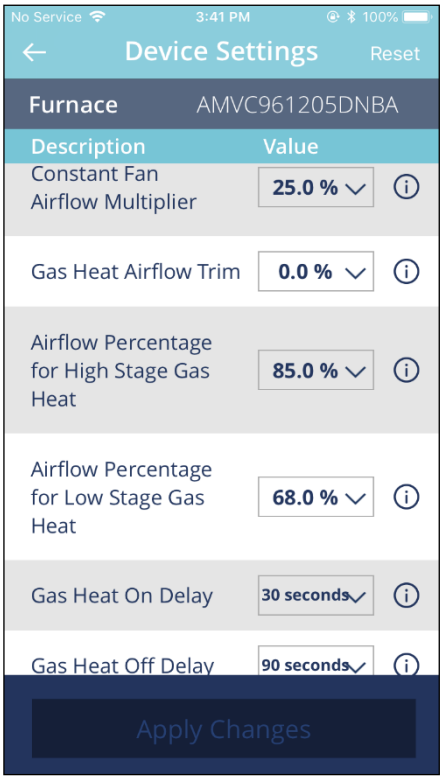
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Viewing and Changing Device Settings

Viewing the *Device Settings* menu will show the user a list of the user-modifiable settings that relate to the given unit. To change these settings, the user must click the box, use the selection tool and select the desired value for that setting. Once the user has made all of their desired setting changes, they must click the visible *Apply Changes* button at the bottom of the screen for the change to take effect. Some setting changes may cause new settings to become available. The user may have to return to the *Device Overview* screen or select *Refresh* to view any new settings. The user can press the *Reset* button in the upper right hand corner to clear any unwanted changes.



Configuration Info Menu



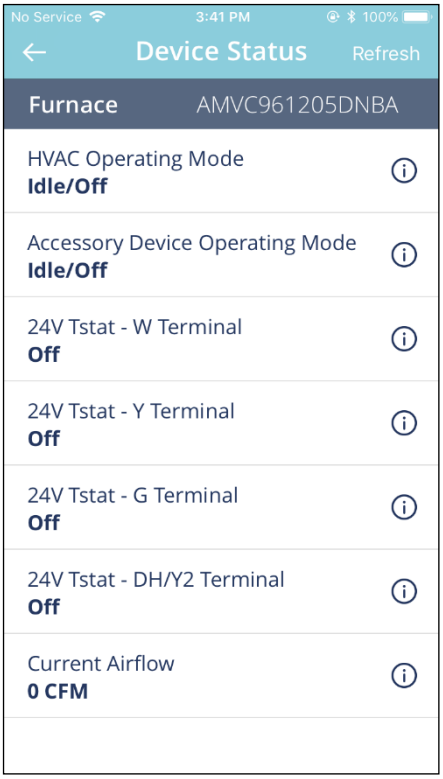
Device Settings Menu

Viewing

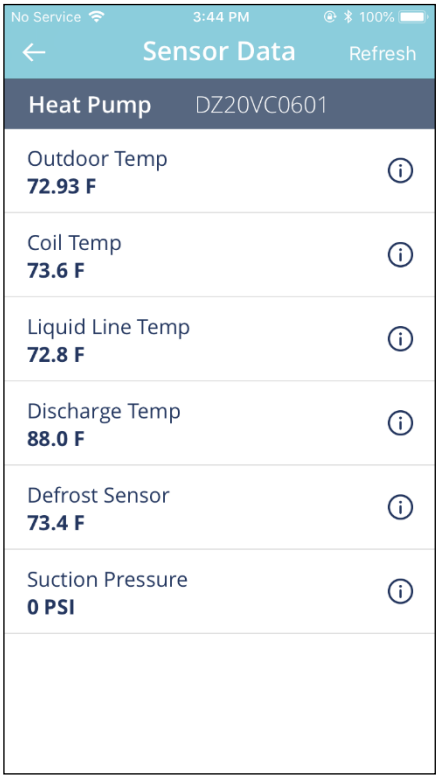
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Device Status

The *Device Status* menu will show any available information about what inputs are currently being sent to the unit and what operational characteristics are being deployed to the heating and cooling equipment. This information does not automatically refresh and must be refreshed using the *Refresh* button to see updated values.



Device Status Menu



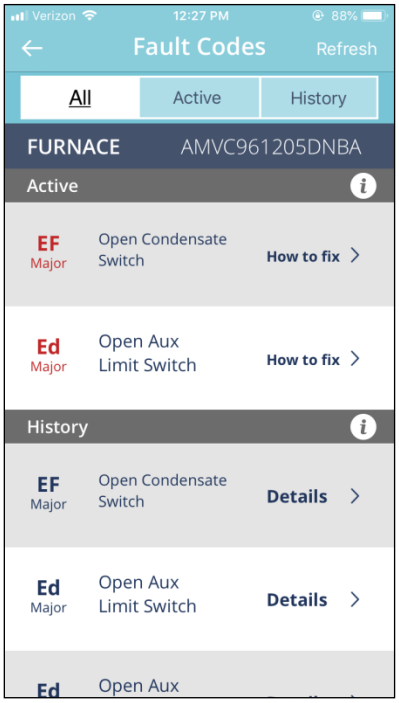
Sensor Data Menu

Viewing Sensor Data

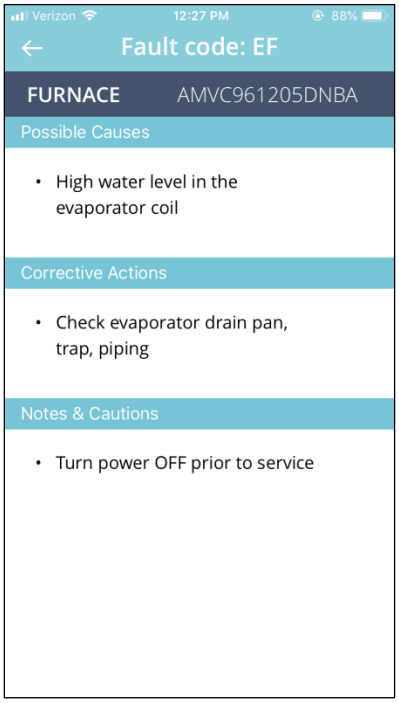
If there are any sensors connected to the unit, information from those sensors will be displayed here. Currently the only units that will have sensor information are communicating outdoor units. This information does not automatically refresh and must be refreshed using the *Refresh* button to see updated values.

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Viewing Fault Code History



Fault Codes



"How-to-fix" Example

The user can view any active or history faults produced by the unit in the *Fault Code History* menu. If there are any active faults, a *How-to-fix* button will appear next to the fault. Pressing this button will open up more information on the fault code with information about possible causes, corrective actions, and notes/cautions.

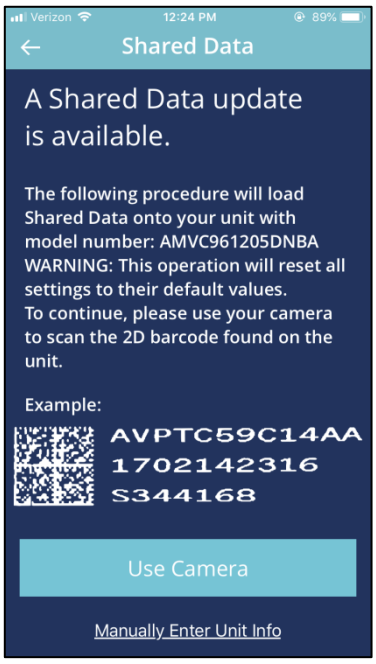
History Faults will appear beneath the Active faults on this screen. These faults are the last 6 faults stored in memory on the device. Though these faults are not active, they may still be caused by an ongoing issue with the unit. Opening the *Details* for these faults will display the same information that is displayed in the *How-to-fix* menu. Faults are displayed differently when using a tablet.

The faults displayed on each device's *Fault Code History* menu are faults for that device only. When multiple units are available at the same site the user should go to each device's *Fault Code History* menu to ensure there are no active faults affecting any of the units connected to the system.

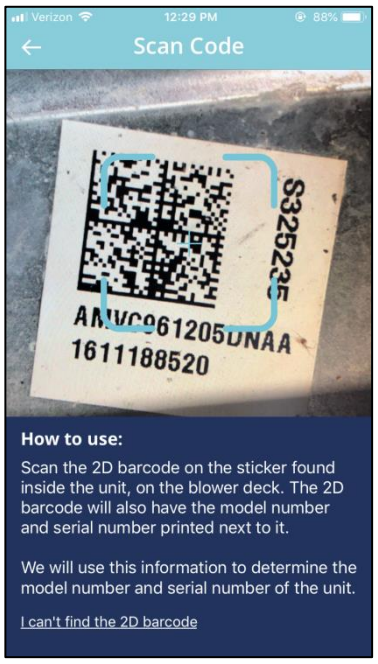
Non-communicating outdoor units have no communication capabilities and will never report active or history faults in the app.

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Shared Data



Shared Data Update Available



Barcode Scanner



Manually Select a Model Number

If a unit supports shared data, the app will display a Shared Data menu on the Device Overview screen for that unit. When the user selects Shared Data from this menu, the app will check for any Shared Data updates that may be available for that unit. If the app determines that the Shared Data of the unit is already up-to-date and the model number provided by the app is accurate, there is no reason to continue with the Shared Data update process.

If the app determines that the unit has outdated shared data, or no shared data, the user can proceed with the shared data update process. Note, however, that this will reset all previous settings on the unit. This includes any setting changes made for non-communicating outdoor units, which will have to be reconfigured after any shared data update.

First, the user must choose whether they would like to use the camera on their device to scan the factory 2D barcode which can be found on the unit or manually select the unit's model number from a list of available device models. Using the camera is recommended to avoid the possibility of loading invalid Shared Data, which has the potential to interfere with normal system performance and void the device's warranty.

To use the camera, first locate the 2D barcode on the unit. The barcode can typically be found on the blower deck, however, accessing this sticker may involve removing the front panel from the unit. If this is the case, the user will have to remove the panel, depress the door switch, and allow enough time for the unit to reboot before reconnecting the app to continue. Once the 2D barcode has been found, the user can select "Use Camera" on the left-most screen above to open the app's barcode scanner (middle screen above). Center the capture tool over the 2D barcode, the app will capture the barcode once it comes into focus. If the camera is too close for the barcode to

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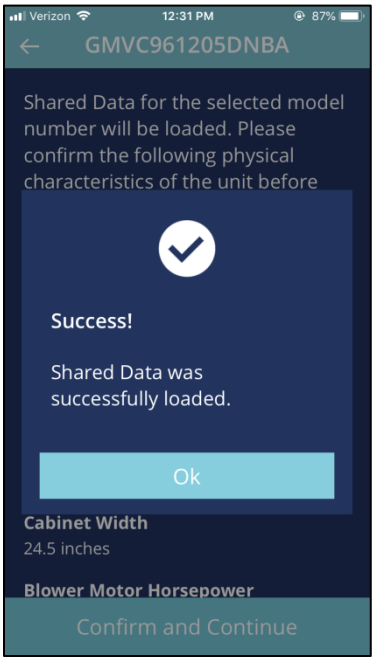
come into focus, it may be necessary to adjust the position of the phone/mobile device until the camera can focus on the 2D barcode.

If the 2D barcode cannot be scanned, it may be necessary to manually select the model number of the unit. In this case, the user can select “Manually Enter Unit Info” on the left-most screen above. The user can then scroll through all available model numbers to find the one they need. The user can type in part of the model number to filter the list.

After providing the model number (either with the camera or by manually selecting it), the user will be brought to a confirmation screen where they can review details about the unit and confirm that the correct model number was selected. See below image for an example of this confirmation screen.



Model Number Confirmation



Success!

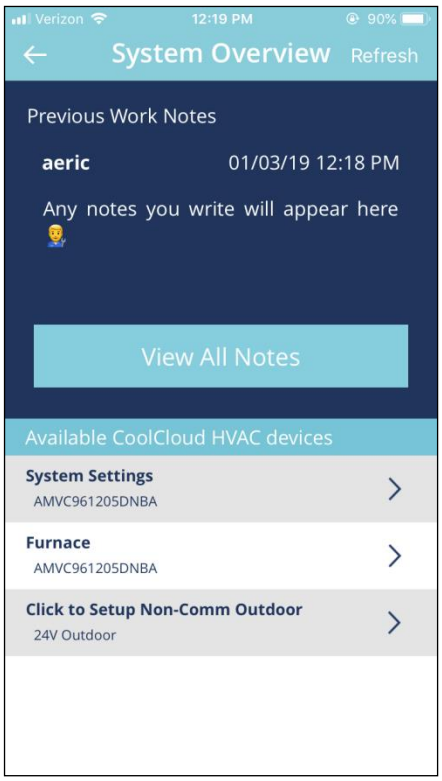
Once the user has confirmed the selected model number is accurate, they may press the “Confirm and Continue” button at the bottom of the screen. This will start the Shared Data update process which may take up to 30 seconds. Once the process is complete, the user will receive a “Success!” message and be brought back to the Device Overview screen.

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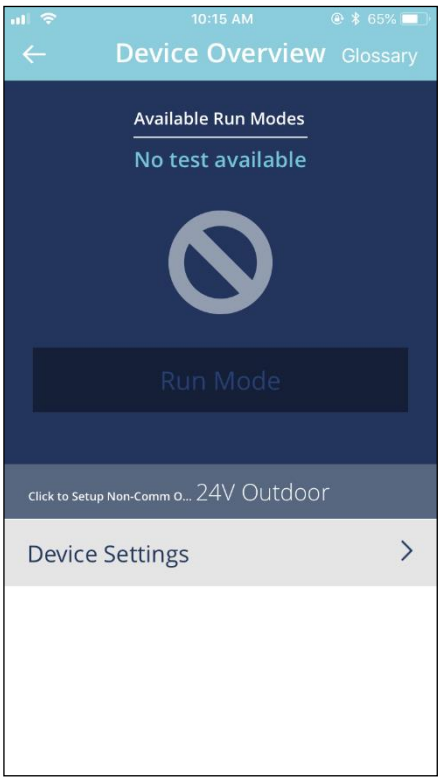
Part 5: Setting Up a Non-Communicating System

This section will explain how to set up non-communicating outdoor equipment. This will only cover what needs to be done on the phone app to complete system setup. See the indoor unit installation manual for other non-app setup requirements.

Setting up a non-communicating system



A System in need of Setup



Non-configured Outdoor Unit Device Overview

If a user has just installed a new system with a CoolCloud HVAC compatible indoor furnace and a non-communicating outdoor unit, their system's airflow will need to be configured through the phone app before the indoor unit can appropriately process calls made to the outdoor unit. This process includes setting the outdoor unit type and tonnage.

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Selecting the *Click to Setup Non-Comm Outdoor* device from the *System Overview* list will take the user to the *Device Overview* screen for that unit where the only available menu is the *Device Settings* menu.



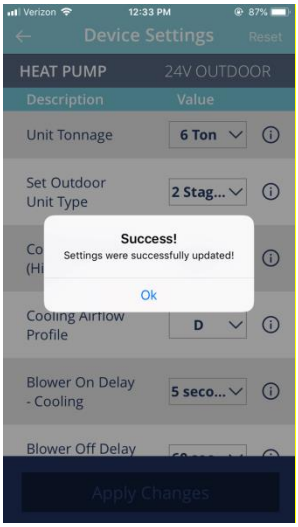
(1)



(2)



(3)

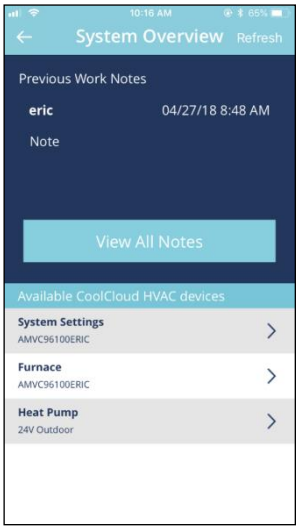


(4)

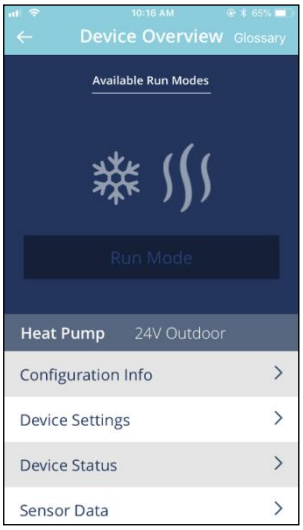
(1) Select the drop down menu from the *Set Outdoor Unit Type* menu
(2) Select *Single Stage AC*, *Single Stage Heat Pump*, *2 Stage AC*, or *2 Stage Heat Pump*.
(3) Select *Apply Changes* at the bottom of the screen.
(4) The phone app will display a *Success!* message indicating the change has been applied. The selected unit type will also now be visible in the upper left hand side of the screen

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After this setting change is applied, the *Click to Setup Non-Comm Outdoor* unit will be replaced with the chosen unit type. The settings page the user is viewing will be updated to reflect these changes. The System Overview screen will also now display the unit type chosen previously.



Updated System Overview



Updated Device Overview



Unit Tonnage Selection

Once the new unit type setting has been applied, the tonnage selection for the outdoor unit will need to be confirmed. This can be found in the *Device Settings* menu of the selected outdoor unit (see the *Unit Tonnage Selection* screen image on the prior page). The indoor unit will use this value to calculate the airflow to provide during high-stage calls to the outdoor unit. The indoor unit will provide 400 CFM/Ton and provides tonnage settings in increments of 0.1 Tons (40 CFM).

For example, selecting the 3 Ton setting means the indoor unit will provide 1200 CFM of airflow during a high stage call to the outdoor unit.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 078 Rev1

DATE: July 8, 2019

TO: All Service and Parts Managers

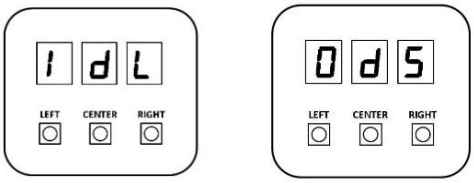
SUBJECT: **ComfortBridge™** Control System Furnace Non Communicating Setup Using PCB Pushbuttons

UPDATE July 2019: SF-078 REV1 is being released due to the high volume of calls we are receiving. You must setup the airflow in the "ton" menu when you have ComfortBridge indoor product attached to a non-communicating outdoor unit.

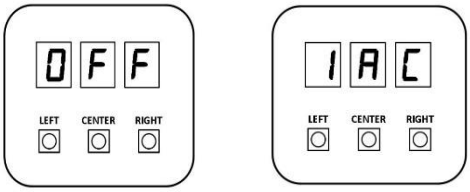
When installing a new **ComfortBridge** control system furnace with non-communicating outdoor units please adhere to the following instructions for setting up the equipment airflow. This safeguard was put in place to prevent maximum airflow when no adjustments are made during the install.

NOTE: Please refer to the Quick Start section of the installation manual for low voltage wiring connections for your specific application. Once you have the unit installed, wired in correctly to terminals Y and G, and ready to start up, the following will assist you in configuring the furnace to operate with a non-communicating air conditioner using the PCB push buttons.

1. From the "**IdL**" menu push the Left or Right push buttons until you get to the "**OdS**" menu.



2. Once at the "**OdS**" menu push the center button once. This will get you into the submenu and display will now read "**Off**". Once "**Off**" is showing push the Right button until you see "**1AC**" (single stage AC). Select the center button once to accept "**1AC**" and a second time back out to the "**OdS**" menu. ***Note:*** The "**OdS**" menu also contains other configuration options: "**2AC"**-2stage AC, "**1HP"**-1 stage HP, and "**2HP"**-2 stage HP.

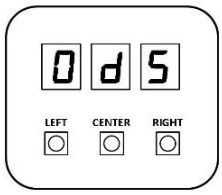


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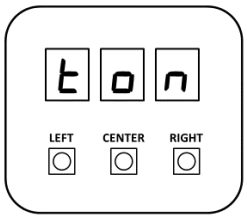
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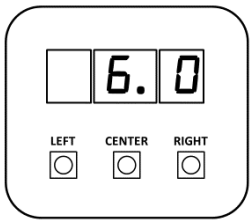
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Once you have selected "**1AC**" and hit the center button twice you will now see "**OdS**" in the 7-segment displays. This confirms the change has been made and you can now push any two buttons and you will be brought back to the main "**IdL**" menu. **Please note**: if you select "**2AC**" or "**2HP**" **the system will stage airflow automatically for low stage operation**. **High stage airflow for all types of non-communicating outdoor units (1AC, 2AC, 1HP or 2HP) will need to be set using the instruction in number 3 below.**



3. You have now successfully configured the system to utilize a non-communicating outdoor unit using the PCB pushbuttons. You now need to select an airflow value in the "**ton**" menu. You will set this according to what CFM is required by the size of the AC you have installed as found in the installation instructions. Use the right or left pushbutton to go to the "**ton**" menu. Press the center button once to enter the menu, then using the right or left pushbutton adjust the airflow to what is required for the system. Once you have selected the airflow needed for your application hit the center button twice to accept the value. The default value is 6.0 ton but can be adjusted in 0.1-ton increments between 1 and 6 ton using the right and left push buttons. **Note**: values are based on 400 CFM / Ton. Setting 3.5 ton, for example, will equal 1400 CFM in high stage.





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Airflow table from Installation Instructions

Tonnage Selection	Airflow	Tonnage Selection	Airflow	Tonnage Selection	Airflow	Tonnage Selection	Airflow
1	400	2.3	920	3.6	1440	4.9	1960
1.1	440	2.4	960	3.7	1480	5	2000
1.2	480	2.5	1000	3.8	1520	5.1	2040
1.3	520	2.6	1040	3.9	1560	5.2	2080
1.4	560	2.7	1080	4	1600	5.3	2120
1.5	600	2.8	1120	4.1	1640	5.4	2160
1.6	640	2.9	1160	4.2	1680	5.5	2200
1.7	680	3	1200	4.3	1720	5.6	2240
1.8	720	3.1	1240	4.4	1760	5.7	2280
1.9	760	3.2	1280	4.5	1800	5.8	2320
2	800	3.3	1320	4.6	1840	5.9	2360
2.1	840	3.4	1360	4.7	1880	6	2400
2.2	880	3.5	1400	4.8	1920		

Note: the system will not provide airflows above the Max Airflow Value.

- **3 Ton Models = 1400 CFM (*MVC960803 max CFM is 1650)**
- **4 Ton Models = 1760 CFM**
- **5 Ton Models = 2200 CFM**

Failure to follow these instructions will cause the furnace board to display “IdL” and will *NOT* start the blower motor with a call for cooling. The PCB should not be replaced.

These changes can also be made using the CoolCloud HVAC™ App.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF-077

DATE: May 21, 2018
TO: All Service and Parts Managers
SUBJECT: 30K BTU Furnace Incorrect Orifices

Goodman has discovered that 30K BTU “B” chassis furnaces, models AMEC960302BN and GMEC960302BN produced with serial number prefixes1610xxxxxx through 1801xxxxxx contain #45 (brass) orifices rather than the #50 (blue) orifices as intended. The result is that these furnaces fire at 40K input rather than the nominal 30K input, but the heat exchanger is capable of handling a 40K input.

Testing has confirmed that these furnaces operate safely. Blower performance between the ***302B and ***402B models is similar and additional airflow adjustments are available if needed. (Refer to Dip Switch Settings in IO for airflow adjustments).

If firing at 40K results in excessive capacity for the installation then it will be necessary to replace the orifices with the #50 blue orifices.

The #50 blue orifices part # **0163F00019** are available from Service Parts by contacting your Goodman CSR.

For installed units where the orifices are replaced Goodman will provide labor at the servicers Class “A” labor rate.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number **8784**. **The claim for the part and labor should be filed as one claim, using the Dealer’s account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

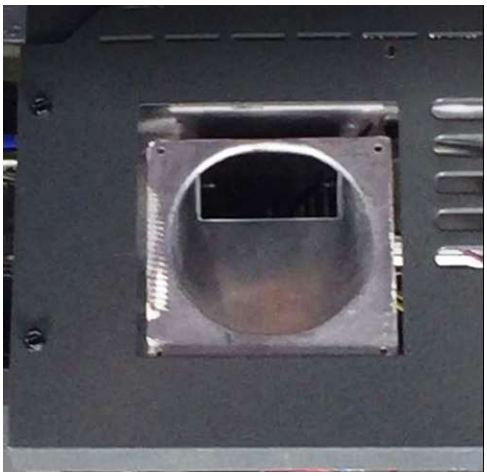
Amana Heating & Air Conditioning

SF-076

DATE: February 27, 2018
TO: All Service and Parts Managers
SUBJECT: 80% Furnace Flue Fit Up

Beginning January 2018, the 80% furnace production began transitioning to our new factory at the DTTP (Daikin Texas Technology Park). In conjunction with this transition, enhanced manufacturing processes and tooling changes were implemented.

As a result of these changes, we have recently found that the mounting brackets securing the heat exchanger to the wrapper were positioned further forward in the cabinet than intended on these DTTP produced furnaces. This may affect the fit-up of the flue connector as shown in the picture on the right. Some of the 80% furnaces, as listed in the table below, with serial number prefixes of 1801xxxxxx and 1802xxxxxx are affected.



Amana	Goodman
AMEH8	GME8
AMH8	GMH8
AMS8	GMS8/VMS8
AMVC8	GMVC8

For upflow or horizontal right installations: In some cases it will be necessary to lift the top panel slightly by pushing upwards on the bottom side of the top panel to allow the flue connector to slip onto the top of the induced draft blower. Additionally, it may be helpful to loosen or remove the two screws securing the left side of the top panel to improve access. After positioning the flue connector these screws should be secured as normal.

For horizontal left installations: These applications generally require the chimney transition bottom kit part # 0270F01119 or service part # 4053501S. In most cases no additional trimming of the horizontal flue cutout will be required. However, if needed the opening may be trimmed towards the front of the furnace to provide adequate clearances.



Some models also state for horizontal installations to install a #8 x 5/8 screw through the center of the top panel (hole provided) into the flange of the partition panel. This hole will need to be moved ¼" towards the front of the furnace to avoid missing the partition panel. A self-tapping screw may be used.

Please note this does not affect the furnace safety or performance.

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Service Bulletin

SF-075

DATE: January 26, 2018

TO: All Service and Parts Managers

SUBJECT: Incorrect Speed Selection Dip Switch Sticker on *MVC96/*CVC96 Furnace

Goodman has discovered an error in the blower speed label affixed to the *MVC96 and *CVC*96 furnace product. Under the Speed Selection Dip Switches section of the door sticker the Heat Selection Switches Taps B, C, and D (S4-3 and S4-4 switches) are mislabeled.

Please refer to the following Switch Bank S4 chart that can be found in the installation instructions that come with the furnace regarding the proper settings below. These Dip Switch settings are for a Legacy (24 volt thermostat) setup as the Dip Switches are not used if the system is utilizing a Communicating thermostat.

Switch Bank S4			If Set Per the Furnace Label
Heating	DIP Switch No.		
Airflow	**3**	**4**	
A	OFF	OFF	TAP A
B*	ON	OFF	TAP C
C	OFF	ON	TAP A
D	ON	ON	TAP C
(* Indicates factory setting)			

If the factory default Dip Switch setting (B) was not changed there will be no change to the intended airflow. If the Dip Switch setting (B) was changed to match what was shown on the furnace label rather than the I&O then this would result in a minor increase in airflow as you are now operating as Tap (C).

Per page 39 of the installation instructions it is recommended to perform CFM verification at Start-up as follows: “Select the desired *heating* speed tap by positioning switches S-4 3, 4 appropriately. Refer to figure above. Verify CFM in heating by noting the number displayed on the dual 7-segment display.”

There is no action required to correct the door sticker as this does not pose a safety or operational furnace issue. Units with serial prefixes of 1802 or later the door stickers have been corrected and are unaffected by the issue.

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Service Bulletin

SF-074 Rev 1
Supersedes SF-074

DATE: January 22, 2018
TO: All Service and Parts Managers
SUBJECT: Alternate Furnace Service Ignition Control Board

To assist in alleviating the furnace service board demand relative to Service Bulletin SF-073, we will be providing a drop in replacement from an alternate vendor. The new board part number is **ICM2810** and is a drop in replacement for the PCBBF136, 136S, 140 and 140S boards.

Additionally in January 2018, we will also be providing the **ICM286** as a service replacement for the PCBBF112S.

The ICM2810 features Humidifier, EAC terminals and Twinning capabilities. The primary difference between it and the PCBBF140 is the lack of the fault recall feature found on the PCBBF140. Included with this bulletin is the instruction sheet packaged with the board, we recommend this document remain with the unit as long as this control is installed.

	ICM2810 or ICM286	PCBBF136 / PCBBF112	PCBBF140
LED	Fault Condition	Fault Condition	Fault Condition
ON	No fault	Normal operation	Normal operation
OFF	Control failure or Blown Fuse	Control failure	Control failure
1 Flash	System lockout	System lockout	System lockout
2 Flashes	Pressure switch stuck closed	Pressure switch stuck closed	Pressure switch stuck closed
3 Flashes	Pressure switch stuck open	Pressure switch stuck open	Pressure switch stuck open
4 Flashes	Open limit switch	Open limit switch	Open limit switch
5 Flashes	Flame has been sensed when no flame should be present	Flame has been sensed when no flame should be present (no call for heat)	Flame has been sensed when no flame should be present (no call for heat)
6 Flashes	Open rollout switch	Open rollout switch	Open rollout switch
7 Flashes	Low flame sense signal	Low flame sense signal	Low flame sense signal
8 Flashes	C terminal must be grounded to frame of furnace or you have a faulty thermostat	Check Igniter Or Improper Grounding	Check Igniter Or Improper Grounding
9 Flashes	Not used	Not Used	Twinning Fault
Continuous Flashing	115 VAC AC power reversed	115 Volt AC power reversed	115 Volt AC power reversed

Orders for the boards listed above may be substituted to the **ICM2810 or ICM286** as needed to support demand.

Jan 22, 2018 update; added ICM286 information.

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ICM286
FURNACE CONTROL BOARD

Replaces: Goodman 0130F00005

FEATURES & SPECIFICATIONS

FEATURES

- **Controls the gas valve, inducer draft motor, circulating blower and hot surface ignitor**
- **Monitors system pressure and limit switches**
- **Microprocessor based precision**
- **Twinning compatible with another ICM286 Control Board**
- **Diagnostic LEDs aid in testing and troubleshooting**
- **Replaces: Goodman 0130F00005**

TIMING

- **Inducer Pre-Purge Time:** 15 seconds
- **Heat Blower On Delay:** 30 seconds
- **Heat Blower Off Delays:** 90/120/150/180 seconds
- **Cool Blower On Delay:** 5 seconds
- **Cool Blower Off Delay:** 45 seconds
- **Ignitor ON:** 7 seconds
- **Inducer Post Purge:** 15 seconds
- **Trials for Ignition:** 3 (before soft lockout)
- **Auto Reset:** 60 minutes

ELECTRICAL

- **Voltage Range:** Line (98-132 VAC) @ 60Hz
- **Cool Blower:** 30A, 2 HP, 240 VAC
- **Heat:** 20A, 240 VAC
- **Inducer Motor:** 4A FLA, 8A LRA @ 120 VAC
- **Ignitor:** 10A FLA @ 120 VAC
- **Humidifier:** 5 amps @ 120 VAC
- **Electric Air Cleaner:** 5 amps @ 120 VAC

ENVIRONMENT

- **Ambient Temperature**
  - Operating: -40ºF to 176ºF
  - Storage: -40ºF to 185ºF
- **Humidity:** 5% to 95% R.H. (non-condensing) @ +55ºF
- **Vibration:** 13.8Hz @ 0.2 Gs for one hour in each orthogonal axis

SAFETY CONSIDERATIONS

CAUTION! ***Only trained personnel should install or service heating equipment. When working with heating equipment, be sure to read and understand all precautions in the documentation, on labels, and on tags that accompany the equipment. Failure to follow all safety guidelines may result in damage to equipment, severe personal injury or death.***

ELECTROSTATIC DISCHARGE (ESD) PRECAUTIONS

Use caution when installing and servicing the furnace to avoid and control electrostatic discharge. ESD can impact electronic components. These precautions must be followed to prevent ESD from hand tools and personnel. Following these precautions will protect the control from ESD by discharging static electricity buildup to ground.

1. Disconnect all power to the furnace. Do not touch the control or the wiring prior to discharging your body's electrostatic discharge to ground.
2. To ground yourself, touch your hand and tools to a clean, metal (unpainted) furnace surface near the control board.
3. Service the furnace after touching the chassis. Your body will recharge with static electricity as you shuffle your feet or move around, and you must reground yourself.
4. Reground yourself if you touch ungrounded items.
5. Before handling a new control, reground yourself; this will protect the control. Store used and new controls in separate containers before touching ungrounded objects.
6. ESD damage can also be prevented by using an ESD service kit.

INSTALLATION

Remove Existing Control:

1. Turn thermostat to OFF position or set it to the lowest possible setting.
2. Turn OFF electrical supply to furnace.

CAUTION! ***Failure to turn off gas and electric supplies can result in explosion, fire, death, or personal injury.***

3. Label each wire with the correct terminal designation.
4. Disconnect the power supply and the thermostat lead wires from the existing ignition control.
5. Disconnect any other line/low voltage, accessory wire and ground leads from the existing ignition control.
6. Remove any screws and any other fasteners, and the old ignition board.

Install New Control:

1. Ground yourself properly before installing the new ICM286 control board.
2. Mount the new control using any screws and fasteners previously removed.
3. Connect all line/low voltage, accessory, thermostat and ground wires.
4. Verify the sequence of operation.

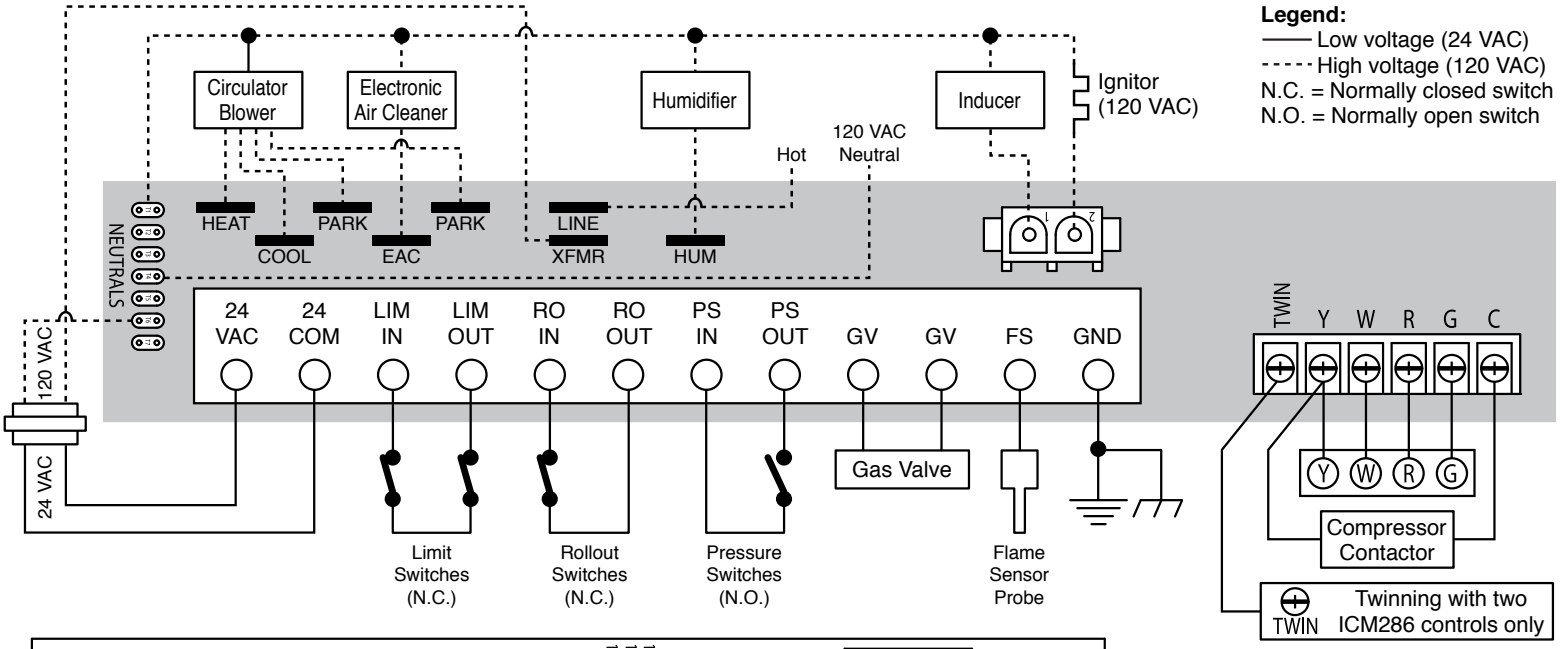
Main Operation:

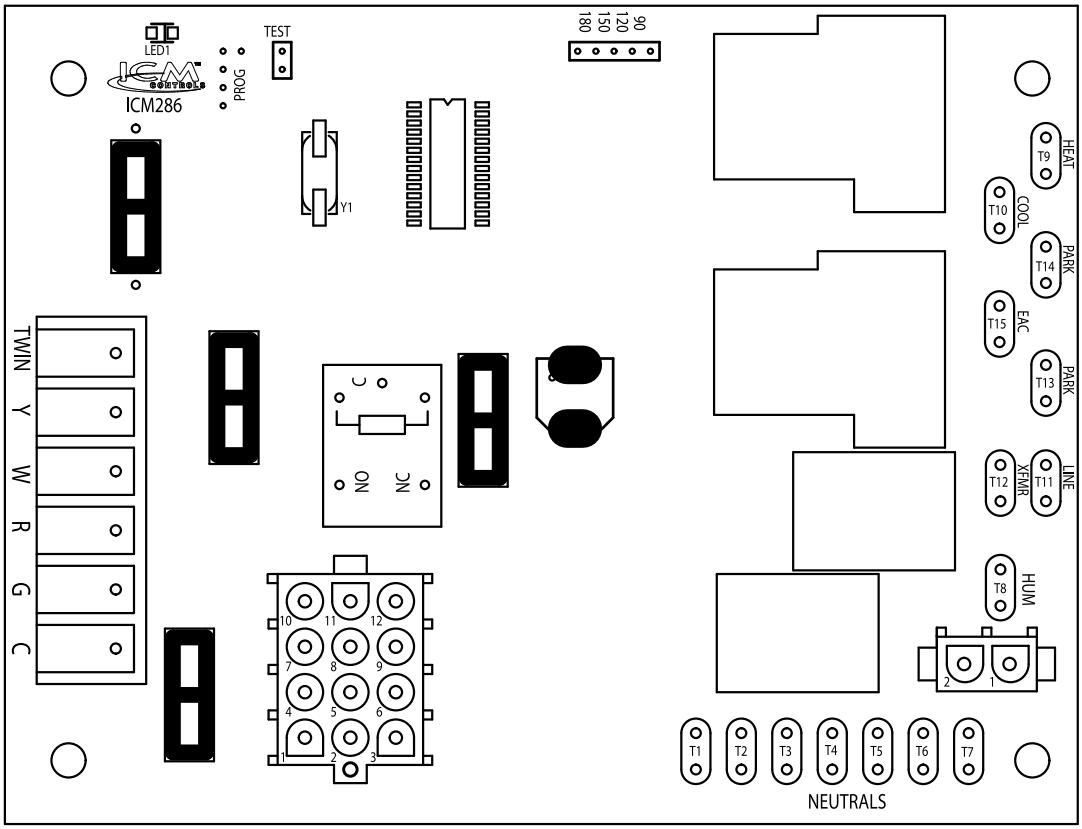
On the application of power, the control will continuously monitor the rollout switch, limit switch, pressure switch, gas valve output and flame sense. During a **Call for Heat**, the control makes sure the limit switch is closed and the pressure switch contact is open before turning on the Inducer blower, which will be energized for 15-seconds in a pre-purge mode. Following the pre-purge period, the pressure switch contact is closed and power is applied to the hot surface ignitor (there is a 7-second warm-up period). The gas valve is energized if a flame is sensed during this 7-second trial-for-ignition period, the blower motor will turn on following a 30-second delay. When the call for heat ends, the control will turn off the gas valve, the inducer blower will turn off after a 15-second post-purge period, and the heat blower will turn off after the jumper-selectable period of time (if jumper is missing, default Heat Blower Off delay is 120 seconds). During a **Call for Cool**, the control will energize the cool blower after a 5-second delay. When the call for cool ends, the control will turn the cool blower off after a 45-second delay.

Twinning:

The ICM286 is Twinning compatible with another ICM286 control board only. By connecting the designated "TWIN" screw terminals and the 24 VAC common together, the controls are designed to turn on/off the blower simultaneously and at the same speed. (NOTE: An external AC relay, whose coil is connected between R & W of the primary furnace and whose normally open contacts connect R & W of the secondary furnace, must be provided to cause both furnaces to heat). A common ground between the two furnaces is also required.

WIRING DIAGRAM





PIN CONNECTIONS	
12-Pin Connections	
Pin 1	Limit switch (W) (input)
Pin 2	Flame sense input
Pin 3	24 VAC input
Pin 4	Pressure switch (output)
Pin 5	Rollout switch (XFMR) (input)
Pin 6	Common
Pin 7	Limit switch (output)
Pin 8	Gas valve common
Pin 9	Common
Pin 10	Pressure switch (input)
Pin 11	Rollout switch (output)
Pin 12	Gas valve output

2-Pin Connections	
Pin 1	Inducer blower
Pin 2	Hot surface ignitor

FAULT CODES

LED	FAULT CONDITION
ON	No fault
OFF	Control failure
1 flash	System lockout
2 flashes	Pressure switch stuck closed
3 flashes	Pressure switch stuck open
4 flashes	Open limit switch

LED	FAULT CONDITION
5 flashes	Flame has been sensed when no flame should be present
6 flashes	Open rollout switch
7 flashes	Low flame sense signal
8 flashes	C terminal must be grounded to frame of furnace or you have a faulty thermostat
Continuous Flashing	115 VAC AC power reversed

ICM2810
FURNACE CONTROL BOARD

Replaces: Goodman PCBBF136

FEATURES & SPECIFICATIONS

FEATURES

- **Controls the gas valve, inducer draft motor, circulating blower and hot surface ignitor**
- **Monitors system pressure and limit switches**
- **Microprocessor based precision**
- **Twinning compatible with another ICM2810 control board**
- **Diagnostic LEDs aid in testing and troubleshooting**
- **Replaces: Goodman PCBBF136**

TIMING

- **Inducer Pre-Purge Time:** 15 seconds
- **Heat Blower ON Delay:** 30 seconds
- **Heat Blower OFF Delays:** 90/120/150/180 seconds
- **Cool Blower ON Delay:** 5 seconds
- **Cool Blower OFF Delay:** 45 seconds
- **Ignitor ON:** 18 seconds
- **Inducer Post Purge:** 15 seconds
- **Trials for Ignition:** 3 (before soft lockout)
- **Auto Reset:** 60 minutes

ELECTRICAL

- **Voltage Range:** Line (98-132 VAC) @ 60Hz
- **Cool Blower:** 30A, 2 HP, 240 VAC
- **Heat:** 20A, 240 VAC
- **Inducer Motor:** 4A FLA, 8A LRA @ 120 VAC
- **Ignitor:** 10A FLA @ 120 VAC
- **Humidifier:** 5 amps @ 120 VAC
- **Electric Air Cleaner:** 5 amps @ 120 VAC

ENVIRONMENT

- **Ambient Temperature**
  - Operating: -40ºF to 176ºF
  - Storage: -40ºF to 185ºF
- **Humidity:** 5% to 95% R.H. (non-condensing) @ +55ºF
- **Vibration:** 13.8Hz @ 0.2 Gs for one hour in each orthogonal axis

SAFETY CONSIDERATIONS

CAUTION! ***Only trained personnel should install or service heating equipment. When working with heating equipment, be sure to read and understand all precautions in the documentation, on labels, and on tags that accompany the equipment. Failure to follow all safety guidelines may result in damage to equipment, severe personal injury or death.***

ELECTROSTATIC DISCHARGE (ESD) PRECAUTIONS

Use caution when installing and servicing the furnace to avoid and control electrostatic discharge. ESD can impact electronic components. These precautions must be followed to prevent ESD from hand tools and personnel. Following these precautions will protect the control from ESD by discharging static electricity buildup to ground.

1. Disconnect all power to the furnace. Do not touch the control or the wiring prior to discharging your body's electrostatic discharge to ground.
2. To ground yourself, touch your hand and tools to a clean, metal (unpainted) furnace surface near the control board.
3. Service the furnace after touching the chassis. Your body will recharge with static electricity as you shuffle your feet or move around, and you must reground yourself.
4. Reground yourself if you touch ungrounded items.
5. Before handling a new control, reground yourself; this will protect the control. Store used and new controls in separate containers before touching ungrounded objects.
6. ESD damage can also be prevented by using an ESD service kit.

INSTALLATION

Remove Existing Control:

1. Turn thermostat to OFF position or set it to the lowest possible setting.
2. Turn OFF electrical supply to furnace.

CAUTION! ***Failure to turn off gas and electric supplies can result in explosion, fire, death, or personal injury.***

3. Label each wire with the correct terminal designation.
4. Disconnect the power supply and the thermostat lead wires from the existing ignition control.
5. Disconnect any other line/low voltage, accessory wire and ground leads from the existing ignition control.
6. Remove any screws and any other fasteners, and the old ignition board.

Install New Control:

1. Ground yourself properly before installing the new **ICM2810** control board.
2. Mount the new control using any screws and fasteners previously removed.
3. Connect all line/low voltage, accessory, thermostat and ground wires.
4. Verify the sequence of operation.

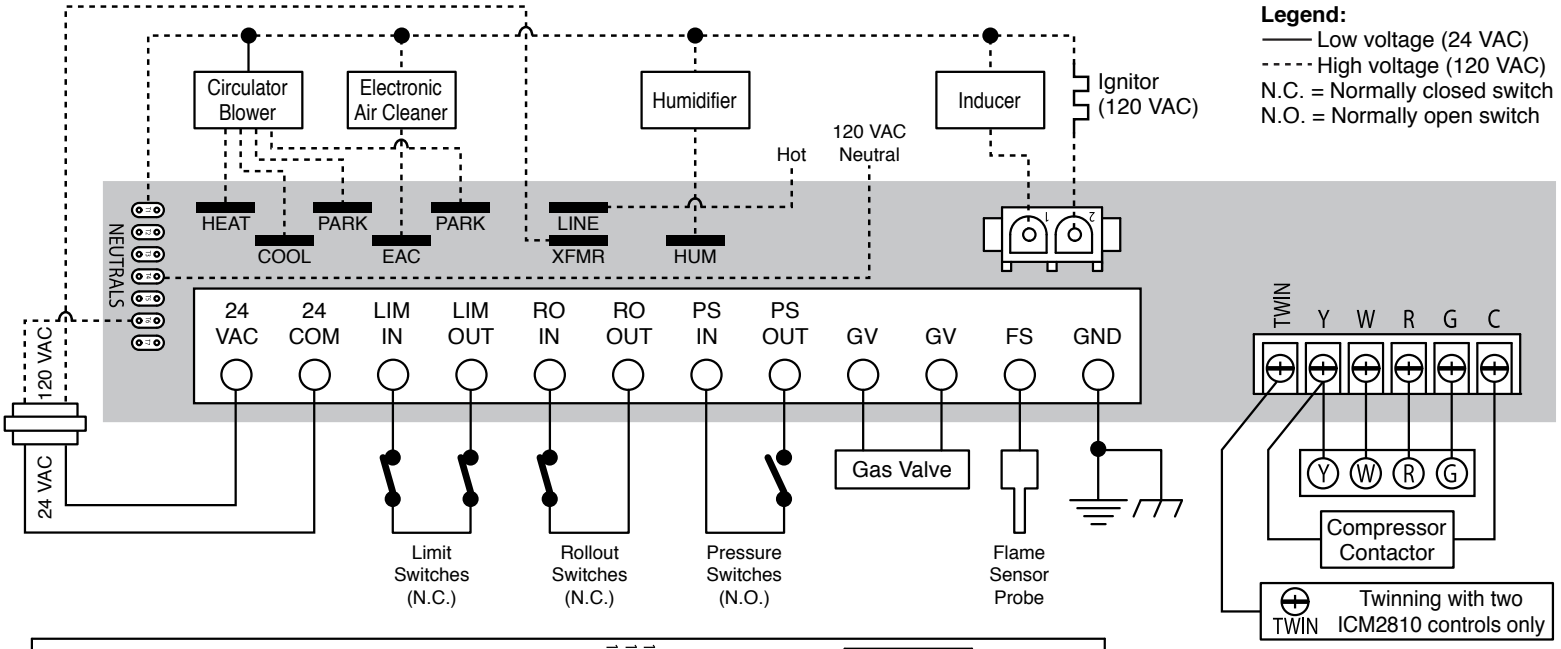
Main Operation:

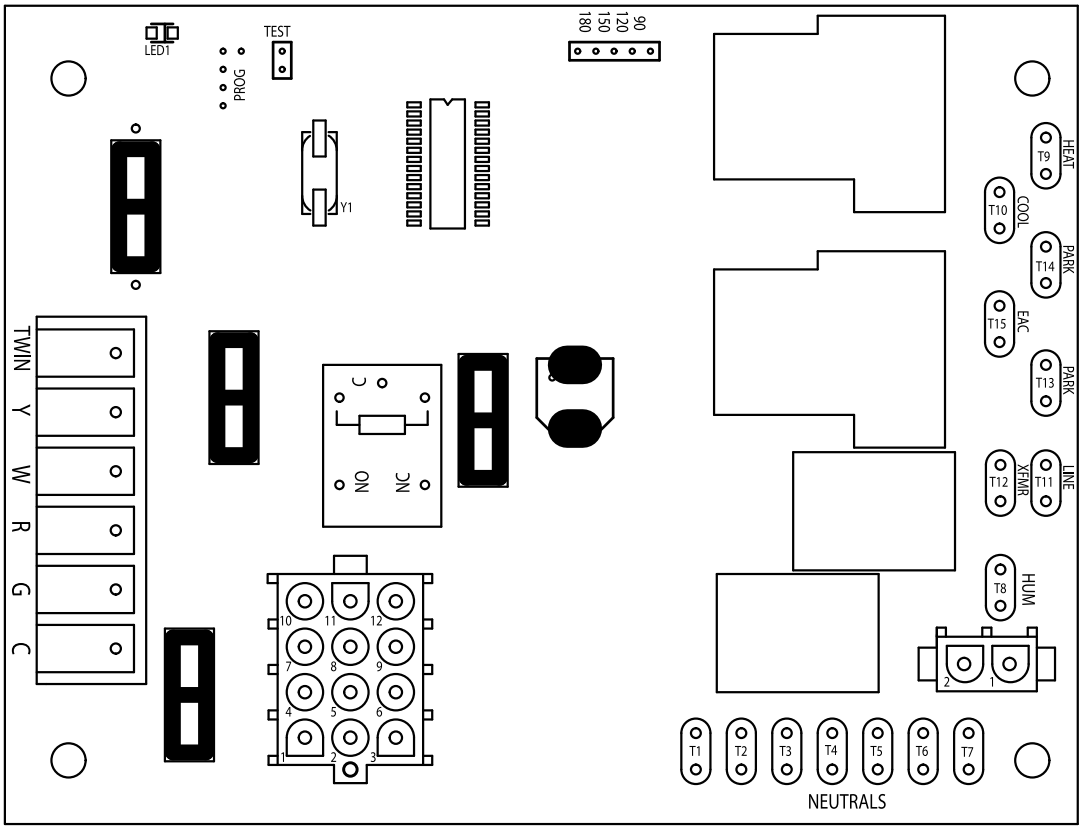
On the application of power, the control will continuously monitor the rollout switch, limit switch, pressure switch, gas valve output and flame sense. During a **Call for Heat**, the control makes sure the limit switch is closed and the pressure switch contact is open before turning on the Inducer blower, which will be energized for 15-seconds in a pre-purge mode. Following the pre-purge period, the pressure switch contact is closed and power is applied to the hot surface ignitor (there is a 18-second warm-up period). The gas valve is energized if a flame is sensed during this trial-for-ignition period, the blower motor will turn on following a 30-second delay. When the call for heat ends, the control will turn off the gas valve, the inducer blower will turn off after a 15-second post-purge period, and the heat blower will turn off after the jumper-selectable period of time (if jumper is missing, default Heat Blower Off delay is 120 seconds). During a **Call for Cool**, the control will energize the cool blower after a 5-second delay. When the call for cool ends, the control will turn the cool blower off after a 45-second delay.

Twinning:

The **ICM2810** is Twinning compatible with another **ICM2810** control board only. By connecting the designated "TWIN" screw terminals and the 24 VAC common together, the controls are designed to turn on/off the blower simultaneously and at the same speed. (NOTE: An external AC relay, whose coil is connected between R & W of the primary furnace and whose normally open contacts connect R & W of the secondary furnace, must be provided to cause both furnaces to heat). A common ground between the two furnaces is also required.

WIRING DIAGRAM





PIN CONNECTIONS	
12-Pin Connections	
Pin 1	Limit switch (W) (input)
Pin 2	Flame sense input
Pin 3	24 VAC input
Pin 4	Pressure switch (output)
Pin 5	Rollout switch (XFMR) (input)
Pin 6	Common
Pin 7	Limit switch (output)
Pin 8	Gas valve common
Pin 9	Common
Pin 10	Pressure switch (input)
Pin 11	Rollout switch (output)
Pin 12	Gas valve output

2-Pin Connections	
Pin 1	Inducer blower
Pin 2	Hot surface ignitor

FAULT CODES

LED	FAULT CONDITION
ON	No fault
OFF	Control failure
1 flash	System lockout
2 flashes	Pressure switch stuck closed
3 flashes	Pressure switch stuck open
4 flashes	Open limit switch

LED	FAULT CONDITION
5 flashes	Flame has been sensed when no flame should be present
6 flashes	Open rollout switch
7 flashes	Low flame sense signal
8 flashes	C terminal must be grounded to frame of furnace or you have a faulty thermostat
Continuous Flashing	115 VAC AC power reversed

Service Bulletin

SF-073 Rev.4
SUPERSEDES SF-073r3

DATE: December 7, 2017
TO: All Service and Parts Managers
SUBJECT: Furnace Control Board; flame sensed when no flame should be present

We have identified an issue with certain White Rodgers furnace ignition controls failing and reporting a 1 or 5 flash error code on non-communicating furnaces or an E4 error code on communicating furnaces. These controls are used in all single stage, two stage and communicating models. *Modulating and Hybrid furnaces are not affected*.

The flash code descriptions are: 5 flash (PCBBF134/136/140), flame sensed without gas valve and 1 flash (PCBBF139), flame sensed when no flame should be present and E4 (PCBKF105) flame sensed when no flame should be present. This is being caused by a component failure in the flame sense circuit and prevents the furnace from being reset.

The White Rodgers furnace ignition controls affected are; ***PCB Part #'s PCBBF107/107S, PCBBF124S, PCBBF134/134S, PCBBF136/136S, PCBBF139/139S/139SK, PCBBF140/140S and PCBKF105/105S*** with a date code of 1734 through 1743 as circled in the picture in figure 1. *Boards with a date code of 1733 and prior, or 1744 and later, are not affected.*



Figure 1

The model prefixes that used these control boards are:

Single Stage				Two Stage			Communicating Models		
ACSS9	GCSS9	DC92SS	VDS80	ACEC96	GCEC96	DC96VE	ACVC8	GCVC8	DC80VC
ADSS80	GDS8	DD80SS	VMS80	AMEC96	GMEC96	DM96VE	ACVC96	GCVC96	DC96VC
	GHS8	DM80SS	VMS81				AMVC8	GMVC8	DM80VC
AMS8	GMS8	DM92SS	VMSS96				AMVC96	GMVC96	DM96VC
AMSS9	GMSS9		VCSS96						

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Control boards with the suspect date codes were used in furnaces as listed above produced in September and October. The furnace serial number prefixes affected are 1709xxxxxx and 1710xxxxxx. Note, not all of the furnaces produced in this serial range will have control boards in the suspect range.

For the Communicating Models, the vast majority of 1709 serial number prefixes were produced with boards prior to the affected date range.

We are requesting that all service inventory of the furnace control boards listed above be inspected to determine if the date code falls within the suspect range and that those boards be quarantined and returned to Goodman for credit. Contact your Goodman CSR for RMA requests. The date code can be found on the box label as shown on the right or on the label on the board.



We are also asking that the furnace models listed above be inspected and if the control board date code is between 1734 and 1743 that these units also be quarantined. Furnaces can be repaired with a replacement board not in the affected date range or returned for credit. Contact your Goodman CSR for RMA requests. Your Goodman CSR can also provide a list of furnace serial numbers with the affected boards to assist in inspecting inventory. This will eliminate the need to open the furnace and check the label on the board.

The furnace models listed above shipped after October 31, 2017 have been inspected and are not affected, these units can be identified by the Green dot on the traveler label.

The ignition control part numbers listed above shipped after October 31, 2017 with a date code on the box or on the control of 1733 and prior or 1744 and later are not affected. Any controls you have in the affected date range may be returned for credit, contact your CSR if returning these controls.

For units that have been installed Goodman will pay “Class A” labor for replacement of the control board part numbers within the date code range listed above on products with serial number prefixes of 1709 and 1710.

For Distributors who wish to repair affected units in their inventory, Goodman will pay $40 per unit to replace the board. Do not file claims through Warranty Express, you must complete the Dist Rework Report Form provided, listing all units in inventory where the board has been replaced. We request that this form be returned in digital format on the spreadsheet provided rather than scanned PDF’s, faxed or handwritten copies. If desired we can provide a pre-populated spreadsheet with the models and serial numbers that were shipped to a specific distributor location. Contact TechServices@goodmanmfg.com if you prefer to have this pre-populated version.

Included with this bulletin are the recommended inventory repair procedures.

Claims for installed units **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number **8772**. **The claim for the part and labor should be filed as one claim, using the Dealer’s account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty**. All claims for this project must be submitted by December 31, 2018.

Please contact Technical Services at TechServices@goodmanmfg.com if you have any questions.

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November 29, 2017 update: The failure described above is due to a transistor in the flame sensing circuit. Additional investigation has found that during the affected date range as described above there were two transistor suppliers used. Supplier “A” is not affected by the flame sensing issue described above while supplier “B” is expected to have a 100% failure rate.

Regarding installed units, our testing has shown that boards with supplier “B” transistor fail rather quickly and if the furnace has operated for approximately 1 month (assuming at least one cycle per hour) then this board likely has supplier “A’s” transistor and will not be affected by this issue. If this is the case, we do not recommend changing the board. While we cannot determine all of the serial numbers of the units with supplier “A” transistors, this may constitute a large percentage of the units already installed.



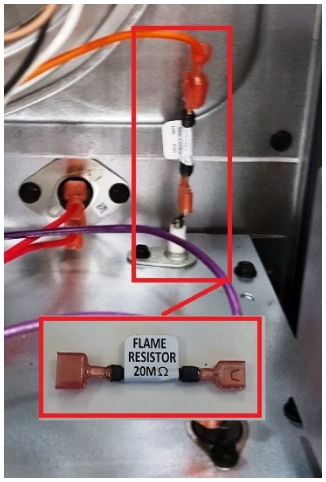


However, for some units we are able to identify serial numbers that are not affected. In these cases the unit and board may be in the date ranges described above but the boards have supplier “A” transistor installed and as such are unaffected. These boards are marked with a green dot or stripe as shown in the two pictures on the right. In addition, some units with good transistors were shipped prior to the original service bulletin and in these cases distribution has been provided with a list of serial numbers that do not require a board change. These units will not have the green mark on the label. If you need a copy of this list contact your Goodman CSR.

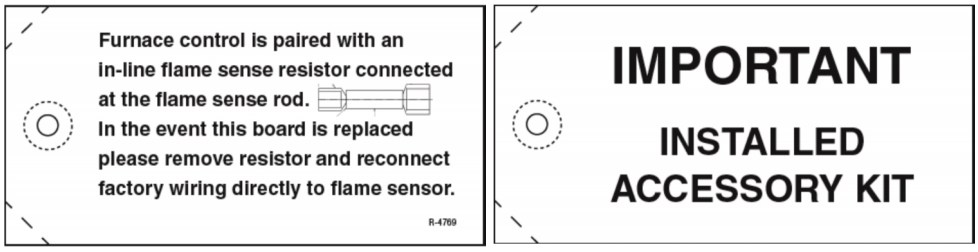
There were a small number of communicating furnaces released with PCBKF105 boards and 1744 date code boards that also contained the bad transistor. Your Goodman CSR has already provided a list of these serial numbers that were shipped to your location.

You should check your service parts inventory of PCBKF105S boards and if any are found with date codes between 1734 and 1744 you should contact your CSR for a return authorization.

December 7, 2017 update: On some 80% furnaces in the affected date range as described above you may observe an additional component connected to the flame sensor as shown on the right. This resistor is installed to improve the reliability of the board on these models and is only for use with the installed board. These boards will also have the green dot or stripe as shown above.



There is also a hang tag attached next to the board as shown on below notifying the servicer of this additional component and to remove it if the board is later replaced. If the board is changed at a later date the resistor should be removed from the flame sensor as well as the hang tag and discarded.



Please contact Technical Services at TechServices@goodmanmfg.com if you have any questions.

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Service Bulletin

SF-072R1

DATE: October 23, 2017

TO: All Service and Parts Managers

SUBJECT: PCBBF112S Service Control Board Without Terminal Designations

Technical Services has identified that furnace service control board Part # PCBBF112S may not contain the silkscreen labeling with the terminal designations on the board as shown in Figure 1A. Figure 1B shows what the board would look like if it contained the terminal identifiers. Any shipment of these service furnace control boards Part # PCBBF112S that you received after August 1, 2017 could be affected by this lack of labeling.

Please inspect your inventory of PCBBF112S's to get a count of the number of boards with the missing silkscreen terminal designations. For PCB's with missing silkscreen terminal designations, we are making available a sticker that is to be affixed to the top of the relays as shown in Figure 2.



Figure 1A

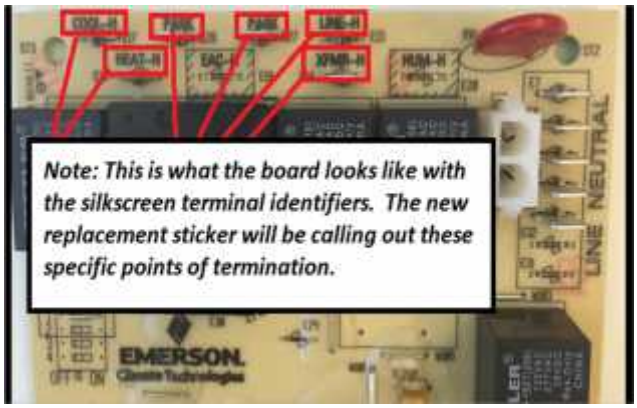


Figure 1B

Please contact your CSR to order the required quantity of ***part number 50A55-289*** labels which will be provided at no charge. PCBBF112S's shipped after October 3, 2017 have been inspected and have the terminal designation label affixed to the board. These can be identified by the green dot on the multipack box as shown in Figure 3, or the individual pack box as shown in Figure 4.



Figure 2



Figure 3



Figure 4

Please contact Technical Services at TechServices@goodmanmfg.com if you have any questions.

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Service Bulletin

SF-071D

DATE: June 13, 2017
TO: Daikin® brand Sales and Distribution
SUBJECT: Use of Furnaces for Construction Heat

The Daikin business unit supports the coalition of furnace manufacturers led by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) to prohibit the future use of gas furnaces as construction heaters. The reasons behind this initiative were outlined in HRAI's position paper "Gas Furnace Use in Construction Heat" dated January 29, 2016 which was widely distributed to HRAI members and homebuilders associations across Canada.

All gas furnace manufacturers who are members of HRAI supported this initiative and agreed to update their gas furnace installation manuals to include the following sentence:

> *"Gas furnaces manufactured on or after May 1, 2017 are not permitted to be used in Canada for heating of buildings or structures under construction."*

This letter informs our customers the applicable installation manuals for gas furnaces have been updated to include this sentence as of May 1, 2017.

Stakeholders are developing a checklist to be completed before turning on the furnace. The form requires builders and activating heating contractors to verify that interior drywall installation is complete and primed prior to any steps are taken to activate the furnace. Additionally, the heating contractor is required to verify that a new filter with a minimum MERV 11 rating is installed, the house has been substantially cleaned, and the furnace has been set up per the manufacturer's installation instructions and information on the furnace serial plate.

If you have any questions about this initiative, please contact your local Daikin technical service manager or sales contact.

Service Bulletin

SF-071

DATE: June 13, 2017
TO: Goodman & Amana Sales and Distribution
SUBJECT: Use of Furnaces for Construction Heat

The Goodman & Amana business unit supports the coalition of furnace manufacturers led by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) to prohibit the future use of gas furnaces as construction heaters. The reasons behind this initiative were outlined in HRAI's position paper "Gas Furnace Use in Construction Heat" dated January 29, 2016 which was widely distributed to HRAI members and homebuilders associations across Canada.

All gas furnace manufacturers who are members of HRAI supported this initiative and agreed to update their gas furnace installation manuals to include the following sentence:

> *"Gas furnaces manufactured on or after May 1, 2017 are not permitted to be used in Canada for heating of buildings or structures under construction."*

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If you have any questions about this initiative, please contact your local Goodman & Amana technical service manager or sales contact.

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Service Bulletin

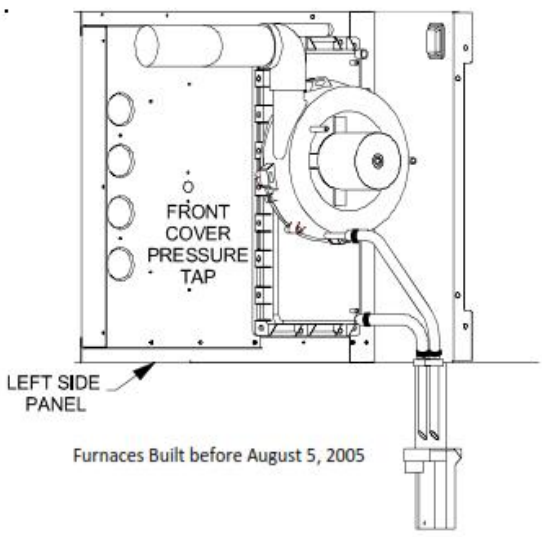
SF-070

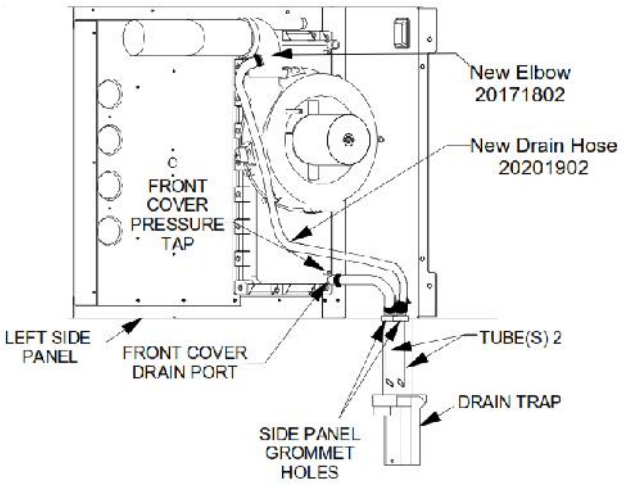
DATE: March 23, 2017
TO: All Service and Parts Managers
SUBJECT: Drain Port on Inducer

On 90% furnaces installed in the **Horizontal Left Position** manufactured before August 5, 2005, the vent condensate was removed through the drain port on the inducer housing. The current replacement inducer does not have the drain port on the inducer housing, so if you have to replace the inducer on furnaces manufactured before August 5, 2005 you will need to use the new drain elbow Part # 20171802 and drain hose Part # 20201902 to remove the condensate from the vent. Refer to instructions and illustration below.

Instructions:

1. Loosen the hose clamps and remove the old drain elbow.
2. Add the new drain elbow Part # 20171802S and reuse the old hose clamps and tighten.
3. Remove the plug from the drain port in the center of the drain elbow, add the dain hose Part # 20201902 and tighten field supplied hose clamp.
4. Attach the drain hose to the tube at the drain trap and tighten the field supplied clamp.
5. Refer to illustrations below.





Horizontal Connections - Left Side Down
(Upflow Shown, Counterflow Similar)

For furnaces using the alternate flue connection in the horizontal left position, you can use the RF000142 kit and follow the instruction provided in the kit.

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Service Bulletin

Important Safety Notice

SF-069 Rev 1

DATE: January 19, 2017

TO: All Service and Parts Managers

SUBJECT: Motor Harness on Certain 80% Multi-Speed ECM Model Furnaces

AMEH80, DM80HE and GME8 model furnaces manufactured from September 2016 through December 2016 (serial number prefixes 1609 through 1612) were produced with an incorrectly configured harness as supplied from the vendor.

If the blower door is removed and the safety switch disabled or bypassed, and the motor has an electrical short to ground, there is a potential shock hazard if the blower motor or blower wheel is contacted.

We are requesting all inventory of the following models be put on hold until the 0130M00073 Motor Power Harness can be corrected as described below.

DM80HE0603BNAA	AMEH800603BXAA	GME80603BNBB
DM80HE0603BXAA	AMEH800805CXAA	GME80603BXBB
DM80HE0805CNAA	AMEH800805DXAA	GME80805CNBB
DM80HE0805CXAA	AMEH801005CXAA	GME80805CXBB
DM80HE0805DXAA		GME80805DXAA
DM80HE1005CNAA		GME81005CNBB
DM80HE1005CXAA		GME81005CXBB

Also, any service parts inventory of the 0130M00073 Motor Power Harness in your possession should be inspected to ensure proper wire positioning. The Green/Yellow wire should be in the third slot of the connector and there should be an empty slot between the Green/Yellow and White wires as shown in the correct image in Figure 1.

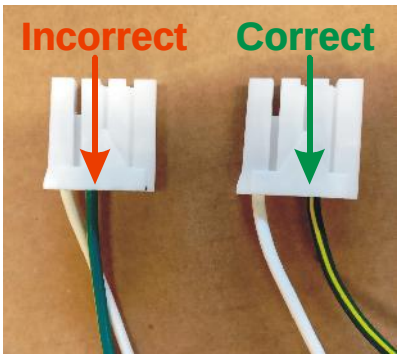


Figure 1

Any incorrectly-configured harnesses should be quarantined and held for disposition. Contact your Goodman CSR to order replacement 0130M00073 Power Harnesses for service inventory.

For both inventory and installed units the repair will consist of installing kit "**GMEGNDWIRE** " which includes an additional Green ground wire to be added to the connector and attaching this new wire to the blower housing as described below. Note there were some units produced with 1609 serial number prefixes that have the correct wiring harness configuration as shown in Figure 1. If while inspecting it is found that the harness is wired as shown on the right (Correct) in Figure 1, kit installation is not needed.

All units shipped after January 9, 2017 have been reworked at the factory and can be identified by the Blue Dot on the traveler label.

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Repair Procedure

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

1. If installed, disconnect power supply to unit.
2. Remove the blower access door.
3. Unplug the motor connector which contains the Green/Yellow and White wires as shown in Figure 2.
4. Viewing the connector with the White wire on your left, insert the new Green/Yellow wire supplied into the third slot in the connector as shown in Figure 3. The wire terminal can only be inserted in the correct orientation; note the orientation of the other terminals.
5. You should hear a slight click as the terminal locks into the connector. Give a gentle tug on the wire to ensure the terminal is properly seated.
6. Reconnect the motor connector removed in step 3 above.
7. Using the screw provided, attach the eyelet end of the Green/Yellow wire to the blower housing as shown in Figure 4.
8. Use an ohmmeter to measure from the unpainted motor endbell to the blower housing to test the new ground wire just installed as shown in Figure 5. It should read continuity. *Shown with blower removed for clarity.*
9. Install blower access door and reconnect power supply to unit.

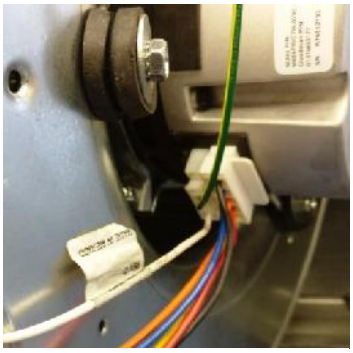


Figure 2

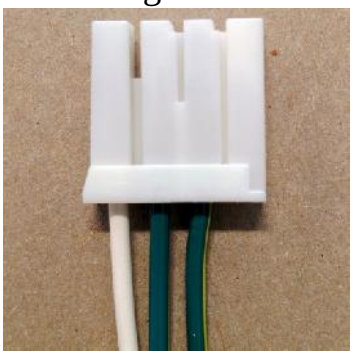


Figure 3

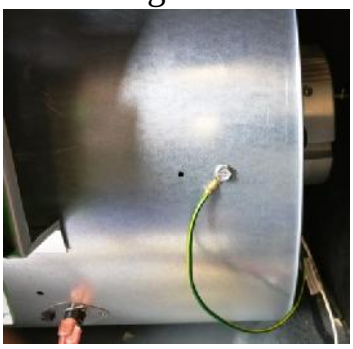


Figure 4



Figure 5

For uninstalled/inventory units Goodman will pay $25 labor for installing the "GMEGNDWIRE" kit as described above*. Please use the supplied Excel claim summary form, listing all units reworked in inventory, so labor and part can be paid against the quantity reworked. All completed Excel claim forms for uninstalled and inventory units must be sent to techservices@goodmanmfg.com. *Do not file for warranty through Warranty Express as this will start the warranty clock.*

For installed units Goodman will pay Class A labor for installing the "GMEGNDWIRE" kit as described above*. For all units installed February 1, 2017 or later, it is expected these units should be repaired prior to installation, so Class A labor will not be paid for installed units with an install date of February 15, 2017 or later.

*includes inspection of 1609 serial prefix units that do not require the "GMEGNDWIRE" kit.

Claims for installed units **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8760***. **The claim for the part and labor should be filed as one claim, using the Dealer's account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2017.

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Service Bulletin

SF-068

DATE: November 8, 2016

TO: All Service and Parts Managers

SUBJECT: Production Control Board Change - *MSS96 / *CSS96 Model Furnaces

Beginning in October 2016 we will discontinue the use of the PCBBF138 control board in production on Amana® and Goodman® *MSS96 / *CSS96 96% single stage furnaces. The PCBBF138 control board will be replaced in production by the PCBBF140 control board starting with serial number with 1610******. The PCBBF140 control board has the added feature of a twinning terminal, which allows you to twin two **SS96 model furnaces together without the use of a twinning kit. The new PCBBF140 control board will be backwards compatible with the PCBBF138 control board.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Installation Instruction:

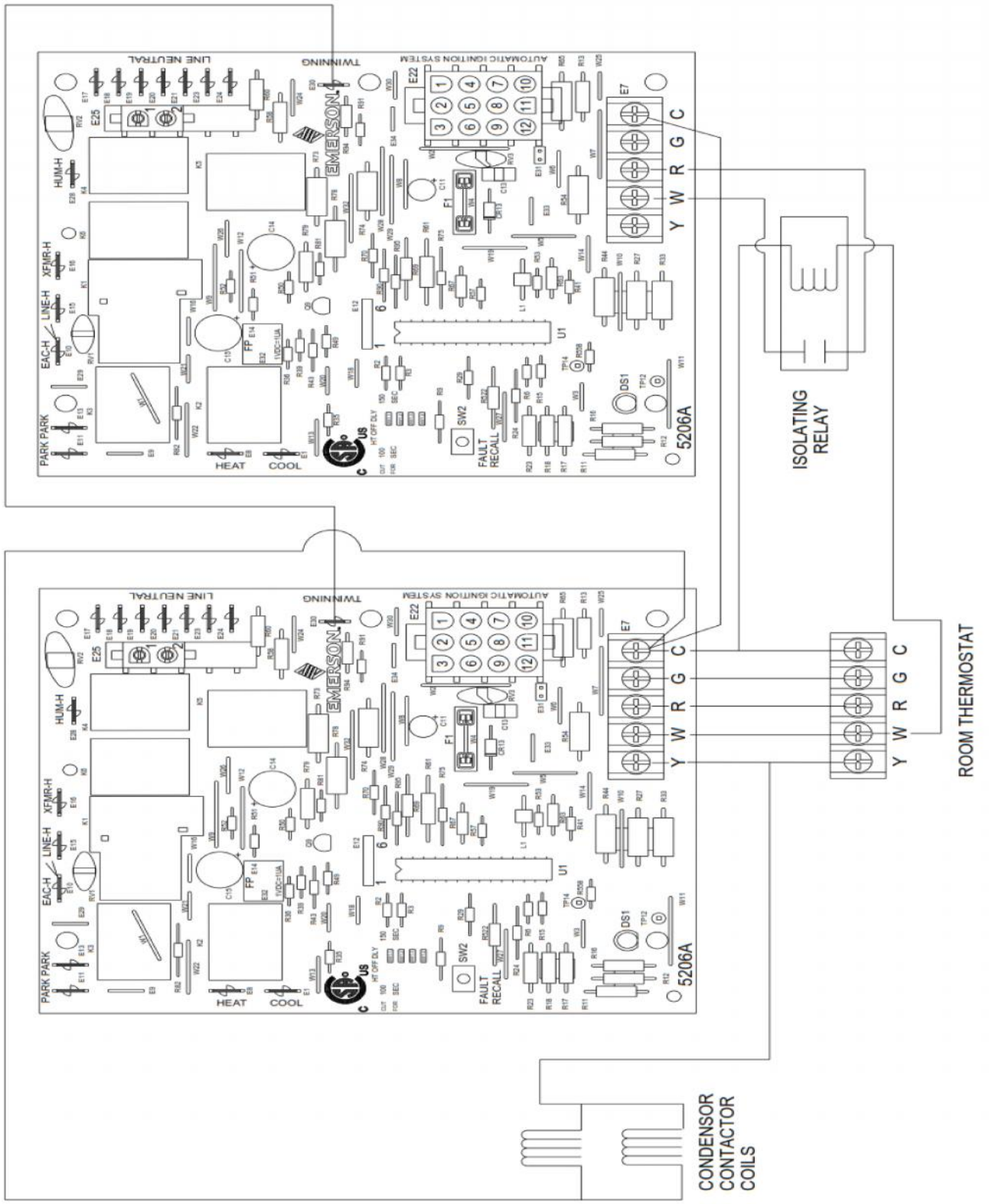
Furnaces may be twinned without the use of a twinning kit. Furnaces must be the same model and equipped with PCBBF140 control boards. Follow the diagram provided in this manual. Connection of the “twin” terminals of each control together will allow simultaneous operation of two or more furnace indoor blowers to operate synchronously on a common duct system. Field installed low voltage thermostat wiring, 3/16" terminals are required to make this connection. An isolating relay (24 VAC coil & N/O SPST) contacts is also required if the furnaces are not fed from the same line voltage phase. A pulsing DC signal is used to share the call for fan operation between furnaces. The duration of the pulse width determines the speed that the reading control will energize its blower motor.

Error Code:

• Circulating blowers not operating simultaneously No blower operation.	9 FLASHES	• Twinning Fault	• Furnace twin terminals not connected together by field wiring. • Isolating relay not used or improperly installed	• Install field wiring connecting twin terminals, Check continuity of wiring. • Verify each furnace fan Motor is operable without twinning connection. • Wire per twinning diagram In this installation manual	• Verify line voltage supply is turned off before proceeding with corrections.

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Wiring Diagram:



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Service Bulletin

SF-067

DATE: March 4, 2016
TO: All Service and Parts Managers
SUBJECT: E0 Lockout *MVM96 & DM96MC

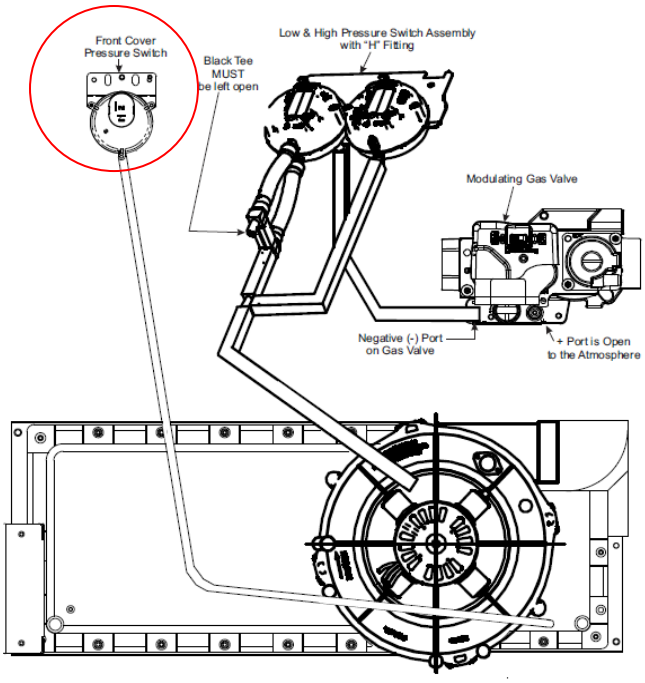
If experiencing nuisance or unexplained lockout (E0 Lockout Code Displayed on 7-Segment Display) on the 40” modulating furnaces; it may be due to moisture in the front cover pressure switch tube causing the pressure switch to open.

If you experience this condition on 40” tall modulating furnace models *MVM96 & DM96MC in an **up-flow application only** the front cover pressure switch should be disconnected (see instructions below). The furnace still has the Induced Draft Blower Low Pressure Switch, which can shut the furnace down due to a blocked drain.

WARNING

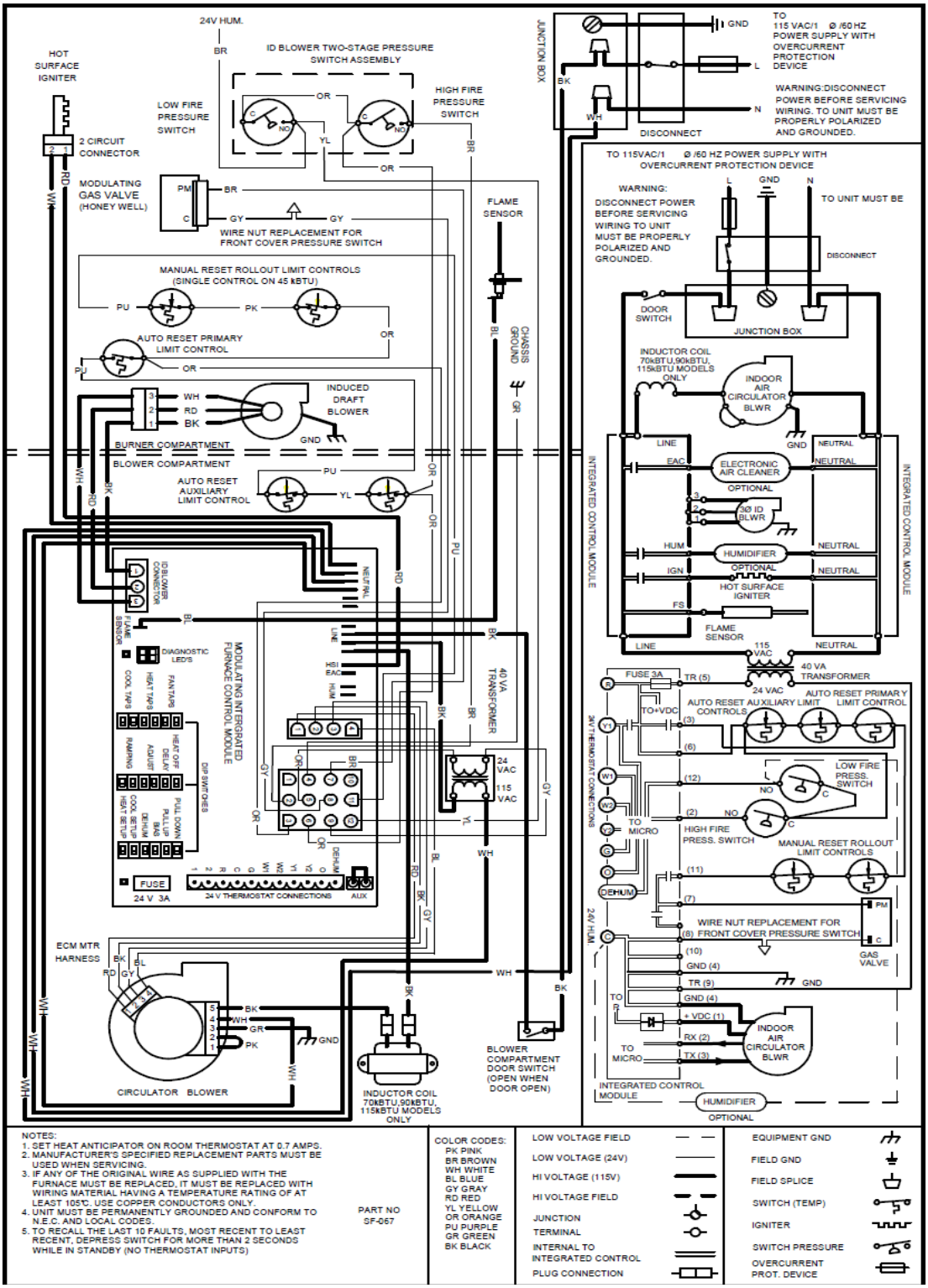
HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

Disconnnect electrical power, then remove the wires from the front cover pressure switch and cut the spade terminal from the wires. Strip the end of the wires and wire nut the wires together.
(Refer to wiring diagram on Page 2)



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Wiring Diagram is in reference to Service bulletin SF-067
Print wiring diagram and leave with furnace.



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Service Bulletin

SF-066 Rev.1
Supersedes SF-066

DATE: August 27, 2015

TO: All Service and Parts Managers

SUBJECT: Production Control Board Change – 80% Single Stage Furnaces

Early in September 2015 we will discontinue the use of the PCBBF123 control board in production on the 80% single stage furnaces. The PCBBF123 control board will be replaced in production by the PCBBF134 control board. The PCBBF123S control board will continue to be available as a service part for furnaces built with PCBBF123. The PCBBF112S control board is also available as a service replacement for early revision single stage furnaces built with EAC and HUM accessory terminals.

PCBBF134 & PCBBF123(S) control boards are *NOT* interchangeable. Likewise 0130F00008 & 20165703 igniters are *NOT* interchangeable. It is necessary to know the complete model and serial number of the furnace with major & minor revision characters to correctly identify service parts.

Furnaces built with the new control board will see a change to the model number minor revision. The models listed below are the first revision with the PCBBF134 control board. Along with the control board change, the igniter and igniter harness will also change. The 0130F00008 silicon nitride igniter has been widely used on many of our other furnaces and will now be used on the new revision 80% single stage furnaces with the PCBBF134 control. The PCBBF134 control & 0130F00008 igniter use seventeen second igniter warm up time, unlike the PCBBF123 control & 20165703 mini igniter which use seven second warm up time. ***NOTE: The service replacement for the PCBBF134 is the PCBBF138S***.

Amana® Brand	Daikin Brand	Goodman® Brand	Goodman® Brand
ADSS800403AXAC	DD80SS0403AXAC	GDS80403ANBD	GMS80603ANBD
ADSS800603AXAC	DD80SS0603AXAC	GDS80403AXBD	GMS80603AXBD
ADSS800804BXAC	DD80SS0804BXAC	GDS80603ANBD	GMS80604BNBD
ADSS801005CXAC	DD80SS1005CXAC	GDS80603AXBD	GMS80604BXBD
AMS80403AXAC	DM80SS0403AXAC	GDS80804BNBD	GMS80804BNBD
AMS80603AXAC	DM80SS0603AXAC	GDS80804BXBD	GMS80804BXBD
AMS80604BXAC	DM80SS0604BXAC	GDS81005CNBD	GMS80805CNBD
AMS80804BXAC	DM80SS0804BXAC	GDS81005CXBD	GMS80805CXBD
AMS80805CXAC	DM80SS0805CXAC	GHS80403AXBC	GMS81005CNBD
AMS81005CXAC	DM80SS1005CXAC	GHS80604BXBC	GMS81005CXBD
AMS81205DXAC	DM80SS1205DXAC	GHS80805CXBC	GMS81205DNBC
AMS81405DNBC	DM80SS1405DNAC	GMS80403ANBD	GMS81205DXBC
		GMS80403AXBD	GMS81405DNCE

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Service Bulletin

SF-065

DATE: August 12, 2015

TO: All Service and Parts Managers

SUBJECT: Modulating Furnace - Gas Manifold Pressure / Valve Adjustment

In the event of low manifold gas pressure, loss of flame, or low flame signal fault alerts on modulating furnaces, perform the following steps to determine if gas valve adjustment is necessary. All other potential issues must be considered before adjusting manifold pressure such as inadequate gas supply pressure or condensation causing the blocked drain switch to go open, breaking the 24 volt circuit to the gas valve. Follow this procedure to adjust the gas valve / manifold pressure if necessary. Before adjusting gas valve / manifold pressure, verify adequate gas supply pressure by measuring gas supply pressure during ignition. Gas supply pressure must be within the range shown in the chart below. Do not attempt to adjust manifold gas pressure if supply pressure is outside the appropriate gas pressure range shown below.

Inlet Gas Supply Pressure		
Natural Gas	Minimum 4.5" w.c.	Maximum 10" w.c.
L.P. Gas	Minimum 10" w.c.	Maximum 13" w.c.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



1) Turn off gas supply to the furnace at the manual gas shutoff valve external to the furnace.
2) Turn off electrical power to furnace.
3) Connect a manometer or appropriate gas pressure gauge to the 1/8” NPT inlet pressure tap on the gas valve.
4) Connect a second manometer or appropriate gas pressure gauge to the 1/8” NPT outlet (manifold) pressure tap on the gas valve.
5) Turn on gas supply to the furnace and verify inlet manometer connection is leak free before proceeding.
6) Set control board DIP switch #13 to “ON”
7) Jumper R to W1 on control board low volt terminal strip.
8) Turn on all gas appliances before starting furnace to verify adequate supply pressure.
9) Turn on electrical power to the furnace. Observe and record the gas supply pressure during ignition. If gas supply pressure is not within the range shown above, contact your gas supplier to correct the gas supply pressure; do not make adjustments to the gas valve.
10) If gas supply pressure is within the acceptable range, proceed with gas manifold pressure check.

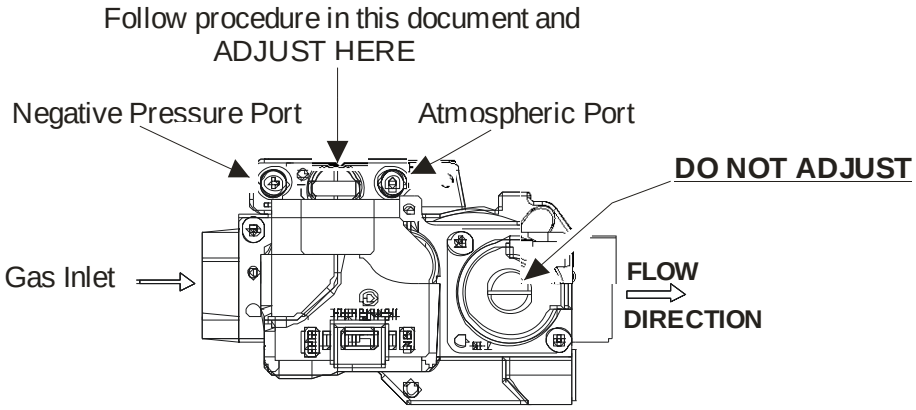
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NOTE: Normal firing rate sequence is as follows for DIP switch #13 in the "ON" position and 24 volts on W1; a) Trial for ignition & flame stabilization period –approximately 17 seconds at 80% rate. b) 35% rate for approximately 2 minutes. c) 50% rate for 8 minutes.

11) Observe and record gas manifold pressure during the 50% firing rate. The gas manifold pressure at 50% firing rate must be within the appropriate range shown below. If manifold pressure is found to be within the acceptable range, do not adjust gas valve.

Manifold Gas Pressure @ 50% Firing Rate		
Natural Gas	Minimum .9" w.c.	Maximum 1.2" w.c.
L.P. Gas	Minimum 2.6" w.c.	Maximum 3.3" w.c.

12) If manifold pressure is found to be lower than acceptable (less than .9" wc for natural gas, less than 2.6" WC for LP gas) turn the fine adjustment screw counterclockwise slightly (¼ - ½ turn) and observe manifold pressure. The fine adjustment screw is located between the atmospheric and negative air ports and extends from the base of the valve as shown in the illustration below. Adjust in small increments using the fine adjustment screw only, until manifold pressure is within the acceptable range. **DO NOT ADJUST** the max regulator screw located on top the gas valve.



13) If manifold pressure is found to be higher than acceptable (more than 1.2" wc for natural gas, more than 3.3" WC for LP gas) turn the fine adjustment screw clockwise slightly (¼ - ½ turn) and observe manifold pressure. The fine adjustment screw is located between the atmospheric and negative air ports and extends from the base of the valve as shown in the illustration below. Adjust in small increments using the fine adjustment screw only, until manifold pressure is within the acceptable range. **DO NOT ADJUST** the max regulator screw located on top the gas valve

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Service Bulletin

SF-064

DATE: May 1, 2015

TO: All Service and Parts Managers

SUBJECT: 34.5" Chassis High Efficiency Furnace Venting Tables

We have recently had changes to many of our venting tables for 34.5" chassis furnaces. Since the launch of our new furnace line in 2014 we have changed some figures for minimum pipe diameter and maximum allowable linear feet of venting as well as the maximum number of elbows allowed. In some instances the installation manual shipped with a furnace may not be the most up to date version. Current installation manuals are available on the following websites: www.daikincomfort.com www.amana-hac.com and www.goodmanmfg.com

When planning and sizing vent systems, especially when long vent lengths may be necessary, please refer to the venting table in the latest installation manual available. The following chart shows literature numbers for installation manuals with current vent tables at the time of this writing.

Daikin Models				
IOD-2010A/B	IOD-2009A/B	IOD-2011B/C	IOD-2008A	IOD-2007B **
DM92SS	DM96HS	DM96VE	DM96VC	DM97MC
DC92SS	DC96HS		DC96VC	DC97MC

Goodman & Amana Models			
IOG-2009A/B	IOG-2011B/C	IOG-2008A/B	IOG-2007B **
MSS9	*MEC96	*MVC96	*MVM97
CSS9		*CVC96	*CVM97

** = Installation Manual in Progress – Table on page 2

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Number of Elbows	Size	1	2	3	4	5	6	7	8
DM97MC0603BNAA	**2 or 2 1/2**	115	110	105	100	95	90	85	80
	3	137	130	123	116	109	102	95	88
DM97MC0803BNAA	**2 or 2 1/2**	115	110	105	100	95	90	85	80
	3	147	140	133	126	119	112	105	98
DM97MC0804CNAA	**2 or 2 1/2**	60	55	50	45	40	35	30	25
	3	120	113	106	99	92	85	78	71
DM97MC1005CNAA	**2 or 2 1/2**	40	35	30	25	20	15	10	5
	3	144	137	130	123	116	109	102	95
DM97MC1205DNAA	**2 or 2 1/2**	40	35	30	25	20	15	10	5
	3	144	137	130	123	116	109	102	95
DC97MC0603BNAA	**2 or 2 1/2**	95	90	85	80	75	70	65	60
	3	144	137	130	123	116	109	102	95
DC97MC0803BNAA	**2 or 2 1/2**	95	90	85	80	75	70	65	60
	3	144	137	130	123	116	109	102	95
DC97MC0804CNAA	**2 or 2 1/2**	60	55	50	45	40	35	30	25
	3	120	113	106	99	92	85	78	71
DC97MC1005CNAA	**2 or 2 1/2**	40	35	30	25	20	15	10	5
	3	103	96	89	82	75	68	61	54

Number of Elbows	Size	1	2	3	4	5	6	7	8
***MVM970603BNAA**	**2 or 2 1/2**	115	110	105	100	95	90	85	80
	3	137	130	123	116	109	102	95	88
***MVM970803BNAA**	**2 or 2 1/2**	115	110	105	100	95	90	85	80
	3	147	140	133	126	119	112	105	98
***MVM970804CNAA**	**2 or 2 1/2**	60	55	50	45	40	35	30	25
	3	120	113	106	99	92	85	78	71
***MVM971005CNAA**	**2 or 2 1/2**	40	35	30	25	20	15	10	5
	3	144	137	130	123	116	109	102	95
***MVM971205DNAA**	**2 or 2 1/2**	40	35	30	25	20	15	10	5
	3	144	137	130	123	116	109	102	95
***CVM970603BNAA**	**2 or 2 1/2**	95	90	85	80	75	70	65	60
	3	144	137	130	123	116	109	102	95
***CVM970803BNAA**	**2 or 2 1/2**	95	90	85	80	75	70	65	60
	3	144	137	130	123	116	109	102	95
***CVM970804CNAA**	**2 or 2 1/2**	60	55	50	45	40	35	30	25
	3	120	113	106	99	92	85	78	71
***CVM971005CNAA**	**2 or 2 1/2**	40	35	30	25	20	15	10	5
	3	103	96	89	82	75	68	61	54

In the event of a furnace installed with a vent system meeting the requirements of the installation manual vent table that shipped with the furnace, but does not meet the current installation manual vent table requirements for vent diameter, length and number of elbows, no action is necessary unless furnace operation has been negatively impacted due to the vent system. If furnace operation is unreliable due to vent length, diameter, elbows installed per a pre-revised venting table, the venting should be reworked to comply with the vent table in the current installation manual in the chart above.

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Service Bulletin

SF-063

DATE: May 1, 2015

TO: All Service and Parts Managers

SUBJECT: Furnace S&R (Serial & Rating) Label Located on Blower Door

The purpose of this bulletin is to raise awareness of the S&R rating label location on our new furnace line. With the launch of our 34.5" chassis furnaces in 2014 the furnace rating label is located on the blower door instead of the interior of the side panel in the top of the furnace.

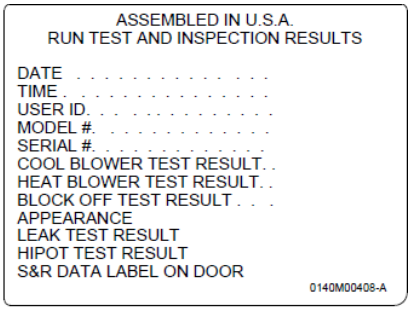
The rating label contains important information including the model and serial number of the furnace. It is important to note that if a blower door ever needs to be replaced because of damage, there is a process that must be followed to obtain a replacement door with a rating label. Regulations prohibit the uncontrolled distribution of rating labels. A damaged blower door that needs to be replaced must not be discarded but must be returned with the rating plate label to the Technical Services Department in order to process the request. Please contact HACPRODSPC@goodmanmfg.com for assistance with this process.

Model and serial numbers can also be found on the furnace run test label and bar code label located on the blower deck. Where multiple furnaces are in one location, care should be taken to ensure that only the matching serialized door is placed on a furnace. A blower door must not be removed from a stock furnace to replace a lost or damaged blower door on another furnace.

Furnace Rating Label Inside of Blower Door



Furnace Run Test Label



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Service Bulletin

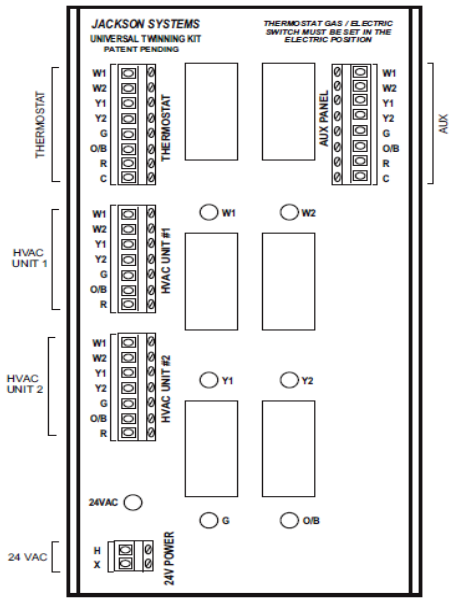
SF-062 Rev.1
Supersedes SF-062

DATE: September 23, 2015
TO: All Service and Parts Managers
SUBJECT: Single Stage Furnace Twinning

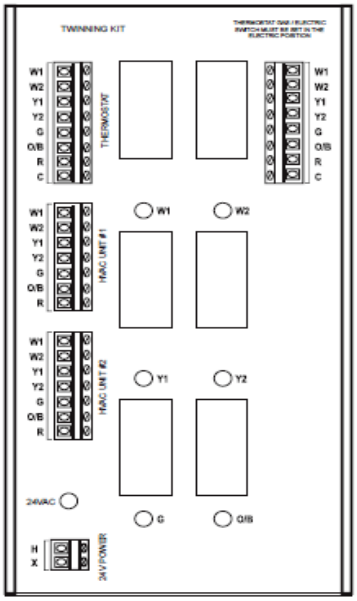
In service bulletin SF-062 we suspended approval of the FTK04 twinning kit for use with *MSS9*, *CSS9*, DC92SS and DM92SS single stage model furnaces. Lab testing following the release of service bulletin SF-062 confirmed that a software conflict does exist between the FTK04 twinning kit and control boards PCBBF134, PCBBF135, PCBBF136 & PCBBF138. Changing the software in the FTK04 or furnace control board to resolve the software conflict is not a practical solution.

We suggest using the TK-400 Twinning Kit by Jackson Systems for twinning *MSS9*, *CSS9*, DC92SS and DM92SS single stage furnaces. This kit is also marketed under the iO Systems brand as “iO-TWIN”. Please see your local distributor for these products. Also, a FSK01A freeze thermostat should be used on each cooling coil if air conditioning units are part of the twinned installation.

We also suggest using the TK-400 or iO-TWIN when twinning the latest revision of our 80% AFUE single stage furnaces built with the PCBBF134 control board.



Jackson Systems “TK-400”



iO Systems “iO TWIN”

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Service Bulletin

SF-061 Rev.1
Supersedes SF-061

DATE: May 13, 2015

TO: All Service and Parts Managers

SUBJECT: Modulating Furnace Service Part Control Board Kits PCBKF201SF & PCBKF202SF

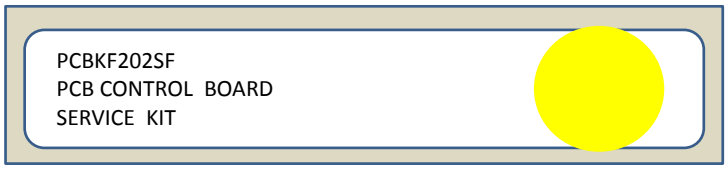
Service Bulletin SF-061 was released in February 2015 requesting that PCBKF201SF & PCBKF202S modulating furnace control board / memory chip kits be returned due to possible corrupt data. Since the release of SF-061 we have continued to receive reports of corrupt data chips in kits produced with Pink or Blue dots. This condition will show up as **d4 or d0 code** on the modulating furnace display and the CTK* communicating thermostat if system is wired up in communicating mode. This potential issue does *not* affect any new furnace products (40" or 34.5" chassis) or single packed control boards PCBKF201S & PCBKF202S.

The issue has been traced to a computer used in the service parts area. This computer has been replaced and the proper programming of chips has been verified with the new computer.

We are asking distributors to return all PCBKF201SF & PCBKF202SF modulating furnace control board kits including kits with Blue or Pink dots. Individual data chips for use with 40" modulating furnaces with part numbers ranging from 0130F00448S to 0130F00468S inclusive should also be returned.

Distributors should contact their CSR to request an RMA to return their current inventory. Replacement PCBKF202SF control board / chip kits and individual chips must be ordered by the distributor from HLC to replace their returned inventory.

New verified PCBKF202SF modulating furnace control board kits as well as individual chips with part numbers ranging from 0130F00448S to 0130F00468S being sent out for distribution after the release of this bulletin will be identified by a Yellow dot until June 30, 2015. Distributors should return their affected stock by June 10, 2015.



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Service Bulletin

SF-060 Rev.1
Supersedes SF-060

DATE: February 16, 2015

TO: All Service and Parts Managers

SUBJECT: **Revised Date for Paid Labor** - Replacement of Front Collector Box Cover on *MSS920803BNAA and DM92SS0803BNAA Model Furnaces

We have discovered that an incorrect front collector box cover (Part # 0161F00068) was used in production on some AMSS920803BNAA, DM92SS0803BNAA and GMSS920803BNAA model furnaces with serial numbers 1501360901 and prior.
The suspect front collector box covers have an undersized orifice, which could cause poor combustion quality. This information pertains only to the specific models listed in this bulletin. We are asking customers check their inventory of these model furnaces and hold any affected furnaces until they are repaired.

All AMSS920803BNAA DM92SS0803BNAA and GMSS920803BNAA model furnaces with serial numbers of 1501360901 and prior that have been reworked at our factory and shipped can be identified by Green dot on the unit traveler label and will not require rework in the field.

All above listed units with serial numbers of 1501360902 and later have the correct collector box cover from manufacturing and not affected. If you need a list of serial numbers shipped to your location including registered units, contact HACPRODSPC@goodmanmfg.com for this report.

A service kit (Part # **FCSS92803K**) has been created for the purpose of repairing these furnaces. This kit contains the correct collector box cover (Part # 0161F00016) with pre-applied gasket as well as a new inducer gasket, spare screws and an instruction sheet. Distributors will need to contact their CSR to order the **FCSS92803K** kits for any affected furnaces they currently have in inventory or have sold.

For products in customer inventory we will pay $40 to replace the front collector box cover and for installed units we will pay ***Class A*** labor. For all units installed April 1, 2015 or later, it is expected these units should be repaired prior to installation, so ***Class A*** labor will not be paid for installed units with an install date of ***April 1, 2015*** or later.

Claims **must** be filed on Warranty Express Authorization Code number ***8715***. The homeowner information including phone number must be included for all claims being submitted for installed furnaces. Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

Claims must be submitted by December 31, 2015.

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Service Bulletin

SF-059

DATE: January 9, 2015

TO: All Service and Parts Managers

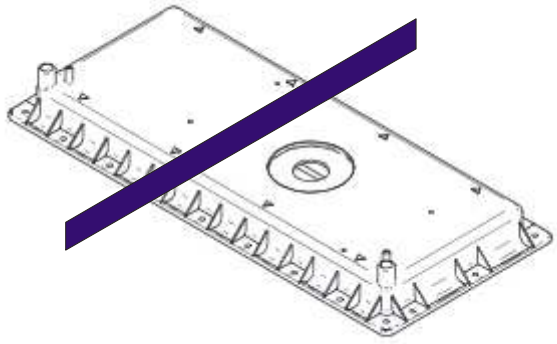
SUBJECT: High Efficiency Furnace Front Collector Box Covers

We have recently received some reports of service part front collector box covers having a cup-shaped depression in the inducer mounting area, not allowing for a good fit up of inducer motor to the front cover. Therefore; we are requesting that all service part front collector box covers with part numbers below be inspected as outlined in this bulletin.

20170901AS	20170905AS	20171001AS	20171005AS	20170801AS	20170805AS	20170809AS
20170902AS	20170906AS	20171002AS	20171006AS	20170802AS	20170806AS	20170810AS
20170903AS	20170907AS	20171003AS	20171007AS	20170803AS	20170807AS	
20170904AS	20170908AS	20171004AS		20170804AS	20170808AS	

Front collector box covers should be checked for flatness by placing a straight edge across the small dimension of the cover on the inducer mounting area as shown below. The maximum depression allowed is 1/8” and any non-conforming collector box covers must be returned to Goodman Service Parts for replacement.

Place straight edge across short dimension



Distributors will need to contact their CSR to request a RMA to return their current inventory of non-conforming front collector box covers and replacement parts will need to be ordered by the distributor from HLC to replace their returned inventory. All parts must be returned for credit prior March 31, 2015.

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Service Bulletin

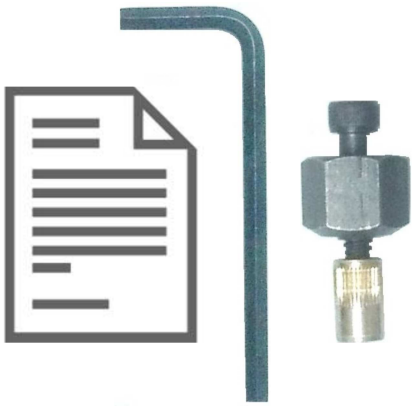
SF-058

DATE: January 7, 2015

TO: All Service and Parts Managers

SUBJECT: Threaded Door Insert Kit FDK01

Our new 34.5” chassis furnaces use thumb screws and threaded inserts to secure furnace doors in place. The threaded insert is crimped in place during assembly at the factory. We now have a Threaded Door Insert Repair Kit available; part # FDK01. Should the need arise to repair a loose or damaged insert, it may be removed and then replaced using the FDK01. The FDK01 is a one-time use kit and contains a new threaded insert and instructions as well as a tool for installing the new insert. A ¼” drill bit can be used to remove a damaged insert if necessary. Replacement door retaining screws are also available to replace a lost or damaged screw and listed in our Repair Part Manuals as “decorative screws” part # M0273904.



FDK01 Contents



M0273904 Decorative Door Screw

The FDK01 threaded insert repair kits and M0273904 decorative door screws are in stock and available to order from Goodman Service Parts Department as needed.

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Service Bulletin

SF-057

DATE: December 11, 2014

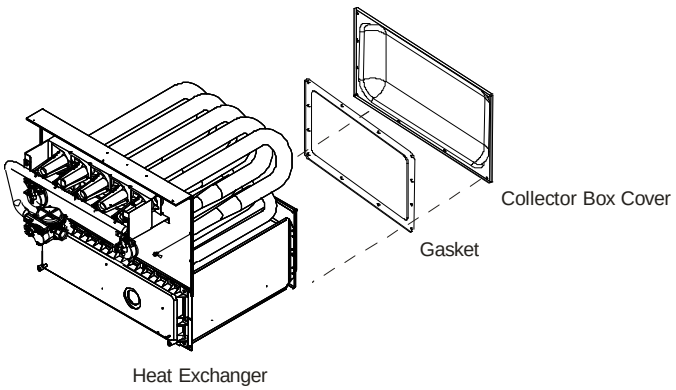
TO: All Service and Parts Managers

SUBJECT: RCGK Rear Collector Box Gasket Kit – 40” High Efficiency Gas Furnaces

We are pleased to announce the availability of the **RCGK** – Rear Collector Box Gasket Service Kit. This kit contains three rear collector box gaskets, one of each size; B, C, and D width, as well as screws and installation instructions. The gaskets contained in the RCGK fit the Amana®, Goodman®, and Daikin brand 40” 92% - 96% AFUE model gas furnaces.

In the event of a cracked or leaking rear collector box gasket, replacing the gasket is a practical alternative to replacing the entire heat exchanger when no other issue exists with the heat exchanger. A failed rear collector box gasket is typically caused by over-firing or long term furnace operation beyond the acceptable temperature rise range. After replacing the rear collector box gasket, the furnace operation must be checked and any excessive temperature or static pressure issues must be corrected. The temperature rise range and other important information can be found on the furnace rating plate. The RCGK is only applicable to the 40” high models in the chart below. Installation Instructions and cautions in the RCGK kit must be followed.

Amana® brand				Daikin brand		Goodman® brand		
ACSH9	AMEH9	DCS9	GUCA	DC96MC	DM96HS	GCH9	GCVM9	GMS9
ACV9	AMH9	DMS9	GULA	DC96VC	DM96MC	GCS9	GKS9	GMV9
ACVC9	AMV9	GCCA	GUSA	DK92SS	DM96VC	GCV9	GME9	GMVC9
ACVM9	AMVC9	GCLA	GUVA	DM96HE	DC96HS	GCVC9	GMH9	GMVM9
AKSS9	AMVM9	GCVA						



These RCGK kits are in stock and available from Service Parts Department.

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Service Bulletin

SF-056

DATE: December 4, 2014

TO: All Service and Parts Managers

SUBJECT: 34.5” Furnace Drain Parts Update

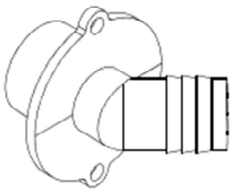
The purpose of this bulletin is to provide information regarding two different condensate drain items used on our new 34.5” chassis 92% - 97% AFUE furnaces.

Item 1:
We are in the process of acquiring a new 45° barb – pipe drain fitting. This fitting (Part # 0161F00048) is shipped with all upflow model furnaces and is mounted to the side of the furnace cabinet during installation. In response to field concerns, the new part will provide a snug fit when connected to a field supplied ¾” PVC fitting. We are expecting to receive these parts from an interim supplier in early December. The part number will not change but the new part will be easily distinguished from the current black fitting by its gray color. We expect to use the gray colored fittings for several months of production and after these parts are depleted, we will begin receiving new parts from our current supplier and the part color will return to black.

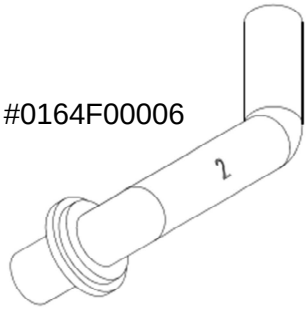
Item 2:
We have recently discovered that a drain hose needed for a downflow model furnace when installed in the horizontal left-side-down position, is missing from the drain parts bag shipped with downflow model furnaces. Beginning with serial date code 1410139051 and later, we have added this part to the drain parts bag shipped with all downflow models. The part number for this hose is Part # 0164F00006, this hose is embossed “2” and identified in the installation manual pictorial as such.

It should be noted that this hose is only required in a very small percentage of installations. The hose Part # 0164F00006 is in stock and can be ordered from Goodman Service Parts Department as needed.

#0161F00048



#0164F00006



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Service Bulletin

SF-055

DATE: November 12, 2014

TO: All Service and Parts Managers

SUBJECT: Changes to Service Parts Control Board for 40” Modulating Furnaces

The purpose of this bulletin is to announce changes to the modulating furnace control board service part offering. Since April 2013, our control board service part for the modulating furnace (PCBKF201SF) has been packaged as a kit which included a set of memory chips. In conjunction with this, we released Service Bulletin SF-049 which explained that a software issue with the PCBKF200 was not allowing the ECM® motor to store data making a memory chip necessary when a control board was replaced and a communicating thermostat was not connected to the system.

Subsequently, the PCBKF201 control board was released in November 2013 and corrected this issue as noted above. This control board has been used in our Modulating Furnace production for several months now with good success. We now offer the PCBKF201S control board packaged without memory chips and available as a service part. We also continue to offer the PCBKF201SF control board kit that contains a set of memory chips.

All 40” chassis Modulating Furnaces manufactured December 2013 and later (serial date code 1312 and later) that require a replacement control board, should use the PCBKF201S service control board, as no memory chip will be needed. All 40” chassis Modulating Furnaces manufactured November 2013 and earlier (serial date code 1311 and earlier) that require a replacement control board, should use the PCBKF201SF service control board kit that contains a set of memory chips.

Should any 34.5” chassis model Modulating Furnace require a replacement control board, the PCBKF201S service control board should be used. It should also be noted that memory chips are model specific and are not interchangeable between 40” chassis models (A/G*VM96, D*96MC) and 34.5” chassis models (A/G*VM97, D*97MC) as the shared data sets differ from each other.

The PCBKF201S is in stock and available to order from Service Parts Department.

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Service Bulletin

SF-054 Rev. 1
Supersedes SF-054

DATE: March 26, 2015

TO: All Service and Parts Managers

SUBJECT: Primary Limit Change on *MEC960603BNAA, *MEC960803BNAA, *MVC960603BNAA,*MVC960803BNAA, DM96VE0603BNAA, DM96VE0803BNAA, DM96VC0603BNAA & DM96VC0803BNAA

In service bulletin SF-054 we announced primary limit changes on *MEC960603BNAA, *MEC960803BNAA, DM96VE0603BNAA & DM96VE0803BN furnaces. Since that time we have conducted further testing both within and outside of design parameters for total external duct static pressure to determine the maximum limit selection on these and other models. Details of furnaces with factory production limit changes are shown in the chart below.

If you are experiencing high limit tripping, first confirm that the furnace is operating in the published total external static range and that the gas pressure is properly adjusted. Since a gas furnace is designed as a ducted appliance and not a stand-alone item, every effort should be made to upgrade sub-standard existing ductwork when a new furnace is being installed as a replacement furnace on existing ductwork. If limit switch replacement is desired on installed furnaces experiencing unresolved high limit tripping, please refer to the chart below for information.

Model	High Limit Part Number	Limit Setting	Production Date
*MEC960603BNAA	20162904	150°	1/30/2015
*MEC960803BNAA	20162904	150°	1/30/2015
*MVC960603BNAA	20162904	150°	1/30/2015
*MVC960803BNAA	20162904	150°	2/13/2015
DM96VE0603BNAA	20162904	150°	1/30/2015
DM96VE0803BNAA	20162904	150°	1/30/2015
DM96VC0603BNAA	20162904	150°	1/30/2015
DM96VC0803BNAA	20162904	150°	2/13/2015

Damage resulting from operation of a furnace at total external static pressure exceeding 0.5” W.C. for heating is not covered by our warranties.

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Service Bulletin

SF-053

DATE: November 3, 2014

TO: All Service and Parts Managers

SUBJECT: Door Switch Bracket for 34.5” Chassis Furnaces

In August 2014 we released our new line of 34.5” chassis high efficiency furnaces and have recently received a few reports of the door safety switches not closing reliably on some of these furnaces.

In response to these reports, we began using a new door safety switch mounting bracket in production on October 20, 2014 (serial date code 1410212019 and later). We are also offering this mounting bracket as a service part (Part # 0121F00509). When installed, the new bracket will move the mounting position of the switch slightly outward allowing for reliable door switch operation. If a 34.5” chassis furnace is encountered with a non-functioning door safety switch, a new bracket can be ordered and installed. Refer to the following instructions for replacing the door safety switch mounting bracket.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



1) Disconnect all sources of electrical power to the furnace and verify a safe condition with a voltage meter.
2) Remove the two black wires from the door safety switch.
3) Remove the two mounting screws holding the door switch bracket to the blower deck.
4) Remove the door switch from the bracket by depressing the tabs on the switch.
5) Install the new bracket and secure with the two screws through the blower deck.
6) Install the switch in the new bracket with the lever pointing to the left side of the furnace.
7) Connect the two black wires to the door switch.
8) Restore electrical power to the furnace and check operation.

The new safety door switch mounting bracket should only be installed on furnaces that exhibit unreliable door switch operation. It is not necessary to rework furnaces in stock as this issue has been reported on only a very small number of furnaces.

For installed units that require replacement of the safety door switch mounting bracket, we will provide labor at the servicers Class “A” labor rate.

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Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code 8714. **The claim for the part and labor should be filed as one claim, using the Dealer's account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2015.

The 0121F00509 door switch bracket is in stock and available to order from Service Parts Department.

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Service Bulletin

SF-052

DATE: December 12, 2013

TO: All Service and Parts Managers

SUBJECT: Availability of Replacement Draft Inducer Capacitor for 80% Furnaces

In an effort to assist service personnel and reduce warranty cost, we now have a replacement capacitor available for 80% draft inducers. In some instances a non-functioning draft inducer motor may be found to only have a failed capacitor rather than a defective motor. In the event of a non-functioning draft inducer motor, the capacitor functionality may be verified by using a capacitor tester.

Remove the two assembly wires from the capacitor terminals and discharge the capacitor by placing a 20 – 30 ohm resistor across the two capacitor terminals before connecting the capacitor tester. Use caution when handling the capacitor and always assume the capacitor is holding an electrical charge and is an electric shock hazard.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage,
personal injury or death.



This capacitor is found only on draft inducer assemblies supplied to Goodman by Broad Ocean and bearing Goodman part number 0131M00002(S, PS, PSP) for single stage inducers and Goodman part number 0131M00003(S, PS) for two-stage inducers.

The Broad Ocean draft inducer was introduced in production with the launch of 33 3/8” high 80% furnace models in 2009 and is also used as a service replacement for some inducers provided by other vendors as indicated by Goodman® / Amana® repair part manuals.

The capacitor part number is DY6.186.070. This is a 6 uF 250 volt capacitor. Some early Broad Ocean inducers used a 6 uF 200 volt capacitor; the DY6.186.070 can replace these as well. The DY6.186.070 cannot be used on a non- Broad Ocean draft inducer or any draft inducer not originally equipped with this capacitor.

Repair part manuals will be updated to show the availability of this new service part. The DY6.186.070 is in stock and available to order from Goodman Service Parts Department.

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Service Bulletin

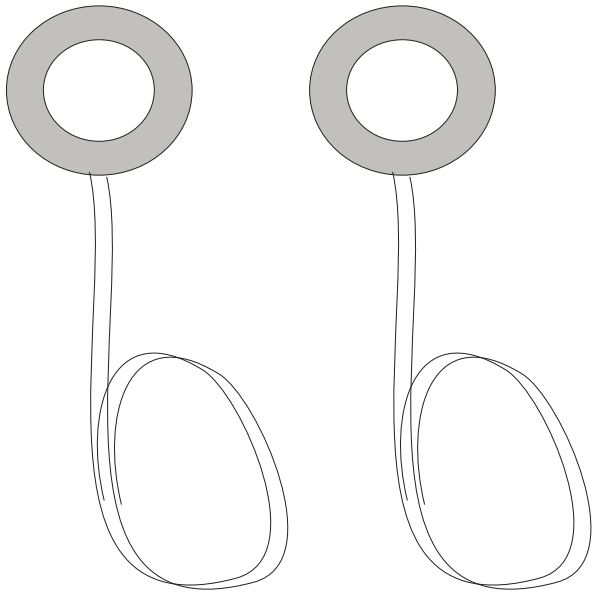
SF-051

DATE: October 7, 2013

TO: All Service and Parts Managers

SUBJECT: FTK04 Twinning Kit

It has recently been brought to our attention that some FTK04 Twinning Kits were found missing one of the fan sensors. A twinned furnace installation using the FTK04 requires both fan sensors to be used. Each fan sensor consists of a current sensing loop with conductors attached as shown below. Therefore; we are asking that customers check the contents of any FTK04 Twinning Kit(s) that you have in inventory and any kit(s) found missing a fan sensor should be returned for replacement.



Two Fan Sensors in FTK04 Twinning Kit

Distributors will need to contact their CSR to request an RMA for return of any FTK04 Twinning Kit(s) inspected and found to be missing a fan sensor. Any kit found to be missing a sensor must be returned by December 31, 2013. Replacement FTK04 Twinning Kits must be ordered by the distributor from HLC to replace their returned inventory.

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Service Bulletin

SF-050

DATE: April 18, 2013

TO: All Service and Parts Managers

SUBJECT: New High Altitude Kit - HANG20

We are pleased to announce the release of the HANG20 high altitude kit, which is designed for use with select Goodman® brand GMS8, GMH8, GDS8, GME8, GHS8, GDH8 model furnaces and select Amana® brand AMH8 model furnaces. The kit includes a set of #46 natural gas orifices and a high altitude pressure switch with a set point of -.60" W.C.

The HANG20 kit must be used when installing a natural gas furnace listed in the chart below, at altitudes between 4,500 ft. and 10,000 ft. Above 4,500 ft, replace the factory installed pressure switch with the -.60" W.C. switch included in the HANG20 kit to avoid nuisance pressure switch trips. Also at or above 7,500 ft. altitude, replace the factory installed natural gas orifices with the #46 orifices included in the HANG20 kit to prevent over-firing. The HANG20 high altitude kit is in stock and available to order from Goodman Service Parts.

GMS8	A/GMH8	GDS8	GME8	GHS8	GDH8
GMS80403A*B*	A/GMH80403A*B*	GDS80403A*B*	GME80603B*B*	GHS80403A*B*	GDH80403A*B*
GMS80603A*B*	A/GMH80603A*B*	GDS80603A*B*	GME80805C*B*	GHS80604B*B*	GDH80603A*B*
GMS80604B*B*	A/GMH80604B*B*	GDS80804B*B*	GME80805D*A*	GHS80805C*B*	GDH80804B*B*
GMS80804B*B*	A/GMH80803B*B*	GDS81005C*B*	GME81005C*B		GDH81005C*B*
GMS80805C*B*	A/GMH80804B*B*				
GMS81005C*B*	A/GMH80805C*B*				
GMS81205D*B*	A/GMH81005C*B*				
	A/GMH81205D*B*				

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Service Bulletin

SF-049

DATE: April 1, 2013

TO: All Service and Parts Managers

SUBJECT: Changes to the PCBKF200SF Modulating Furnace Control Board Service Kit for A/GMVM96 and A/GCVM96 Model Furnaces

In service bulletin SF-048 we described when replacing the furnace control board on a non-communicating modulating furnace the need to install a memory chip in the board at the same time. To simplify the process for the servicer, we have released a new service control board kit that includes all 7 memory chips.

The PCBKF200SF kit will contain a set of memory chips, one for each of the modulating furnace models. Should the need to replace a modulating furnace control board ever arise, the correct memory chip for the particular model furnace being serviced must be selected from the kit and installed on the replacement control board and should remain on the control board. Follow the instructions included with the PCBKF200SF kit. Memory chips are model specific and only the chip for the specific model furnace must be used.

NOTE: For installations including a communicating thermostat, the replacement board will acquire all necessary data from the communicating thermostat and no memory chip is required.

Furnace Model	Memory Chip Part Number
A/GMVM960603BX*	0130F00166S
A/GMVM960805CX*	0130F00167S
A/GMVM961005DX*	0130F00168S
A/GMVM961155DX*	0130F00169S
A/GCVM960604CX*	0130F00163S
A/GCVM960805DX*	0130F00164S
GCVM961005DX*	0130F00165S

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Service Bulletin

SF-048

DATE: December 12, 2012

TO: All Service and Parts Managers

SUBJECT: Modulating Furnace - Service Replacement Control Board PCBKF200SF

We have received reports that when replacing the control board on the modulating furnace, the necessary data is not consistently being uploaded to the replacement control board resulting in a nonfunctioning furnace and a “d0” fault code displayed on the control board. Models affected are AMVM96, ACVM96, GMVM96 and GCVM96.

Therefore; in the event of a failed modulating furnace control board in a legacy wired system (using a 24 volt thermostat), it will be necessary to install the proper memory chip at the time of control board replacement. Memory chips are model specific. Please refer to the chart below when selecting memory chips and follow instructions packaged with each memory chip.

NOTE: For installations including a communicating thermostat, the replacement board will acquire all necessary data from the communicating thermostat and no memory chip is required.

Furnace Model	Memory Chip Part Number
A/GMVM960603BX*	0130F00166S
A/GMVM960805CX*	0130F00167S
A/GMVM961005DX*	0130F00168S
A/GMVM961155DX*	0130F00169S
A/GCVM960604CX*	0130F00163S
A/GCVM960805DX*	0130F00164S
GCVM961005DX*	0130F00165S

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Service Bulletin

SF-047

DATE: September 27, 2012

TO: All Service and Parts Managers

SUBJECT: Approval of Manufactured Vent Systems for High Efficiency Furnaces

We are pleased to announce the approval of two alternate venting materials for use with Goodman® and Amana® brand high efficiency condensing furnaces that do not have discharge flue temperatures that exceed 140 degrees F. These alternates are InnoFlue by Centrotherm Eco Systems and Poly Pro by M&G Duravent.

These materials are listed for use in Canada and the United States and are intended to supplement the materials specified in the Goodman/Amana Installation Instructions. The Goodman/Amana Installation Instructions will be updated to mention these two manufacturers at our earliest convenience.

It is important to follow each alternate manufacturer's Installation Instructions and to not mix materials.

For more information regarding the use of Poly Pro visit: http//www.duravent.com/index.aspx. For the same information on the use of InnoFlue, visit http//www.centrotherm.us.com/.

Note: These vent systems are <u>NOT</u> for use with any 80% gas furnaces.

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Service Bulletin

SF-046

DATE: July 28, 2011

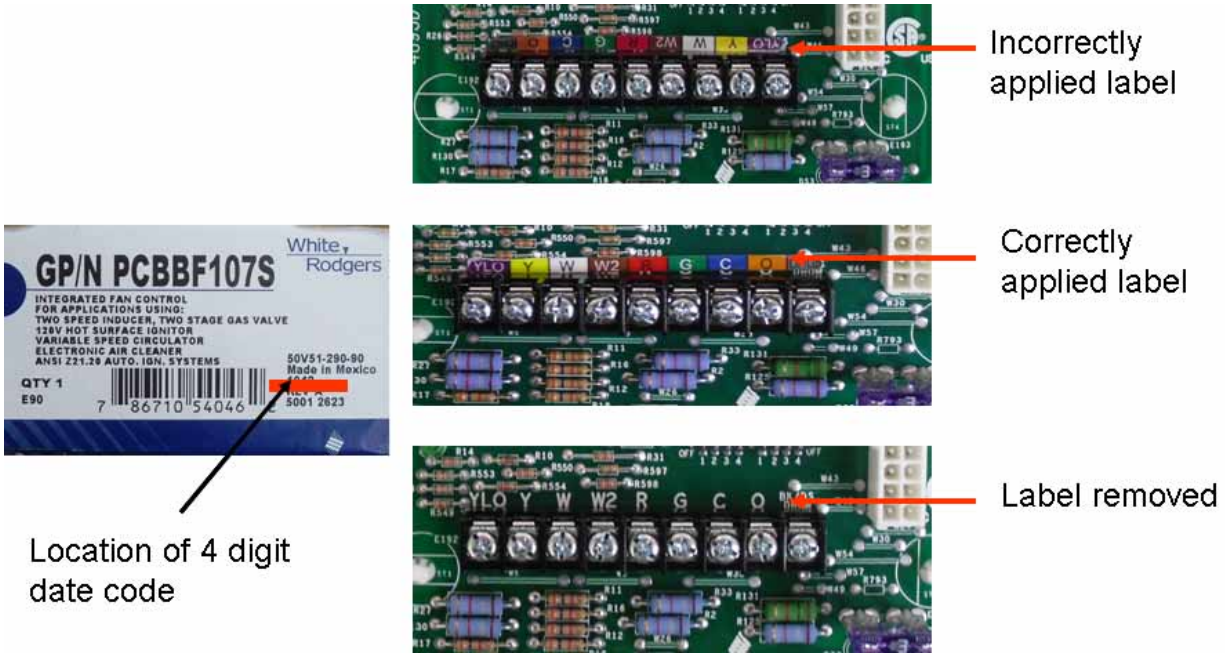
TO: All Service and Parts Managers

SUBJECT: PCBBF107S and PCBBF124S Service Ignition Control Boards

Goodman has discovered that we have received a limited number of ignition control boards from our vender that have miss-applied low voltage wiring labels. The affected part numbers are PCBBF107S control boards. These boards are also part of PCBBF124S control board kits.

To date, all the miss-labeled control boards have a date code of “1122”. This date code is located on the outside of the box as indicated below. PCBBF107S control boards come with a color-coded label adjacent to the low volt terminal strip and in some cases, this label has been applied up-side-down. It should be noted that the silk screen printing on the control board has the correct low voltage designations under the label. A miss-applied label can be removed and the control board installed and wired according to the silk screen printing on the board.

Distributors should check inventory and remove any miss-applied labels. This control board is used only as a service part, therefore; no new equipment is affected.



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Service Bulletin

SF-045

DATE: May 2, 2011

TO: All Service and Parts Managers

SUBJECT: Changes to LPM-06 LP Kit

We have recently made changes to our LPM-06 conversion kit. This kit is used to convert White-Rodgers® 36G54 (Goodman Part # 0151F00000P) and Honeywell® VR9205Q (Goodman Part # 0151M00014) 2-stage gas valves from Natural Gas to L.P. gas.
These valves are used on A/GMH, GDH, GCH, A/GMV, A/GMVC, A/GCV, A/GCVC, ADV, GME and ADVC model furnaces.

Changes have been made **only** to the Honeywell portion of the LPM-06 kit. The White-Rodgers portion of the kit has not changed.

Changes to the kit for the Honeywell valves are as follows;

1) Springs are now colored Red.
2) The two springs are now individually packaged.
3) A T25 torx tool has been included in the kit to be used for removing, installing, and setting regulator adjustment screws.
4) Kit installation instructions have been updated

Before converting a gas valve, locate the appropriate section of the installation instructions that pertains to the brand of gas valve your furnace has, either Honeywell or White-Rodgers. Read and follow the instructions.

When converting the Honeywell 2-stage gas valve to L.P., please note the following points;

- Do not use power tools.
- Use the new adjusting screws provided in the kit after the L.P. springs are installed in the gas valve.
- Start the screw threads by hand to avoid cross-threading.
- Adjust both regulator screws to the bottom, and then back them off 1-2 turns.
- Adjust L.P. manifold pressures in both high and low stages with a manometer before leaving the job.

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Service Bulletin

SF-044

DATE: April 29, 2011

TO: All Service and Parts Managers

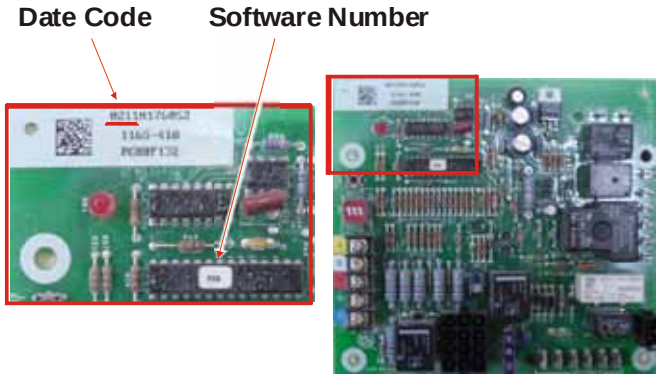
SUBJECT: Twinning H Model Furnaces

In the fourth quarter of 2010 we began using a new integrated furnace control board (PCBBF132) in limited numbers on our H model furnaces. It has recently come to our attention that the software version in some of these early UTEC™ PCBBF132 boards can conflict with furnace twinning. This includes twinning installations using FTK03 or FTK04 twinning kits.

The sequence of operation with the affected boards is such that adding a “W” call to an existing “G” call will turn off the furnace indoor fan motor. This is seen as a fault by the twinning kit. In a single furnace application this does not present a problem. Therefore; in a single furnace installation no corrective action in the field is required.

Each PCBBF132(S) control board contains an 11 digit serial number beginning with a four digit date code showing when the board was manufactured. The first and second digits represent the week the board was produced, the third and forth digits represent the year. The software was corrected beginning with certain 4510 date code boards. The updated 4510 boards will have a 3 digit number on the microprocessor of “398”. Any board with a date code of 4610 or later will have the microprocessor code of “398” and updated software. The location of the serial number containing a date code is shown below.

When twinning H model furnaces, the control board date code and / or microprocessor code should be checked against the information provided in this bulletin and replaced if necessary. Our records indicate that any affected PCBBF132 control boards were used in late 2010 production furnaces.



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Service Bulletin

SF-043

DATE: February 14, 2011

TO: All Service and Parts Managers

SUBJECT: Potential Misleading Fault Code on Communicating Model Furnaces

On our communicating model furnaces we have found that the potential exists for the control board to display a misleading fault code after a failed ignition attempt. The code is E1 (Pressure Switch Stuck Closed). The following example shows how this could occur:

1) The furnace receives a call for heat
2) The furnace does a check for closed limits and an open pressure switch and proceeds with a trial for ignition. The inducer, pressure switch and igniter all perform as designed
3) The furnace fails to light or prove flame (this could be caused by any number of reasons such as gas supply turned off, gas valve switched off, improper gas pressure settings etc)
4) The inducer goes into a 30 second purge
5) The inducer is powered off
6) The control board would attempt another ignition but detects a closed pressure switch circuit because the inducer is still spinning fast enough to hold in the pressure switch. At the beginning of every ignition attempt the board must see an open pressure switch. This is a fail-safe feature that is designed to keep the furnace from proceeding with a call for heat if the pressure switch contacts were to ever stick closed
7) The board momentarily displays E1 (pressure switch stuck closed)
8) The board will attempt ignition again and work properly if the cause of the failed ignition has been corrected.
9) If the cause of failed ignition is not corrected, the furnace will lock out for one hour after three failed ignition attempts

The service person is sometimes misled by the E1 fault code away from the true cause of failed ignition. We are working with Emerson to determine a different timing routine for the control board. The updated version control board will have the part number PCBKF102 and the estimated delivery time is April 2011.

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Service Bulletin

SF-042

DATE: February 10, 2011

TO: All Service and Parts Managers

SUBJECT: Gas Valve Diagnostics

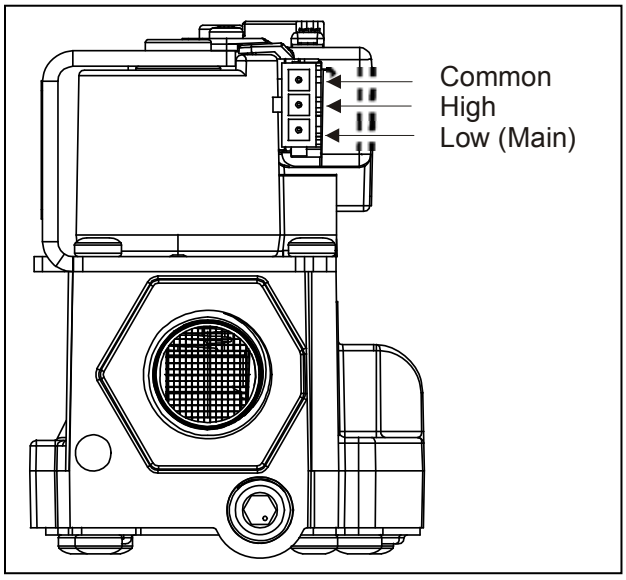
In the event of a non-functioning 2 stage gas valve on a Goodman® or Amana® brand furnace, please use the following information to properly diagnose and determine if the gas valve is faulty or if there is another problem such as an open front-cover pressure switch. Two stage gas valves are used on modified two stage (hybrid) furnaces and on communicating model furnaces. For a two stage gas valve to open it must at least be powered between the Low (Main) and Common terminals. Our communicating model furnaces will light in low fire. Hybrid models are designed to light in high fire and therefore will be powered on the low and high terminals simultaneously. A proper volt meter reading to the gas valve on a hybrid furnace would show:

- 24 volts between low and common terminals of the gas valve *and* 24 volts between high and common terminals of the gas valve.

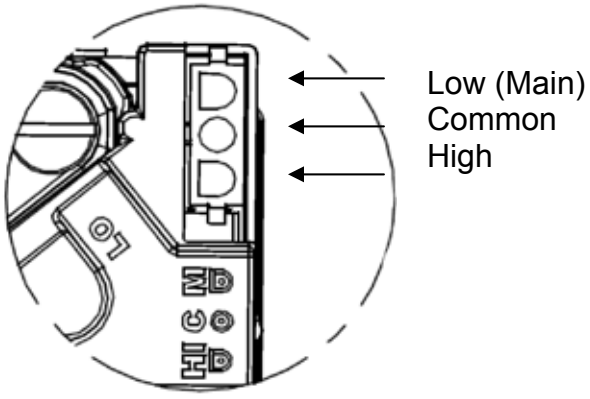
It is important to note that 24 volt power to the high fire solenoid alone will not open a gas valve even though there may be an audible clicking sound.

Gas pressure must be verified on the inlet pressure side (houseline) and outlet pressure side (manifold) of the gas valve by using a manometer. Please see the charts on page 2 for proper gas pressures.

Honeywell 2 Stage



White-Rodgers 2 Stage



Inlet Gas Supply Pressure		
Natural Gas	Minimum: 5.0" w.c.	Maximum:10.0" w.c.
Propane Gas	Minimum: 11.0" w.c.	Maximum:13.0" w.c.

Manifold Gas Pressure			
Gas		Range	Nominal
Natural	Low Stage	1.6 - 2.2" w.c.	1.9" w.c.
	High Stage	3.2 - 3.8" w.c.	3.5" w.c.
Propane	Low Stage	5.7 - 6.3" w.c.	6.0" w.c.
	High Stage	9.7 - 10.3" w.c.	10.0" w.c.

Before any gas valve is determined to be faulty, the harness connections to the valve and adaptor harness must be checked for proper seating. Honeywell gas valves are currently a required return warranty item though Service Bench.

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Service Bulletin

SF-041

DATE: January 7, 2011

TO: All Service and Parts Managers

SUBJECT: Induced Draft Furnace Heat Exchanger Inspection Procedure

Portions of This Procedure Have Been Reprinted With Permission from the Air Conditioning Heating and Refrigeration Institute (AHRI)

The following method of checking heat exchangers is recommended by Goodman and Amana for our induced draft furnaces when a heat exchanger is suspected of being faulty:

1) Look for flame disturbances; Start the furnace and observe changes in the flame pattern as the air circulating blower starts operating. Look for floating flames, flame rollout, or flame distortion. These conditions could indicate a split seam, crack, deterioration of the heat exchanger or gasketing material, or physical separation of the connected parts. Flame disturbance that occurs after the blower comes on is a good indication that a heat exchanger problem may exist. Other air leaks in the vicinity of the burners may also cause flame disturbances and must be corrected.

2) Measure CO levels in the airstream; ***Note**: **To ensure accuracy of the measurements, take more than one reading and average the results to obtain the CO level**.* With the furnace running, measure the CO level in the return airstream near the furnace and record the value. Then, measure the CO in the supply air stream and record the value. If there is no measurable difference in the CO level between the supply and return airstreams, it is likely that the furnace is not leaking CO into the airstream.

   If there is no difference in the CO concentration between the supply and return airstreams, but there is CO detected in the airstream, there may be another source of CO in the home such as other gas fired appliances, an automobile operating in a garage, or a fireplace in operation. Discuss the elevated CO levels and the possible other sources with the homeowner.

3) Measure CO in the flue pipe; Allow the furnace to warm up for at least 10 minutes. Measure the CO in the flue pipe using a properly calibrated combustion analyzer. If the CO reading is less than 200 PPM, no further action is necessary. If the CO reading is above 200 PPM, proceed to step #4.

4) Verify Proper Installation; Verify that the furnace's installation complies with installation requirements and any applicable codes.

Verify Proper Installation Cont'd;

***Note:* It is important to verify proper installation and setup before removing a heat exchanger.** Verify the gas orifice size, gas input rate and manifold pressure. Verify proper conversion to LP gas and high altitude if applicable. Also check vent for blockage or holes, proper vent length and fittings. Check for adequate combustion air to the furnace.

Check furnace for proper condensate drainage if applicable. Check burner alignment.

Make corrections as necessary and then recheck CO in a flue gas sample. If the CO is still at 200 PPM or higher in the flue gas, proceed to step #5.

5) Visually Inspect Heat Exchanger; Disassemble the furnace until you can visually inspect all heat exchanger exterior surfaces. Any crack or hole that is big enough to affect combustion will be visible to the naked eye. Do not use water or smoking agents to check for leaks. Furnace heat exchanger joints are not hermetically sealed and not designed to be water tight.

   If there are splits, cracks, or holes, the heat exchanger must be replaced.

   Note: Other methods and products may be available commercially but are not Goodman approved test methods. The use of water, liquids, and sprays being introduced into the supply air stream and possibly other products are not approved by Goodman. Test results based on their use are not considered valid by Goodman. Therefore; a warranty claim for a faulty heat exchanger will be held to these standards.

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Service Bulletin

SF-040

DATE: January 6, 2011

TO: All Service and Parts Managers

SUBJECT: Introduction of New Pressure Switches on 95% Furnaces

Over the last several weeks we have been phasing in new front-cover pressure switches on our 95% furnace line. These new pressure switches have a set point of -0.10" W.C. The switch used on upflow models is Part **# 20197308**; the counterflow version is Part **# 0130F00070**. The purpose of the front cover pressure switch is to verify that the furnace secondary heat exchanger is draining properly. In the event that the furnace does not drain properly, this switch will open and break the electrical circuit to the main coil of the gas valve. We have not made changes to the main draft inducer pressure switches.

The A/GMH950904CX and A/GMH951155DX began using the new switch in November 2010. The A/GMH950453BX, A/GMH950703BX, A/GMH950704CX and A/GMH950905DX are scheduled to be built with the new switch in January 2011.
A/GMVC95*, A/GCVC95*, and GCH95* model furnaces are currently in production with a -0.10" W.C switch.

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Service Bulletin

SF-039

DATE: November 16, 2010

TO: All Service and Parts Managers

SUBJECT: High Speed Motor Noise on GCH90904CX, GCH950904CX, *MH950704CX, *MH950904CX, GKS90704CX, & GKS90904CX Furnaces

Goodman has received reports of indoor fan motor noise on some GCH90904CXA*, GCH950904CX**AA** and GCH950904CX**AB** counter flow model furnaces. In addition, we have received similar reports on up flow models produced with 0911****** and later serial numbers.

Testing has shown that this noise is present in a small number of furnaces when operating on high speed. High speed operation should be used only when it is necessary to provide indoor air for cooling mode based on 400 CFM per ton. If it is necessary to operate the indoor fan motor in high speed and an objectionable noise is evident, the 0131F00022 motor should be replaced with a 10759415K kit. This kit contains a new motor, motor mounting bracket, mounting hardware and capacitor. Kits are available and can be ordered from Goodman Service Parts.

GCH950904CX**AC** furnaces produced with serial numbers 1009****** and greater will not require a service kit.

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Service Bulletin

SF-038

DATE: November 12, 2010

TO: All Service and Parts Managers

SUBJECT: Furnace Sound Reduction Kits

Earlier this year an announcement was made by Goodman & Amana Marketing News (C-NP-FN-336-A) announcing the release of furnace sound reduction kits. These kits are available as an accessory for our 33" chassis, 80% furnace line. The purpose of the Furnace Sound Reduction Kits is to provide a quieter alternative when a furnace is installed in an area where the typical sound of a furnace is objectionable. Equipping a furnace with a sound reduction kit could reduce the sound by approximately two decibels.

There are eight kits available for Goodman® and Amana® brand 80% short chassis furnaces. Each kit can be used on up-flow models only and includes an insulated louver-less control access door and a set of reduced-size natural gas orifices. The sound reduction kit is not for use with a furnace converted to LP gas. Please note that the orifices will drop the output of each burner by approximately 2,500 BTUH.

NOTE: The use of these kits is optional and they are not provided as a warranty item. Goodman will not provide warranty reimbursement for the installation of these accessory items.

These kits are in stock and available from Goodman Service Parts.

Amana	Goodman
FSRKA-14 ("A" Width Cabinet)	FSRKG-14 ("A" Width Cabinet)
FSRKA-17 ("B" Width Cabinet)	FSRKG-17 ("B" Width Cabinet)
FSRKA-21 ("C" Width Cabinet)	FSRKG-21 ("C" Width Cabinet)
FSRKA-24 ("D" Width Cabinet)	FSRKG-24 ("D" Width Cabinet)

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Service Bulletin

SF-037

DATE: August 31, 2010

TO: All Service and Parts Managers

SUBJECT: Optional Auxiliary Limit Conversion Kits For GCH9, GCV9, ACV9 Gas Furnaces

Some parts of the country experience frequent power outages during the winter months and if a power outage occurs during the heating cycle it can result in the auxiliary limit switch opening due to the loss of blower operation. Since Goodman and Amana high efficiency furnaces have traditionally used manual reset auxiliary limit switches this can lead to a service call.

To alleviate this problem due to power outages Goodman has released two Auxiliary Limit Conversion Kits to convert the manual reset auxiliary limit switch to an auto-reset type limit switch.

GCH9 model furnaces use the FLK01 Auxiliary Limit Conversion Kit
ACV9 and GCV9 models use the FLK02 Auxiliary Limit Conversion Kit

These kits include the new auto-reset limit switch, wiring harness adapter, new wiring diagram label and installation instructions. Current production counterflow furnaces are now utilizing these auto-reset type limit switches.

Note: These kits are being released to alleviate customer complaints due to conditions outside Goodman's control and are not provided as a warranty item. Goodman will not provide warranty reimbursement for installation of these accessory items.

These kits are in stock and available from Goodman Service Parts.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SF – 036 REV2

DATE: July 11, 2019
TO: All Service and Parts Managers
SUBJECT: Low Voltage Board Connectors

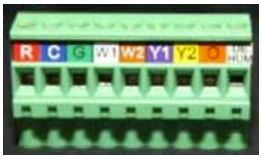
The communicating controls in Goodman's Furnaces, Split Condensers, Heat Pumps and Air-Handlers are shipped with the required Phoenix connectors needed for connecting the low voltage wiring to these units. However, we understand these connectors can from time to time get misplaced preventing you from completing the installation; therefore, we have made these connectors available through service parts. Please refer to the following list for part numbers when ordering connectors:

Furnace and Air-Handler 9 pin connector: # F043067300S

Split Condenser or Heat Pump 7 pin connector: # F043067500S or 0130M00485

Communicating mode 4 pin connector: # F043067900S or 0130D00002

ComfortBridge™ Control Platform Furnace 6 pin Connector: # F043068000S









July 2019 Revision:

As announced in PMN #C-PC-SP-1733, the introduction of the ComfortBridge™ technology has minimized the need for the 7-pin connector with communicating condensing units. Beginning August 1, 2019, the 7-pin connector will be removed from the condensing units listed below. The 7-pin connector (Part numbers # F043067500S or 0130M00485) will continue to be available through service parts for 24 VAC, non-communicating applications.

Amana	Goodman
ASXC160241	GSXC160241
ASXC160361	GSXC160361
ASXC160481	GSXC160481
ASXC160601	GSXC160601
ASXC180241	GSXC180241
ASXC180361	GSXC180361
ASXC180481	GSXC180481
ASXC180601	GSXC180601

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Service Bulletin

SF-035

DATE: July 9, 2010

TO: All Service and Parts Managers

SUBJECT: Emerson UltraCheck-EZ™ Motor Tester

We have received information from Emerson that some of the UltraCheck-EZ motor testing tools may have been improperly assembled and could result in unreliable operation. This tool was introduced 2/10/2010 for field testing the Emerson four wire motors used on our communicating furnaces and air handlers. The Goodman part is UTT-01.

Therefore we are requesting all UltraCheck-EZ motor testers be returned to Goodman. Please contact your CSR (Customer Service Representative) to request an RMA and credit for the returned testers. It will be necessary to reorder the UltraCheck-EZ motor testers to replenish your inventory.

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Service Bulletin

SF-034

DATE: April 26, 2010

TO: All Service and Parts Managers

SUBJECT: Introduction of Honeywell Gas Valves on Furnaces

We have introduced Honeywell gas valves on single stage furnaces in March 2010 and on two stage furnaces beginning in April 2010. Furnaces equipped with the Honeywell gas valve will show a change in the minor revision level. Example: an "AB" revision furnace will become an "AC" revision when built with the Honeywell valve.

Service part manuals will show new part numbers with the addition of Honeywell Gas Valves. It is recommended that if a replacement gas valve is needed, it should be the same brand gas valve as the original. It is possible to replace a White-Rodgers valve with a Honeywell valve but there are differences to be aware of.

Single Stage: Honeywell valve is approximately ½" longer than the White-Rodgers valve. Both valves have the same ¼" push on 24 volt electrical connections.

Two Stage: Honeywell valve is approximately 1" longer than the White-Rodgers valve. Both valves have a 3 pin harness for the 24 volt electrical connection but are different in their shape and wiring arrangements.

To replace a single stage White-Rodgers valve with a single stage Honeywell valve: The ½" difference in valve length must be considered. If installed on the 33 3/8" chassis the use of a 90°street elbow will be necessary to get proper alignment between the gas valve and the gas line hole in the left or right side of the cabinet. Electrical connections are the same for both valves.

To replace a two stage White-Rodgers valve with a two stage Honeywell valve: The 1" difference in valve length must be considered. If installed on a 33 3/8" chassis furnace the use of a 90°street elbow will be necessary to get proper alignment between the gas valve and the gas line hole in the left or right side of the cabinet. An adapter harness part number **0259M00004** would also be needed.

To replace a two stage Honeywell valve with a two stage White Rodgers valve: Simply remove and discard the short adapter harness and connect the remaining connector to the White-Rodgers gas valve.

Propane Kits:

We have introduced two new L.P. kits. The LPT-03 kit will convert a single stage Honeywell or White-Rodgers valve to L.P. The LPM-06 will convert a two stage Honeywell or White-Rodgers valve to L.P. Existing LPT-00A and LPM-05 kits can still be used to convert White-Rodgers valves only. If replacing a White-Rodgers gas valve with a Honeywell in an LP application, it is essential that you use the Honeywell gas valve spring, do not use the spring from the WR valve.

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Service Bulletin

SF-033

DATE: February 10, 2010

TO: All Service and Parts Managers

SUBJECT: Field Testing Tool for the Emerson Four-Wire Motor

We are pleased to introduce our new tool for field testing the Emerson serially communicating four wire motor. The preferred method of testing these motors is with the Emerson UltraCheck-EZ™ tool. The four-wire motor in ½, ¾ and 1 H.P. versions is currently being used on our complete line of communicating furnaces and communicating air handlers.

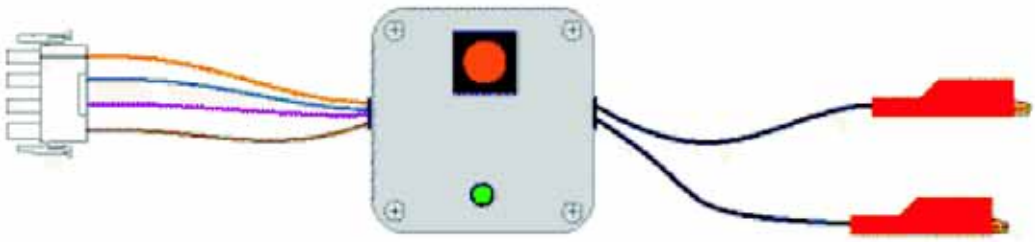
This tool gives the service technician the ability to isolate the four-wire motor from the furnace main control board and evaluate the motor and end bell unit. The Emerson UltraCheck-EZ™ tool (Part # **UTT-01**) can be ordered from Service Parts.

As an alternative to the UltraCheck-EZ tool, the GE TecMate XL™ and GE TecMate Pro™ tools can also be used to test the Emerson four wire motor. The use of the GE testers requires an adaptor that converts the 16 pin connection on the GE TecMate XL or GE TecMate Pro tools into a 4 pin connection. The four-wire adapter is available by visiting the GE TecMate website / toolbox.

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Emerson UltraCheck-EZ™

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Service Bulletin

SF-032

DATE: January 7, 2010

TO: All Service and Parts Managers

SUBJECT: GMVC95, GCVC9, AMVC95, and ACVC9 Model Furnaces Continuous Fan Speed

The new communicating model furnaces GMVC95, GCVC9, AMVC95 and ACVC9 when installed with traditional thermostat wiring (legacy mode) are designed to provide 30% of maximum CFM during continuous fan operation but due to a missing multiplier in the shared data, these furnaces actually produce 15% of maximum CFM.

Additionally the AMVC950453BX and GMVC950453BX model furnaces may produce low CFM in a legacy first stage (W1) call for heat. This can occur when the motor senses low supply static pressure and fails to ramp up to full RPM for 1st stage. Please note that both of these conditions only exist in non-communicating legacy mode and will have no impact when used with the Comfort Net communicating control.

If you have a furnace exhibiting either of these conditions, an upgrade to the software coefficients can be performed by adding a memory card to the furnace board. These memory cards are model specific and care must be taken to use the proper memory card for your furnace. Memory cards are available and should be ordered from your distributor. Please note; the intent of these kits is that they be used exclusively for this update. In the future, memory cards may be used for other purposes and may be assigned different part numbers.

WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Install the correct memory card based on your model furnace and perform the following steps to upgrade the software:

1) Turn off all power to the furnace.
2) Do not touch the memory card or integrated furnace control or any wire connected to the control prior to discharging your body's electrostatic charge to ground. Firmly touch a clean, unpainted metal surface of the furnace away from the control.
3) Install the memory card on the furnace board by plugging it in the white colored socket located next to the furnace dual displays (refer to picture on page 2)
4) Apply power to the furnace and test operation.

Memory Card Socket



Memory Card Installed



Furnace Model	Kit
A/GMVC950453BXAA	0130F00031S
A/GMVC950704CXAA	0130F00032S
A/GMVC950905DXAA	0130F00033S
A/GMVC951155DXAA	0130F00034S
A/GCVC90704CXAA	0130F00028S
A/GCVC90905DXAA	0130F00029S
GCVC91155DXAA	0130F00030S

Software changes were made to furnaces produced beginning with serial number 0912635819. Additionally, any product in factory stock was upgraded and indicated by a blue dot next to the bar code on the furnace packaging. Furnaces produced with serial number 0912635819 and greater or furnaces showing the blue dot next to the bar code do not require a field upgrade.

Goodman will provide $50 labor for each furnace requiring the memory card upgrade. The deadline for warranty claims is March 31, 2010.

A warranty claim form (RF000007) must be completed for each furnace and must reference Project Code **8694** in section 6 (Project Code) on the warranty claim form. This claim can be filed on service bench (preferred) as Warranty Type “Epidemic” as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Furnace Integrated Module – PCBBF
Inventory Replacement Instructions

Items Required for Rework:

- Needle Nose Pliers
- Green Bingo Dabber (or equivalent) to indicate reworked units
- Gloves
- Safety Goggles

ELECTROSTATIC DISCHARGE (ESD) PRECAUTIONS NOTE:

Discharge your body's static electricity before touching unit. An electrostatic discharge can adversely affect electrical components. Use the following precautions during process of changing the furnace integrated control module. By putting the furnace, the control, and the person at the same electrostatic potential, these steps will help avoid exposing the integrated control module to electrostatic discharge. This procedure is applicable to uninstalled (ungrounded) furnaces.

1. Do not touch the integrated control module prior to discharging your body's electrostatic charge to ground.
2. Firmly touch a clean, unpainted, metal surface of the furnace away from the control. Any tools held in a person's hand during grounding will be discharged.
3. Use caution not to recharge your body with static electricity; (i.e., do not move or shuffle your feet, do not touch ungrounded objects, etc.). If you come in contact with an ungrounded object, repeat step 2 before touching control or wires.
4. Discharge your body to ground before removing a new control from its container. Follow steps 1 through 3 if installing the control on a furnace. Return any old or new controls to their containers before touching any ungrounded object.

BOARD REPLACEMENT PROCEDURE:

1. Open the stretch wrap and remove straps from unit and scrap.
2. Remove the top carton (Goodman units) or sleeve (Amana/Daikin units) and put aside for use later.
3. Open both doors and place them beside the unit. ***Note: Take precaution to keep correct door with serial date label with correct unit and this will be verified in later step when reinstalling the doors.***
4. Remove the wires from the control board using needle nose pliers and then any wiring harnesses (i.e. 12-pin harness, 2-pin harness). ***Note: Pliers are not required to remove the 12-pin or 2-pin harnesses.***
5. Repackage the replaced (old) control board in the packaging from the replacement board and hold for return to Goodman.
6. Install the new control board and re-wire it per wiring diagram. Do not force the harness into place or damage harness by using pliers. For communicating units with the PCBKF105 control board ensure dipswitches are set the same as replaced board.

Furnace Integrated Module – PCBBF
Inventory Replacement Instructions

7. Install both doors. ***Note: Take precaution to keep correct door with serial data label (Figure1) with correct unit and verify this with small bar code inside unit (Figure2) to ensure the serial numbers match.***



Figure 1



Figure 2

8. Install the top carton or sleeve (per model).
9. Put “Green DOT” on the traveler by using Green Bingo Dabber (or equivalent).
10. Wrap each individual unit and then band strap the unit and then wrap four units together.
11. For units repaired in distributor inventory do not file claims through Warranty Express, use the supplied Dist Rework Report form.
    a. Using the “Data” tab in the supplied spreadsheet enter the Model, Serial, Distributor Name, City, State, Date Replaced, Replaced By, Original Board Part#, and Replacement Board Part# in the fields provided for the corresponding unit reworked.
12. Replaced boards should be repackaged in the box from the replacement board and bulk packed for return to Goodman. Every attempt should be made to return these boards in reusable condition. Once you have completed the rework process for all units in your inventory contact your Goodman CSR to request an RMA to return these replaced boards.
13. To receive labor for reworking units in inventory email all completed spreadsheets to Technical Services with email Subject title “SF-073 Rework” at email address TechServices@goodmanmfg.com

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Service Bulletin

SF-031

DATE: December 15, 2009

TO: All Service and Parts Managers

SUBJECT: Clarification of Control Wiring on GMVC95, GCVC9, AMVC95, ACVC9, AMVC8, GMVC8 and ADVC8 Model Furnaces

The purpose of this letter is to provide clarification of low voltage connections when installing our new Variable Speed Communicating Furnaces. The two categories of installation are:

1) With a typical 24 volt thermostat which is also known as a “legacy” or a non-communicating installation. With this method of installation, acceptable system configurations include furnace alone; furnace and a/c condensing unit; furnace and heat pump. When installing a communicating furnace in ***legacy*** with a heat pump, a dual fuel board or dual fuel thermostat must also be used.

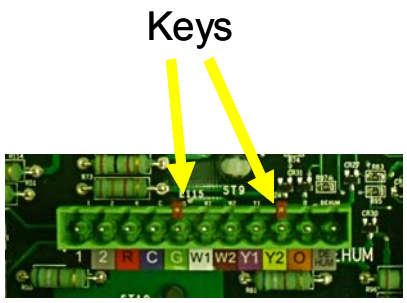
2) With our communicating thermostat (CTK01AA). With this method of installation, acceptable system configurations include furnace alone; furnace and communicating a/c condensing unit; furnace and communicating heat pump; furnace and non-communicating single stage a/c condensing unit.
NOTE: It is **NOT** acceptable to install a communicating thermostat, communicating furnace and a non-communicating heat pump.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

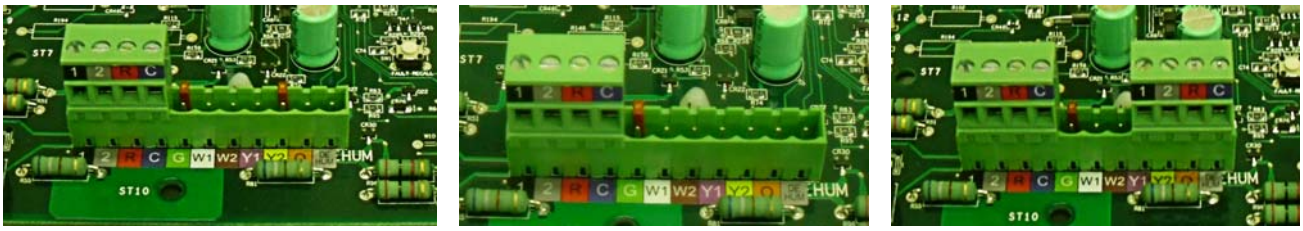


In a legacy installation the 24 volt connections are made to the furnace board by way of the 9 pin connector. This connector comes installed on the furnace board and its removable feature makes low voltage connections easier. The mating board socket is keyed to prevent improper placement of the connector on the board. The intent for a legacy installation is that the 9 pin connector placed on the board to connect from R to DEHUM inclusive.

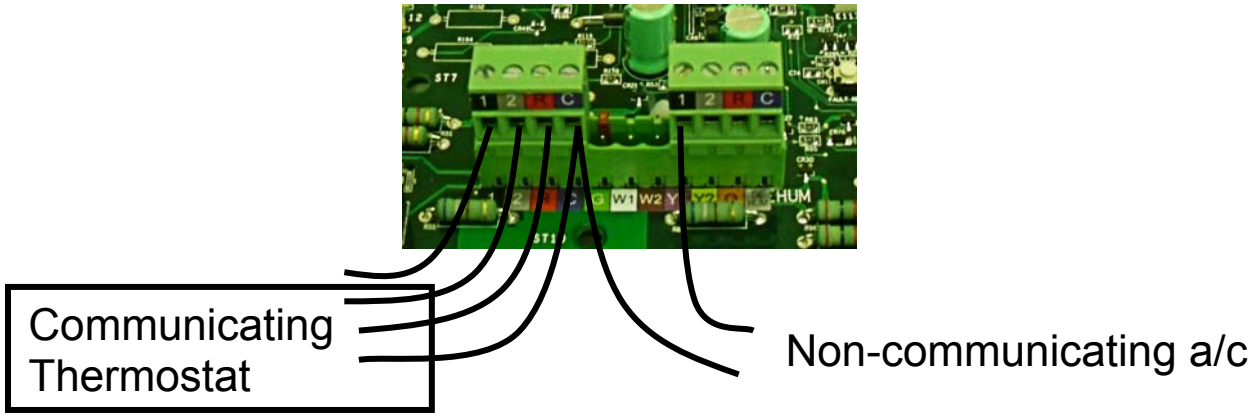


When installing a non-communicating single stage a/c condensing unit with a communicating furnace and communicating thermostat, the condensing unit must be wired between ***Y1*** and ***C*** on the furnace board. The recommended method to do this is as follows:

1) Turn off all power to the furnace.
2) Install one of the 4 pin connectors from the CTK01AA kit on the furnace board to mate with the #1 to C terminals inclusive.
3) Remove the red key located near the Y2 terminal on the furnace board. This can be done by applying a small amount of force with a small screwdriver on the outside of the board socket and sliding the key off. Do not apply excessive force or damage to the control may occur.
4) Install the remaining 4 pin connector to the opposite side of the furnace board socket. It will be mating with board pins Y1 to Dehum inclusive.
5) Connect 1, 2, R, and C wires from the communicating thermostat to the corresponding terminals of furnace board.
6) Connect the two a/c condensing unit wires to ***Y1 and C*** on the furnace board. When two wires are installed at the same terminal they must be twisted together before being placed under the screw.
7) Restore power and check operation.



Note: ***The Y1 terminal becomes an output of the furnace board. This is the only installation using a communicating thermostat that requires a wire to be connected to any terminal other than 1, 2, R, C. The Y1 terminal will correspond to the"1" label on the 4 pin connector. The three remaining terminals are not used.***



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Service Bulletin

SF-030

DATE: October 28, 2009

TO: All Service and Parts Managers

SUBJECT: Dehumidification Settings For GMVC95, GCVC9, AMVC95, ACVC9, AMVC8, GMVC8 And ADVC8 Model Furnaces

The purpose of this letter is to provide clarification of low voltage wiring for proper cooling operation and utilization of the dehumidification feature on our new Variable Speed Communicating Furnaces. The information herein applies only to ***"legacy"*** installations using a traditional 24V thermostat and wiring. When installing a communicating furnace with the CTK01AA communicating thermostat, follow instructions provided with the communicating thermostat for selecting options such as the dehumidification feature.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



To use the dehumidification feature in a legacy installation with an air conditioning unit:

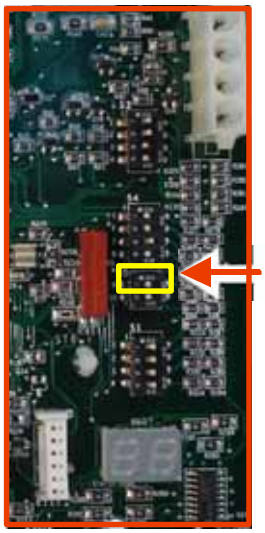
1) Turn off all power to the unit.
2) Set #9 dip switch to the ON position. This switch is located in the bank of switches labeled S5.
3) Use a dehumidistat with normally closed contacts such as the DEHUM1 control. This type of control will open on a humidity rise breaking the 24V signal to the Dehum terminal on the PCBKF101 control board.
4) Install a jumper on the PCBKF101 control board between Y1 and O thermostat terminals of the furnace regardless of whether the condenser is single stage or two stage.
5) Restore power and check for proper operation.

Following these steps will allow your cooling CFM to be reduced by 15% when a call for cooling is accompanied by a humidity level above the control set point.

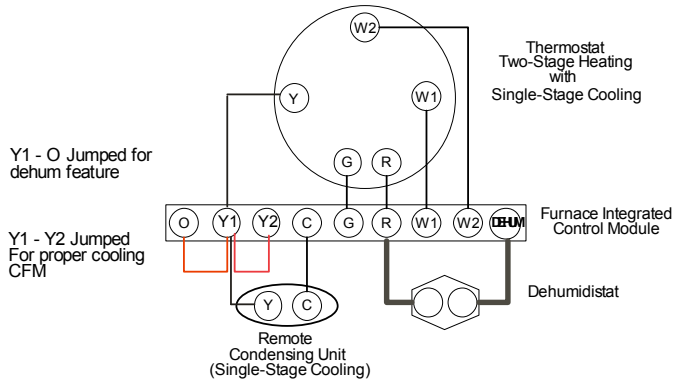
To use the dehumidification feature in a legacy installation with a heat pump; follow steps 1, 2, 3 and 5 above and refer to your unit wiring diagram and your thermostat wiring diagram

Note: If it is not desirable to use the dehumidification feature, it is important to make sure dip switch #9 is in the off position; some early production communicating furnaces were shipped with this switch in the on position.

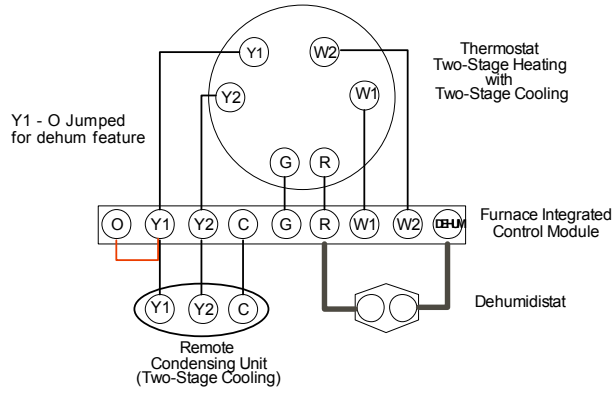




Switch # 9
ON To Enable Dehumidification Feature
OFF To Disable Dehumidification Feature



Two-Stage Heating with Single-Stage Cooling with Dehumidification



Two-Stage Heating and Two-Stage Cooling with Dehumidification

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Service Bulletin

SF-029

DATE: April 20, 2009

TO: All Service and Parts Managers

SUBJECT: Lighting Instruction Labels on 90% Model Furnaces

We have received reports of the Lighting Instruction Label coming off the inside front panel on Goodman® and Amana® brand 90% model gas furnaces, and in some instances interrupting the operation of the Induced Draft Blower.

This problem appears to be more noticeable on the Amana® brand 90% model furnaces because of overspray on the back of the doors. Temporary measures were put into place beginning mid November 2008 until a new label with better adhesion could be developed. It was found that by powder coating the back of the door as well as the front we could maintain better adhesion with the existing label.

For AMH9, AMV9, ACV9, GMH9, GCH9, GMV9, and GCV9 model furnaces, the new Lighting Instruction Label is part **# 0140F00000P (REV B)** and for GKS9 model furnaces, the new Lighting Instruction Label is part **# 11072715**. These new labels were released into production in April 2009. The initial shipment of part **# 11072715** has no revision letters. Subsequent shipments of label **11072715** will be **REV AB** and will be used in production starting in May 2009. If you have experienced this issue with installed furnaces or furnaces in your inventory, a replacement label can be ordered at no charge from the Service Parts Department by contacting your customer service representative.

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Service Bulletin

SF-028

DATE: March 16, 2009

TO: All Service and Parts Managers

SUBJECT: Improved Integrated Furnace Control Board PCBBF109

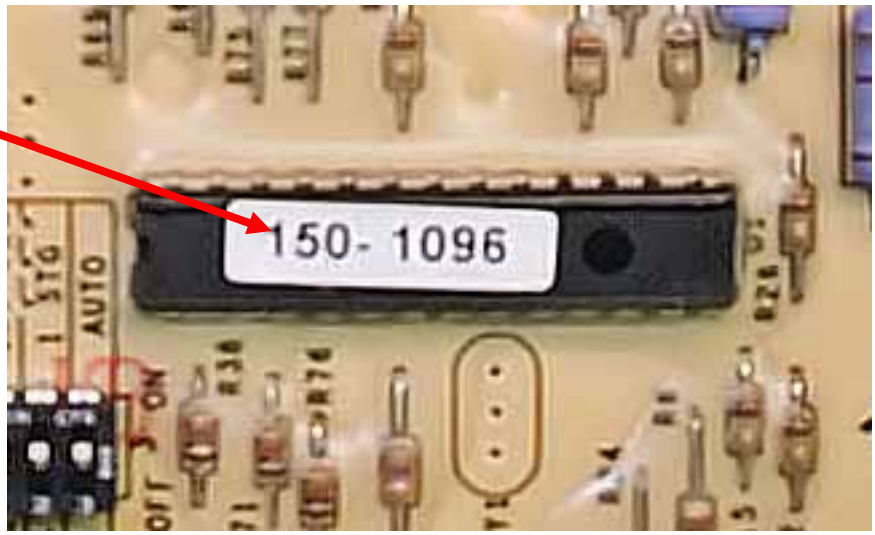
In our ongoing effort to provide high quality gas furnaces, we have made improvements to the PCBBF109 Ignition Control Board which is used on GMH8, GMH9, AMH8, AMH9, GDH8 and GCH9 model gas furnaces.

Software changes have been implemented to eliminate the blower motor speed change during the fan off delay period after a call for heat is satisfied. The purpose of the software change is to address field complaints of “bumping” noise that has occurred in some situations.

The board has also received additional conformal coating to help protect the components on the board against corrosion. There is also a part number change that will take place during the second quarter of 2009. The PCBBF109 will change to PCBBF122.

The improved changes to current control PCBBF109 took place the later part of 2008 but the part # was not revised to new part # of PCBBF122. The revised PCBBF109 controls can be identified by software I.D. number of “150-1096” on the chipset of the control, which is illustrated below. Also, these improvements will be present in all PCBBF122 controls once they are released.

Software ID # on Chipset



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Service Bulletin

SF-027

DATE: March 11, 2009

TO: All Service and Parts Managers

SUBJECT: 90% Jakel Two–Stage Induced Draft Motor Overload Tripping

We have received some additional reports from the field of Jakel Induced Draft Motor (**Part # 20245903**) used on the 90% variable speed furnaces shutting down on internal overload. This issue was previously addressed in Service Bulletin SF-015 released back in March 7, 2007 with changes made to the internal motor windings of the Jakel Induced Draft Motor to help prevent the overload from tripping due to excessive heat created by power supplies in excess of 126 volts.

The number of new reported cases has been extremely low as these high voltage conditions are not common. If you are experiencing a two-stage inducer not operating but being powered from the control board and your applied voltage is in excess of 126 volts, the inducer should be replaced with Fasco Induced Draft Motor (**Part # 20245904S**). Field testing has shown this Fasco inducer to be more tolerant of these higher voltage conditions.

The models affected are ACV9, GCV9, AMV9 and GMV9 two-stage furnaces.

This replacement induced draft motor may be obtained from the Service Parts Department by contacting your customer service representative. A warranty claim form (RF000007) must be completed for each unit requiring the repair. This claim can be filed on Service Bench (preferred). The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SF-026 Rev. 1
Supersedes SF-026

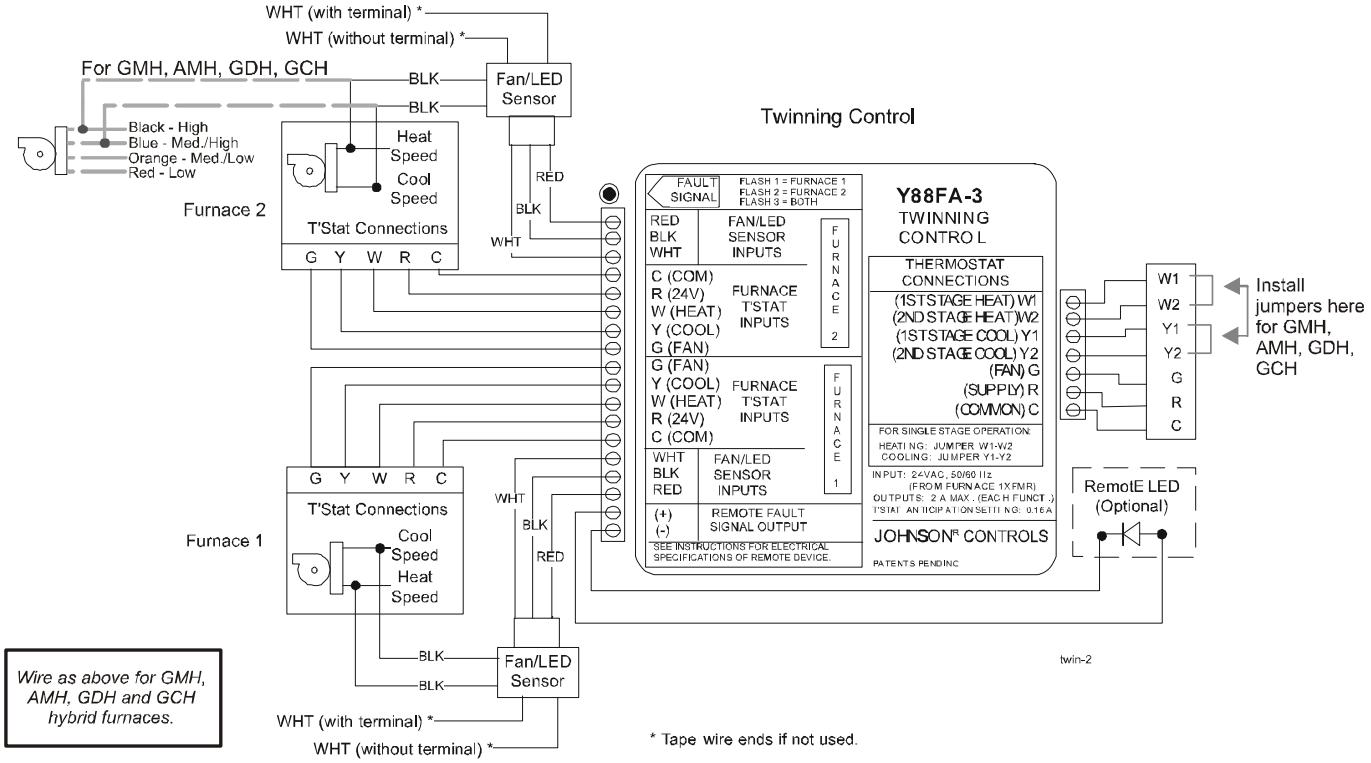
DATE: January 22, 2009

TO: All Service and Parts Managers

SUBJECT: FTK03A Twin Kit Usage with GMH, AMH, GCH and GDH Model Furnaces

We are pleased to announce that the use of the FTK03A Twinning Kit with GMH, AMH, GCH and GDH model furnaces has now been approved. Lab testing has shown that the FTK03A Twinning kit will operate as designed with these furnaces providing careful attention is given to assure that the two black motor sensor wires are connected to the High Speed and Medium High Speed motor leads regardless of where these leads are connected to the furnace ignition control board.

Also, W1 and W2 input terminals must be connected together and then Y1 and Y2 input terminals must also be connected together at the thermostat connections on the twinning control. The white, red, and black signal wires must be connected to their designated places on the twinning control. Please refer to the FTK03A twinning kit instructions for these updated installation instructions specific to the "H" model furnaces.



All Sales and Technical Literature pertaining to these model furnaces is being updated to reflect this change.

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Service Bulletin

SF-025

DATE: December 3, 2008

TO: All Service and Parts Managers

SUBJECT: Revised 90% Furnace Venting Tables

We have received several requests to expand the 90% furnace venting tables and allow the use of 2 ½" vent pipe in all locations. Currently these tables show values for 2" and 3" pipe only. The 90% furnace venting tables have been revised and now allow the use of 2 ½" vent pipe

All 90% model furnaces are affected. Please use the tables listed below for properly sizing 2 ½" vent systems. The installation instructions, service manuals and technical manuals are being updated to reflect the change. This bulletin may be used to verify installations with local code officials and inspectors.

Non-Direct Vent (Single Pipe)
Maximum Allowable Length of Vent/Flue Pipe (ft) (1) (2)

Models (kBTU_Tons)	Pipe Size (4) (in.)	Number of Elbows (3) (5)						
		2	3	4	5	6	7	8
045_3	2 or 2 1/2	68	65	62	59	56	53	50
070_3	2 or 2 1/2	36	33	30	27	24	21	18
	3	68	65	62	59	56	53	50
070_4	2 or 2 1/2	55	52	49	46	43	40	37
	3	68	65	62	59	56	53	50
090_4	2 or 2 1/2	37	34	31	28	25	22	19
	3	68	65	62	59	56	53	50
090_5	2 or 2 1/2	39	36	33	30	27	24	21
	3	68	65	62	59	56	53	50
115_5	3	68	65	62	59	56	53	50

1. One 90° elbow should be secured to the combustion air intake connection.
2. Minimum requirement for each vent pipe is five (5) feet in length and one elbow/tee.
3. Tee used in the vent/flue termination must be included when determining the number of elbows in the piping system.
4. 2 ½" and 3" diameter pipe can be used in place of 2" diameter pipe.
5. Increased clearance configurations using two (2) 45 degree long sweep elbows should be considered equivalent to one 90 degree elbow.

Direct Vent (Dual Pipe) Maximum Allowable Length of Vent/Flue & Combustion Air Intake Pipe (ft)									
Unit Input (Btu)	Vent/Flue/Air Intake Termination	Pipe Size [4] (in.)	Number of Elbows [1][2][3][5]						
			2	3	4	5	6	7	8
045_3	Standard	2 or 2 1/2	68	65	62	59	56	53	50
	Alternate	2 or 2 1/2	55	52	49	46	43	40	37
070_3	Standard	2 or 2 1/2	36	33	30	27	24	21	18
	Alternate	2 or 2 1/2	23	20	17	14	11	8	5
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
070_4	Standard	2 or 2 1/2	55	52	49	46	43	40	37
	Alternate	2 or 2 1/2	42	39	36	33	30	27	24
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
090_4	Standard	2 or 2 1/2	37	34	31	28	25	22	19
	Alternate	2 or 2 1/2	24	21	18	15	12	9	6
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
090_5	Standard	2 or 2 1/2	39	36	33	30	27	24	21
	Alternate	2 or 2 1/2	26	23	20	17	14	11	8
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
115_5	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37

1. One 90° elbow should be secured to the combustion air intake connection.
2. Minimum requirement for each vent pipe is five (5) feet in length and one elbow/tee.
3. Tee used in the vent/flue termination must be included when determining the number of elbows in the piping system.
4. 2 ½" and 3" diameter pipe can be used in place of 2" diameter pipe.
5. Increased clearance configurations using two (2) 45 degree long sweep elbows should be considered equivalent to one 90 degree elbow.

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Service Bulletin

SF-024

DATE: November 3, 2008

TO: All Service and Parts Managers

SUBJECT: Missing Identification of Eight (8) Flash Fault Code

It has been brought to our attention that the ignition control board used on “H” model furnaces (GMH,.AMH, GCH and GDH), may display an Eight (8) Flash Fault Code for which there isn’t a description either on the furnace wiring diagram or in our Service and Technical manuals. This omission of information is being corrected and the fault code description will be added to the furnace wiring label and to our Service and Technical Manuals.

According to the control manufacturer, the eight (8) Flash Fault Code indicates an igniter relay fault or a shorted HSI. Field indications; however, has linked this fault code to either an open or insufficient grounding of the furnace. The open or insufficient grounding of the furnace has been reported to be the most common reason for this fault code and if this code is being displayed check all ground wire connections to the furnace chassis especially the blower motor ground and the low voltage common ground. Once all grounds are tightened turn off the power to the furnace for 10 seconds and then turn the power back on and all fault codes will be reset. If the code returns replace the HSI.

We are currently working to have the wiring schematics revised along with the Service and Technical manuals.

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Service Bulletin

SF-023

DATE: October 20, 2008

TO: All Service and Parts Managers

SUBJECT: RF000129 Ignition Control Kits

Goodman has discovered that the vendor has shipped some incorrect ignition controls used in RF000129 Ignition Control Kits. The affected part numbers are RF000129, PCBBF117 and PCBBF117S. The incorrect ignition control has a 4-pin plug for igniter (IGN) and inducer (IND) instead of the required 2-pin plug as shown in the illustrations below.



Incorrect Control
4-Pin Connector for
IGN/IND



Correct Control
2-Pin Connector for
IGN/IND

Therefore, we need distributers to examine their inventory of RF000129 kits, PCBBF117 and PCBBF117S Ignition Controls and return any with the incorrect 4-pin plug.

Distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement RF000129 Ignition Control Kits must be ordered by the distributor from HLC to replace their returned inventory.

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Service Bulletin

SF-022

DATE: April 29, 2008

TO: All Service and Parts Managers

SUBJECT: Updated and Revised Venting Tables for GCV91155DX, AMH950704CX, GCH90704CX, GMH950704CX and GKS90704CX Model Furnaces

Goodman has recently tested and approved the use of 3" vent pipe on the following model furnaces, AMH950704CX, GCH90704CX, GMH950704CX and GKS90704CX. Also we've added the GCV91155DX model furnace to flue pipe tables in GMV95/GCV9 Installation and Operation manual that was inadvertently left out.

The following are the changes outlined for each specific model furnace:

- Added GCV91155DX model to flue pipe tables in GMV95/GCV9 Installation and Operation manual. The allowable flue pipe for the GCV91155DX model is 50 feet and 8 elbows of 3" pipe only. The new IO manual will be IO-280H.
- Added 3" pipe to AMH950704CX model. Allowable 3" is 50 feet and 8 elbows. The new IO manual will be IO-297C.
- Added 3" pipe to GCH90704CX and GMH950704CX models. Allowable 3" is 50 feet and 8 elbows. The new IO manual will be IO-299C.
- Added 3" pipe to GKS90704CX model. Allowable 3" is 50 feet and 8 elbows. The new IO manual will be IO-300E.

These updated and revised venting tables are provided below for your reference.

GCV91155DX

COUNTERFLOW
Non-Direct Vent (Single Pipe)
Maximum Allowable Length of Vent/Flue Pipe (ft)[1][2]

Unit Input	Pipe[4] (inch)	Number of Elbows[3][5]							
		1	2	3	4	5	6	7	8
70,000	2	61	58	55	52	49	46	43	40
	3	71	68	65	62	59	56	53	50
90,000	2	61	58	55	52	49	46	43	40
	3	71	68	65	62	59	56	53	50
115,000	3	71	68	65	62	59	56	53	50

COUNTERFLOW
Direct Vent (Dual Pipe) Maximum Allowable Length* of Vent/Flue & Combustion Air Intake Pipe [ft]

Unit Input (Btu)	Termination Style	Pipe[4] (inch)	Number of Elbows [1][2][3][5]							
			1	2	3	4	5	6	7	8
70,000	Standard	2	49	46	43	40	37	34	31	28
		3	71	68	65	62	59	56	53	50
	Alternate	2	36	33	30	27	24	21	18	15
		3	57	54	51	48	45	42	39	36
90,000	Standard	2	61	58	55	52	49	46	43	40
		3	71	68	65	62	59	56	53	50
	Alternate	2	48	45	42	39	36	33	30	27
		3	57	54	51	48	45	42	39	36
115,000	Standard	3	71	68	65	62	59	56	53	50
	Alternate	3	57	54	51	48	45	42	39	36

AMH950704CX

Non-Direct Vent (Single Pipe)
Maximum Allowable Length of Vent/Flue Pipe (ft) [1] [2]

Models (kBtu_Tons)	Pipe Size [4] (inc.)	Number of Elbows [3] [5]						
		2	3	4	5	6	7	8
045_3	2	68	65	62	59	56	53	50
070_3	2	68	65	62	59	56	53	50
070_4	2	46	43	40	Not Recommended			
070_4	3	68	65	62	59	56	53	50
090_4	2	16	13	10	Not Recommended			
	3	68	65	62	59	56	53	50
090_5	3	68	65	62	59	56	53	50
115_5	3	68	65	62	59	56	53	50

Direct Vent (Dual Pipe)
Maximum Allowable Length of Vent/Flue & Combustion Air Intake Pipe (ft)

Unit Input (Btu)	Vent/Flue/Air Intake Termination	Pipe Size [4] (in.)	Number of Elbows [1][2][3][5]						
			2	3	4	5	6	7	8
045_3	Standard	2	68	65	62	59	56	53	50
	Alternate	2	55	52	49	46	43	40	37
070_3	Standard	2	68	65	62	59	56	53	50
	Alternate	2	55	52	49	46	43	40	37
070_4	Standard	2	46	43	40	Not Recommended			
	Alternate	2	33	30	27				
070_4	Standard	3	68	65	62	59	56	53	50
	Alternate	3	54	51	48	45	42	39	36
090_4	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
090_5	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
115_5	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37

GCH90704CX and GMH950704CX

Non-Direct Vent (Single Pipe)
Maximum Allowable Length of Vent/Flue Pipe (ft) [1] [2]

Models (kBtu_Tons)	Pipe Size [4] (inc.)	Number of Elbows [3] [5]						
		2	3	4	5	6	7	8
045_3	2	68	65	62	59	56	53	50
070_3	2	68	65	62	59	56	53	50
070_4	2	46	43	40	Not Recommended			
070_4	3	68	65	62	59	56	53	50
090_4	2	16	13	10	Not Recommended			
	3	68	65	62	59	56	53	50
090_5	3	68	65	62	59	56	53	50
115_5	3	68	65	62	59	56	53	50

Direct Vent (Dual Pipe)
Maximum Allowable Length of Vent/Flue & Combustion Air Intake Pipe (ft)

Unit Input (Btu)	Vent/Flue/Air Intake Termination	Pipe Size [4] (in.)	Number of Elbows [1][2][3][5]						
			2	3	4	5	6	7	8
045_3	Standard	2	68	65	62	59	56	53	50
	Alternate	2	55	52	49	46	43	40	37
070_3	Standard	2	68	65	62	59	56	53	50
	Alternate	2	55	52	49	46	43	40	37
070_4	Standard	2	46	43	40	Not Recommended			
	Alternate	2	33	30	27				
070_4	Standard	3	68	65	62	59	56	53	50
	Alternate	3	54	51	48	45	42	39	36
090_4	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
090_5	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
115_5	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37

GKS90704CX

Non-Direct Vent (Single Pipe)
Maximum Allowable Length of Vent/Flue Pipe (ft) (1) (2)

Models (kBTU_Tons)	Pipe Size (4) (in.)	Number of Elbows (3) (5)						
		2	3	4	5	6	7	8
045_3	2	68	65	62	59	56	53	50
070_3	2	36	33	30	27	24	21	18
	3	68	65	62	59	56	53	50
070_4	2	55	52	49	46	43	40	37
	3	68	65	62	59	56	53	50
090_4	2	37	34	31	28	25	22	19
	3	68	65	62	59	56	53	50
090_5	2	39	36	33	30	27	24	21
	3	68	65	62	59	56	53	50
115_5	3	68	65	62	59	56	53	50

Direct Vent (Dual Pipe)
Maximum Allowable Length of Vent/Flue & Combustion Air Intake Pipe (ft)

Unit Input (Btu)	Vent/Flue/Air Intake Termination	Pipe Size (4) (in.)	Number of Elbows (1) (2) (3) (5)						
			2	3	4	5	6	7	8
045_3	Standard	2	68	65	62	59	56	53	50
	Alternate	2	55	52	49	46	43	40	37
070_3	Standard	2	36	33	30	27	24	21	18
	Alternate	2	23	20	17	14	11	8	5
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
070_4	Standard	2	55	52	49	46	43	40	37
	Alternate	2	42	39	36	33	30	27	24
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
090_4	Standard	2	37	34	31	28	25	22	19
	Alternate	2	24	21	18	15	12	9	6
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
090_5	Standard	2	39	36	33	30	27	24	21
	Alternate	2	26	23	20	17	14	11	8
	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37
115_5	Standard	3	68	65	62	59	56	53	50
	Alternate	3	55	52	49	46	43	40	37

This letter may be used to inform local code officials and inspectors about the change in use of 3" instead of 2" vent pipe on AMH950704CX, GCH90704CX, GMH950704CX and GKS90704CX model furnaces, along with the addition of the GCV91155DX model to Installation and Operation Manual.

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Service Bulletin

SF-021

DATE: February 27, 2008

TO: All Service and Parts Managers

SUBJECT: 0130F00006 Integrated Furnace Control Board

We have made a change to the control logic on 0130F00006 Integrated Furnace Control Board that is used on 80% and 90% AMH, GMH, GCH and GDH model furnaces.

If the furnace were to encounter a primary limit trip and the thermostat is calling for heat with blower set to continuous fan operation (Fan ON), the furnace may not restart the heating cycle unless the main power is re-set or call for the "G" signal is interrupted.

To prevent this potential lockout we had our supplier make a minor software change to the Integrated Furnace Control Board. The new Ignition Control part **#** is **Part # PCBBF109**.

NOTE: There are other possible reasons for a primary limit trip. A qualified service technician should verify the reason for the limit tripping. Possible reasons for a primary limit switch opening include:

1) Plugged or restricted air filter.
2) Improper gas pressure causing over firing of the furnace.
3) Improper sized or restricted ductwork.

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Service Bulletin

SF-020

DATE: January 23, 2008

TO: All Service and Parts Managers

SUBJECT: New Service Part Smart Number Part Cross Reference

Goodman has recently introduced a new service part numbering system (Smart Part Number) to provide an easier method to identify service parts, along with consolidation of multiple part numbers. The new part numbers provide a descriptor of the part (i.e. PCBAG100 – Printed Circuit Board Direct Spark Ignition Board Package) for easier identification of the part. To assist our customers in cross referencing current high usage service parts (circuit boards, capacitors, and contactors) we are provided the following cross reference charts, along with the decoding reference for each part that offers an explanation of what the actual part is.

Control Board Cross Reference

Original Part Number	Original PCB Part Number	New PCB Part Number	Description
N/A	PCB00100	PCBAG100S	UTEC DSI Ignition Board (15 SEER A/GPG, 2 Stage)
N/A	PCB00100S	PCBAG100S	UTEC DSI Ignition Board (15 SEER A/GPG, 2 Stage)
B1226008	PCB00101	PCBDM101S	Defrost board
B1368274	PCB00102	PCBEM102S	ECM Primary VSTB
B1370735	PCB00103	PCBFM103S	Electronic Blower Time Delay Relay
B1809921	PCB00104	PCBAM104S	DSI Ignition Board (PGB 50 Hz Jumbo)
B1809922	PCB00105	PCBAM105S	DSI Aux (PGB 50 Hz Jumbo)
B1809927	PCB00106	PCBBF106S	HSI Ignition Board (2 Stage, Furnace)
B1809927S	PCB00106S	PCBBF106S	HSI Ignition Board (2 Stage, Furnace) Kit
20481401	PCB00107	TSTWK01	2 Wire AC Control
20487201	PCB00108	PCBCR108S	2 Stage HP Control
0130F00006	PCB00109	PCBBF109S	HSI Integrated Ignition Board (2 Stage Furnace)
0130F00007	PCB00110	PCBBF112S	HSI Integrated Ignition Board (Furnace)
0130P00000P	PCB00111	PCBCP111S	Control, M61, Wireless (PTAC)
0130F00005	PCB00112	PCBBF112S	HSI Integrated Ignition Control w/Acc (Furnace)
10207707	PCB00113	PCBBF113S	HSI Integrated Ignition Control (Furnace)
10207708	PCB00114	PCBBF114S	HSI Integrated Ignition Control (2 Stage Furnace)
10207712	PCB00115	PCBBF115S	HSI Integrated Ignition Control (2 Stage Furnace)
10207713	PCB00116	PCBBF116S	HSI Integrated Ignition Control (2 Stage Furnace)

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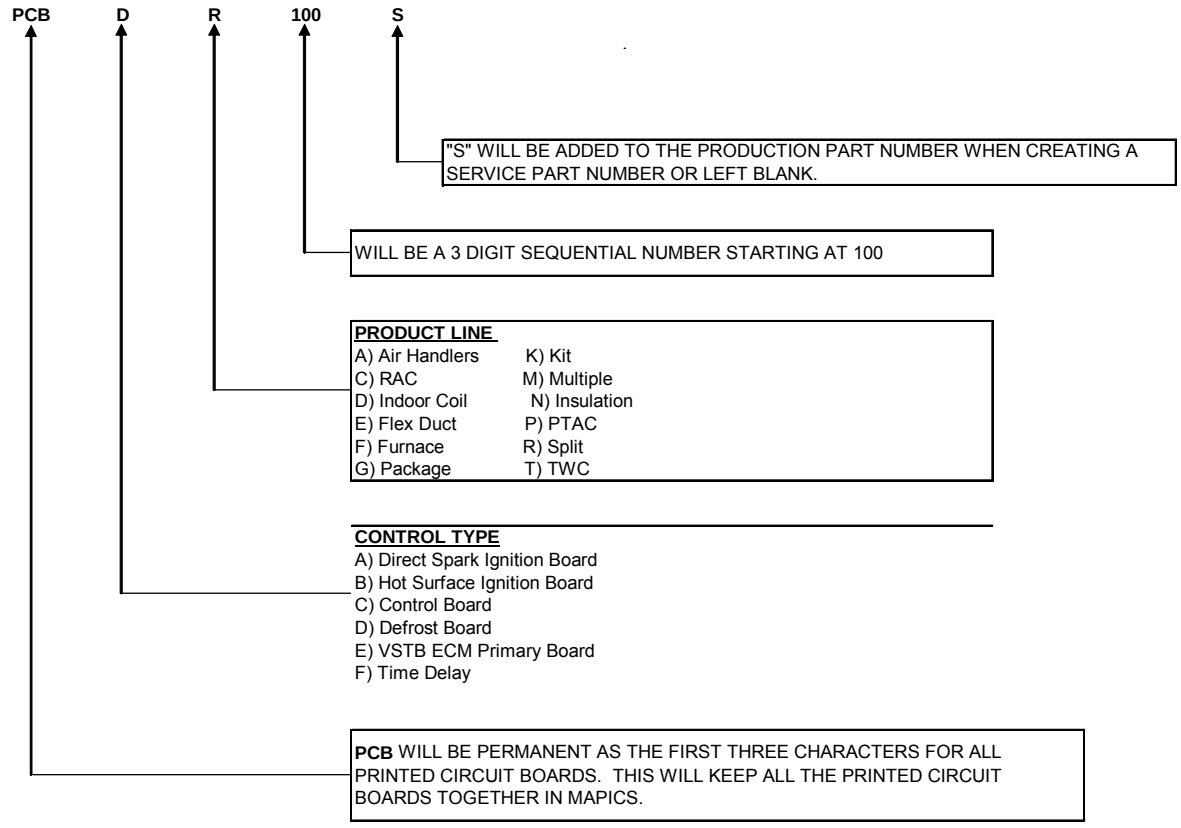
Control Board Cross Reference

Original Part Number	Original PCB Part Number	New PCB Part Number	Description
10207713S	PCB00116S	PCBBF116S	HSI Integrated Ignition Control (2 Stage Furnace)
10207719	PCB00117	PCBBF117	HSI Ignition Control (Used in RF000129)
10207720	PCB00118	PCBBF118S	HSI Integrated Ignition Control
10207720S	PCB00119S	PCBBF118S	HSI Integrated Ignition Control Svc Kit
20300003	PCB00120	PCBBF120S	HSI Integrated Ignition Control (2 Stage Furnace)
20300006	PCB00121	PCBBF121S	HSI Integrated Ignition Control (2 Stage Furnace)
B1226006	PCB00122S	PCBDM122S	Defrost Timer w/Jiffy Bag, Service
B1809918	PCB00123	PCBAG123S	UTEC Spark Ignition Board (Package)
0130P00012	PCB00124	PCBCP124	Control Board (PTAC)
N/A	PCB00125	PCBDR125S	Defrost Board (DFTD-1 Kit)
N/A	N/A	PCBAG126S	DSI Ignition Board (50 Hz, CE)

Decoding Printed Circuit Board Part Numbers

PRINTED CIRCUIT BOARD

EXAMPLE: PCBDR100S
Description(limited to 30 characters) EXAMPLE: PCB, DEFROST CONTROL



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Contactor Cross Reference

SINGLE POLE CONTACTORS							
POLES	AMPS	COIL	GOODMAN HOUSTON	GOODMAN DAYTON	AMANA	AMANA	New Part Number
1	20	24 VAC	N/A	N/A	C6170006	N/A	N/A
1	25	24 VAC	B1360321	BT1370704	C6170004	N/A	CONT1P025024V
1	25	208/230 VAC	B1360322	N/A	N/A	N/A	CONT1P025240V
1	30	24 VAC	B1360324	N/A	C6170002	22308301	CONT1P030024V
1	35	24 VAC	B1360325	N/A	C6170003	N/A	N/A
1	40	24 VAC	N/A	N/A	N/A	22308302	CONT1P040024V

DOUBLE POLE CONTACTORS					
POLES	AMPS	COIL	GOODMAN	AMANA	New Part Number
2	25	24 VAC	B1360300	N/A	CONT2P025024V
2	30	24 VAC	B1360301	N/A	CONT2P030024V
2	40	24 VAC	B1360305	C6170005	CONT2P040024V

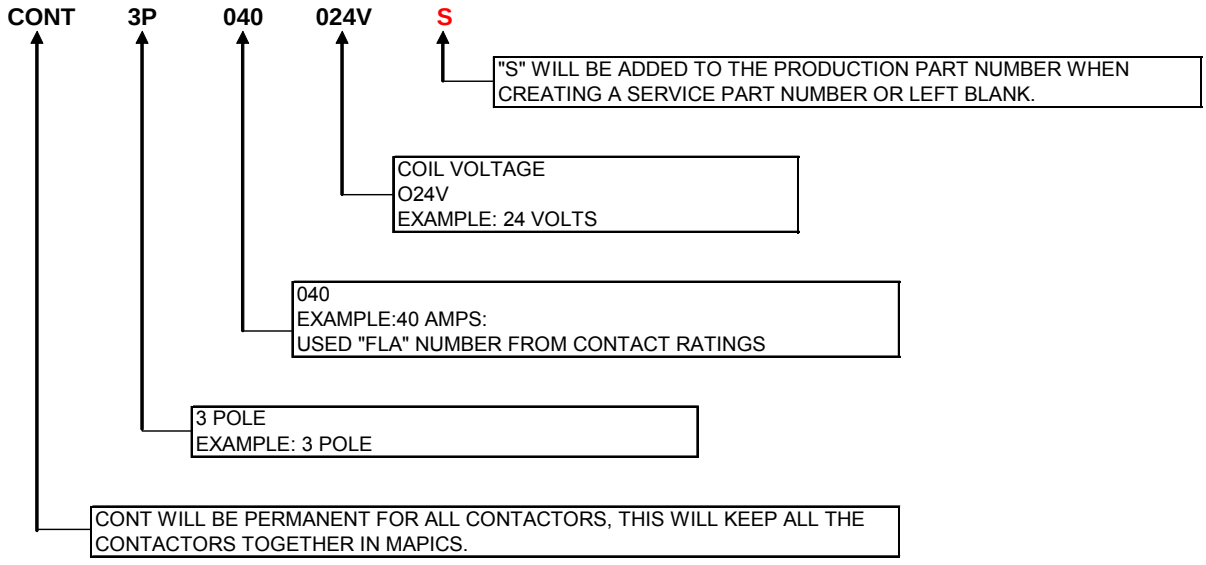
THREE POLE CONTACTORS					
POLES	AMPS	COIL	GOODMAN	AMANA	New Part Number
3	20	24 VAC	B1360303	N/A	N/A
3	25	24VAC	B1360315	C6333501	CONT3P025024V
3	30	24VAC	N/A	C6333601	CONT3P030024V
3	40	24 VAC	B1360335	N/A	CONT3P040024V
3	50	24VAC	B1360338	N/A	CONT3P050024V

Decoding New Contactor Part Numbers

CONTACTOR

EXAMPLE: CONT3P040024VS

Description(limited to 30 characters) EXAMPLE: CONT,3 POLE,40 AMP, 24 VAC



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Capacitor Cross Reference

New Part Number	Old Part Number
CAP030000370VA	A4056501 A4079601 B945654 D5515654 D6711825 D6879749 D6905403
CAP030150370RS	D6789058 D6879833
CAP030150440RS	D6789061 D6879844
CAP030350370RS	D6789050
CAP040000370VA	22-9627 A4048501 A4076901 B945655 C5825009 D5515608 D5515609 D5515678 D5523009 D6711804 D6711805 D6905402 M0300004 R0160005
CAP040150370RS	D6711844 D6879707
CAP040150370VC	D5515677
CAP040150440VC	D5515675 D6711842 D6879723
CAP040200370VC	C6711843 D5515676 D6711843 D6879708 D6973106
CAP040200440VC	D6711845 D6879724
CAP040250370VC	D5515646 D6711847
CAP050000370VA	10099901 22-9626 A4053101 A4066401 B945650 BT9458000 BT94580-00 C5825007 C5825010 C6711806 D5515607 D5515610 D5523010 D6711803 D6711806 D6879752 D6905401 M0300005 R0160049 R0658066 R1000290 RF000049
CAP050000440VA	10099903 22-9603 D5515649 R0160004
CAP050100370VC	D6879732 D6973105
CAP050100440VC	D6973107
CAP050150370RS	BT9457013 D6789054 D6879821 D6879825
CAP050150370VC	RF000051
CAP050150370VC	C5825003 D5515601 D5515603 D5515672 D6711801 D6879703 M0300301
CAP050250370RS	B94576000 B94576000S BT9457004 D5515640 D5515656 D5711827 D6711827 D6711848 D6711868 D6789020 D6789048 D6798022 D6859310 D6859315 D6879710 D6879715 D6879820 D6879836 D7689025
CAP050250440RS	D6789060 D6879839 D6879842
CAP050300370RS	B92578700 B94578700 B94578700S BT9457011 C6789023 D6789023 D6789051 D6879823
CAP050300370VC	R0658006 RF000048
CAP050300370VC	D5515642 D5515658 D6711828 D6879728
CAP050350370RS	D6789021 B94575300 B94575300S BT9457009 D6789021

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Capacitor Cross Reference

New Part Number	Old Part Number
CAP040250370VC	D6879709 D6879835
CAP040250440VC	D6879726
CAP040300370VC	D6879730 D6879827 D6879837
CAP040350440RS	D6789072
CAP050350440RS	B94575400 D6789025 D6798025 R0658058
CAP050400370RS	B94575500 D5515647 D5515662 D6711831 D6789024 D7689024
CAP050400370RT	BT9457008
CAP050400440RT	B92577500 B94575600 D6789028
CAP050450370RS	B92577200 B94577200 B94577200S C6789031 D6789031
CAP050450440RT	D6789029
CAP050500370RS	D6789043 D6879846
CAP050500370RT	B94577400 B94577400S
CAP050500440RT	B94575700
CAP050550370RS	D6789045
CAP050550370RT	B94575900 B94575900S
CAP050150440RS	D6789063 D6879847
CAP050200370RS	BT9457014 D6789022
CAP050200370VC	D5515645 D5515650 D5515660 D6879704
CAP075000440VA	10099904 D5523011 D6711870 D6725001
CAP075150370RS	D6879855
CAP075250370RS	BT9457002 D6789071 D6879824
CAP075300370RS	BT9457006 D6789056 D6879830
CAP075300370VC	D6711863 D6879731
CAP075350370RS	BT9457005 D6789062 D6859312 D6879712 D6879822 D6879845
CAP075350370VC	D5515648 D5515663 D6711832
CAP075350440RT	D6789034
CAP075400370RS	BT9457012 D6789057 D6879831 R0658126
CAP075400370VC	D6711869
CAP050350370RS	D6789049 D6879832 R0750074
CAP050350370VC	D5515643 D5515659 D5515673 D6711824 D6711829 D6711840 D6859306 D6879706 R0658028 RF000063
CAP100000370VA	22-9616 A4006401 A4080201 B945625 B945652 B9456-52 C5825012 C5825014 D5515614 D5515671 D6711538 D6711838 D6859325 D6879747 R0160050 R0658079 R1000297
CAP100000440VA	D5523012 D6725002
CAP100150370VC	D6973109
CAP100250370RS	BT9457003
CAP100250370VC	D5515641 D6711866
CAP100250370VC	D6879722
CAP100300370RS	D6789066 D6879853
CAP100300370VC	D6879725
CAP100350370RS	BT9457001

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Capacitor Cross Reference

New Part Number	Old Part Number	New Part Number	Old Part Number	New Part Number	Old Part Number
CAP050550440RT	B94575800	CAP075400370VC	D6879714	CAP100350370RS	D6789065
CAP050600370RT	B94577500	CAP075400440RT	D6789027		D6879727
	D6789046	CAP075450370RS	BT9457007		D6879852
CAP050600440RT	B94578800		D6789059	CAP100400370VC	D6879743
CAP050700370RT	B94577700		D6879841	CAP100450370RS	D6789064
CAP050800370RT	B94577600	CAP075450370VC	D6711865		D6879850
	B94577600S		D6859316	CAP100450370VC	C5825004
	B94757600S		D6879716		D5515651
	D6789047	CAP075450440RT	D6789026		D5515666
	R0658098				D5515674
CAP075000370VA	10019702	CAP075500370VD	D6879737		D6711834
	10099902	CAP075500440RT	D6789030		D6879744
	A4077001	CAP075550440RT	D6789033	CAP100500370RS	D6789069
	B945651		D689033	CAP125000370RP	B945672
	BT9458003	CAP075600370RT	D6789036		B9456-72
	C5825011	CAP075600440RT	D6789041	CAP125000370VA	D6859333
	C5825013	CAP075700370RT	D6789070		D6879756
	C6711807			CAP125400440RT	D6789040
	D5515611			CAP125600370RT	D6789038
	D5515613			CAP125600440RS	D6789052
	D6711807			CAP125600440RT	D6789053
	D6711808			CAP125800370RT	D6789044
	D6879753				
	R0160033				
	R0160052				
	R0208276				
	R0658067				
CAP150000370RP	A4053701	CAP200000370RP	B945665	CAP350000440RS	B4758521
	B4758501		D6789007		C5825029
	C5825005		D6879805		D5515628
	D5515602	CAP200000370VA	D6879757		D5515629
	D6711802	CAP200000370VC	A4060301		D6711817
	D6789004		B4758502	CAP350000440RT	D6789009
	D6879804		B4758518	CAP400000370RS	C5825021
	R0160008		C5825017		C5825024
	R0160051		D5515617		D5515621
CAP150000370VA	A4021901		D5515668		D5515624
	A4073701		D5515669		D6789001
	B4758515		D5523017	CAP400000370RT	D6711814
	B945653		D6711836	CAP550000440RT	C5825032
	B9456-53		D6879746		C5825033

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Capacitor Cross Reference

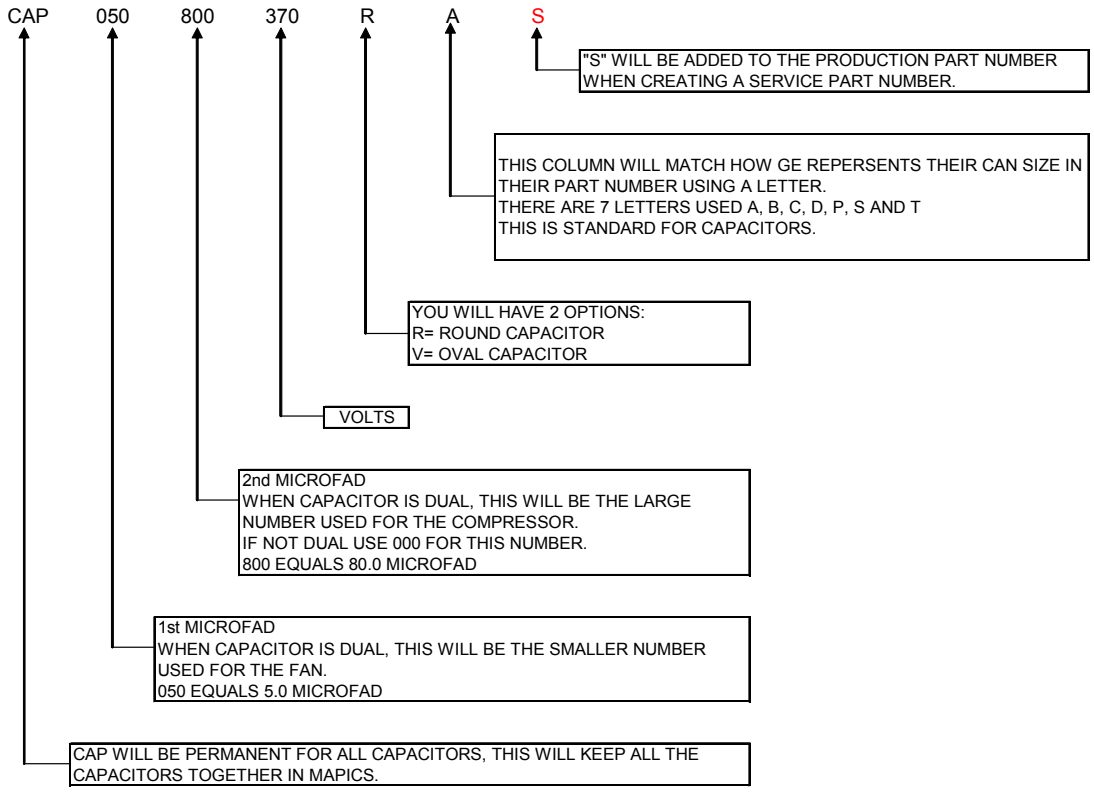
New Part Number	Old Part Number	New Part Number	Old Part Number	New Part Number	Old Part Number
CAP150000370VA	B945656 C5825016 C6711809 D5515616 D6711809 D6859332 D6879748 R0208161 R0208277 R0658170	CAP200000440RP	B945673	CAP550000440RT	C5825034 C5825035 D5515633 D5515635 D6711819
CAP150000370VC	D5523016 D6879739	CAP250000370RP	A4029401 A4060401 B4758504 B4758505 B945666 C5825018 C5825022 D5515618 D5515622 D5523018 D6711811		
CAP150000440VC	D6879741 D6973103 D6973108	CAP250000370VC	D6789003 D6879740		

Decoding New Capacitor Part Numbers

CAPACITORS

EXAMPLE: CAP050800370RS

Description(limited to 30 characters) EXAMPLE: CAP,5/80 MFD/370V/DUAL RD



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Service Bulletin

SF-019

DATE: November 20, 2007

TO: All Service and Parts Managers

SUBJECT: Replacement Burners for Obsolete Burner Part # 2522703S

Due to original burners (Part # 2522703S) used on Goodman GMP, GMPH, GMPE, GPD, GMPN, GMPNV, GMN model furnaces along with PGB and PGJ model gas package units being no longer available from our supplier, we are providing you with this bulletin that provides you with current replacement burner part number (Part # 40227-**S) for these units.

If there is a requirement for a new burner or set of burners for the GMP, GMPH, GMPE, GPD, GMPN, GMPNV, GMN model furnaces or PGB and PGJ model gas package units, refer to the chart below for new burner part #. These replacement burner part #'s 40227-**S will be a burner rail assembly supplied for the repair.

Number of Cells (burners) in Furnace	Part Number **
2 Cells	40227-00S
3 Cells	40227-01S
4 Cells	40227-02S
5 Cells	40227-03S
6 Cells	40227-04S

These burner rail assemblies (Part # 40227-**S) can be ordered from Service Parts by contacting your customer service order representative.

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Service Bulletin

SF-018

DATE: September 6, 2007

TO: All Service and Parts Managers

SUBJECT: Revised Venting Table for GKS90904CX** Model Furnace

Goodman has recently tested and approved the use of 2" vent pipe on GKS90904CX** model furnace. As a result of lab testing, it was found that in order to use 2" in place of 3" vent pipe on this model furnace, a pressure switch change is required. The new part # for pressure switch is **0130F00002P** (trip point pressure of -0.95" w.c.).

With this change there has been a minor model revision level change to the furnace model from GKS90904CXAB, AC & AD which were for use with 3" flue pipe only to GKS90904CX**AE** for use with 2" vent pipe.

Note: All previous GKS90904CXAB, AC and AD model furnaces can also utilize the revised vent tables shown below but will require a change to the new pressure switch 0130F00002P. Please also note that this is not a warranty replacement issue, switches replaced to allow the use of 2" vent pipe per the tables below will not be covered under warranty.

Below are the revised vent tables listing the use of 2" vent pipe for Non-Direct and Direct Vent pipe installations.

Non-Direct Vent (Single Pipe) Maximum Allowable Length of Vent Pipe (ft)								
Models	Pipe Size	Number of Elbows						
		2	3	4	5	6	7	8
090_4	2	37	34	31	28	25	22	19

Direct Vent (Dual Pipe) Maximum Allowable Length of Vent & Combustion Air Intake Pipe (ft)									
		Pipe Size	Number of Elbows						
			2	3	4	5	6	7	8
090_4	Standard	2	37	34	31	28	25	22	19
	Alternate	2	24	21	18	15	12	9	6

The Installation and Operation manual has been revised to include the vent pipe revisions (IO-300D). This letter may be used to inform local code officials and inspectors about the change in use of 2" instead of 3" vent pipe on these model furnaces.

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Service Bulletin

SF-017

DATE: June 26, 2007

TO: All Service and Parts Managers

SUBJECT: LPM-05 LP Gas Conversion Kits

Goodman has received reports of the LPM-05 LP Gas Conversion Kits containing only one of the LP gas valve springs instead of two that are needed for the conversion of the White-Rodgers 36G two-stage gas valve from natural to LP gas. There should be a packet (part # 0163F00000P) in the kit that will contain instructions for conversion to LP, an LP sticker and Two (2) springs to be placed in the gas valve.

The date code of the affected LPM-05 LP Conversion Kits ranges from 0704****** through 0706******. Please inspect your inventory of these kits to determine if there is only one (1) spring in the White-Rodgers packet part # 0163F00000P, or a single packet with White-Rodgers part number 92-1008 that contains one (1) spring.

If after inspecting your inventory of LPM-05 LP Gas Conversion kits and you need the additional spring, you will need to contact your customer service representative to get replacement spring kit (part # 0163F00000P) sent to you at no charge.

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Service Bulletin

SF-016

DATE: July 17, 2007

TO: All Service and Parts Managers

SUBJECT: GME8 Furnace Wiring Diagram Correction

We have discovered that the wiring diagram placed in the GME8 model furnaces is incorrect in regards to wiring for indoor blower cooling and heating speeds. However we have verified that the furnaces were wired correctly from the factory per the control assembly drawing being used in manufacturing.

Although the furnaces are wired correctly, the wiring diagram attached to the furnace could lead to improper cooling or heat speed airflow when changing a blower motor or the main control board.

The *incorrect* wiring shown on the diagram is:

High cool (Orange wire) to the Low Heat Relay # 3 terminal.

Low Heat (Blue wire) going to the High Heat Relay # 3 terminal.

High Heat (Black wire) going to the Cool Relay #3 terminal.

The *correct* wiring of the relays should be:

High Cool (Black wire) to the Cool Relay #3 terminal.

Low Heat (Orange wire) going to the Low Heat Relay #3 terminal.

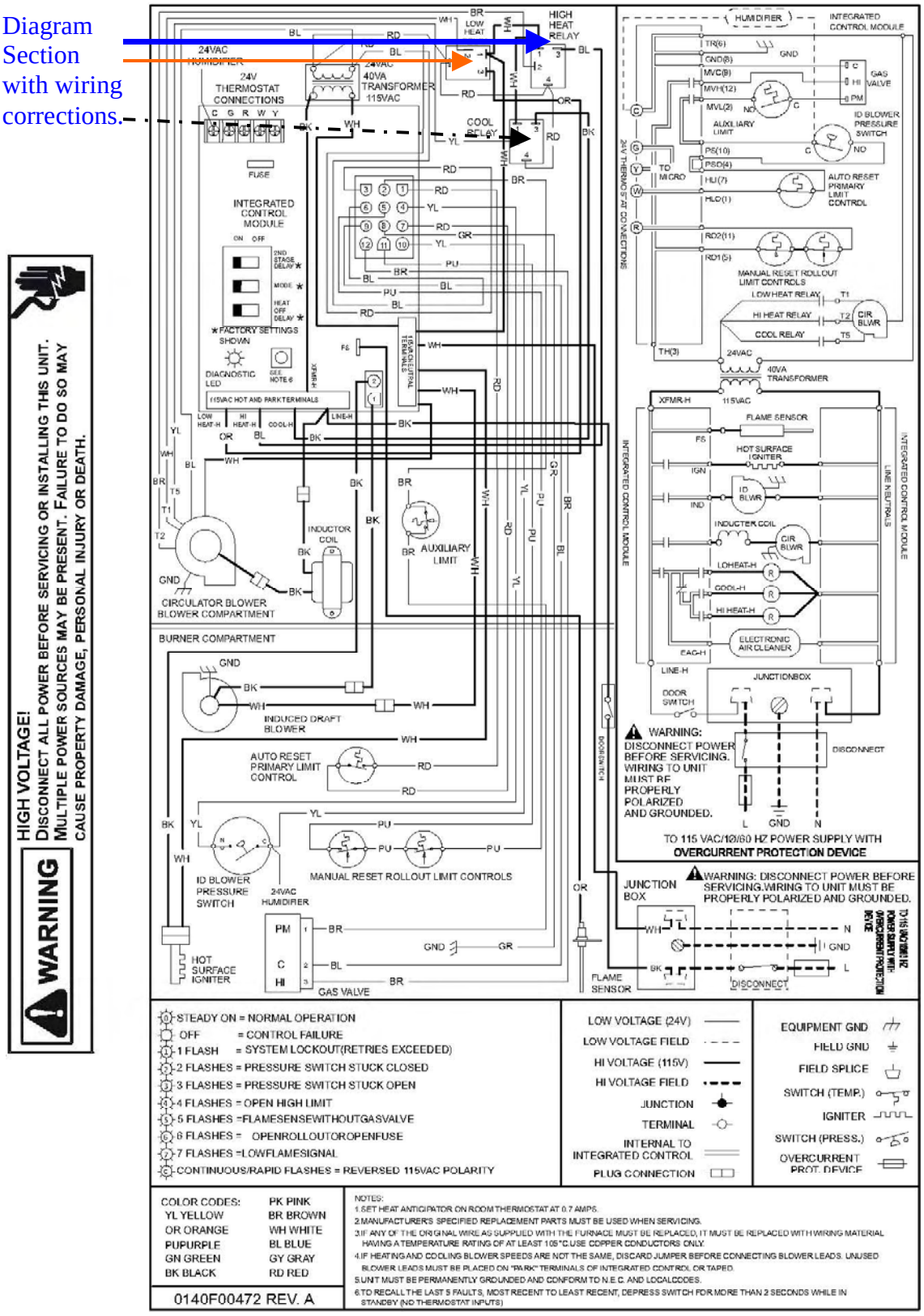
High Heat (Blue wire) going to the High Heat Relay #3 terminal.

A new wiring diagram Part # 0140F00472 is available upon request at no charge from service parts by contacting your customer service representative. For your reference, a copy of the new corrected wiring diagram is attached to this bulletin.

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Diagram Section with wiring corrections.



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Service Bulletin

SF-015

DATE: March 7, 2007

TO: All Service and Parts Managers

SUBJECT: 90% Jakel Two–Stage Induced Draft Motor Overload Tripping

We have received reports from the field of Jakel Induced Draft Motor (**Part # 20245903**) used on the 90% variable speed furnaces shutting down on internal overload. This issue is occurring during the high-speed operation of the induced draft motor when the furnace is having long run cycles due to the extremely low outdoor ambient temperature or if there is use of a setback thermostat which may cause the furnace to have a long second stage run time when coming out of the setback mode and is aggravated by power supplies in excess of 120 volts.

The models affected are ACV9, GCV9, AMV9 and GMV95 manufactured with date code of August 2006 (serial date code 0608) through January 2007 (serial date code 0701).

Symptoms for this issue include:

1. Pressure switch fault code 3 (low fire pressure switch stuck open).
2. Dwelling not coming up to temperature after night setback or in very cold outside ambient temperature.
3. Induced Draft Motor shutting down during operation, verified with voltage still provided by the circuit board to the motor.

Current Jakel Induced Draft Motors (Part # 20245903S) in Service Parts Inventory have had a change made to the internal motor windings to prevent the overload from tripping due to excessive heat and can be identified by blue on the outside of box and along with date code of 0807M and later. Units produced after 02/05/2007 starting with serial number 0702****** were built with the new ID Blower. The Induced Draft Motor (Part # 20245903S) can be ordered through Service Parts by contacting your customer service representative.

Goodman will pay $85.00 labor for each unit that requires replacement of the Jakel Induced Draft Motor (Part # 20245903). Inducer motors should be claimed under the warranty. A warranty claim form (RF000007) must be completed for each unit requiring the repair and must reference Project Code **8590** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using **8590** as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SF-014

DATE: February 27, 2007

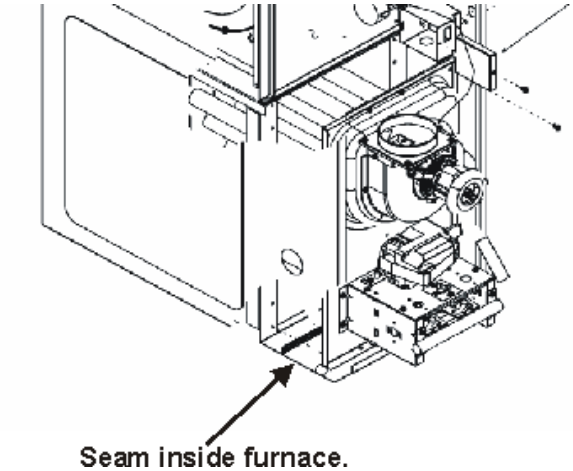
TO: All Service and Parts Managers

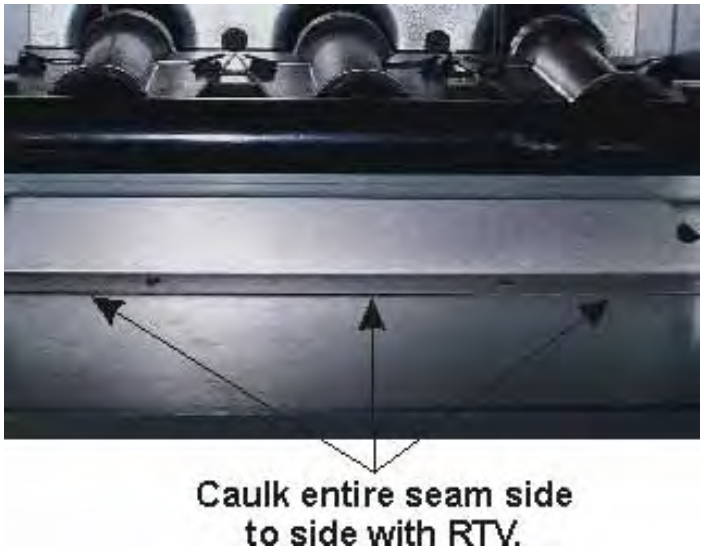
SUBJECT: Supply Air Infiltration on 80% Dedicated Down Flow Model Furnaces

Goodman has received reports on ADH/GDH & ADS/GDS 80% dedicated down flow model furnaces locking out due to supply air infiltrating into the burner compartment causing loss of flame sense after the main blower is energized. This issue is due to an air gap that has occurred on some furnaces at the bottom of the cabinet, allowing supply air to leak into the burner compartment and disrupting the flame causing loss of flame sense.

Goodman Mfg began installing a gasket in this area on all down flow models as of February 2007 (i.e., serial numbers 0702******).

The point where the blower section and burner section of the furnace connect (refer to following two images) is the area of focus. The bottom of the furnace where the burner assembly meets the cabinet **may** have an air gap at the flange which can allow air to be forced around the burner, causing loss of flame sense and after repeated retries the furnace eventually goes into lockout.





The field repair for this issue will be to use a high temp RTV silicone sealant to seal the gap between the burner and blower sections as shown above. When installing the RTV Silicone Sealant, make sure to fill the gap by running a bead along the entire seam to prevent any internal air leakage from the main blower compartment into the burner compartment.

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Service Bulletin

SF-013

DATE: 11/10/2006

TO: All Service and Parts Managers

SUBJECT: New Jakel Round Nose Induced Draft Blower Assemblies for 80% Single Stage Gas Furnaces

Beginning the later part of this month, November 2006 (serial date code 0611), the Induced Draft Blower assembly on all 80% single stage gas furnaces will have a new look. The Induced Draft Blower that you are familiar with has a rectangular outlet and is furnished with a two-piece transition (Chimney Assembly) for connection to the 4-inch flue. This new Induced Draft Blower from Jakel **(Part # 0131F00006S)** features a single piece drawn housing incorporating the transition right into the housing. The new assembly has the same 4-point mounting, the same termination outside the cabinet and can still be rotated for horizontal left and right installations. Also the motor and blower wheel are exactly the same as in the square nosed induced draft blowers.

Provided below is breakdown of the 80% single stage gas furnaces that use the new round nose Induced Draft Blower assembly, along with models that use the square nose Induced Draft Blower assemblies and require the two-piece transition (chimney assembly). The minor revision letter (AB and BB) in the model number is being used to track this change from the square to round nose Induced Draft Blower assembly.

Model #	Rev	Induced Draft Blower Part #	Chimney Assembly Part #
GDS8	AA	0131M00002S	4053501S
GDS8	BB	0131F00006S	None Required
GMS8	AA	0131M00002S	4053501S
GMS8	BB	0131F00006S	None Required
GHS8	AA	0131M00002S	4053501S
GHS8	BB	0131F00006S	None Required
GMH8	AA	0131M00002S	4053501S
GMH8	AB	0131F00006S	None Required
GDH8	AA	0131M00002S	4053501S
GDH8	AB	0131F00006S	None Required
AMH8	AA	0131M00002S	4053501S
AMH8	AB	0131F00006S	None Required

The new round nose Induced Draft Blower **(Part # 0131F00006S)** is not 100% backwards compatible with the old square nose design. The new smooth transition on this round nose Induced Draft Blower changed the internal airflow patterns enough in some cases to require a new pressure switch. Distributors will need to maintain an inventory of both the square nose and round nose Induced Draft Blowers.

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Service Bulletin

SF-012

DATE: April 18, 2006

TO: All Service and Parts Managers

SUBJECT: New Ignition Control Board 0130F00005S

During this past heating season we had some reports of slight delays in furnace ignition operation. The igniter was not staying energized long enough before the gas valve was fully opened causing a no light situation during the first ignition sequence of the furnace. On subsequent ignition tries the furnace, in most cases, would light and continue to operate until next ignition cycle.

As a product improvement we have made a change to the Ignition Activation Period (IAP) of the ignition control on all GMS8, GCS8, GDS8, GMS9, GCS9, GMS95, GCS95, DMS8, DDS8, DHS8, DMS9, and DCS9 model furnaces from 1 to 2 seconds. This allows for a slightly longer time for the igniter to stay energized after the gas valve is energized. The Ignition Activation Period is defined as the amount of time the igniter remains energized after the gas valve has been energized. All other wiring, connections, timings, etc. are equivalent to the B1809926 ignition control.

With this change, which took effect in production December 15, 2005, the part number of the control board changed from B1809926 to 0130F00005. All units produced after this date, have the new control (Part # 0130F00005) with the 2 second Ignition Activation Period (IAP). These ignition controls are used on Goodman® single-stage 80%, 90% and 95% model furnaces (GMS8, GCS8, GDS8, GMS9, GCS9, GMS95, GCS95) along with the Amana® Distinctions single-stage 80% and 90% model furnaces (DMS8, DDS8, DHS8, DMS9, DCS9).

If a unit experiences a “no light” situation, before arbitrarily making a control board change, the following checks should be performed to rule them out as a possible cause and **only then** should the ignition control be replaced:

1. *Poor electrical ground to the equipment:* All internal equipment ground wires should be checked for tight connections. Also, check for voltage between the “LINE N” terminal and the “C” Common 24 volt terminal on the ignition control board. If you measure 2 volts or less you have a good ground, more than 2 volts indicates a bad ground at the electrical panel or ground rod. The gas furnace must be on a dedicated electrical circuit going directly to a dedicated single-pole breaker in the breaker panel. The ground wire from the furnace should terminate to a ground rod.

2. *Sticking Gas Valve:* To check for this condition, apply 24 volts “OFF/ON” several times to the gas valve directly. Replace the original low voltage wires to the gas valve and then start the furnace. Adjust the thermostat to call for heat and verify proper ignition.

The new ignition control **(Part # 0130F00005S)** can be ordered from Service Parts by contacting your customer service order representative.

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Service Bulletin SF-011

DATE: February 16, 2006

TO: All Service and Parts Managers

SUBJECT: Induced Draft Motor Rubber Coupling Change for B1859001S Kit

On January 16, 2004, we changed to a Jakel induced draft motor service kit, gray in color, (Part # B1859001S) used on Goodman GUN and GUS gas furnaces. We have received reports this heating season of difficulty installing the rubber coupling supplied with this kit.

We are releasing a new rubber coupling (Part # M-1484) which has a larger inside diameter opening. This can be ordered to replace any existing rubber couplings that fit too tight.

Check your inventory and call your customer service representative for the correct coupling. Discard the old rubber coupling and place the new coupling in your existing kits when you receive them.

A new label (shown below) will be placed on the outside of future kits to identify that the new coupling has been included. The new kits shipped will contain a date code of (0406M and later) for proper identification. This is the only change made to this service kit.



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Service Bulletin SF-010

DATE: February 15, 2006

TO: All Service and Parts Managers

SUBJECT: B4833000S Kit Shipped With Incorrect Induced Draft Blower

We have received reports that the single stage induced draft blower kit, Part # B4833000S, was shipped with an incorrect two-stage induced draft blower, Part # B4833001S, in the box.

The two-stage induced draft blower is easy to identify by looking at the part # (B4833001S) on the blower label. The blower can be identified by the wiring harness, which has a black, red and white wire. It has a three-spade Amp connector instead of two individual wires from the motor like on the single stage blower.

If you have any of these single stage induced draft blowers incorrectly boxed with the two-stage induced draft blowers you have two options:

(1) Re-label the box with Part # B4833001S, keep the motor and adjust your inventory accordingly.

(2) Contact your customer service representative for a return authorization to return these induced draft blower motors.

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Service Bulletin SF-009

DATE: February 3, 2006

TO: All Service and Parts Managers

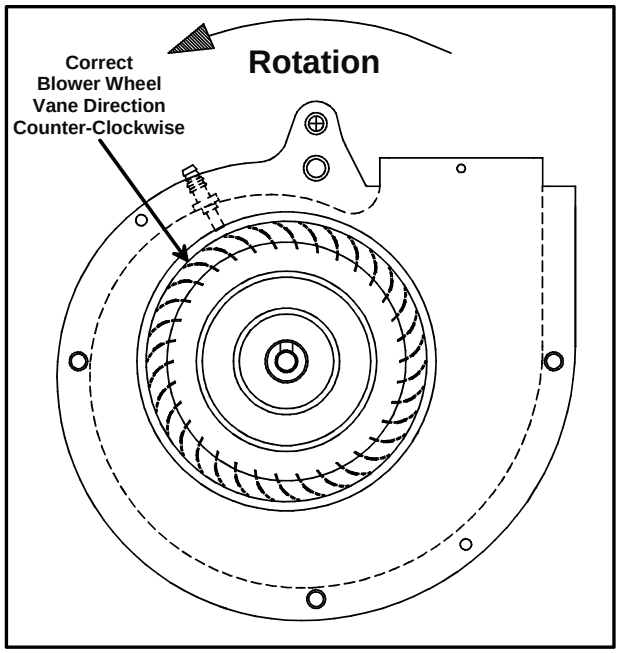
SUBJECT: 0131M00002S Service Kit with Incorrect Induced Draft Motor Wheel

We have received reports that some single stage Jakel induced draft blowers Part # 0131M00002S have the wrong rotation blower wheel installed.

The date code (45-05X) located on the induced draft blower label is the date code that has been reported with the incorrect rotation blower wheel. We have a preliminary serial number range of 88523 to 90092 that you will need to check for the incorrect blower wheel. As we continue to look into this issue with our supplier Jakel, the serial number range may extend before or after the numbers we have listed.

To inspect: Remove the induced draft blower from the box and check the direction of the blower wheel vanes. The direction of rotation is counter-clockwise as viewed from the shaft end of the motor. (Refer to the figure below for correct blower wheel vane direction and rotation of blower wheel). The incorrect vanes of the wheel are facing a clockwise direction to the right.

If you have any of these induced draft blowers with the incorrect wheel it will be necessary for you to contact your customer service representative for a return authorization for return of these induced draft blowers. The blower wheel **cannot** be field replaced.



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Service Bulletin SF-008

DATE: February 3, 2006
TO: All Service and Parts Managers
SUBJECT: 0230K00001 Mini Igniter Service Kit

Service Bulletin SF-001 issued in September 2005 released a new Mini Igniter Kit that could be used to replace the B1401015S and B1401018S silicon carbide igniters on most Goodman 80% and 90% furnaces. Goodman has recently received a few reports of furnaces not lighting or inconsistent ignition. We have discovered, due to variations in burner design and manifold assemblies, the igniter can be positioned further from the burner than desired on some units.

To improve ignition reliability we have released a new igniter bracket (part # 0121K00006). This moves the igniter .22" closer to the burner. To help identify the new bracket in igniter kits we have changed the **Mini Igniter Kit to a new Part number 0230K00001**.

Goodman will be providing the new bracket in all igniter kits produced after February 1, 2006 and with all Mini Igniter kits shipped after February 6, 2006. If you need the new bracket for igniter kits in your inventory contact Technical Services at 888-593-9988 or your Order Services representative to have igniters shipped to you.

NOTE: The mini igniter conversion kit is NOT approved for GSU model furnaces at this time.

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Service Bulletin

SF-007

DATE: January 12, 2006

TO: All Service and Parts Managers

SUBJECT: Service Igniter Kit Part # 10735003A with Incorrect Igniter

Some recent shipments of service igniter's **Part # 10735003A** contain the wrong igniter in the box. The igniter that has been incorrectly placed in the box is Part # B1401018S and has the connector on the end of it as shown in Figure 1 below. This style igniter is used on all Goodman brand furnaces that use the silicon carbide igniter.

The igniter in Figure 2 (Part # 10735003A) is the correct igniter that should have been shipped in the box instead of igniter Part # B1401018S. These two igniters look similar except for the plastic connectors on the end of each igniter.

If you ordered igniter Part # 10735003A and were shipped igniter Part B1401018S as shown in Figure 1 below, you can either keep these igniters for use on Goodman brand furnaces that use this style of igniter or return the parts for credit. If you choose to keep these parts, please change the part number on the igniter box to B1401018S.

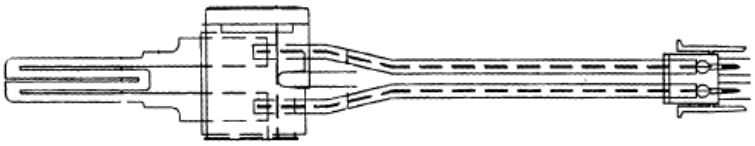


Figure 1 – Incorrect Igniter (B1401018S)



Figure 2 – Correct Igniter (10735003A)

If you choose to return these igniters, please contact your customer service parts representative to obtain a return authorization for return of these parts.

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Service Bulletin

SF-006

DATE: January 12, 2006
TO: All Service and Parts Managers
SUBJECT: Drain Clamp Change for the New Drain Elbow

The new drain elbow used on current 90% gas furnaces (released August 2005, serial date code 0508 and later) will now use a new 3/4" clamp that connects to the vertical drain leg (Figure 1). The new drain elbow design has a slightly larger diameter in the vertical drain leg causing a tight fit.

We will now use a new 3/4" clamp (Part # M0119206) in the Standpipe Bag Assemblies (Part # 10195517 and Part # 10195518) effective November 14, 2005.

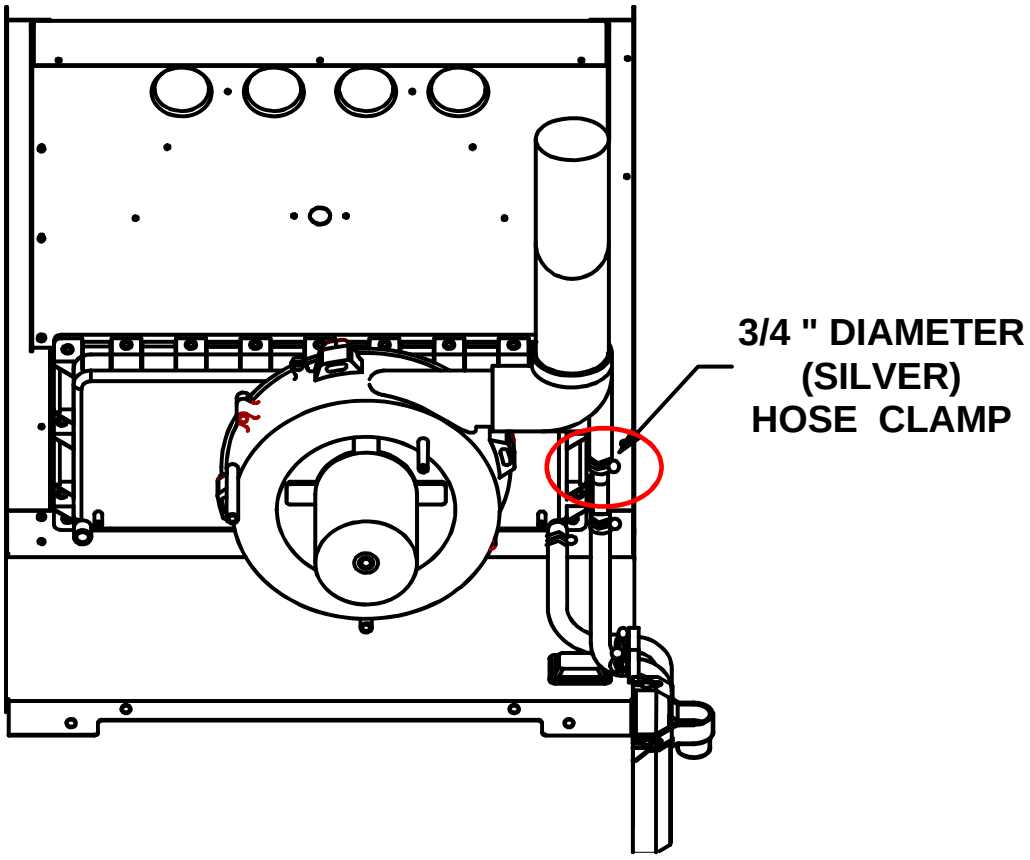


Figure 1

If you encounter an issue in the field with the existing clamp not fitting on the new drain elbow vertical drain leg, you can order the new 3/4"clamp from service parts by contacting your customer order representative.

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Service Bulletin

SF-005

DATE: November 8, 2005

TO: All Service and Parts Managers

SUBJECT: Schedule 40 PVC Cellular Core (Foam Core) Plastic Pipe

We are approving the use of **"Schedule 40 PVC Cellular Core (Foam Core) Plastic Pipe"** for use as flue/vent pipe material on all 90% plus model gas furnaces installed **only** in the United States. The "PVC Cellular Core (Foam Core) Plastic Pipe" is manufactured under American Society for Testing and Methods standard ASTM F891.

Schedule 40 PVC Cellular Core (Foam Core) Plastic Pipe is **not** approved for use in Canada. CSA does not have a Reference Standard for Cellular Core PVC Plastic Pipe.

Schedule 40 PVC Cellular Core (Foam Core) Plastic Pipe is a coextruded poly (vinyl chloride) (PVC) plastic pipe with a cellular core (contains numerous cells intentionally introduced, interconnecting or not, distributed throughout the pipe) and concentric inner and outer solid layers. PVC primer meeting ASTM F656 and PVC solvent cement meeting ASTM D2564 specifications must be used. Fittings must be DWV type fittings meeting ASTM D2665 and ASTM D3311. Carefully follow the manufacturer's instructions for cutting, cleaning and solvent cementing of PVC.

To ensure proper furnace operation, this Schedule 40 PVC Cellular Core (Foam Core) Plastic Pipe must be installed in accordance with the installation instructions, all local building codes and ordinances. In their absence, follow the latest edition of the National Fuel Gas Code (NFPA 54/ANSI Z223.1), and or CAN/CGA B149 Installation Codes, local plumbing or wastewater codes, and other appliance codes.

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Service Bulletin

SF-004

DATE: November 3, 2005

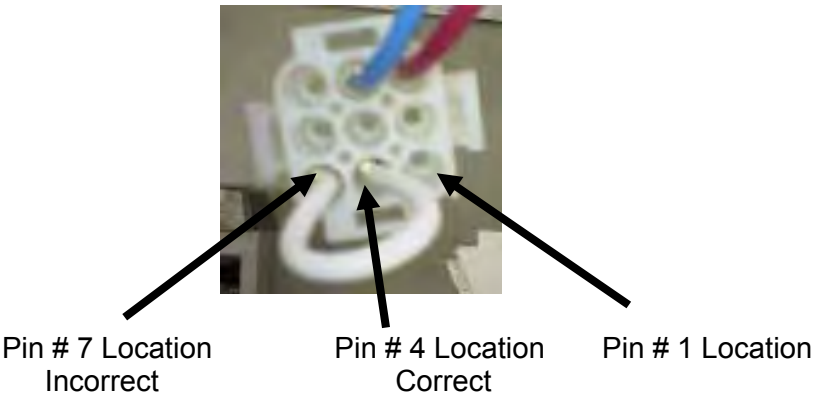
TO: All Service and Parts Managers

SUBJECT: Incorrectly Wired 9-Pin Harness in B1809913S Ignition Control Service Kit

There have been reports of the 9-pin wiring harness used in the B1809913S ignition control service kit being wired incorrectly. The picture below provides an example of a harness that is incorrectly wired.

The white wire located at pin location # 7 is incorrect and should have been located at pin # 1 location of the connector. With the white wire in the # 7 pin location, this will cause the 3A fuse to blow on the control board. The lower middle white wire of the connector located at pin position # 4 is correct.

Please check your inventory of B1809913S ignition control service kits as soon as possible for these incorrectly wired harnesses. If you have any of the incorrectly wired harnesses, the first option is to use a pin extractor to relocate the white wire from pin # 7 location to the correct #1 pin location. Obtaining a pin extractor locally would be the fastest method of resolving this issue. If you do not have a pin extraction/insertion tool, you will need to order a new harness from service parts by contacting your customer order representative. Please DO NOT return any of the parts in this kit.



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Service Bulletin

SF-003

DATE: November 4, 2005

TO: All Service and Parts Managers

SUBJECT: Amana® and Amana® Distinctions™ 80% Furnace Door Switch Kit

In June 2004 we introduced the new Amana® brand 80% gas furnaces, models AMS8, DMS8 and DHS8 with a new deep drawn door panel. Because of this deep drawn door, the door interlock switch did not make proper contact with the blower access door and prevented the furnace from operating correctly. Units affected are AMS8, DMS8 and DHS8 model furnaces with serial numbers of 0407673199 and prior.

On July 20, 2004 (serial date code **0407673200 and later**) a rubber plug (Part # M0326804S) inserted over the door switch (See Figure 1) was added in production to allow the door switch to make proper contact with the blower access door. Also at that time all units in our inventory were reworked by adding the rubber plug and these units were identified by the green rework dot on the carton adjacent to the traveler label. Additionally, all distributor locations where these furnaces were shipped were provided with parts and instructions for reworking their inventories. Effective August 2004 the door interlock switch was moved to the blower deck and standardized with the 90% furnaces eliminating the need for this switch extension.

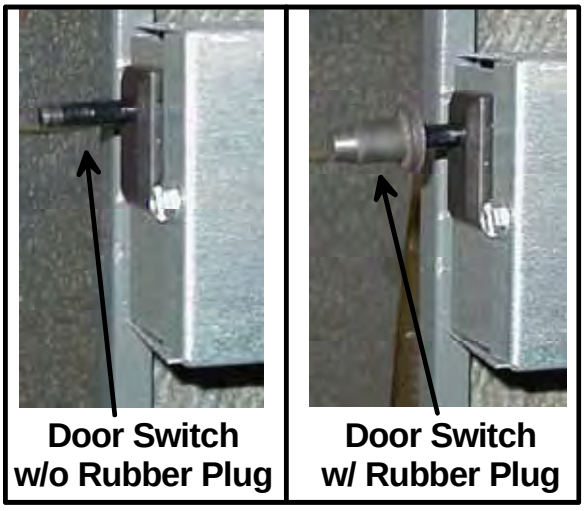


Figure 1

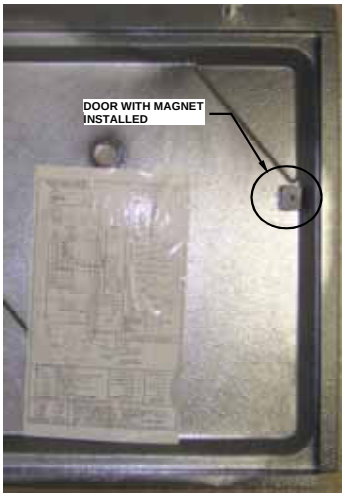


Figure 2

Due to varying internal depths in the rubber plugs and high ambient temperatures in some applications, there have been a few reports of the door switch not making proper contact. In those situations, we are providing the following alternate repair kit shown in Figure 2. The new repair kit **(Part # 0270K00006P)** consists of three magnets applied to the inside blower door and locating instructions allowing proper operation of the door interlock switch.

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Service Bulletin

SF-002

DATE: November 8, 2005

TO: All Service and Parts Managers

SUBJECT: New Drain Elbow - 90% Model Furnaces

We have designed a new drain elbow to address condensate disposal issues from the vent pipe which were, under certain conditions, causing nuisance pressure switch trips on 90% Amana® brand ACS9, ACV9, AMS9, AMV9, DCS9, DMS9 and Goodman® brand GCS9, GCV9, GMS9, GMV9 model gas furnaces when installed in a horizontal left position. The new drain elbow **Part # 20171802** will be used in production effective August 5, 2005 (serial number 0508xxxxxx).

We previously used the RF000142 drain coupling kit when installing 90% model gas furnaces in the horizontal left position to address the issue as stated above, and this new drain elbow will take the place of the RF000142 drain kit. This new elbow allows any condensate in the vent pipe to drain out the small side port hole when installing the furnace in a horizontal left position. The elbow is located between the induced draft motor and the flue vent pipe inside the furnace.

The new drain elbow has a tapered plug (Part # B9139949) inserted into the side drain port. Updated Installation Instructions (IO-244E) Goodman® and (IO-254D) Amana® show how to connect the hoses when using the new elbow. The drain hose that previously went from the induced draft blower housing to the drain trap will now go from the new elbow to the drain trap. The blower wheel port will remain plugged.

NOTE: Gas furnaces still in inventory that DO NOT have the new drain elbow as shown below, need to use either the RF000142 drain kit or the new drain elbow Part # 20171802 and the Installation Instructions listed above, only when the furnace is installed in the horizontal left position.



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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR – 085

DATE: January 13, 2022

TO: All Service and Parts Managers

SUBJECT: MBVC2001 Shared Data Update

MBVC2001 air handlers manufactured January 2022 and later (serial numbers starting with **2201**) can now utilize 20kw heater kits. For MBVC2001 air handlers manufactured prior to January 2022 (serial numbers **2112** and prior), updated shared data must be flashed to the system using the CoolCloud App. This shared data update will give sufficient airflow to the equipment to allow for the use of a 20kw heater kit.

The airflow stickers mounted on the equipment and the IO electric heat airflow tables (shown below) list the 20kw heat kit as NR (not rated) when matched with the MBVC2001. These documents/tables will be updated as running changes to reflect this airflow change.

Electric Heat Airflow Table before 2201

Htr Kw	MBVC1201AA-1	MBVC1601AA-1	MBVC2001AA-1
3	600	800	800
5	600	800	800
6	635	800	800
8	740	1000	1000
10	1000	1000	1200
15	1400	1500	1500
19	NR	NR	NR
20	NR	NR	NR
21	NR	NR	NR
25	NR	NR	NR

Electric Heat Airflow Table after 2201

Htr Kw	MBVC1201AA-1	MBVC1601AA-1	MBVC2001AA-1
3	600	800	800
5	600	800	800
6	635	800	800
8	740	1000	1000
10	1000	1000	1200
15	1400	1500	1500
19	NR	NR	NR
20	NR	NR	2000
21	NR	NR	NR
25	NR	NR	NR

If you have questions regarding this bulletin, please contact TechServices@goodmanmfg.com

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR – 084

DATE: January 20, 2022

TO: All Service and Parts Managers

SUBJECT: Rotary Compressors Require Hard Start Kit when Paired with Indoor TXV

All outdoor equipment utilizing a rotary compressor when matched with a TXV equipped indoor coil are ***REQUIRED*** to have a hard start kit installed per the Installation Instructions. Shown below are the manufacturer approved hard start kits. The appropriate hard start kit can be found in the accessories section of the Spec Sheet of the outdoor equipment. Operating the unit without the proper Hard Start Kit can cause damage to or failure of the unit. Such damage or failure is not covered under the unit's warranty.

Hard Start Kit Part #'s

Part #	Description
CSR-U-1	Hard-start Kit
CSR-U-2	Hard-start Kit
CSR-U-3	Hard-start Kit

Notice Shown in IO's

NOTICE

UNITS WITH ROTARY OR RECIPROCATING COMPRESSORS AND NON-BLEED TXV'S REQUIRE A HARD START KIT.

If compressor type is unknown, please refer to one of the discovery options below.

1. Review the equipment Spec Sheets shown in the example below
2. Call your Distributor or Customer Service Representative
3. Call Goodman Tech Support at **888-593-9988**

	GSX14 0181M*	GSX14 0191K*	GSX14 0241L*	GSX14 0251L*	GSX14 0301K*	GSX14 0301N*	GSX14 0311K*
CAPACITIES							
Max Cooling (BTU/h)	18,000	18,000	24,000	24,000	30,000	30,000	30,000
SEER/EER	14 / 11.5	14 / 12.2	14 / 12	14 / 12.2	14/12.0	14/11.5	14 / 12.2
Decibels	75	71	74	71	72	73	72
COMPRESSOR							
RLA	6.0	9.0	7.7	13.5	12.8	12.1	12.8
LRA	37.5	47.5	38.0	58.3	64	55	67.8
Type	Rotary	Scroll	Rotary	Scroll	Scroll	Rotary	Scroll

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR-083Rev1

DATE: July 13, 2021

TO: All Service and Parts Managers

SUBECT: Inverter PCB's – New Inverter PCB Kit numbers

Update July 2021: Revised Table 1 to correct Tonnage to New PCB Kit

All new Inverter PCB kits provided through Service Parts will require shared data to be field installed. It is necessary to flash the Shared Data to the PCB utilizing the service tool BTSDL01 for **Goodman®** / **Amana®** brand or BTSDL01-D for **Daikin**. These service tools eliminated the Shared Data chips outlined in SR-069R1. This service bulletin supersedes SA-075.

Note: Service kits will continue to contain the necessary gaskets and thermal paste required for replacement installation. See ***Table 1*** for new Programmed Inverter PCB Kit numbers:

18 Seer Tonnage	Old PCB Kit	New PCB Kit
2 Ton HP	0272R01042S	3P386786-1S-K
3 Ton HP	0272R01043S	3P386786-3S-K
4 Ton HP	0272R01044S	3P386786-5S-K
5 Ton HP	0272R01045S	3P386786-5S-K
20 Seer Tonnage	**Old PCB Kit**	**New PCB Kit**
2 Ton AC	0272R00976S	3P357336-4S-U
3 Ton AC	0272R00978S	3P357336-5S-U
4 Ton AC	0272R00981S	3P357343-4S-T
5 Ton AC	0272R00994S	2P361563-3S-M
2 Ton HP	0272R00985S	3P357336-4S-U
3 Ton HP	0272R00988S	3P357343-4S-T
4 Ton HP	0272R00991S	3P357343-4S-T
5 Ton HP*	None-New Part	3P357343-5S-U
5 Ton HP	0272R00997S	2P361563-3S-L

Table 1

The 5 Ton HP PCB is Model Revision specific. All model / revisions prior to **Amana** brand AVZC200601BA, or **Daikin** DZ20VC0601CA revision will use the *2P361563-3S-L* PCB kit. All current model / revisions and after **Amana** brand AVZC200601BA, **Goodman** GVZC200601AA, or **Daikin** DZ20VC0601CA will use PCB kit ***3P357343-5S-U**. Instructions IO-858A for installing Shared Data using the brand specific Data Loaders' is included below.

If you have questions regarding this bulletin, please contact TechServices@goodmanmfg.com

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Inverter PCB Kit Installation
18 and 20 SEER Instructions

© 2018, 2021 **DAIKIN MANUFACTURING COMPANY, L.P.**
5151 San Felipe, Suite 500, Houston, TX 77056
www.daikinac.com
P/N: IO-858A Date: March 2021

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.
Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings.
Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.
Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.
Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices..follow them.
The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

WARNING

ONLY PERSONNEL THAT HAVE BEEN TRAINED TO INSTALL, ADJUST SERVICE OR REPAIR (HEREINAFTER, "SERVICE") THE EQUIPMENT SPECIFIED IN THIS MANUAL SHOULD SERVICE THE EQUIPMENT. THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU SERVICE THIS UNIT, YOU ASSUME RESPONSIBILITY FOR ANY INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. IN ADDITION, IN JURISDICTIONS THAT REQUIRE ONE OR MORE LICENSES TO SERVICE THE EQUIPMENT SPECIFIED IN THIS MANUAL, ONLY LICENSED PERSONNEL SHOULD SERVICE THE EQUIPMENT. IMPROPER INSTALLATION, ADJUSTMENT, SERVICING OR REPAIR OF THE EQUIPMENT SPECIFIED IN THIS MANUAL, OR ATTEMPTING TO INSTALL, ADJUST, SERVICE OR REPAIR THE EQUIPMENT SPECIFIED IN THIS MANUAL WITHOUT PROPER TRAINING MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

WARNING

DISCHARGE YOUR BODY'S STATIC ELECTRICITY BEFORE TOUCHING PCB AND/OR UNIT. AN ELECTROSTATIC DISCHARGE CAN ADVERSELY AFFECT ELECTRICAL COMPONENTS. USE THE FOLLOWING PRECAUTIONS DURING INSTALLATION AND SERVICING TO PROTECT THE PCB FROM DAMAGE:
1. DISCONNECT ALL POWER TO THE UNIT. DO NOT TOUCH THE PCB OR ANY WIRE CONNECTED TO THE CONTROL PRIOR TO DISCHARGING YOUR BODY'S ELECTROSTATIC CHARGE TO GROUND.
2. FIRMLY TOUCH A CLEAN, UNPAINTED, METAL SURFACE OF THE UNIT AWAY FROM THE CONTROL. BY PUTTING THE UNIT, THE CONTROL, AND THE PERSON AT THE SAME ELECTROSTATIC POTENTIAL, THESE STEPS WILL HELP AVOID EXPOSING THE PCB TO ELECTROSTATIC DISCHARGE.

WARNING

DO NOT CONNECT TO OR USE ANY DEVICE THAT IS NOT DESIGNED CERTIFIED BY THE MANUFACTURER FOR USE WITH THIS UNIT. SERIOUS PROPERTY DAMAGE, PERSONAL INJURY, REDUCED UNIT PERFORMANCE AND/OR HAZARDOUS CONDITIONS MAY RESULT FROM THE USE OF SUCH NON-APPROVED DEVICES.

WARNING

HIGH VOLTAGE

DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



NOTE: After installation of the PCB board shared data must be installed on the PCB board prior to starting the unit.

NOTE: Use the Bluetooth Shared Data loader and follow the instructions in the Installation and Instruction contained with the loader

18 Seer Tonnage	PCB (Revision)	New PCB Kit
2 Ton HP	3P386786-1 (K)	3P386786-1S-K
3 Ton HP	3P386786-3 (K)	3P386786-3S-K
4 Ton HP	3P386786-5 (K)	3P386786-5S-K
5 Ton HP	3P386786-5 (K)	3P386786-5S-K

20 Seer Tonnage	PCB (Revision)	New PCB Kit
2 Ton AC	3P357336-4 (U)	3P357336-4S-U
3 Ton AC	3P357336-5 (U)	3P357336-5S-U
4 Ton AC	3P357343-4 (T)	3P357343-4S-T
3 Ton HP	3P357343-4 (T)	3P357343-4S-T
4 Ton HP	3P357343-4 (T)	3P357343-4S-T
5 Ton AC	2P361563-3 (M)	2P361563-3S-M
2 Ton HP	3P357336-4 (U)	3P357336-4S-U
5 Ton HP*	3P357343-5 (U)	3P357343-5S-U
5 Ton HP	2P361563-3 (L)	2P361563-3S-L

* The 5 Ton HP PCB's are Model Rev specific.
The 3P357343-5S U is not backwards compatible for previous model Rev.

Programed Inverter PC Kit Instructions:

WARNING: Discharge your body's static electricity before touching PCB and/or unit. An electrostatic discharge can adversely affect electrical components. Use the following precautions during installation and servicing to protect the PCB from damage. By putting the unit, the control, and the person at the same electrostatic potential, these steps will help avoid exposing the PCB to electrostatic discharge.

WARNING

HIGH VOLTAGE

DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



1. Disconnect all power to the unit. Do not touch the PCB or any wire connected to the PCB prior to discharging your body's electrostatic charge to ground.

2. Firmly touch a clean, unpainted, metal surface of the unit away from the control.

3. Note location of all wiring and plug terminals (recommend pictures) and remove all wiring from PCB.

NOTE: Thermal grease applied between the heat sink and the refrigerant loop allows for proper cooling of the PCB circuits (IGBT's). Failure to apply the grease on the cooling loop may result in an insufficient cooling circuit. Only use thermal greas part # 9S00859.

4. Remove the screws from the cooling loop cover to allow it to hinge open. (Figure 1)



Figure 1

5. Pull back gently on the 3/8 copper tubing. (Figure 2)



Figure 2

6. Carefully slide the board from the cooling loop. (Figure 3)



Figure 3

7. Before installing the new board back in place, evenly apply the thermal grease. (Figure 4)



Figure 4

8. Insert the cooling loop in the metal bracket. (Figure 5)



Figure 5

9. Secure the top plate with the screws. (Figure 6)



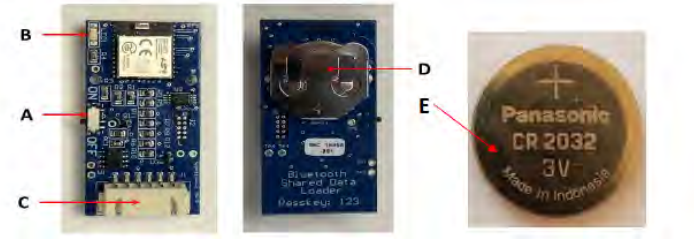
Figure 6

Loading Shared Data:

Bluetooth Shared Data Loader required to install the specific shared data file for your Brand/Model

Use the Bluetooth Shared data Loader, and follow the installation instructions on how to use the this contained in the Bluetooth loader tool.

Device Layout



A. **Power Switch** – Can be placed in the ON or OFF position. The device must be powered on to program Shared Data from the **CoolCloud™** HVAC app and to load Shared Data onto any compatible equipment.
B. **Status LED** – Will blink periodically when the device is powered on. The Status LED will blink once every 4 seconds when the device is powered on normally. The Status LED will blink 3 times in quick succession to indicate the battery is low and will need to be replaced soon.
C. **Shared Data Loading Connector**
D. **Battery/Battery Slot** – Accepts a CR2032 3V coin cell battery
E. **Coin Battery –** One-coin battery is provided in the packaging. Ensure the positive side is facing up and slide the battery into the battery slot.

Setup

Before using the card, download the **CoolCloud** HVAC app for iOS or Android using the links below. Be sure to register for an account before continuing.

Download on the App Store

GET IT ON Google Play

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Google Play and the Google Play logo are trademarks of Google LLC

Figure 7

1. Ensure that the power to the outdoor unit is turned off.

2. Remove PCB cover. Attach the “Bluetooth Shared Data Loader” to X52A on PCB.

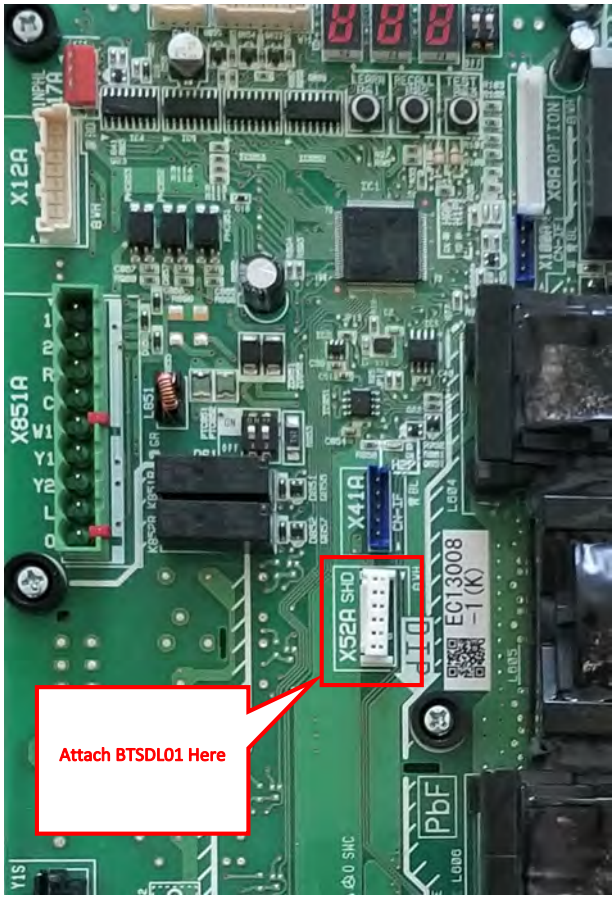


Figure 8

3. Turn the Bluetooth Shared Data Loader on by switching the Power Switch to the ON position. The blue Status LED should begin flashing periodicall . If the HVAC app is open, it will detect the new Bluetooth network and display “SharedDataCard” as an available network. Tap on this network to connect.

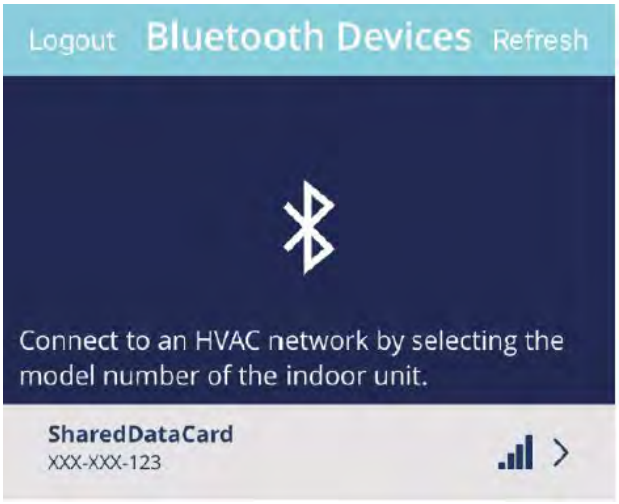


Figure 9

4. Using the app, find the shared data part number that corresponds to your specific outdoor unit model

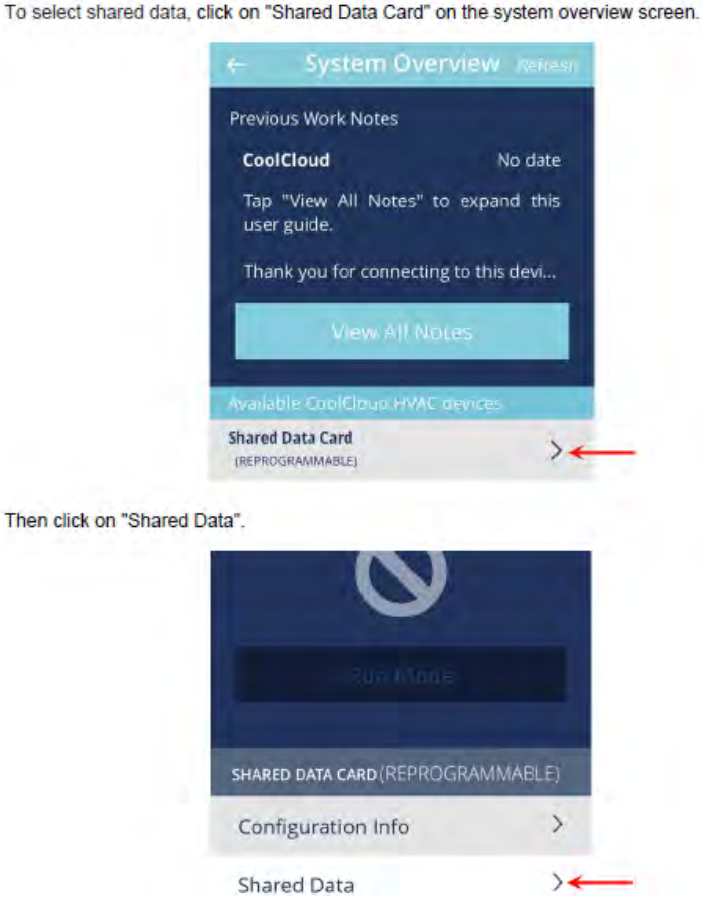


Figure 10

5. From here, the appropriate Shared Data can be selected by either scanning a barcode that can be found on the unit or by typing in the model number of the unit. If possible, scanning the 2D barcode is recommended to get the most accurate results. If this barcode is faded, damaged, or can’t be found, then it will be necessary to enter the model number instead.



Figure 11

6. If manually entering unit info, start typing the model and the available units for that model and system type will populate. Tap on the correct model.



Figure 12

7. Confirm model number and system type and then tap “Confirm and Continue



Figure 13

8. There will be a previous setting reset warning notification. Select “YES”

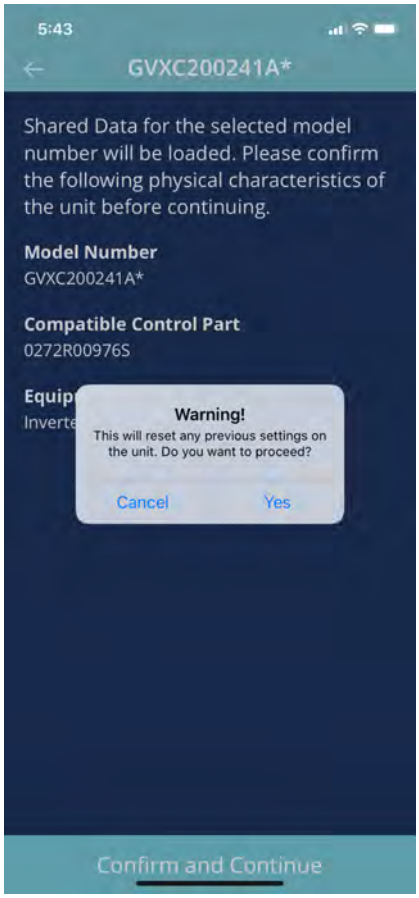


Figure 14

9. The shared data will now be loaded onto the Shared Data Loader



Figure 15

10. When the process is complete, there will be a success popup Shared Data was successfully loaded.

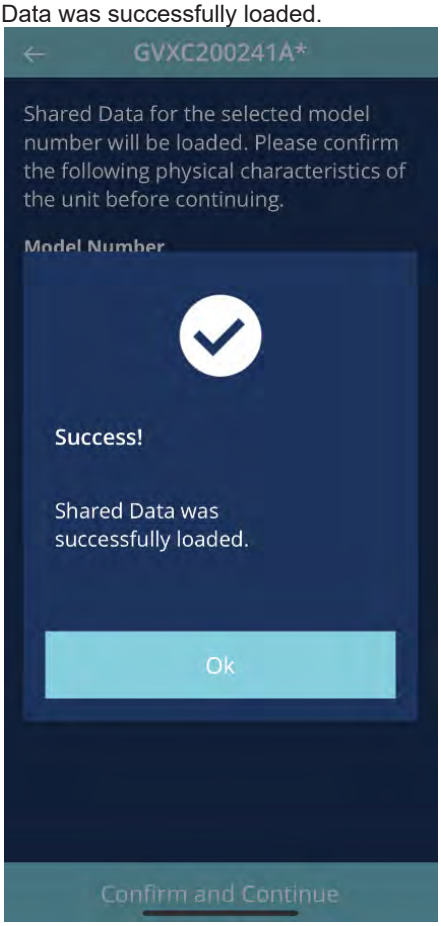


Figure 16

Loading Shared Data onto the Equipment

Remove communication molex plug (X851A) with the card plugged in and powered on, turn power on to the equipment for 30 seconds to allow the Shared Data loading process to complete. When complete, power the equipment off and retrieve the card from the unit. Reconnect power to the system and confirm that the Shared Data loading process was successful, and that the system is operating normally.

NOTE: Follow the installation instructions on “How to use the Bluetooth loader tool” contained with the tool.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR-082

DATE: April 20, 2021

TO: All Service and Parts Managers

SUBJECT: **ComfortBridge**™ Air handlers Locking Out Heat Operation

ComfortBridge air handlers listed in the table below with a serial number of prefixes 2010 through 2104 may fail to energize electric heat when the outdoor ambient is below zero or if the outdoor ambient rises above the electric heat lockout temperature (factory default 65°F) and then falls below this temperature.

To resolve, apply the over-the-air (OTA) update available via the **CoolCloud**™ HVAC app.

Model Rev	Model Rev
AVPTC25B14BB	MBVC1201
AVPTC29B14BB	MBVC1601
AVPTC31C14BB	MBVC2001
AVPTC35B14BB	
AVPTC37B14BB	
AVPTC37C14BB	
AVPTC37D14BB	
AVPTC39C14BB	
AVPTC49C14BB	
AVPTC49D14BB	
AVPTC59C14BB	
AVPTC59D14BB	
AVPTC61D14BB	

Download the **CoolCloud** HVAC app from your phone App Store. The **CoolCloud** HVAC App is used to upload firmware and shared data via OTA updates. Once the user has logged into the app, the latest firmware will immediately be available for upload to the unit. Once wireless connection to the equipment is established, the app will prompt you that updates are available. Click “Update” and the transfer will begin. Time to complete could reach or exceed 10+ minutes.

Units produced with serial number prefix 2105 and later will include this software update and are unaffected. Units shipped from Goodman after 4/19/2021 have been reworked at the factory and can be identified by a green dot on the traveler label or by the green V09 sticker on the board as shown in the pictures below.



Goodman will provide labor at a Class “A” labor rate for those units listed above that require this software update to correct these issues. The labor rate will only apply for units with the serial range listed above and installed prior to ***(June 1, 2021)***. For all other units, the update is available during initial system startup using the **CoolCloud** HVAC app as instructed in the Installation Instructions. In these cases, the app will provide the updated firmware through the OTA process.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number **8717**. **The claim for the labor should be filed using the Dealer’s account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 2026.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR – 081 Rev1

SUPERSEDES SR-081

DATE: October 29, 2021
TO: All Service and Parts Managers

SUBJECT: D-Checker Service Tool for Unitary Inverter Units

UPDATE October 2021

The BTSC/i2S (Bluetooth® Version of D-Checker) Service Part number has changed.
New Service Part # **999187T** *(Additional cable for VRV6 added to Service Part # 999172T)*

Explanation of Service Part number change:

1. New Service Part # 999187T has 3 unique harnesses.
2. Individual Service Part numbers created for all individual harnesses for easy replacement.
3. No software changes to the BTSC/i2S. If you have the old Service Part # 999172T you can purchase the additional VRV6 cable Service Part# 999190T.

BTSC/i2S Harnesses Individual Service Part Numbers:
(Note: The below harnesses are not compatible for the PC Version of D-Checker)

1. Service Part # 999188T for Unitary Inverter, Sky Air, VRV prior to VRV6




2. Service Part # 999189T for Ductless / Mini-Split




3. Service Part # 999190T for VRV6




Original SR-081

We are excited to announce the Daikin D-Checker service tool is now available for **Goodman** and **Amana**® brand unitary inverter products. The D-Checker is used to monitor and record system equipment operation, sensor status (temperature and pressure), and actuator status (compressors, solenoid valves, etc.). The D-checker is available in two forms:

1. Service Part #**999482P3** (PC Version) *Windows Operating Systems ONLY*
2. Service Part #**999187T** (Bluetooth® Version / BTSC/i2S) *iOS and Android App available from your App Store*
   Effective 11/2021 Service Part number #999172T (Bluetooth® Version - BTSC/i2S) has changed to Service Part #999187T

Features include

- Software Version dedicated to all unitary inverter equipment
- **Goodman** and **Amana** brand models included in the menu
- Indoor unit operation available when paired with an AVPEC model Air Handler
- Sensor section labeling now enabled
- Equipment operation parameters shown
- The D-Checker is **not compatible** with all revisions *(see chart below for compatibility)*
- The D-Checker is **not compatible** with any 18 SEER inverter equipment

Compatible Models/Revisions			
AVZC20	**AVXC20**	**GVZC20**	**GVXC20**
AVZC200241 (AG)	AVXC200241 (AG)	GVZC200241 (AA)	GVXC200241 (AA)
AVZC200361 (AF)	AVXC200361 (AF)	GVZC200361 (AA)	GVXC200361 (AA)
AVZC200481 (AF)	AVXC200481 (AF)	GVZC200481 (AA)	GVXC200481 (AA)
AVZC200601 (BA)	AVXC200601 (AF)	GVZC200601 (AA)	GVXC200601 (AA)

If you currently own the Daikin D-checker service tool, please email TechServices@goodmanmfg.com to request our latest software version **"3.6.2.1"**.

To obtain the D-checker service tool *(PC or Bluetooth® options)* please contact your local Goodman/Amana Brand Customer Service Representative with the service part number listed above.

All questions regarding this bulletin, please contact TechServices@goodmanmfg.com.

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SERVICE BULLETIN

SR – 080 Rev1

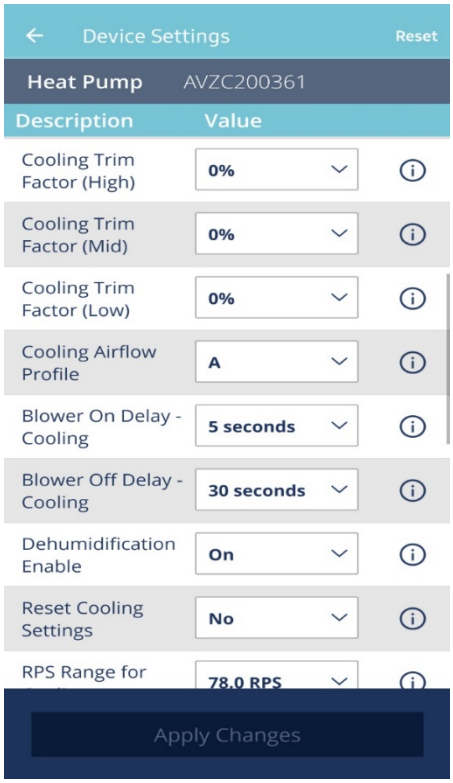
DATE: October 07, 2020
TO: All Service and Parts Managers
SUBJECT: Inverter Outdoor Units Reporting b0 error

20 SEER Inverter outdoor units may report a false b0 error code in cooling mode when paired with **ComfortBridge™** indoor equipment. The error may occur when the **cooling** blower on delay is manually adjusted to values greater than 5 seconds.

This error may be generated when the indoor unit blower is running, and the compressor may turn off. The compressor will restart after approximately 5 minutes. When using the factory default settings, the b0 error code will not occur.

If the default settings have been adjusted and the b0 error code is present, adjusting the **cooling** blower on delay to 5 seconds will correct the error. The **cooling** blower on delay can be adjusted using the **CoolCloud™ HVAC** App (preferred) or the push buttons on the **ComfortBridge** indoor unit control board (see indoor equipment Installation & Operation instructions for push button adjustments).

Affected Inverter Models	
AVXC20	AVZC20
GVXC20	GVZC20



Using the **CoolCloud HVAC** App to adjust the setting:

1. Open the **CoolCloud HVAC** App
2. select **Device Settings**
3. scroll down to **Blower on Delay - Cooling**.
4. View the current **Blower on Delay - Cooling** value
5. If the value is not set on the default setting of **5 seconds** change it back to the 5 second default to correct the b0 error.

If you have questions regarding this bulletin, please contact TechServices@goodmanmfg.com

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR-079

DATE: February 7, 2020

TO: All Service and Parts Managers

SUBJECT: **ComfortBridge™ AVPTC – BA Revision** Air handlers Locking Out Electric Heat Operation Below 0°F Outdoor Temperatures

With the January 2020 and prior firmware version, the **ComfortBridge** AVPTC – BA Revision air handlers matched with communicating heat pumps will lockout both the compressor and electric heat if the outdoor temperature is below 0°F. The board converts the negative temperatures received from the outdoor sensor to an erroneous value resulting in the heat pump lockout value to be considered null and thus does not allow electric heat to take over as a primary source of heat.

We have released an over-the-air (OTA) update to resolve this issue and is available now via the **CoolCloud**™ HVAC app.

This firmware update is required for installs that contain a Communicating Heat Pump, a ComfortBridge air handler, and located in an area where outdoor temperature may drop below 0°F.

Download the **CoolCloud** HVAC app from the Google Play Store (Android Phones) or Apple App Store (iOS Phones). One of the features of the **CoolCloud** HVAC App is the ability to upload firmware and shared data via OTA updates. **Note:** Make sure you have a good cell signal or strong Wi-Fi signal when opening the **CoolCloud** HVAC App. Once you log in to the app, it will download the latest firmware in the background. Once you have a Bluetooth connection to the air handler, the app will prompt you that an update is available. Click update and the transfer will take place over Bluetooth. Please be patient as this could take up to 10 minutes.

Model Rev
AVPTC25B14BA
AVPTC29B14BA
AVPTC31C14BA
AVPTC35B14BA
AVPTC37B14BA
AVPTC37C14BA
AVPTC37D14BA
AVPTC39C14BA
AVPTC49C14BA
AVPTC49D14BA
AVPTC59C14BA
AVPTC59D14BA
AVPTC61D14BA

ComfortBridge air handlers as listed above that have a serial number starting with **2002** and later are unaffected. Units with a serial number starting with 2001 and prior shipped after 2/3/2020 have been reworked in the factory and can be identified by a blue dot on the traveler label and on the board as shown in the pictures below.

Service boards shipped from Goodman after 2/10/2020 have been reworked and will have the same blue dot on the board and a blue check on the label of the box. If you are using a service board from inventory that does not have the blue check, it will be necessary to use the **CoolCloud** app to update the board software during replacement.

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SERVICE BULLETIN



Blue Rework Identification Dot on the control board label.





Blue Rework Identification check on the service parts control board label.

Goodman will provide labor at the servicer's Class "A" labor rate for those units listed above that require this software update to correct the outdoor ambient sensor issue. The labor rate will only apply for units installed before March 1, 2020. For all other units, the update is available during initial system startup using the **CoolCloud** HVAC app. In these cases, the app will provide the updated firmware through the OTA process.

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number **8805**. **The claim for the labor should be filed using the Dealer's account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2021.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR – 078 Rev. 1

DATE: January 30, 2020

TO: All Service and Parts Managers

SUBJECT: Undercharged GSZ140241**LA**

Goodman has determined the refrigerant charge for GSZ140241**LA** units produced in January 2020 are undercharged by 26 oz. The affected serial number range is **2001058017** through **2001159773**.

- For units installed **before** February 1, 2020 Goodman will provide Class "A" labor plus a $10 refrigerant allowance for units requiring a charge adjustment.
- Units installed February 1, 2020 and **later** Goodman will provide a $10 refrigerant allowance only. Distributors please communicate this undercharge information to your customers who purchase the affected units as described above.

Claims **must** be filed on Warranty Express as an Authorization type claim. Units installed **prior** to **February 1, 2020** use Authorization Code number ***8803***. **The claim for the refrigerant and labor should be filed as one claim, using the Dealer's account number.** Units that have been installed **after** February 1, 2020 use authorization code number **8804**.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty. All claims for this project must be submitted by December 30, 2020.

*****Update January 30, 2020: Equipment that has been reworked in the factory will have a purple dot on the traveler label and serial data plate. Please see image below.**



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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR - 077 Rev1

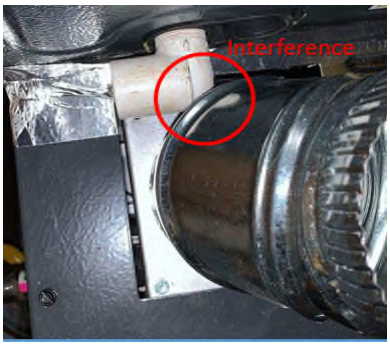
DATE: April 16, 2020

TO: All Service and Parts Managers

SUBJECT: AlumaFin7 “A” cabinet coil drain blocking flue on 80% “A” cabinet furnace

The AlumaFin7 “A” width cased and uncased A-Coil have a clearance issue with the flue when matched with the 80% “A” width furnaces (i.e. **GMES800403AN**). There is no clearance issue when the AlumaFin7 “A” width coil is matched with an “A” width 90% furnace.

When installing a 14” width **AlumaFin7** evaporator coil and an 80% AFUE furnace, please consider bending the flue side flange up and slide the coil back until it makes contact with the flange. The coil will overhang the backside of the furnace 3/8”-1/2” but will not allow air loss when sealed properly. See images below.







Note there is insufficient clearance for a secondary drain connection, please see the IOG-4010B for secondary drain terminations.

Affected Models AlumaFin7 “A” cabinet

CAPFA1714A6	CAUFA1714A6
CAPFA1818A6	CAUFA1818A6
CAPFA2318A6	CAUFA2318A6
CAPFA2418A6	CAUFA2418A6
CAPFA2422A6	CAUFA2422A6
CAPFA3022A6	CAUFA3022A6

Other options include;

1. Using a “B” width A-Coil with the coil installed centered on the furnace, be sure to include a secondary cutoff switch.
2. Use the previous 3/8” A-Coils that have the drain connections on the right-hand side.
3. If option 1 or 2 is not applicable utilize a brass or copper street 90.

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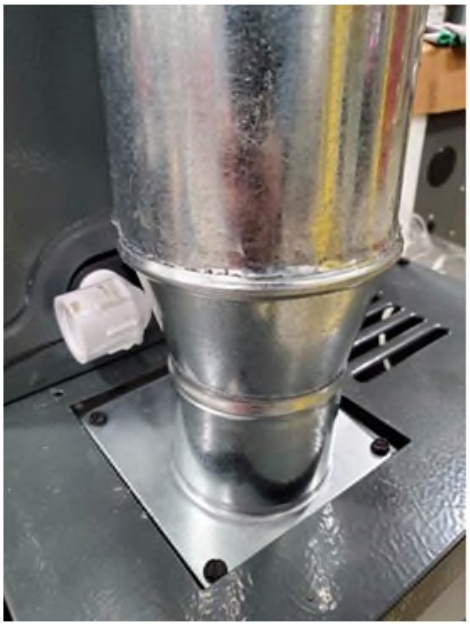
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Rev. 1 Update

In the event options 1 – 3 listed above cannot be achieved, we have released a kit that moves the flue pipe away from the drain connector.

Kit part # **0121K00027**.

This kit will include a 3-inch vent termination adapter and a 3” to 4” transition. Shown below is an example of what this kit will look like when installed.



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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR – 076

DATE: February 28, 2019

TO: All Service and Parts Managers

SUBJECT: Defrost Thermostat Relocation for Single Row 7mm Heat Pump Coils

In certain applications the defrost thermostat may not be installed in the optimal location for complete defrosting of the outdoor coil. If you are experiencing incomplete defrost, we recommend relocating the defrost thermostat from the lowest U-bend to the U-bend just beneath the bottom most flowrator leg (approximately the third U-bend from the bottom of the coil; Illustrated on page 2). This will allow the unit to completely defrost the coil. Listed below are the models that are potentially impacted by the coil thermostat location.

Goodman/Amana 14/16 SEER 7mm Heat Pumps				
Model	**Model**	**Model**	**Model**	**Model**
GSZ140181L*	VSZ140181B*	ANZ140181A*	ASZ140181K*	GSZ160181B*
GSZ140191A*	VSZ140241B*	ANZ140241A*	ASZ140241K*	GSZ160241B*
GSZ140241L*	VSZ140301A*	ANZ140301A*	ASZ140301K*	GSZ160301B*
GSZ140251A*	VSZ140361A*	ANZ140361A*	ASZ140361K*	GSZ160361B*
GSZ140301K*	VSZ140421A*	ANZ140421A*	ASZ140421K*	ASZ160181L*
GSZ140311A*	VSZ140481A*	ANZ140481A*	ASZ140481K*	ASZ160241L*
GSZ140361K*	VSZ140491A*	ANZ140491A*	ASZ140491K*	ASZ160301L*
GSZ140371A*	VSZ140601A*	ANZ140601A*	ASZ140601K*	ASZ160361L*
GSZ140421K*				
GSZ140481K*				
GSZ140491K*				
GSZ140601K*				

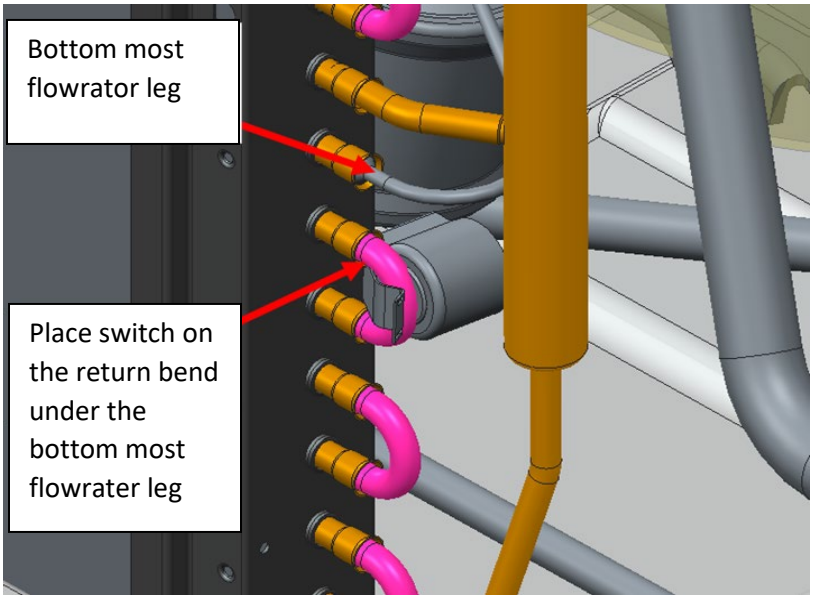
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If you are experiencing incomplete defrosts, the defrost sensor will need to be relocated as shown in the illustration to the right.



Production changes were implemented on February 2, 2019. Any units with a serial of **1902** or later have the defrost thermostat in the correct location.

For installed units that require the defrost sensor relocation, Goodman will provide labor at the servicers Class "A" labor rate. Labor will be provided for 5 years from date of installation.

The affected serial numbers range from **1501-1901.**

Claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8797*****.** The claim for labor should be filed using the Dealer's account number.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

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FAX (931) 438-2273

SERVICE BULLETIN SF-001

DATE: **September 28, 2005**

TO: **All Goodman Distributors**

FROM: **Technical Services Department**

SUBJECT: **Mini Igniter Replacement Kit**

We are introducing a replacement mini igniter kit **(Part # 0230K00000S)** that converts standard carbide igniters (Part # B1401015S and B1401018S) used on previous Goodman® brand 80% and 90% model gas furnaces. The mini igniter conversion kit is NOT approved for GSU model furnaces at this time.

The kit **shown** below in **Figure 1** contains a mounting plate, mini igniter, screw, adapter harness and **installation** instructions to upgrade the previous carbide igniters used on the models specified above.

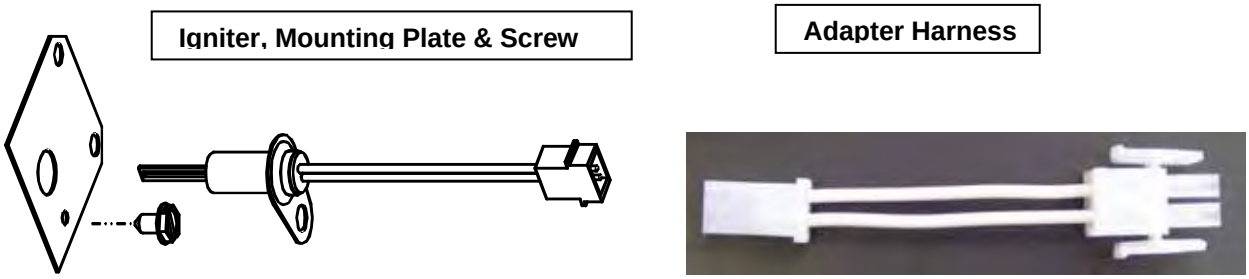


Figure 1

The picture **shown** below in **Figure 2 indicates** how the new mini igniter kit would mount underneath the burner box. The burner box below was rotated 180° to show you a bottom view installation of the igniter **(visual purposes)**.

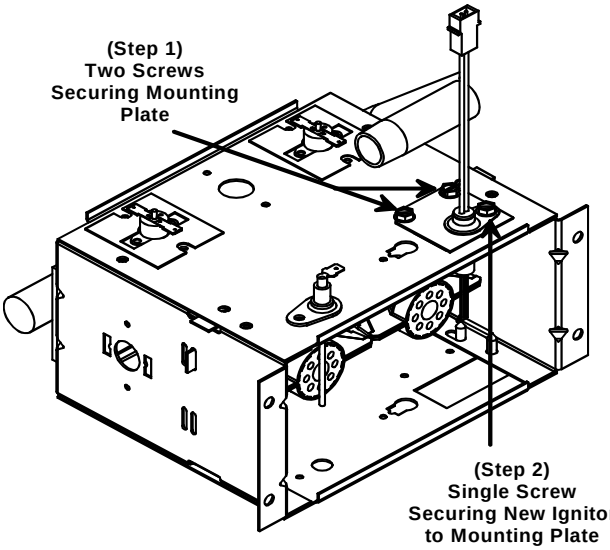


Figure 2

WARNING

TO AVOID INJURY, ELECTRICAL SHOCK OR DEATH, DISCONNECT ELECTRICAL POWER BEFORE SERVICING OR CHANGING ANY ELECTRICAL WIRING.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR – 075

DATE: October 24, 2018

TO: All Service and Parts Managers

SUBJECT: Inverter PCB's – New Pre-Programmed A/C Inverter PCB Kits

Effective immediately, all new Inverter PCB kits provided through Service Parts are configured for use on specific models as listed below. With these kits it is no longer necessary to flash the PCB with a Shared Data Chip as listed in SR-069 Rev. 1.

Note: *Service kits will continue to contain the necessary gaskets and thermal paste required for replacement installation. See table below for new Programmed Inverter PCB Kit numbers:*

PROG. INV. PCB KIT	Daikin Model	Amana Model	REF UNIT
0272R00976S	DX20VC0241**	AVXC200241**	2 TON AC
0272R00978S	DX20VC0361**	AVXC200361**	3 TON AC
0272R00981S	DX20VC0481**	AVXC200481**	4 TON AC
0272R00994S	DX20VC0601**	AVXC200601**	5 TON AC
0272R00985S	DZ20VC0241**	AVZC200241**	2 TON HP
0272R00988S	DZ20VC0361**	AVZC200361**	3 TON HP
0272R00991S	DZ20VC0481**	AVZC200481**	4 TON HP
0272R00997S	DZ20VC0601**	AVZC200601**	5 TON HP
0272R01042S	DZ18VC0241**	AVZC180241**	2 TON HP
0272R01043S	DZ18VC0361**	AVZC180361**	3 TON HP
0272R01044S	DZ18VC0481**	AVZC180481**	4 TON HP
0272R01045S	DZ18VC0601**	AVZC180601**	5 TON HP

If you have any earlier Inverter PCB Kits in inventory as shown on the right or as described in SR-069 r1, these may be returned for credit. Please contact your CSR to return to request an RMA.

3P357336-4SA	3P386786-1
3P357336-5SA	3P386786-3
3P357343-4SA	3P386786-5
2P361563-3SA	

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Programed Inverter PCB Kit Instructions:

WARNING: Discharge your body's static electricity before touching PCB and/or unit. An electrostatic discharge can adversely affect electrical components. Use the following precautions during installation and servicing to protect the PCB from damage. By putting the unit, the control, and the person at the same electrostatic potential, these steps will help avoid exposing the PCB to electrostatic discharge.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

1. Disconnect all power to the unit. Do not touch the PCB or any wire connected to the PCB prior to discharging your body's electrostatic charge to ground.
2. Firmly touch a clean, unpainted, metal surface of the unit away from the control.
3. Note location of all wiring and plug terminals (recommend pictures) and remove all wiring from PCB.

NOTE: Thermal grease applied between the heat sink and the refrigerant loop allows for proper cooling of the PCB circuits (IGBT's). Failure to apply the grease on the cooling loop may result in an insufficient cooling circuit. Only use thermal grease part # 9S00859.

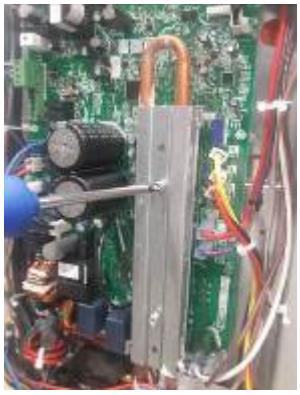


Figure #1



Figure #2



Figure #3

4. Remove the screws from the cooling loop cover to allow it to hinge open (Figure #1).
5. Pull back gently on the 3/8 copper tubing (Figure #2).
6. Carefully slide the board from the cooling loop (Figure #3).

NOTE: Do not remove any grease from the cooling loop.

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Figure #4



Figure #5



Figure #6

7. Before installing the new board back in place, evenly apply the thermal grease (Figure #4).

   NOTE: Additional Thermal grease part # 9S00859.

8. Insert the cooling loop in the metal bracket (Figure #5).
9. Secure the top plate with the screws (Figure #6).

WARNING

ONLY PERSONNEL THAT HAVE BEEN TRAINED TO INSTALL, ADJUST, SERVICE OR REPAIR (HEREINAFTER,"SERVICE") THE EQUIPMENT SPECIFIED IN THIS MANUAL SHOULD SERVICE THE EQUIPMENT. THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU SERVICE THIS UNIT, YOU ASSUME RESPONSIBILITY FOR ANY INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. IN ADDITION, IN JURISDICTIONS THAT REQUIRE ONE OR MORE LICENSES TO SERVICE THE EQUIPMENT SPECIFIED IN THIS MANUAL, ONLY LICENSED PERSONNEL SHOULD SERVICE THE EQUIPMENT. IMPROPER INSTALLATION, ADJUSTMENT, SERVICING OR REPAIR OF THE EQUIPMENT SPECIFIED IN THIS MANUAL, OR ATTEMPTING TO INSTALL, ADJUST, SERVICE OR REPAIR THE EQUIPMENT SPECIFIED IN THIS MANUAL WITHOUT PROPER TRAINING MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SR – 074 rev.1

DATE: March 21, 2018
TO: All Service and Parts Managers
SUBJECT: Incorrect label used on HKS***X***10XC Heater Kits

Goodman Manufacturing has discovered that our vendor shipped a limited number of HKS***X***10XC heat kits, serial date code 1712800844 – 1712801189, with incorrect carton labels. The incorrect label identifies the kit as a HKS***X***10XC but is in fact a HKS***C***10XC which includes a circuit breaker and additional wiring components necessary to field install the circuit breaker.

The additional components included in the mislabeled HKSX10XC kit may be used if the installing contractor choses or discarded if deemed unnecessary for their application.

If you have any questions, please email Technical Services at TechServices@goodmanmfg.com.

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Service Bulletin

Important Safety Notice

SR-073

DATE: October 2, 2017

TO: All Service and Parts Managers

SUBJECT: MBR1200/1600AA** & MBVC1600/2000AA** Serial/Rating Labels

Goodman is requesting any remaining inventory of **MBR1200AA, MBR1600AA, MBVC1600AA or MBVC2000AA** air handlers with April, May or August serial numbers beginning with 1704******, 1705****** or 1708****** be placed on hold.

These units may have an incorrect serial/rating label as shown in the Figure 1 below. Figure 2 provides a sample of the correct serial/rating plate which lists the approved heater kits and their MCA/MOP values.



Figure 1(Incorrect)

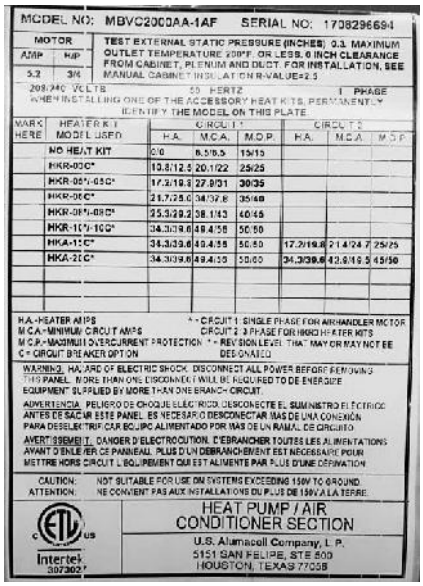


Figure 2(Correct)

Distributors/COD Branches please contact your dealers to request any remaining units in their inventory as described above also be put on hold. Additional instructions will be forthcoming.

Independent distributors, if our records show affected units shipped to your location then you will be provided a list of the serial numbers shipped to you.

All units shipped from the factory after 10/2/2017 have been inspected and can be identified by the green dot on the traveler label adjacent to the traveler label.

Some units within the affected date ranges listed above may have the correct serial plates as shown in figure 2. If so please email a picture of the serial plate to the email address listed below along with the person's name that inspected the unit and the date of the inspection. Once this is done the unit may be released from hold and made available for sale.

Thank you for your assistance in this project, please email at TechServices@goodmanmfg.com if you have any questions.

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Service Bulletin

SR-072

DATE: August 07, 2017

TO: All Service and Parts Managers

SUBJECT: Defrost Timer Change on AVZC18/20 and DZ18/20VC SEER Inverter Heat Pump Units

This bulletin is to inform you of a software change made to the Inverter Heat Pump models listed above. For units with a serial number prefix of 1706 and later the factory default setting for the defrost interval has been changed from 30 minutes to 120 minutes.

The defrost time interval can still be field adjustable to 30, 60, 90 or 120 minutes between defrost cycles to suit weather conditions and unit performance. This setting can be adjusted in the Comfortnet User Menu of the CTK04AE thermostat by selecting “Inverter” – “Heat Set Up” – “Defrost Interval”. When in this Sub Menu select 30, 60, 90,120 minutes setting.

NOTE: Oil Return Mode: In order to properly return the oil to the compressor, compressor speed may periodically adjust to assist oil circulation. These Inverter units utilize an oil return mode to properly return oil to the compressor which functions similar to a defrost cycle and may create the appearance of the unit having unnecessary defrosts.

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Service Bulletin

SR-071

DATE: April 18, 2017

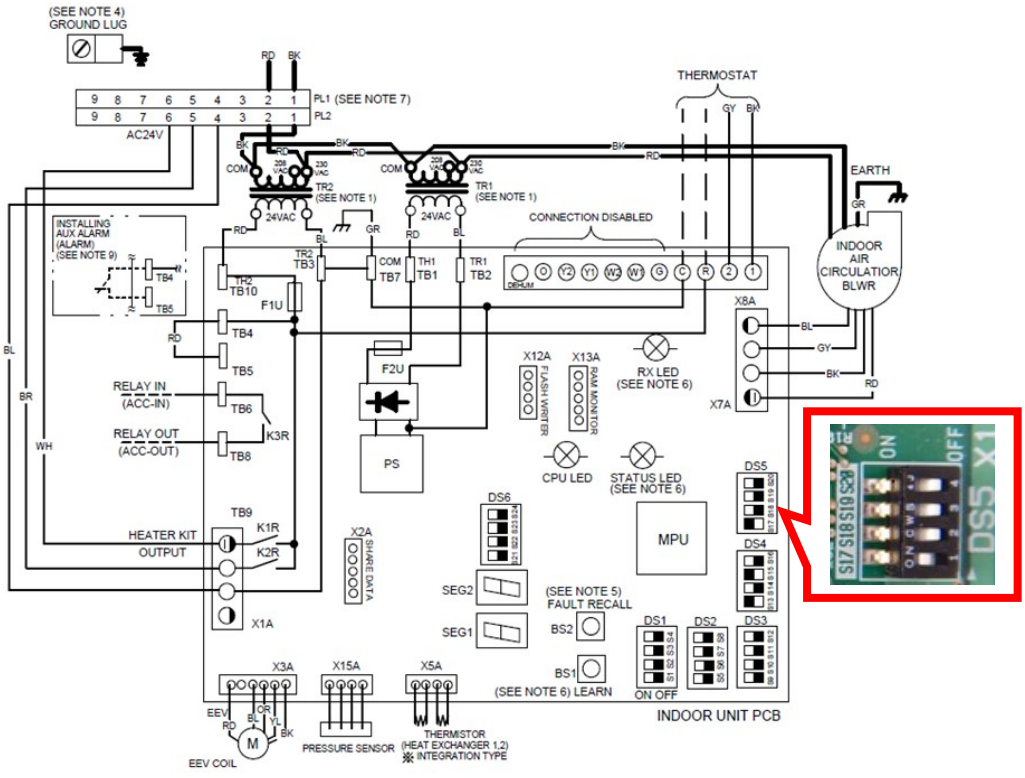
TO: All Service and Parts Managers

SUBJECT: Dip Switch Settings on Inverter DV**PEC* or AVPEC** Air Handlers.

Technical Services has received a few reports of low heating output in the heat pump mode when a AVZC18/20, DZ18/20VC inverter heat pump is installed with a DV**PEC* or AVPEC** Air Handler. Our investigation has found the Dip Switches set in the wrong position. If Dip Switch 19 is turned ON, it enables the Emergency EEV operation and will cause the indoor Electronic Expansion Valve (EEV) to shut down to 25%-50% depending on how dip switches 17 and 18 are set. The result of shutting down the EEV will be a pressure drop in the evaporator coil by +/-100 PSIG.

Please verify that Dip Switch DS19 is in the OFF position at all times.

1. The dip switches on the DV**PECC or AVPEC** air handlers should never need to be changed. The drawing below shows the proper settings of the dip switches.



Please refer to table on Page 2 of this service bulletin for proper factory settings of the dip switches.

Switch Bank	Switch Number	Factory Setting	Function
DS-1	1	OFF	No Use
	2	OFF	No Use
	3	OFF	No Use
	4	OFF	No Use
DS-2	5	OFF	No Use
	6	OFF	No Use
	7	OFF	No Use
	8	OFF	No Use
DS-3	9	OFF	Emergency Mode Heater Kit Selection.
	10	OFF	
	11	OFF	
	12	OFF	
DS-4	13	ON	Air Flow in Emergency Mode.
	14	OFF	
	15	**ON***	EEV Enable
	16	OFF	No Use
DS-5	17	ON	EEV Opening in Emergency Mode
	18	OFF	
	19	**OFF****	EEV Emergency Mode
	20	OFF	No use
DS-6	21	OFF	Emergency Mode
	22	OFF	
	23	OFF	No Use
	24	OFF	No Use

*** Must be in the ON position for proper operation.**

**** Must be set in OFF position for proper operation.**

If you have any questions about this bulletin please contact Rodney White at Rodney.White@goodmanmfg.com.

Service Bulletin

SR-070 Rev. 3

IMPORTANT SAFETY NOTICE

DATE: November 17, 2016

TO: All Service and Parts Managers

SUBJECT: Inspection and Replacement of Disconnects (Part # BT1753510 & 0130A00091) on Inventory and Installed AWUF and ACNF Air Handlers

Goodman is requiring that the disconnect on all inventory and field-installed **AWUF and ACNF model air handlers** be inspected and replaced if needed for all units in the production ranges listed below:

Affected Models	Production Date Ranges	Serial Number Prefixes
AWUF model air handlers	November 2015 through October 2016	1511****** to 1610******
ACNF model air handlers	January 2016 through October 2016	1601****** to 1610******

For these units the date code of the disconnect should be verified and **if the date code of the disconnect is February 2016 or prior (date code on disconnect is in YYMM format: QCM14xx, QCM15xx, QCM1601 and QCM1602), the disconnect should be replaced.**

Also, Goodman is requiring that all service parts inventory of disconnects **Part # BT1753510 or 0130A00091 be replaced if the date code of the disconnect is February 2016 or prior (date code on disconnect is in YYMM format: QCM14xx, QCM15xx, QCM1601 and QCM1602).**

Only disconnects where the date code begins with QCM are affected.

Replacement disconnects must be ordered by the distributor from service parts to replace their returned inventory.

Please see below for instructions on how to find the date code on the disconnect and how to replace the disconnect on both installed and inventory units.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



If servicing AWUF model air handlers with a serial number range between November 2015 through October 2016 (serial date code 1511*** to 1610******), and ACNF models January 2016 through October 2016 (serial date code 1601****** to 1610******), do not rely on the disconnect to remove all power from the unit. Disconnect incoming power supply at the circuit breaker or fuse panel supplying power to the unit.***

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Procedure for inspecting and replacing disconnects:

1. If installed, disconnect all power to the unit.
2. Remove disconnect handle from unit.
3. Remove access door from unit.
4. Visually inspect the disconnect. If it has a yellow label as shown in Figure 1, the disconnect is not affected and no replacement is required. This applies to AWUFs, ACNFs and service parts. Record the model number and serial number of the unit with a yellow label on the disconnect on the supplied spreadsheet claim form. Indicate "Yellow Sticker Disconnect" in the "Disconnect Info" column. Skip to step 9. If the yellow label is not present, proceed to step 5.
5. Remove screws that hold the disconnect housing to the control panel.
6. Inspect the label on the bottom of the disconnect housing (Figure 2).
7. Record the model number and serial number of the unit along with the date code of the disconnect.
8. If the date code of the disconnect is 1602 (February 2016) or prior (QCM14xx, QCM15xx, QCM1601 and QCM1602), replace the disconnect.
9. Replace the access door.
10. Replace the disconnect handle.
11. **Place a green dot next to the disconnect to indicate this unit has been inspected for future identification. We recommend you use a green sticker, paint pen or paint dabber.**
12. If the unit is installed, reconnect power and test for proper unit operation.
13. If you remove one disconnect with a date code of 1602 (February 2016) or prior (QCM14xx, QCM15xx, QCM1601 and QCM1602), send the one disconnect to Goodman at Special Projects, 18998 Kickapoo Road, Waller, TX 77484, at Goodman's cost. If you remove more than one disconnect, return 10 percent to Goodman (e.g., send 1 of every 10 disconnects, 2 of every 20, etc.). Those disconnects not returned to Goodman **must be permanently destroyed and disabled**.



Figure 1
Disconnect with yellow label



Figure 2
Bottom of disconnect housing showing the date code of the disconnect

When returning disconnects as described above use **FedEx**, choose "**Bill Recipient**" and reference account number **820430085**.

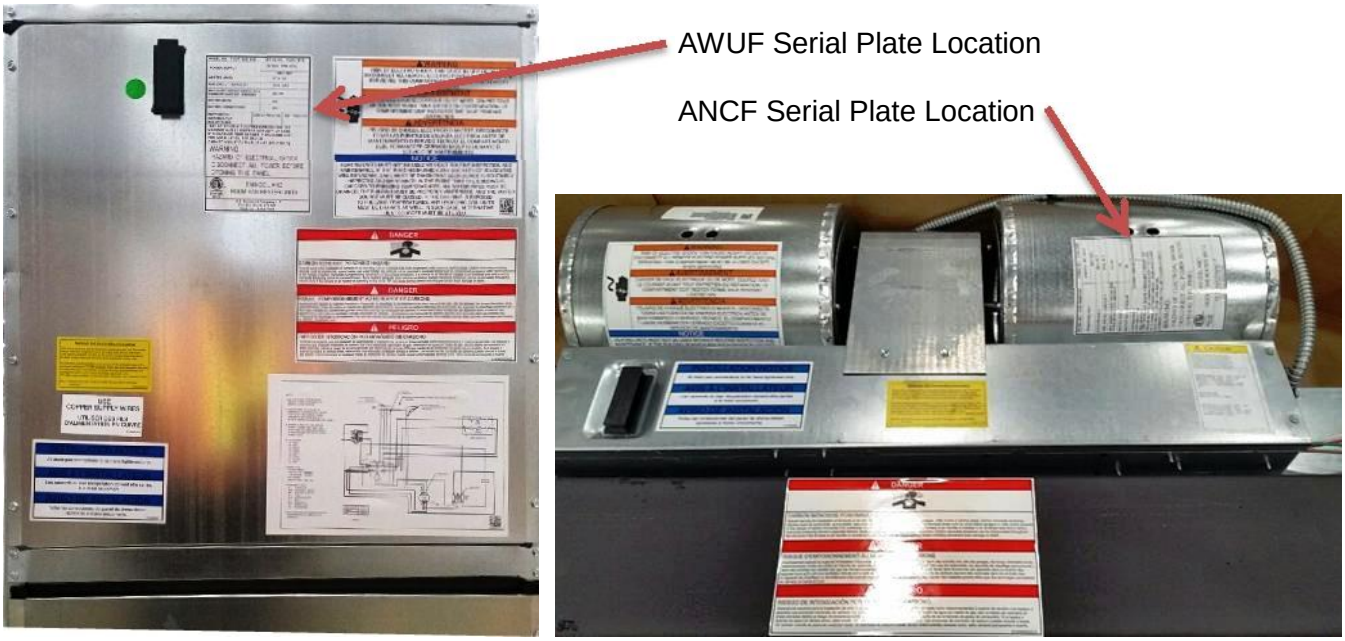
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AWUF and ACNF units shipped after 10/21/2016 have been inspected and reworked, if required, and can be identified by the green dot on the traveler label (Figure 3) or next to the disconnect (Figure 2).



Figure 3
Location of green dot identifier on traveler label or next to disconnect

The units Model and Serial can be found on the rating plate as shown in the pictures below.



<u>Uninstalled/Inventory Units</u>: Goodman will pay a $25 labor allowance for each unit in customer inventory that requires the inspection/replacement of a disconnect. To apply for labor on <u>uninstalled</u> units, complete the supplied warranty claim spreadsheet and email to <u>techservices@goodmanmfg.com.</u> These will be reviewed and submitted to the Warranty Department for processing.

<u>+1 Units In Multi-Family Installation</u>: Goodman will pay a $50 labor allowance for each unit installed in multi-family or apartment installations (where more than one unit is installed) that requires the

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inspection/replacement of a disconnect. To apply for labor, complete the supplied warranty claim spreadsheet and email to techservices@goodmanmfg.com. The property name, address and apartment number must be included on the spreadsheet. These will be reviewed and submitted to the Warranty Department for processing.

Single Unit In Single-Family or Multi-Family Installation: Goodman will pay a $75 labor allowance for a single unit installed in a stand-alone single family residence, or if there is a single unit in a multi-family or apartment installation that requires the inspection/replacement of a disconnect. Claims for $75 labor **must** be filed on Warranty Express as **Service Bulletin SR-070 Rev. 2**, using Authorization Code number **8756**. **The claim for the part and claim for labor should be filed as one claim by submitting the claim using the "Dealers Warranty Express ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department.

Alternative Method to Obtain Parts and Submit Request for Labor Reimbursement

In the above method for submitting a claim for labor and part reimbursement it is implied that the dealer or servicer would purchase the needed parts through their regular channels. As an alternative to this standard practice Goodman will provide the disconnects at no charge per the following process:

1. Goodman is provided a detailed list that includes the air handler model and serial numbers, the address where the unit(s) are located, and the address where the disconnect parts should be shipped. This list must also include the name, email address, and phone number for a contact person service location. This list should be sent via email to techservices@goodmanmfg.com.
2. Goodman will ship the disconnects free of charge after validating that the model and serial numbers provided are in the suspect range.
3. Goodman will also email the labor reimbursement form to the contact person listed on the initial submittal. Once the supplied warranty claim spreadsheet is completed, it should be emailed to techservices@goodmanmfg.com.
4. Upon receipt of the labor form with all the necessary information, including the Tax ID or EIN for the person or company who will be receiving payment, Goodman will process labor payment at the rates listed above to the entity noted on that form.

Servicers should not charge the consumer for any additional cost of inspection/replacement.

For all claims, if the disconnect has a yellow sticker as described in Step 4 above, the disconnect does not require replacement and you should list on the supplied spreadsheet claim form "Yellow Sticker Disconnect" in "Disconnect Info" column.

Note: If additional Warranty Claim Spreadsheet forms are needed, please contact Technical Services by email techservices@goodmanmfg.com and we will provide the forms.

The labor rates above apply only to the models and serial number ranges listed above. Disconnect replacement is only required on units with **Disconnect Part # BT1753510 or 0130A00091 if the date code of the disconnect is February 2016 or prior (date code on disconnect is in YYMM format: QCM14xx, QCM15xx, QCM1601 and QCM1602).**

Note: All disconnects Part # BT1753510 or 0130A00091 sold as service part replacements and installed in the field, should be located and inspected and replaced if the date code of the disconnect is February 2016 or prior (date code on disconnect is in YYMM format: QCM14xx, QCM15xx, QCM1601 and QCM1602).

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The following table lists the disconnects used by Model and Revision for the affected ACNF and AWUF production date ranges.

Model	Revision	Disconnect part#
ACNF180016	DA/DB	BT1753510
ACNF240016	DA/DB	BT1753510
ACNF250016	AA	BT1753510
ACNF300016	DA/DB	BT1753510
ACNF310016	AA	BT1753510
ACNF180516	DB/DC	0130A00091
ACNF180616	DB/DC	0130A00091
ACNF180816	DB/DC	0130A00091
ACNF240516	DB/DC	0130A00091
ACNF240616	DB/DC	0130A00091
ACNF240816	DB/DC	0130A00091
ACNF241016	DB/DC	0130A00091
ACNF250516	AA	0130A00091
ACNF250616	AA	0130A00091
ACNF250816	AA	0130A00091
ACNF251016	AA	0130A00091
ACNF300516	DB/DC	0130A00091
ACNF300616	DB/DC	0130A00091
ACNF300816	DB/DC	0130A00091
ACNF301016	DB/DC	0130A00091
ACNF310516	AA	0130A00091
ACNF310616	AA	0130A00091
ACNF310816	AA	0130A00091
ACNF311016	AA	0130A00091

Model	Revision	Disconnect part#
AWUF180316	BB/BC	0130A00091
AWUF180516	BB/BC	0130A00091
AWUF180816	BB/BC	0130A00091
AWUF190316	AA/AB	0130A00091
AWUF190516	AA/AB	0130A00091
AWUF190816	AA/AB	0130A00091
AWUF240316	BB/BC	0130A00091
AWUF240516	BB/BC	0130A00091
AWUF240816	BB/BC	0130A00091
AWUF241016	BB/BC	0130A00091
AWUF250316	AA/AB	0130A00091
AWUF250516	AA/AB	0130A00091
AWUF250816	AA/AB	0130A00091
AWUF251016	AA/AB	0130A00091
AWUF300516	BC/BD	0130A00091
AWUF300816	BC/BD	0130A00091
AWUF301016	BC/BD	0130A00091
AWUF310516	AB/AC	0130A00091
AWUF310816	AB/AC	0130A00091
AWUF321016	AB/AC	0130A00091
AWUF360516	BC/BD	0130A00091
AWUF360816	BC/BD	0130A00091
AWUF361016	BC/BD	0130A00091
AWUF370516	BB/BC	0130A00091
AWUF370816	BB/BC	0130A00091
AWUF371016	BB/BC	0130A00091

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Service Bulletin

SR-069 Rev. 1

DATE: July 17, 2017

TO: All Service and Parts Managers

SUBJECT: Inverter PCB's – New Shared Data Memory Chips

All Inverter PCB kits provided through service parts are configured for Heat Pump operation. If using for cooling only models it is necessary to flash the PCB with the appropriate Shared Data Chip as listed below. It is recommended anytime the PCB is replaced that the corresponding Shared Data Chip be flashed per the instructions shipped in the kit to ensure the PCB is properly configured.

Note: *Kit instructions are provided with this bulletin for reference. The provided instruction supersedes any previous versions and should be used to replace the instructions in any kits containing the previous version.*

The Shared Data Memory Chip is included with the new PCB Service Part Number listed below. The Shared Data Memory Chip can also be ordered separately.

For PCB kits in your inventory if you have any other Shared Data Chips in the PCB kits please contact your CSR to return it and order the appropriate New Shared Data in the updated chart below.

Also if you have any Inverter PCB Kits in inventory other than those listed below for example 3P357336-1, 3P357343-1, or 2P361563-1 these should not be used as service replacements as they do not contain the necessary shared data chips. Please contact your CSR to return.

Amana Model	Daikin Model	PCB Kit #	New Shared
AVXC200241**	DX20VC0241**	3P357336-4SA	0130M00332S
AVXC200361**	DX20VC0361**	3P357336-5SA	0130M00333S
AVXC200481**	DX20VC0481**	3P357343-4SA	0130M00334S
AVXC200601**	DX20VC0601**	2P361563-3SA	0130M00335S
AVZC200241**	DZ20VC0241**	3P357336-4SA	0130M00336S
AVZC200361**	DZ20VC0361**	3P357343-4SA	0130M00337S
AVZC200481**	DZ20VC0481**	3P357343-4SA	0130M00338S
AVZC200601**	DZ20VC0601**	2P361563-3SA	0130M00339S

WARNING: Discharge your body's static electricity before touching shared memory chips and/or unit. An electrostatic discharge can adversely affect electrical components. Use the following precautions during installation and servicing to protect the integrated control module from damage. By putting the unit, the control, and the person at the same electrostatic potential, these steps will help avoid exposing the integrated control module to electrostatic discharge.

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WARNING

HIGH VOLTAGE!

DISCONNECT ALL POWER BEFORE SERVICING. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



1. Disconnect all power to the unit. Do not touch the integrated control module or any wire connected to the control prior to discharging your body's electrostatic charge to ground.
2. Firmly touch a clean, unpainted, metal surface of the unit away from the control.

NOTE: Thermal grease applied between the heat sink and the refrigerant loop allows for proper cooling of the PCB circuits (IGBT's). Failure to apply the grease on the cooling loop may result in an insufficient cooling circuit. Only use Goodman thermal grease part # 9S00859.



Figure #1



Figure #2



Figure #3

1. Remove the screws from the cooling loop cover to allow it to hinge open (Figure #1).
2. Pull back gently on the 3/8 copper tubing (Figure #2).
3. Carefully slide the board from the cooling loop (Figure #3).
   NOTE: Do not remove any grease from the cooling loop.



Figure #4



Figure #5



Figure #6

4. Before installing the new board back in place, evenly apply the thermal grease (Figure #4).
   NOTE: Additional Thermal grease part # 9S00859.
5. Insert the cooling loop in the metal bracket (Figure #5).
6. Secure the top plate with the screws (Figure #6).

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DATA FLASH USING MEMORY CHIP

AVXC20, AVZC20, DX20VC & DZ20VC

INSTRUCTIONS

© 2016, 2017 *DAIKIN MANUFACTURING COMPANY, L.P.*

5151 San Felipe, Suite 500, Houston, TX 77056

www.daikincomfort.com

P/N: IOD-7057A Date: August 2017

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

⚠ WARNING

DISCHARGE YOUR BODY'S STATIC ELECTRICITY BEFORE TOUCHING SHARED MEMORY CHIPS AND/OR UNIT. AN ELECTROSTATIC DISCHARGE CAN ADVERSELY AFFECT ELECTRICAL COMPONENTS. USE THE FOLLOWING PRECAUTIONS DURING INSTALLATION AND SERVICING TO PROTECT THE INTEGRATED CONTROL MODULE FROM DAMAGE:

1. DISCONNECT ALL POWER TO THE UNIT. DO NOT TOUCH THE INTEGRATED CONTROL MODULE OR ANY WIRE CONNECTED TO THE CONTROL PRIOR TO DISCHARGING YOUR BODY'S ELECTROSTATIC CHARGE TO GROUND.

2. FIRMLY TOUCH A CLEAN, UNPAINTED, METAL SURFACE OF THE UNIT AWAY FROM THE CONTROL.

BY PUTTING THE UNIT, THE CONTROL, AND THE PERSON AT THE SAME ELECTROSTATIC POTENTIAL, THESE STEPS WILL HELP AVOID EXPOSING THE INTEGRATED CONTROL MODULE TO ELECTROSTATIC DISCHARGE.

⚠ WARNING

ONLY PERSONNEL THAT HAVE BEEN TRAINED TO INSTALL, ADJUST, SERVICE OR REPAIR (HEREINAFTER, "SERVICE") THE EQUIPMENT SPECIFIED IN THIS MANUAL SHOULD SERVICE THE EQUIPMENT. THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU SERVICE THIS UNIT, YOU ASSUME RESPONSIBILITY FOR ANY INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. IN ADDITION, IN JURISDICTIONS THAT REQUIRE ONE OR MORE LICENSES TO SERVICE THE EQUIPMENT SPECIFIED IN THIS MANUAL, ONLY LICENSED PERSONNEL SHOULD SERVICE THE EQUIPMENT. IMPROPER INSTALLATION, ADJUSTMENT, SERVICING OR REPAIR OF THE EQUIPMENT SPECIFIED IN THIS MANUAL, OR ATTEMPTING TO INSTALL, ADJUST, SERVICE OR REPAIR THE EQUIPMENT SPECIFIED IN THIS MANUAL WITHOUT PROPER TRAINING MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

⚠ WARNING

DO NOT CONNECT TO OR USE ANY DEVICE THAT IS NOT DESIGNED CERTIFIED BY THE MANUFACTURER FOR USE WITH THIS UNIT. SERIOUS PROPERTY DAMAGE, PERSONAL INJURY, REDUCED UNIT PERFORMANCE AND/OR HAZARDOUS CONDITIONS MAY RESULT FROM THE USE OF SUCH NON-APPROVED DEVICES.

⚠ WARNING

HIGH VOLTAGE!

DISCONNECT ALL POWER BEFORE SERVICING. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Amana Model	Daikin Model	PCB	Shared Data Chip Part #
AVXC200241**	DX20VC0241**	3P357336-4SA	0130M00332S
AVXC200361**	DX20VC0361**	3P357336-5SA	0130M00333S
AVXC200481**	DX20VC0481**	3P357343-4SA	0130M00334S
AVXC200601**	DX20VC0601**	2P361563-3SA	0130M00335S
AVZC200241**	DZ20VC0241**	3P357336-4SA	0130M00336S
AVZC200361**	DZ20VC0361**	3P357343-4SA	0130M00337S
AVZC200481**	DZ20VC0481**	3P357343-4SA	0130M00338S
AVZC200601**	DZ20VC0601**	2P361563-3SA	0130M00339S

NOTE: All figures shown in this manual are for reference only.

STEPS TO FLASH SHARED DATA TO OUTDOOR UNIT USING MEMORY CHIP

1. Turn the power OFF to the Outdoor unit.
2. Disconnect the Climate Talk (CT) connector and RAM Monitor connector from the Outdoor unit.
3. Insert the memory chip on the Outdoor unit.
4. Turn the power ON to the Outdoor unit.
5. Verify the HIP (red LED) flashes twice.
   - This step confirms that the data has been transferred from the memory chip to the Outdoor unit.
6. Remove the memory chip from the unit.
7. Turn the power OFF to the Outdoor unit.
8. Turn the power ON to the Outdoor unit.
9. Turn the power OFF to the Outdoor unit.
10. Connect the Climate Talk (CT) connector and RAM monitor connector to the Outdoor unit.
11. Turn the power ON to the Outdoor unit.
12. Continue the operation of the unit as desired.

    NOTE: If there is an error E11 on the seven segment display of the Outdoor unit after Step 11, run the System Verification Test on the Outdoor unit using the thermostat menu.

    AC - Menu > Air > Conditioner > System > Verification Test > ON

    HP - Menu > Heat Pump > Equip Test > System Verification Test > ON

Control boards for the various 20 SEER OD units (2T, 3T, 4T & 5T) are different. Below are the names of the connectors for quick identification. See Figure 1 and Figure 2 for locations on Outdoor Control Board.

Connector	Description
Memory Chip	X52A (White - 12 Pin Connector)
RAM Monitor	X41A (Blue - 5 Pin Connector)
Climate Talk	X851A (Green - 9 Pin Connector)
Red LED	H1P

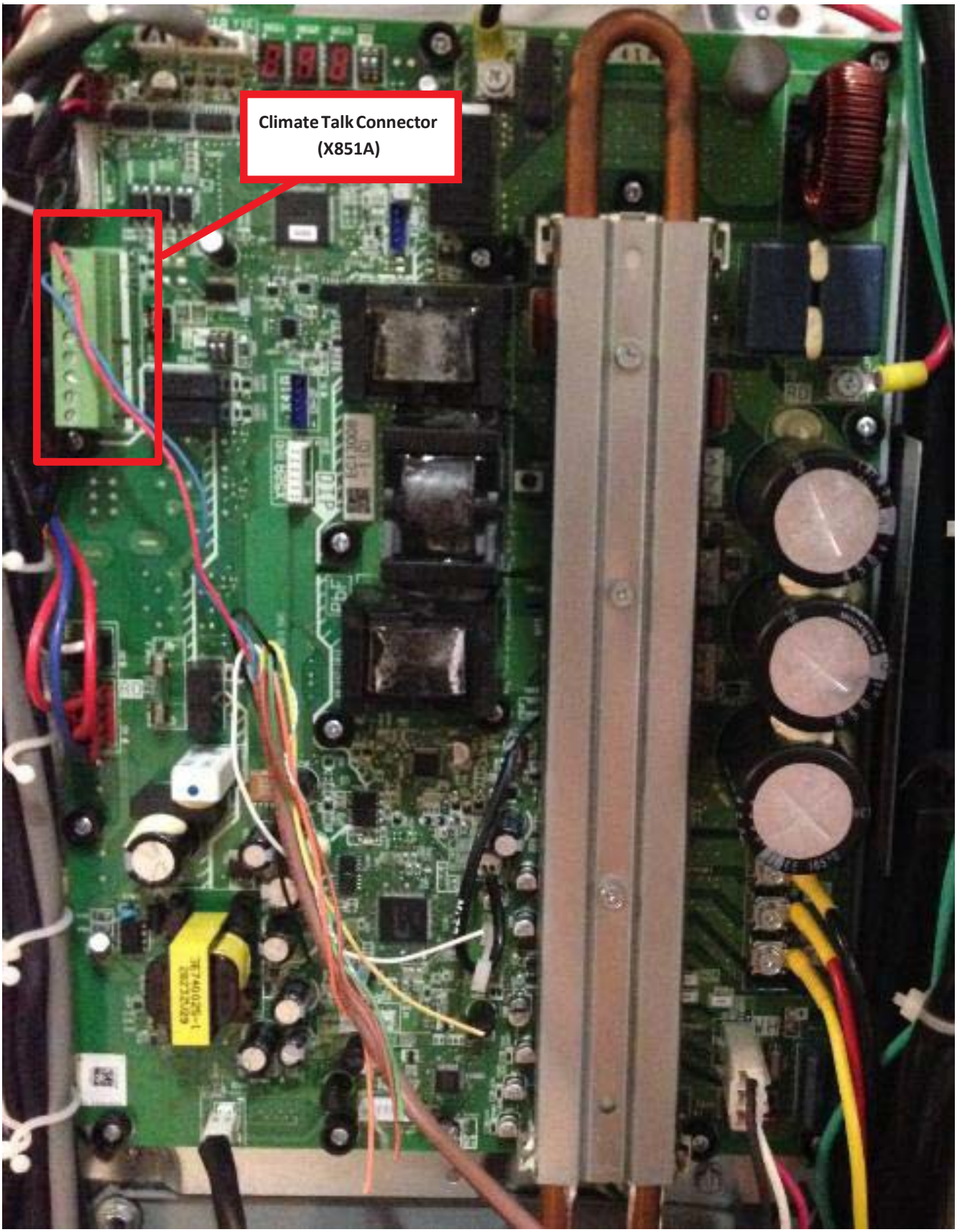


Figure 1
20 SEER Outdoor Control Board

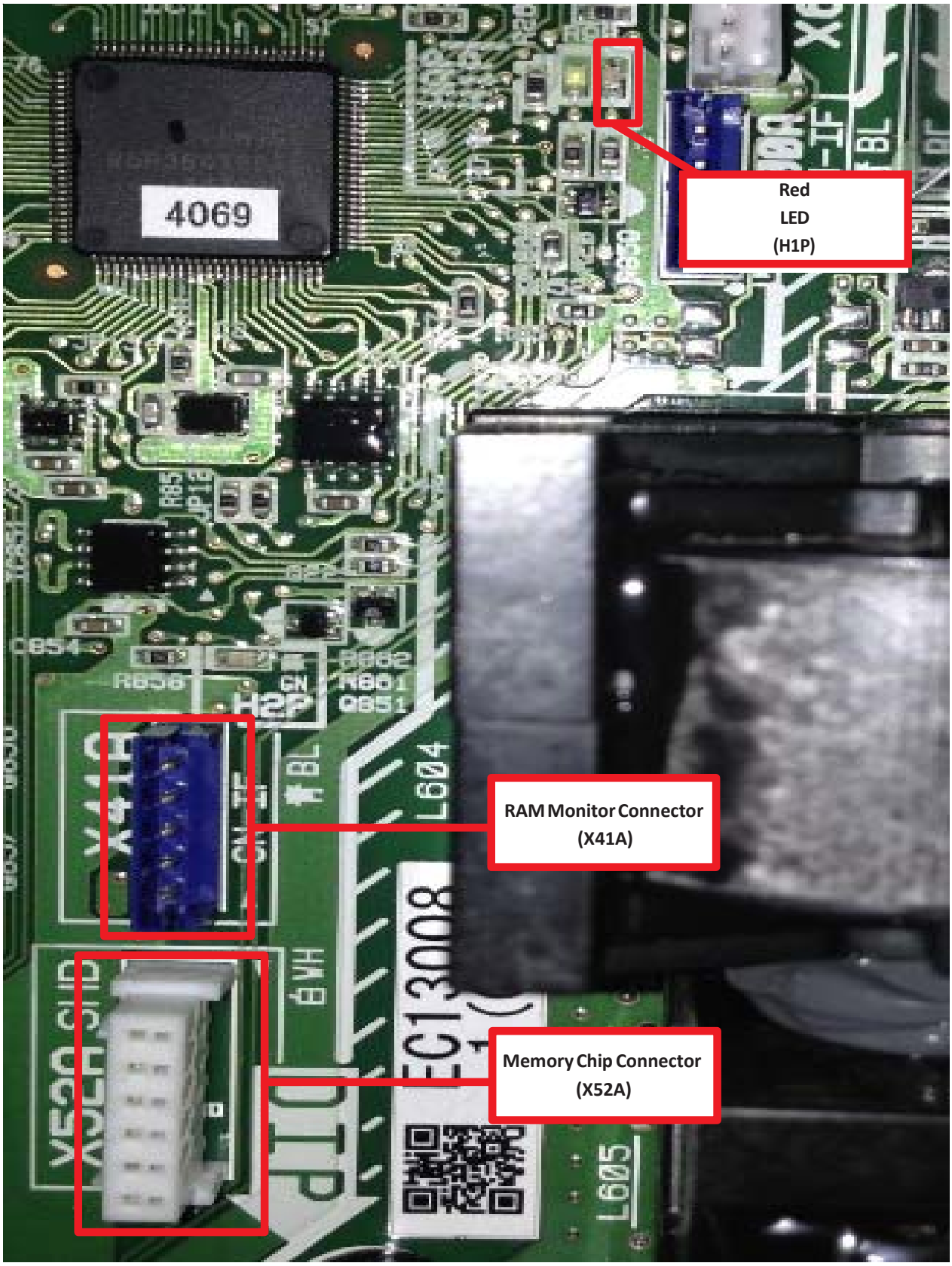


Figure 2
Zoomed in view of 20 SEER Outdoor Control Board

SERVICE BULLETIN

SR – 068 Rev 1

DATE: October 7, 2020

TO: All Service and Parts Managers

SUBJECT: Crank Case Heater Kit for Inverter Split Systems

For reliability and longevity, inverter condensing units are designed to maintain compressor oil at optimum conditions while the unit is in stand-by mode. This feature allows a small current draw through the compressor windings to maintain proper oil temperature to provide compressor protection in preparation for the next run cycle.

In some cases, homeowners may hear a high-pitched sound coming from the outdoor unit. This is the result of current draw through the compressor windings and is not a defect with the inverter unit. If you have a homeowner experiencing this condition and finds it objectionable, we have developed a kit to install an external crankcase heater to maintain proper oil temperature instead of utilizing the compressor windings on the inverter units.

This kit is not under the manufacturer's warranty and must be purchased by contacting your service parts CSR. The part number for the kit is **INVCCHK01**.

Note: Please review **IO-7005** (attached) before proceeding with the installation. The "New" **INVCCHK01** requires the use of the **BTSDL01** (Bluetooth Shared Data Loader) in addition to this kit to install the required shared data.

Applicable Models				
AVZC180241	AVZC200241	AVXC2000241	GVZC200241	GVXC200241
AVZC180361	AVZC200361	AVXC2000361	GVZC200361	GVXC200361
AVZC180481	AVZC200481	AVXC2000481	GVZC200481	GVXC200481
AVZC180601	AVZC200601	AVXC2000601	GVZC200601	GVXC200601

If you have questions regarding this bulletin, please contact TechServices@goodmanmfg.com

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INVCCHK01

Bluetooth Shared Data Loader (p#BTSDL01) required to use this kit.
External Crankcase Heater Kit
INSTALLATION INSTRUCTIONS

⚠ WARNING

Only personnel that have been trained to install, adjust, service or repair(hereinafter, "service") the equipment specified in this manual should service the equipment. The manufacturer will not be responsible for any injury or property damage arising from improper service or service procedures. If you service this unit, you assume responsibility for any injury or property damage which may result. In addition, in jurisdictions that require one or more licenses to service the equipment specified in this manual, only licensed personnel should service the equipment. Improper installation, adjustment, servicing or repair of the equipment specified in this manual, or attempting to install, adjust, service or repair the equipment specified in this manual without proper training may result in product damage, property damage, personal injury or death.

PROP 65 WARNING
FOR CALIFORNIA CONSUMERS

⚠ WARNING

Cancer and Reproductive Harm -
www.P65Warnings.ca.gov

0140M00517-A

DESCRIPTION

The INVCCHK01 external crankcase heater kit will be used where an off-cycle noise is not acceptable.

The kit disables the internal crankcase heater function enabled in the production shared data file. The kit includes a temperature control that turns ON/OFF the added external crankcase heater when the discharge temperature reaches a specific temperature during operation. The temperature switch has a cut in (98°–112°) and a cut out range (122°–150°). When the ambient temperature is low enough, the temperature switch turns the crankcase heater ON. This heater will allow the compressor oil to heat up before operation. As the compressor starts running, the discharge tube will heat up to 150°, at which point, the temperature switch will turn the crankcase heater OFF. When the compressor stops running and the discharge tube temperature drops below 102°, the temperature switch turns the crankcase heater back ON.

After installation of the external crankcase heater kit components, a new shared data file must be installed in the PCB board prior to starting the unit. The new shared data file will disengage the compressor motor winding from running when using the external crankcase heater kit. See **Kit Installation Procedure** on how to install the crankcase heater kit components.

The Bluetooth Shared Data Loader (p#BTSDL01), along with the CoolCloud™ phone app, is required to install the specific shared data file for your legacy ComfortNet™ Brand/Model. Please refer to the BTSDL01 kit instruction for additional information on using the Bluetooth Shared Data Loader.

PARTS LIST FOR KIT

Crankcase Heater Kit		
Item	**Part No.**	**Qty.**
Temperature Switch	0130M00301	1
Terminal Block	1412205	1
Crankcase Heater	0163R00002	1
Ground Wire Adaptor	W18211120160006	1
Installation Instructions	IO-7005	1
CoolCloud™ **HVAC Bluetooth® Shared Data Loader User Guide**	HI-151	1

Affected Models			
AVZC180241	AVZC200361	AVXC200481	GVXC200601
AVZC180361	AVZC200481	AVXC200601	GVZC200241
AVZC180481	AVZC200601	GVXC200241	GVZC200361
AVZC180601	AVXC200241	GVXC200361	GVZC200481
AVZC200241	AVXC200361	GVXC200481	GVZC200601

KIT INSTALLATION PROCEDURE

⚠ WARNING

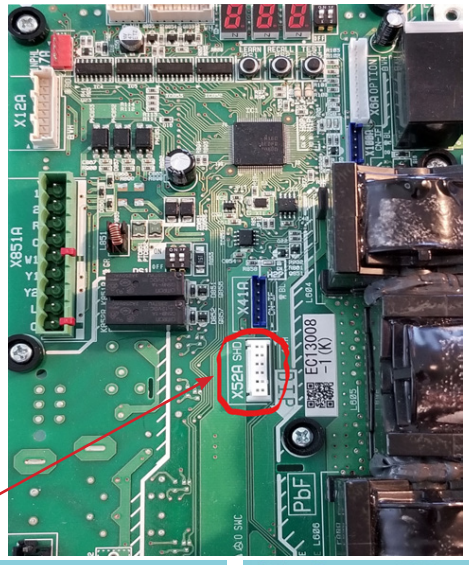
HIGH VOLTAGE
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



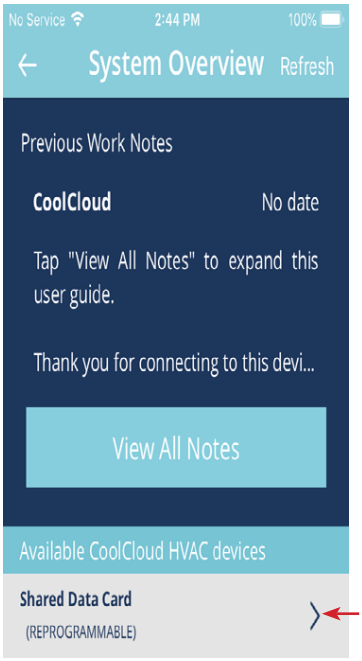
NOTE: VERIFY CAPACITOR VOLTAGE IS 50VDC OR LESS WITH METER BEFORE PROCEEDING

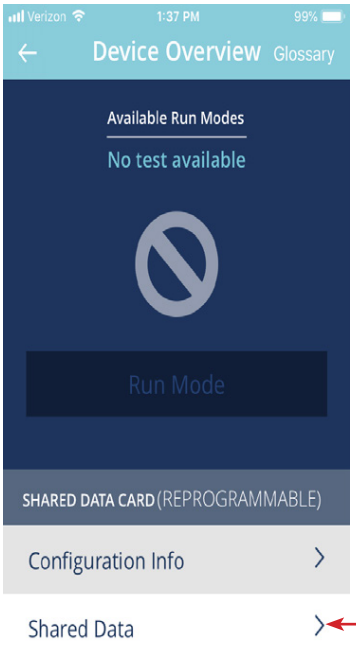
1. Before removing the PCB cover, ensure that the power to the outdoor unit is turned off. Remove PCB cover.

2. Attach the BTSDL01 to X52A on PCB. Using the CoolCloud™ app, find the shared data part number that corresponds to your specific outdoor unit model. Please refer to BTSDL01 kit instruction "HI-151" for information related to loading and using your Bluetooth Shared Data Loader.



Attach BTSDL01 Here







3. Remove top panel assembly. Remove zip tie that is fastening the fan motor wire onto the coil return tube as necessary.

4. Remove compressor blanket.

5. A) Install crankcase heater around the compressor (2T/3T on 18/20S) above the weld plugs as shown on the picture below.



2 Ton Models



3 Ton Models

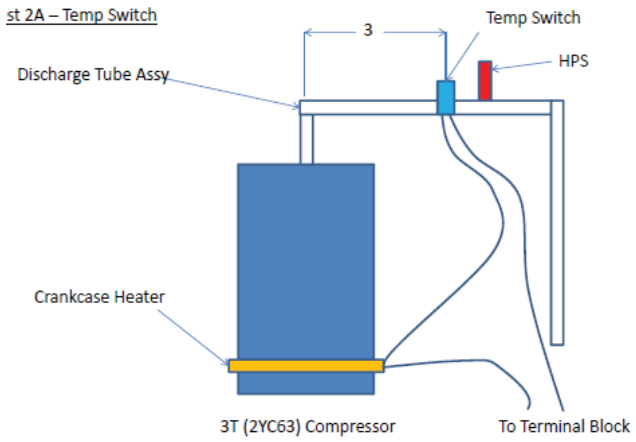
6. B) Install crankcase heater around the base of the compressor for the 4T 20S and 4/5 T 18S units. The crankcase heater should be within 2.25” from the base pan.

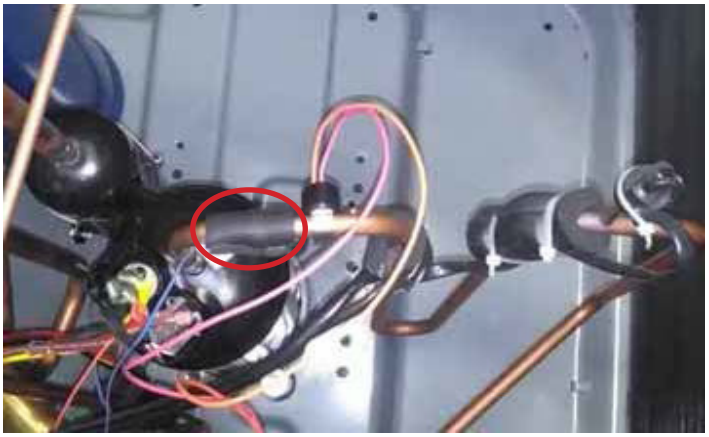


4 Ton (20 SEER) &
4/5 Ton (18 SEER) Models

7. Remove lower access panel by removing the nut on the access tube and two screws. Route crankcase heater wires through the PCB main panel as shown below. Ensure wires do not contact the discharge line as they may melt.

8. Install temperature switch on the horizontal discharge line 3 inches away from the compressor as shown in the pictures below. The position of the temperature switch is critical and has to be positioned in such a way that it is completely within the sound jacket after assembly for best insulation.





9. Route switch wires through the PCB main panel as shown on picture for #6 above.

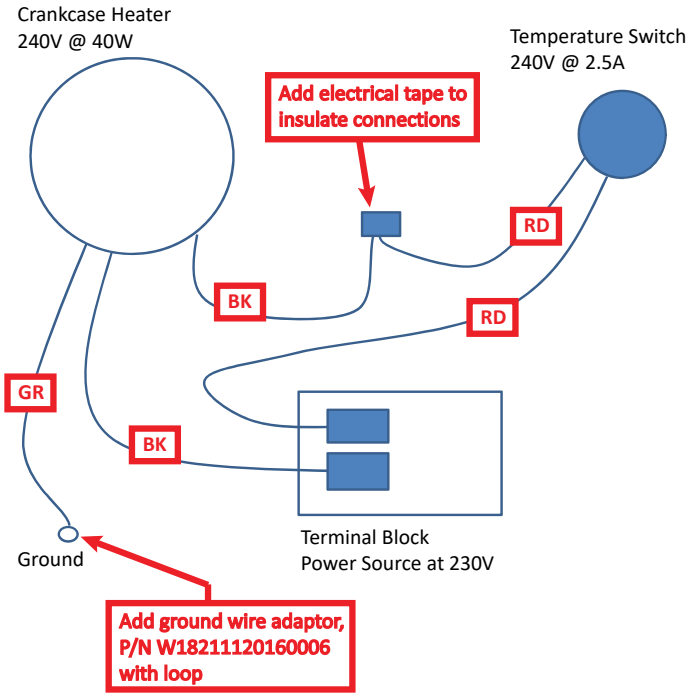
10. Connect the male terminal on the switch to the female connector on the crankcase heater. Wrap connections with electrical tape to insulate metal parts. Ensure connection is inside the PCB cover to keep connection from getting wet. See wiring illustration below.

11. Connect the second wire of the crankcase heater to the terminal block. See wiring illustration below.

12. Connect the second wire of the temperature switch to the terminal block. See wiring illustration below.

13. Caution: DO NOT DOUBLE UP ON THE WIRE CONNECTIONS TO THE TERMINAL BLOCK. Replace existing terminal block with terminal block with adaptor. Connect the crankcase heater and switch cables to the adaptor. Pictures below show current terminal block and terminal block with adaptor.

14. Attach ground wire adaptor, P/N W18211120160006 with loop, to the crankcase heater ground wire. Connect ground wire loop to ground next to the terminal block. See wiring illustration below.

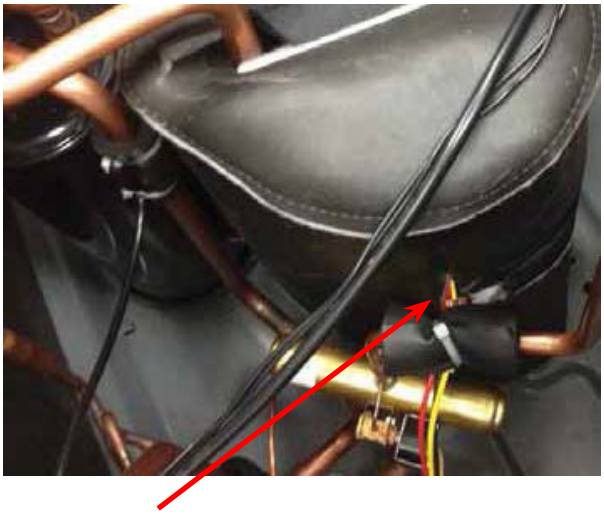




CURRENT TERMINAL BLOCK



TERMINAL BLOCK WITH ADAPTOR



Route Temperature switch cables through compressor cable opening

15. Ensure that the switch cables are routed through the same jacket opening as the compressor power cables.

16. Replace the Top Panel Assy. Before securing the assembly, tie wrap the fan motor cable to the coil return tube. ENSURE TO ROUTE FAN MOTOR WIRE BETWEEN COIL AND PCB PANEL.

17. Ensure all excess cable wires are properly secured using existing wire loops.

18. Reinstall lower access panel and access tube using existing hardware.

19. Once all components are installed, turn outdoor unit on. Let unit cycle for 5 minutes.

20. After cycle time, turn off outdoor unit and remove the Bluetooth Shared Data Loader (BTSDL01). Install back PCB cover and turn outdoor unit back on.

CoolCloud™

Download on the App Store

GET IT ON Google Play

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CUSTOMER FEEDBACK

We are very interested in all product comments.
Please fill out the feedback form on one of the following links:
Daikin Products: (https://daikincomfort.com/contact-us)
Goodman® Brand Products: (http://www.goodmanmfg.com/about/contact-us).
Amana® Brand Products: (http://www.amana-hac.com/about-us/contact-us).
You can also scan the QR code on the right for the product brand you purchased to be directed to the feedback page.

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- Products
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HI-151
CoolCloud™ HVAC Bluetooth® Shared Data Loader User Guide

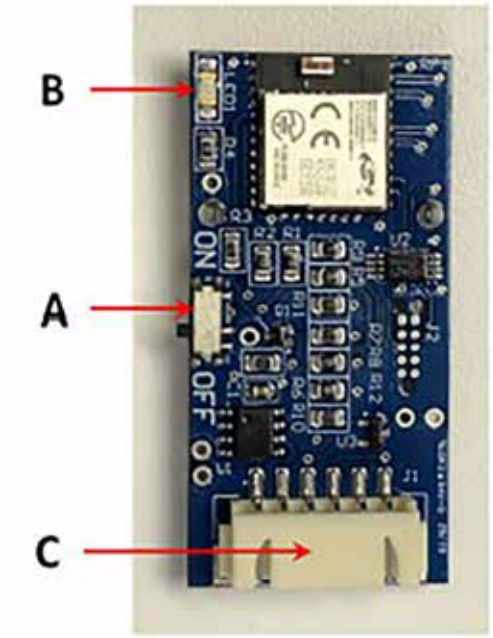
The Bluetooth Shared Data Loader can be used to load Shared Data onto **ComfortNet ®** and **ComfortBridge ™** HVAC equipment. It can be reprogrammed in the field to hold any set of Shared Data using the **CoolCloud** HVAC app and a compatible mobile device.

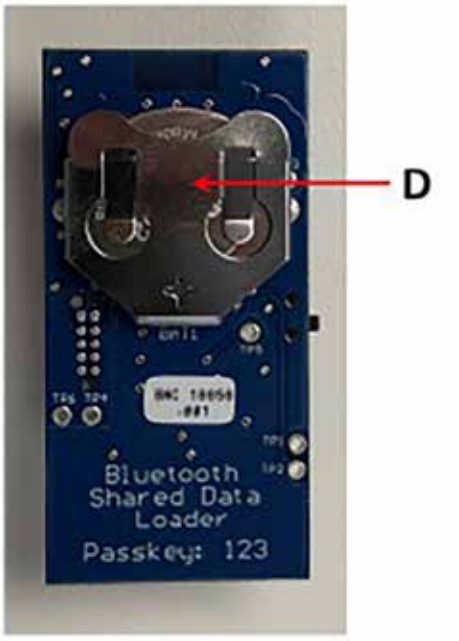
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Device Layout





A. **Power Switch** – Can be placed in the ON or OFF position. The device must be powered on to program Shared Data from the CoolCloud HVAC app and to load Shared Data onto any compatible equipment.
B. **Status LED** – Will blink periodically when the device is powered on. The Status LED will blink once every 4 seconds when the device is powered on normally. The Status LED will blink 3 times in quick succession to indicate the battery is low and will need to be replaced soon.
C. **Shared Data Loading Connector**
D. **Battery/Battery Slot** – Accepts a CR2032 3V coin cell battery

Setup

Before using the card, download the **CoolCloud** HVAC app for iOS or Android using the links below. Be sure to register for an account before continuing.

GET IT ON Google Play

Download on the App Store

Connecting to the Device

Turn the Bluetooth ® Shared Data Loader on by switching the Power Switch to the ON position. The blue Status LED should begin flashing periodically. If the CoolCloud HVAC app is open, it will detect the new Bluetooth network and display “SharedDataCard” as an available network. Tap on this network to connect.



If the network does not appear, ensure the Status LED on the device is flashing and tap the refresh button in the app to continue scanning for networks.

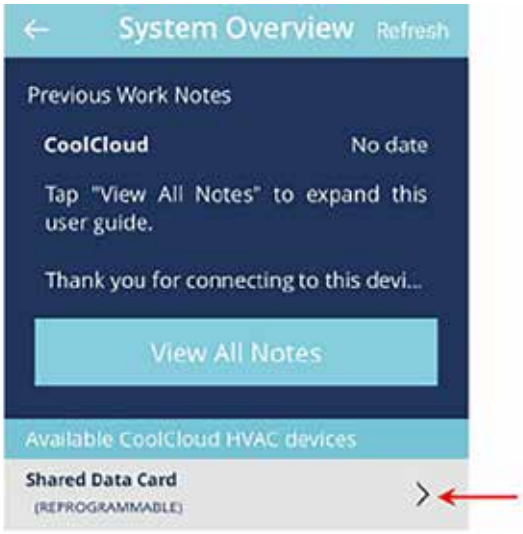
If the app requires any security verification, choose “Pair Device by Code” and enter the code 123.



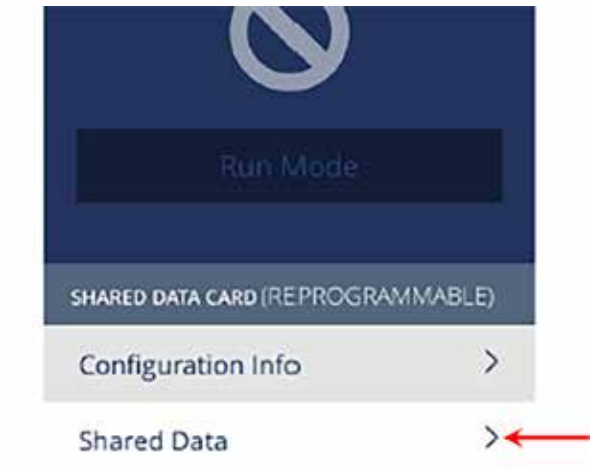


Reprogramming Shared Data

To select shared data, click on “Shared Data Card” on the system overview screen.



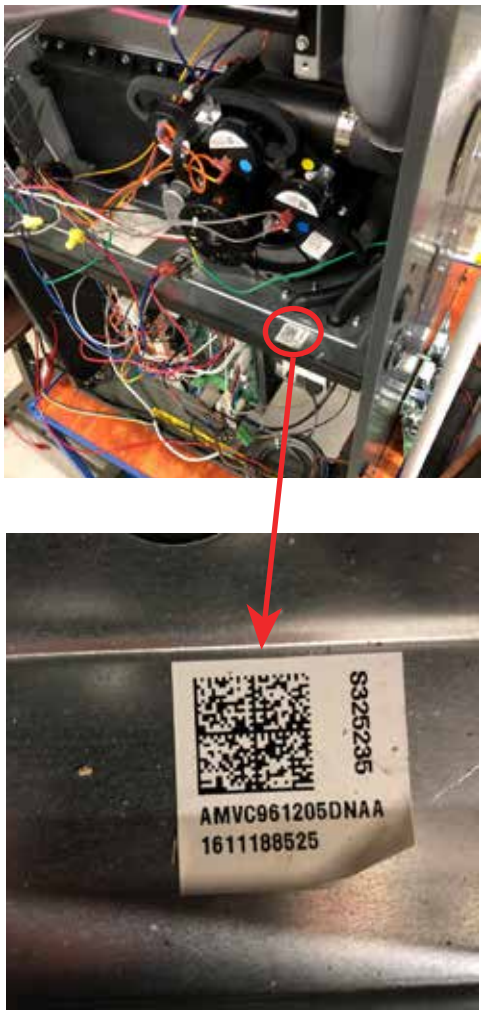
Then click on “Shared Data”.



From here, the appropriate Shared Data can be selected by either scanning a barcode that can be found on the unit or by typing in the model number of the unit. If possible, scanning the 2D barcode is recommended to get the most accurate results. If this barcode is faded, damaged, or can’t be found, then it will be necessary to enter the model number instead.



The 2D barcode can typically be found somewhere inside the unit. For indoor units, the barcode can typically be found on the blower deck. For outdoor units, it can typically be found on the inside of the control board compartment. This 2D barcode will always have the model number of the unit printed next to it.



For this **ComfortNet** furnace, the 2D barcode is located on the blowerdeck, its model number is AMVC961205DNAA

After selecting the desired model number, the app will present a confirmation screen. Review the information on this screen, then, if the information looks correct, click “Confirm and Continue” to program the selected Shared Data onto the card.



If the information shown on the confirmation screen does not look correct, it may be necessary to choose a different set of Shared Data. Return to the previous screens and ensure the model number provided in the app is correct. If possible, use the camera to scan the 2D barcode instead of manually selecting the model number from the list.

Loading Shared Data onto the Equipment

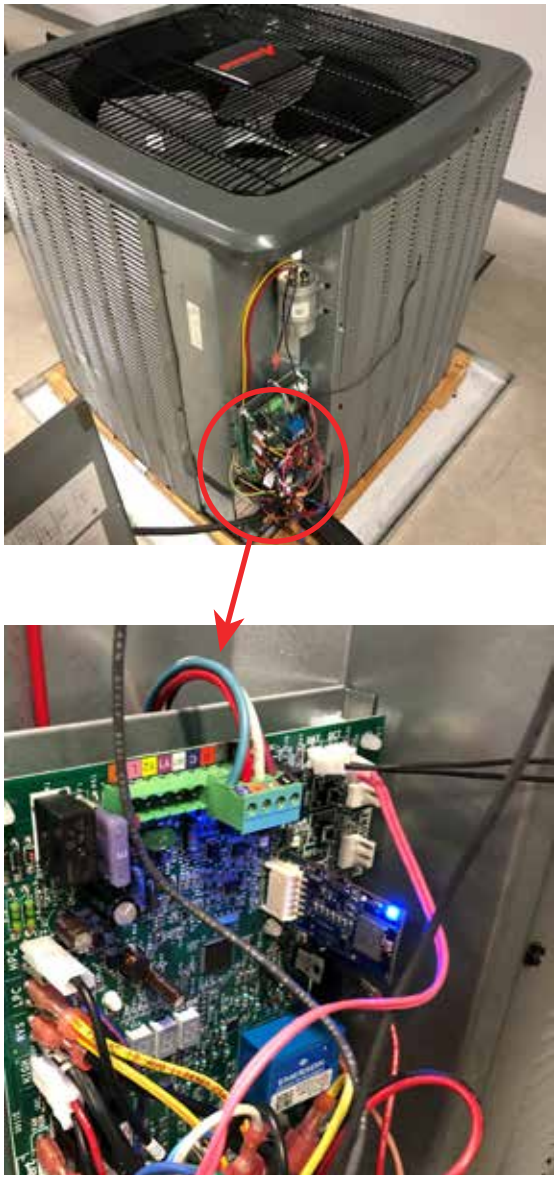
Once the Shared Data has been loaded onto the card, determine if the equipment being worked on is a **ComfortNet** unit or a **ComfortBridge** unit. All **ComfortBridge** units have Bluetooth and are designed to work with the **CoolCloud** HVAC app directly. In most cases, it will be easier to simply connect the app to the Bluetooth network of the unit and reprogram the Shared Data on the unit directly from the app.

In some cases it may be necessary to load Shared Data onto a **ComfortBridge** unit (e.g. when the Bluetooth connection is not working). If this is the case, please skip to the section labeled “Loading Shared Data onto **ComfortBridge** Equipment” for further instructions. Otherwise, please keep reading.

Loading Shared Data onto ComfortNet™ Equipment

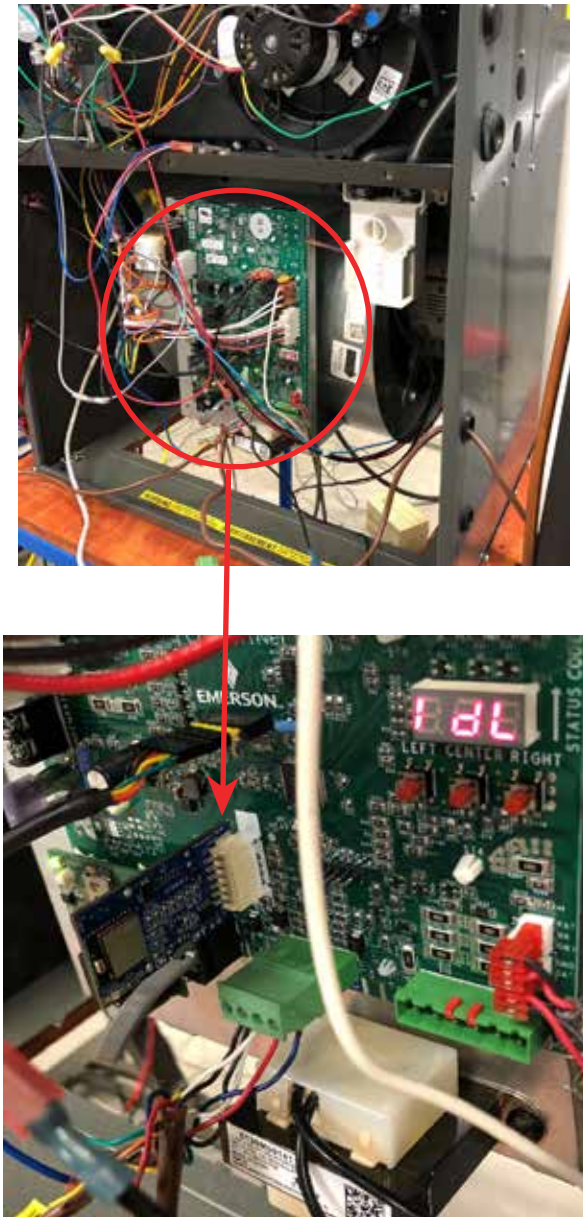
When loading Shared Data from the card onto a **ComfortNet** unit, first disconnect power from the HVAC system and insert the card into the Shared Data loading connector on the control board inside the desired **ComfortNet** unit. When plugged into the unit, the card must be powered on to function properly.

With the card plugged in and powered on, power on the equipment for 30 seconds to allow the Shared Data loading process to complete. When complete, power the equipment back off and retrieve the card from the unit. Reconnect power to the system and confirm that the Shared Data loading process was successful and that the system is operating normally.



The reprogrammable Shared Data loader card must be powered on to load Shared Data onto a unit.

Loading Shared Data onto ComfortBridge™ Equipment



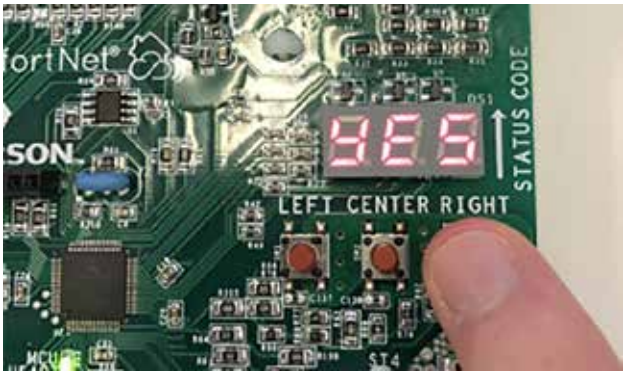
To load Shared Data onto a **ComfortBridge** unit, first insert the card into the Shared Data programming connector on the control board inside the desired **ComfortBridge** unit. Then ensure the board is receiving power. Once the board is fully powered on, use the “LEFT”, “RIGHT”, and “CENTER” buttons on the control board to navigate the appropriate menus on the control board.
Press the “RIGHT” button until the display reads “Cr”.



Then press “CENTER” to select the Cr menu. Some codes will begin flashing on the display. Ignore these codes and hold down the “LEFT” and “RIGHT” buttons simultaneously for at least 10 seconds. If the display switches to “Cr” again, check that the Bluetooth Shared Data Loader is inserted fully into the connector and is powered on.



After holding “LEFT” and “RIGHT” for 10 seconds, the display will start flashing a new code, once this new code appears, release the “LEFT” and “RIGHT” buttons. The equipment will display the options “YES” and “no” to confirm or cancel the Shared Data loading process. To confirm, press the “RIGHT” button to select “YES”.



Then press the “CENTER” button **twice** to confirm the selection. The board will then start the Shared Data loading process. Once the Shared Data Loading process is complete, the display will return to displaying “Cr”.

Additional Notes

What is Shared Data?

There are many different models of equipment offered under the **ComfortNet** and **ComfortBridge** platforms; however, all these models use only a small handful of control boards. To make sure each control board can work inside its intended chassis, we load each board with a small amount of chassis-specific data when the equipment is assembled.

When the equipment is installed, this chassis data is copied over to any other connected communicating equipment and saved there in case some parts need to be replaced at a later date. Because this data is shared by other equipment on the same network, we call it “Shared Data.”

This means if only one part needs to be replaced in a system, it’s likely the Shared Data will automatically be loaded from the existing equipment. However, if multiple parts need to be replaced all at once and the system loses all the places where this Shared Data is stored, Shared Data will need to be reloaded to make sure the freshly installed parts are compatible with the existing equipment.

When is it Necessary to Load Shared Data?

In short, if a unit reports a d0, d1, or d2 fault code, it will be necessary to load Shared Data from the card.

One of these fault codes may be generated by a unit after some parts of the equipment are replaced. After a system is powered on for the first time, there are two or three places where the Shared Data for the entire system is stored. Shared Data is always stored on the **indoor unit control board** and the **indoor blower motor**. If the outdoor unit is a ComfortNet outdoor unit wired in communicating mode to the indoor unit (i.e. wired using the 1-2-R-C connector), then Shared Data for the system is also stored on the **outdoor control board.**

Shared Data will only need to be replaced if **all** sources of Shared Data on a system are replaced at the same time.

Loading Shared Data can be avoided by replacing only one of these parts at a time and powering up the system after replacing each part.

FCC Statement

This Device Contains Transmitter Module FCC ID: QOQB-GM111; IC: 5123A-BGM111.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved could void the user’s authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter meets both portable and mobile limits as demonstrated in the RF Exposure Analysis.

Service Bulletin

SR-067 Rev. 1

DATE: September 19, 2016

TO: All Service and Parts Managers

SUBJECT: 18 SEER Inverter Air Handler DV**PEC Compatibility with EWC Ultra-Zone® UT3000 Zone Control

Technical Services has received an update from EWC Controls Inc. regarding compatibility of the Ultra-Zone® UT3000 Zone Control with Daikin electronic expansion valve-based air handlers. EWC Controls has released a new Code Version to provide compatibility with all DV**PEC air handlers. The new Code Version is 1.33 and is shown on the UT3000 box label. Code Version 1.33 or higher must be utilized when employing DV**PEC air handlers.

This screen below is displayed upon initial power up of the UT3000 Zone Control.



If you have any questions about this bulletin please contact Rodney White at Rodney.White@goodmanmfg.com.

Excellence Without Compromise

EWC® CONTROLS INC.

TECHNICAL BULLETIN

ULTRA-TALK® 3000

Communicating Zone Control System U.S. Patent No. 9,253,260

ULTRA-ZONE® Forced Air Zone Controls

LEAVE THIS BULLETIN ON THE JOB SITE FOR FUTURE REFERENCE

The One of a Kind UT3000 Zone Control System provides intelligent control of a communicating HVAC system or 24volt legacy HVAC system at a maximum of five zones using 24volt motorized dampers and any off-the-shelf 24volt thermostat or compatible communicating thermostat. The UT3000 is 100% plug and play when connected to a communicating HVAC system and network thermostats. The UT3000 includes features such as Modulating and Staged Operation, Automatic Equipment Recognition, Dual Fuel Functions and Precise Control of Supply Air Target & Limit set-points. EWC® Controls raises the bar again and sets another new standard for Residential and Light Commercial HVAC Air Zoning.

Zone Capacity

Controls 2 or 3 air zones with 24vac Power Open/Close or Spring Assisted motorized dampers. *Can be expanded to 5 zones by twinning 2 UT3000's together.*

Compatible HVAC Systems

Control any Communicating HVAC system based on the ClimateTalk™ Open Protocol. *Or any 24volt 2 Heat / 1 Cool Gas/Electric system or 2 Heat / 1 Cool Conventional or Dual Fuel Heat Pump.*

Compatible Thermostats

The UT3000 is compatible with any Communicating Thermostat that operates on the ClimateTalk™ Open Standard. Also compatible with any off-the shelf 24v single stage Heat/Cool Thermostat or 2 Heat/1Cool Heat Pump Thermostat.

Automatic Heat / Cool Changeover

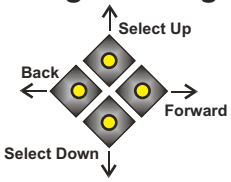
The UT3000 features automatic mode changeover from any zone thermostat, allowing for individual zone comfort from the HVAC system.

Status LCD



The Liquid Crystal Display scrolls to show each zone thermostat demand input and the HVAC system demand output. The outside & supply air temperatures are also displayed. In addition, all UT3000 programming is performed at the LCD.

4 Button LCD Programming



Four buttons are provided just below the LCD screen. The buttons are used to scroll thru the Menu on the LCD and make your selections. Program the UT3000 and select the features you like. Non-volatile memory maintains your settings even after a prolonged power failure.

System LED's

In addition to the LCD, a total of 5 colored LED's provide visual indication of the HVAC system status & mode of operation.

Damper LED's

A total of 3 green LED's labeled Zone 1 thru Zone 3, are also provided to indicate which dampers are energized to Open.

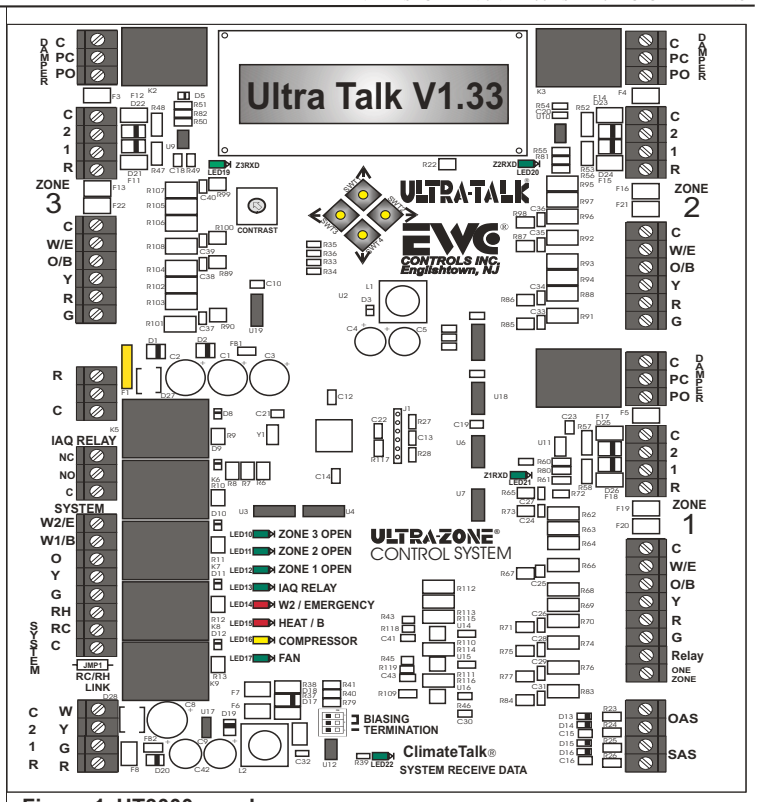


Figure 1. UT3000 panel

Communicating LED's

A total of 4 green Pulsing LED's are provided to indicate a Comm Link has been established with each Communicating T-stat and/or the Communicating HVAC system. A series of Rapid & Random Pulses indicate successful comm-link and data transmission. Otherwise, each Comm LED will blink On & Off slowly for non-communicating devices.

Fault Free Programming & Intuitive Temperature Control

The UT3000 comes pre-loaded with Default Operating Parameters *(See Table 1)* for Zoned HVAC Systems. The Default Program Settings free the Technician from Programming but also allows Fine Tuning of the System to Optimize Performance and Personal Preference. The UT3000 operates in Staged and Modulating mode at all times. Multi-Stage and Modulating Equipment will be operated in a manner that maximizes efficiency, maximizes temperature control & improves system performance.

Ancillary IAQ Dry Relay Provided

The UT3000 includes a *SPDT* Indoor Air Quality Dry Relay, with a digital & 24v Input Trigger. It can be used to interlock and control Ancillary IAQ functions:

** Fresh Air Damper * Whole House Humidifier*

** Energy Recovery Ventilator * Ultra-Violet Lamp*

The UT3000 must detect a fan request from one or more communicating zone thermostats or legacy non-communicating zone thermostats, before the IAQ relay will energize. This ensures the zone that requested IAQ function actually receives it.

EWC Controls Inc. 385 Highway 33 Englishtown, NJ 07726 800-446-3110 FAX 732-446-5362 E-Mail- info@ewccontrols.com

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INSTALLATION INSTRUCTIONS

MOUNT:

Choose a suitable location to mount the UT3000 housing. Likely locations are the Return Duct, a Nearby Wall or Convenient Studs where plywood can be installed to support the housing. Avoid mounting the UT3000 on the Supply duct. ***Do not*** *mount the UT3000 directly to any Air-Handler, Furnace, Hot Water Coil or Evaporator Cabinet to avoid damage to these devices.*
Follow National and/or Local Mechanical Code.

POWER:

EWC always recommends to install a separate transformer to power the UT3000. Follow NEC and/or Local Electrical Code.

WIRE:

Connect the Power Supply to the UT3000 and wire-up thermostats and dampers. Use the knock-outs provided on the housing as the wire entry-way. Strip the cable jacket back to the point where the cable enters the housing. That reduces bulk and allows easy routing of the individual wires for a professional looking install.

4 Wire Communicating Network:

Whenever possible, adhere to the Climate Talk™ Color code. RED, GREEN, YELLOW, WHITE. Doing so reduces the possibility of mis-wiring components.

PROGRAM:

When connected to a Fully Communicating HVAC system, programming is not required. *The UT3000 will automatically configure the entire system and start running as soon as thermostat demands are detected.* ***Allow at least 1-2 minutes for all Thermostats and the HVAC system to fully configure on the network.*** *The Default Supply air temperature Targets and off-set Limits will be used. Other unique features can be selected and/or you can adjust the default settings to the values you prefer in order to achieve the desired staging and system operation.*

When connected to a Conventional 24v HVAC system, you simply scroll thru the LCD menu and select the type of HVAC system you have and the type of thermostats you want to use. The Default Supply Air Temperature Targets and Off-Set Limits will be used, or you can adjust your own settings.

FINISH:

When the Installation is complete, run the system thru it's paces and observe the operation of the HVAC system in all possible modes of operation. Check the Zone Dampers and the Bypass Damper for proper operation. Balance the System and Adjust the Feature Range Values as necessary.

UT3000 Version 1.33 SPECIFICATIONS and MENU ITEMS:

NUMBER OF ZONES: *2 or 3 Zones per control panel. Expandable to 5 zones.*

COMPATIBLE EQUIPMENT:
Climate Talk™ based Communicating HVAC systems *- ComfortNet™ or Comfort Control2™* Up to 4 stages of heat & up to 2 stages of cooling. *(Inverter driven AC or HP) (Modulating Gas).*
Non-Comm. Gas/Electric/Hydronic systems – Up to 2 Stage Heating and 1 Stage Cooling.
Non-Comm. Heat Pump or Dual Fuel systems – Up to 2 Stage Heating and 1 Stage Cooling.

COMPATIBLE THERMOSTATS:
Any Climate Talk™ based Communicating HVAC Thermostat.
Any 24vac single stage Heat/Cool Thermostat.
Any 24vac 2 Stage Heat, 1 Stage cool Heat Pump Thermostat.

COMPATIBLE DAMPERS:
EWC® Ultra-Zone® Models URD, ND, RSD and SID, or
Any Competitor's 24vac 3 Wire or 2 Wire damper.
MAX. DAMPERS PER ZONE:
Up to 18 ND, URD, or SID Dampers Per Zone @ 26mA per damper. ***Total 54.***
Only 1 Spring Type Damper Per Zone @ 400mA per damper. ***Total 3.***

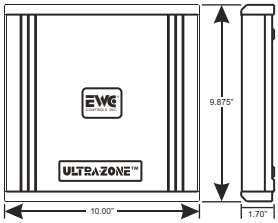
OVER-CURRENT (Auto-Reset) PROTECTION:
2.5Amp main circuit board protection.
500mA on each Damper Motor Terminal Block.
140mA on each Communicating Thermostat and HVAC System Terminal Block.
140mA on each Regular 24v Thermostat Terminal Block.

UT3000 MAXIMUM CURRENT DRAW = *1.75 Amp.*

POWER REQUIREMENT = *24Vac min.40Va max.60Va 50/60 Hz.*

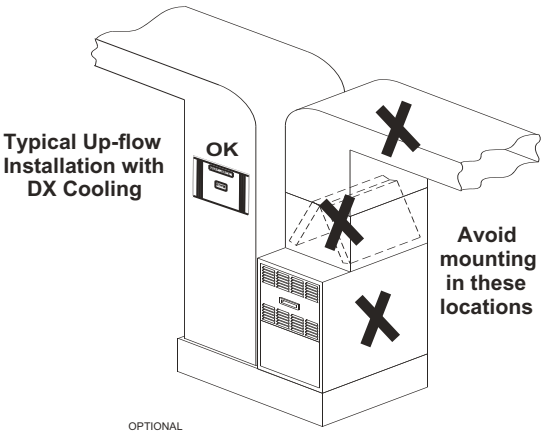
AMBIENT OPERATING CONDITIONS:
TEMPERATURE: -4° to 158°F (-20° to 70°C).
HUMIDITY: 0% - 95% Rh Non-Condensing.

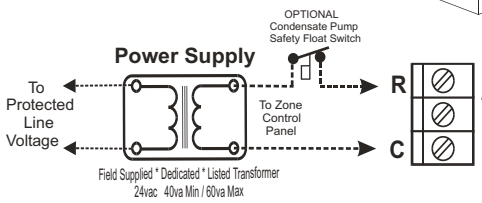
ANCILLARY IAQ DRY RELAY FUNCTIONS:
Control a Whole House Humidifier.
Interlock an ERV or HRV
Interlock a Fresh Air Damper or UV lamp.



NOMINAL DIMENSIONS
10" x 10" x 1.75"

ACCESSORIES:
Model SAS *– Supply Air Sensor* ***(Included).***
Model OAS *– Outdoor Air Sensor* ***(Optional) Communicating systems provide OA value.***
Model CPLS *– Coil Protection Lockout Switch* ***(Optional/Recommended).***

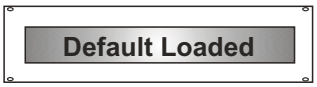




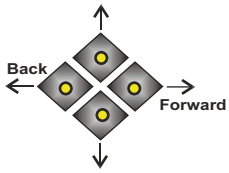
Install a Separate Transformer to Power the UT3000



Stick with the Color Code & Protect the Wires



If desired, you can reset the UT3000.

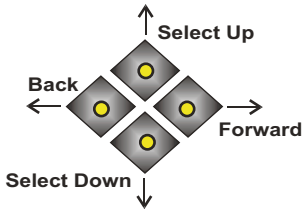


Upon Power Up, Press and Hold the Back & Forward buttons to Load the Factory Default Values, then Release.

TABLE 1

FEATURE	DEFAULT	RANGE TO SELECT
System Type	Heat/Cool	Heat Pump or Heat/Cool
HP Type	NON Dual Fuel	Dual Fuel or Non-Dual Fuel
T-Stat Type	Heat/Cool	Heat Pump or Heat/Cool
Rev Valve	RV 'O'	'O' Type RV or 'B' Type RV
Fan Mode	Gas	GAS or HYDRO (Electric)
OAS SP	20° F	OFF or 7° to 42° F
O.T. Offset	15° F	5° to 20° F
U.T. Offset	9° F	5° to 12° F
SAS HP TGT	100° F	90° to 120° F
SAS Gas TGT	140° F	120° to 170° F
SAS Cool TGT	49° F	40° to 60° F
SAS RSP DLY	15s	10seconds - 180seconds
W2 Threshold	95%	65% - 99% (Adj. in 5 point increments)
PURGE FAN	25%	25% - 100% (Adj. in 25 point increments)
Zone 1 Weight	50%	0% to 100%
Zone 2 Weight	40%	0% to 100%
Zone 3 Weight	10%	0% to 100%
Total Zones	3	2 or 3 zones per panel
Limit SAS PID	N	*Yes or No*
DMP DFLT	Open	Open or Close
W2 lockout	99° F	20° to 99° F

LCD Screen Programming



4 Button LCD Programming

Remember, if you are installing a Communicating HVAC system, this programming is done for you! ***There is no need to perform the Programming steps below.*** You can still program certain detail functions ie. (24v T-stat Type). Select only the functions you want or need. Your changes will take effect in real time and the UT3000 will remember your settings even after a power failure. When the power is restored, the UT3000 will re-configure the network automatically.

Use the *Forward* & *Back* buttons to navigate thru the Menu Features. Use the *Up* & *Down* buttons to change or adjust the options available in that feature. ***Place a check mark next to each selection or write the value in the box for future reference!***

Step 1

Heat Pump System ☐

OR

Heat Cool System ☐

Select either ***Heat Pump*** or regular ***Heat/Cool*** system. *If you have a Heat Pump and a Gas/Oil Furnace, you should still select Heat Pump.*

Step 2

Dual Fuel System ☐

OR

Non- Dual Fuel ☐

IMPORTANT

On ComfortNet™ Dual Fuel communicating systems, thermostat models CTK01, CTK02 & CTK04ab are compatible with the UT3000.

Contact EWC Controls Technical Support for assistance.

If you selected a Heat Pump system in Step 1, select whether your Heat Pump has a ***Furnace*** back-up system ***or Electric Heat*** back-up. *You can still operate any Heat Pump in a restricted mode by using the OAS-SP feature.*

Step 3

Heat Pump 'Stats ☐

OR

Heat / Cool 'Stats ☐

Select the type of 24v ***(Non-Communicating)*** thermostat you want to use.You may have a Communicating thermostat in Zone 1 and Regular 24v thermostats in the other zones. ***So you must select which type are in the other zones.***

You cannot mix non-communicating HP and HC type thermostats. All 24v T-stats must be Wired and/or Programmed for HC or HP Operation. ***Conflicting Zone Demands due to mis-wiring or incorrect programming will not be recognized!***

Step 4

HP Stat Type 'B' ☐

OR

HP Stat Type 'O' ☐

IMPORTANT
This selection is important when using non-communicating HP T-stats. You must Wire and/or Program your HP T-stats to match this selection!

If you selected a Heat Pump system in Step 1 and Heat Pump Thermostats in Step 3, then select the type of Reversing Valve Operation.

Step 5

Fan Mode Hydro ☐

OR

Fan Mode Gas ☐

Select how you want the Indoor Fan to operate during Heating Operations. Select HYDRO if you have an Air-Handler with Hot Water Coil or an Electric Furnace. Select GAS if your system is a Gas/Oil Furnace with A/C. *If you selected a Heat Pump system in Step 1, the Fan Mode is set for you, in which case you'll see the screen Fan Mode N/A.*

Fan Mode N/A

Step 6

OAS SP 20° ☐

If you are using the Outside Air Data to Lock-Out the Heat Pump, select that ***Set-Point*** Temperature right here. *If you do not want to use Outside Air Data to lock-out the heat Pump, adjust the OAS SP (Set-Point) value down to the OFF position and the UT3000 will display the screens to the right.*

OAS SP OFF **OAS Sensor N/A**

Step 7

O.T. Offset: 15° ☐

AND

U.T. Offset: 9° ☐

Examples:

SAS HP Target = 100°F
O.T. Offset + 15°F
HP Heat Limit = 115°F

SAS Cool Target = 49°F
U.T. Offset - 9°F
Cooling Limit = 40°F

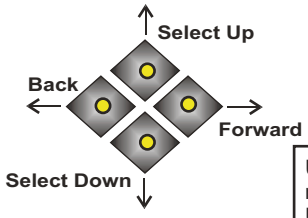
SAS Gas Target = 140°F
O.T. Offset + 15°F
Gas Heat Limit = 155°F

If the Supply Air Temperature exceeds any Target Set-Point, (Plus or Minus the Off-Set), the resulting value becomes the ***Over Temperature Condition.*** Choose an ***Off-Set*** value that will provide a safe operating limit for your HVAC equipment. *The UT3000 will cycle the system off-line for 3 minutes, allowing the discharge air temperature to moderate while displaying the Over or Under Temp Condition (OTC or UTC) screen, depending on the mode of operation.*

Supply OTC* 156 **Supply UTC* 39**

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LCD Screen Programming



4 Button LCD Programming

The UT3000 staging process is very unique. The difference between the Target Set-point and the Actual Supply Air temperature along with the SAS Response Delay determines how fast or slow the UT3000 will stage the HVAC system. Via the UT3000's advanced staging logic, *(see the next page)* the UT3000 will stage or modulate the System's BTU capacity to match the discharge air set-point target, for each mode of operation.

Use the *Forward* & *Back* buttons to navigate thru the Menu Features. Use the *Up* & *Down* buttons to change or adjust the options available in that feature. ***Place a check mark next to each selection or write the value in the box for future reference!***

Step 8



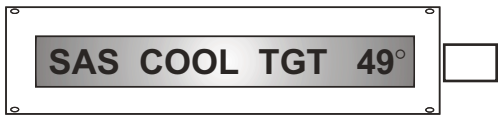
Select the desired ***HP*** Heating Supply Air Sensor Temperature Target that the UT3000 will demand from the HVAC system. The UT3000 will automatically stage the HVAC system Up or Down to maintain this value.

Step 9



Select the desired ***GAS*** Heating Supply Air Sensor Temperature Target that the UT3000 will demand from the HVAC system. The UT3000 will automatically stage the HVAC system Up or Down to maintain this value.

Step 10



Select the desired ***COOLING*** Supply Air Sensor Temperature Target that the UT3000 will demand from the HVAC system. The UT3000 will automatically stage the HVAC system Up or Down to maintain this value.

Step 11

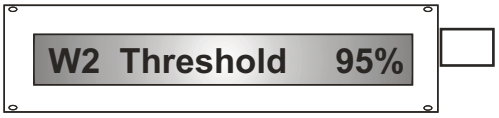


Select how often the UT3000 will force an increase or decrease to (Ramp up or Ramp Down) the SYSTEM (SYS) **H**eat or **C**ool Demand Output. ***The UT3000's PI Control constantly monitors and wants to match the supply air temperature in the duct, to the active operational target set-point.*** *The UT3000 achieves this by increasing or decreasing the SYSTEM* ***(SYS)*** *demand output, trying to match the Supply Air Temperature delivered from the HVAC system, to the active Cool Target, Gas Target or HP Target Set-Point.* **The SAS Response Delay allows the user to control how fast this function is allowed to occur.** The Default value to Ramp Up or Down is once every 15 seconds. ***HEAT MODE:*** If the Heating Supply Air is below the Heat Target, the UT3000 will increase the ***SYS* H**eat Output by 1% every 15 seconds. If the Heating Supply Air is above the Heat Target, it will decrease the ***SYS* H**eat Output by 2% every 15 seconds. ***Continued on the next column***

COOL MODE: If the Cooling Supply Air Temperature is above the Cooling Target, the UT3000 will increase the ***SYS* C**ool Output by 1% every 15 seconds. If the Cooling Supply Air Temperature is below the Cooling Target, the UT3000 will decrease the ***SYS* C**ool Output by 2% every 15 seconds.

The PI control functions in response to the Supply Air Sensor actual temperature value, as compared to the Target Set-point including a 1°F differential. Select a lower value (10 - 20 seconds) to Stage Faster. Select a higher value (60 - 90 seconds) to Stage Slower.

Step 12



Select the value at which the Auxiliary (W2) or Back-up system energizes. The Range is 65% - 99% and the default value is 80% of System ***(SYS)*** Output. Setting the value low means the Auxiliary system will operate more often. Setting a high value means the Auxiliary system operates less often. There is a 5% differential added to the value selected which prevents short cycling. ***Setting the W2 threshold to 99% effectively turns it OFF.*** The reason for this is the differential. So, a value of 94% actually trips at 99%. *Thus, a value of 99% would require the System Output to reach 104% which is impossible.* **Use the 99% value if you want the Auxiliary system to Energize on the Outside Air Set-point only.** If desired, you can use the Outside Air Set-point ***and*** set the W2 Threshold to maximum 94%. That would require the System **(SYS)** Output Percentage to reach 100% demand ***or*** the Outside Air temperature has to drop low enough, to warrant energizing the Auxiliary system.

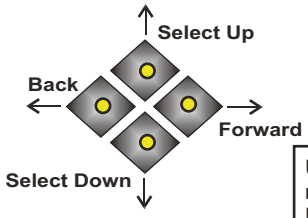
Step 13



Select how fast you want the Indoor Fan to run at the end of a cycle, to Purge the last of the hot or cool air into the last zone calling. You may select 25%, 50%, 75% or 100%.The default value is 25%. **Note 1:** *Fan Only operations using 24v T-stats on all zones will operate at the Fan Purge Setting.* **Note 2:** *Fan Only operations using 24v T-stats on zone 2 & 3 with a Communicating T-stat in zone 1 will operate at whatever speed is selected on the Zone 1 T-stat. Simply operate the communicating Zone 1 T-stat in Fan Only mode for a minimum of 20 minutes.*

Important Note: ***Review all of these Programming Features carefully and call EWC Controls if you have any questions. With years of experience Zoning HVAC systems, we have plugged in the default values that should work fine for the majority of the jobs you will encounter. If desired, you can still adjust the settings to your own preference. When doing so, wait patiently and observe the effect of those changes before changing them again. The UT3000's SYS output (PI Control) to the HVAC equipment will vary and change depending on numerous factors such as: Internal Load, External Load, SAS Response Delay Setting, Supply Air Target set-point, Thermostat Type, Thermostat Set-point versus actual zone temperature.***

LCD Screen Programming



4 Button LCD Programming

The UT3000 staging process is very unique. The difference between the Target Set-point and the Actual Supply Air temperature along with the SAS Response Delay determines how fast or slow the UT3000 will stage the HVAC system. Via the System ***(SYS)*** Output screen, *(see the next page)* the UT3000 will increase or decrease the System Output value so it can match the Target set-point. When the target is matched, the UT3000 will stop staging, unless the x2 operating range stops it first.

Use the *Forward* & *Back* buttons to navigate thru the Menu Features. Use the *Up* & *Down* buttons to change or adjust the options available in that feature. ***Place a check mark next to each selection or write the value in the box for future reference!***

The UT3000 utilizes a new zone weighting feature. You can now select the weight for each zone independently. For example, if zone 1 has more heat loss/gain than zone 2 or zone 3, you can now assign it more weight, which is a big advantage over the old "Legacy DMD" demand feature.

Step 14

Z1 WEIGHT 50% ☐

Select the Weight value that will be applied to Zone 1 Thermostat. You may select from a range of 0% to 100%. The factory default value is 50%. The sum of all the zones weights can add up to 100% or less.

Step 15

Z2 WEIGHT 40% ☐

Select the Weight value that will be applied to Zone 2 Thermostat. You may select from a range of 0% to 100%. The factory default value is 40%. The sum of all the zones weights can add up to 100% or less.

Step 16

Z3 WEIGHT 10% ☐

Select the Weight value that will be applied to Zone 3 Thermostat. You may select from a range of 0% to 100%. The factory default value is 10%. The sum of all the zones weights can add up to 100% or less.

Step 17

Total ZONES = 3 ☐

Select the total number of zones you have connected to each UT3000. You may select two zones or three zones. The factory default value is 3 zones. The assigned weights of all selected zones should total 100%. You can assign less weight to any zone if desired.

Step 18

LIMIT SAS PID N

Select "N" for NO, if you want the UT3000 to Stage the HVAC system Up & Down, in an effort to achieve the programmed Supply Air Temperature Targets for HP heat, Gas heat or Cool operations. The PID Loop is allowed to operate within the range of the zone weight demand totals x2. *This is the Default mode of system operation.* The System (SYS) demand value is based upon the sum of the demand(s) times the weight of each active calling zone. ***See page 13 for more details.***

Step 19

LIMIT SAS PID Y ☐

Select "Y" for YES, if you want the UT3000 to ignore the Supply Air Temperature Targets. ***Simply stated, the UT3000 will not increase or decrease the System (SYS) demand values in an effort to match the programmed Supply Air Targets!*** This will limit the HVAC system demand based purely on the number of zones calling and the sum of the demand weight from each calling zone. ***See page 14 for more details.***

Step 20

DMP DFLT OPEN

Change the default position of the zone dampers when the HVAC system is idle. The factory default is to OPEN all dampers when idle. Select CLOSE if desired but first make sure the HVAC system's purge cycle is set for no longer than 90 seconds. Always select "CLOSE" on Panel "B" when twinning.

Step 21

W2 LOCKOUT 99°

W2 Lockout feature allows the installer to prevent Auxiliary Heat from energizing depending on the outside temperature. An energy savings code requirement in some states.

Finish

Ultra Talk V 1.33

The final program screen displays the code version of your UT3000. *It may be different than shown above.* No further action is required. Leave the buttons alone for 10 seconds and the LCD screen will resume scrolling. The programming is complete and the UT3000 will store all settings into permanent memory.

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LCD Screen Scrolling Displays

Once the programming is complete and the System is running, the LCD screen will scroll and display the following data screens continuously. The HVAC system mode of operation is displayed including Supply Air and Outdoor Air temperature, Auxiliary and Emergency mode including IAQ Functions. The UT3000 LCD will continuously Scroll data as to which Zones are actively calling for a Heating, Cooling or Fan Operation. By watching the LCD display you can observe all system functions as they occur. If desired, you can lock the LCD on a single screen by pushing the Program Up button one time. Then select the screen you want to watch using the Up or Down button. The LCD will stay locked on that screen for 10 minutes then resume scrolling, or you can unlock the screen by pushing the Forward button one time.
Below are LCD data screen examples:



Communicating Thermostats are capable of providing a proportional heat or cool demand signal.

Zone 1 is calling for Heat @30%. This indicates the presence of a Communicating Thermostat in Zone 1 whose demands are given a weighted value due to it's proportional capability. *(0% - 30% - 60% - 85% - 100% - etc.)*



24v HP Thermostats cannot provide a proportional heat or cool demand signal. ie:Heat demand = 50% -100% (Y with Aux) Cool demand = 100% (Y alone)

Zone 2 is calling for Heat @50% including Fan. The Fan Only demand is pro-rated. This indicates the presence of a Regular 24v HP T-stat in Zone 2.



24v HC Thermostats cannot provide a proportional heat or cool demand signal. Heat demand = 100% (W) Cool demand = 100% (Y)

Zone 3 is calling for Cooling @100%. This indicates the presence of a Regular 24v H/C Thermostat in Zone 3.

IMPORTANT NOTE: You cannot mix 24V HP Thermostats with 24V Heat/Cool Thermostats. The LCD screens shown above are examples only. *A Typical installation may have a Communicating T-stat in Zone 1 and the rest may be 24v Heat Pump type.*

Acceptable UT3000 Thermostat Combinations:

Zone 1 = Communicating
Zone 2 = Communicating
Zone 3 = Communicating

Zone 1 = Communicating
Zone 2 = 24v H/C
Zone 3 = 24v H/C

NOTE: The Comm T-stat could be in any Zone!
But to make 24v fan operations behave like the Communicating T-stat, keep the Comm T-stat in Zone 1.

Zone 1 = Communicating
Zone 2 = 24v HP
Zone 3 = 24v HP

NOTE: The Comm T-stat could be in any Zone!
But to make 24v fan operations behave like the Communicating T-stat, keep the Comm T-stat in Zone 1.

Zone 1 = 24v H/C
Zone 2 = 24v H/C
Zone 3 = 24v H/C

Zone 1 = 24v HP
Zone 2 = 24v HP
Zone 3 = 24v HP

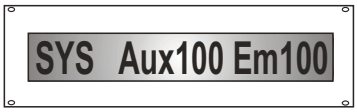
Refer to Page 9 for Sample Thermostat Diagrams

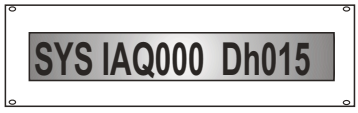


This screen displays the SYSTEM ***(SYS)*** Output percentage to the HVAC Equipment. *In this Heat Pump Example, the UT3000 is demanding 35% heating capacity and 35% fan capacity. That means 1st stage heat (Y1) is active. If the HP Target set-point (100F) is not satisfied before reaching 51% SYS Output, Y2 will energize. If the HP target set-point is still not satisfied before reaching the W2 threshold value, W2 will energize.*

01% - 50% Output = ***Y1HP or Y1A/C or W1Gas***
51% - 65% Output = ***Y2HP or Y2A/C***
W2 Threshold 65% - 95% = ***W2HP or W2Gas***

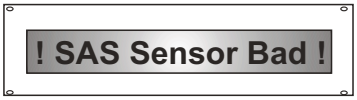
Note: The UT3000 may interpret a ZoneThermostat input as 100% demand but it will not Output a 100% System Demand. The UT3000 will demand only as much System Capacity as is necessary, to satisfy the Active Supply Air Target Set- Point. ***Upon the start of any heat or cool operation, any single calling zone is considered to be a maximum 33% demand out of a possible 99% demand, if all zones were calling.***





This screen displays the System Percentage demand from the Auxiliary and/or the Emergency system. The ***Aux*** will display a value during Auxiliary mode. Both screens will display values during Emergency mode. The next screen displays the System Percentage demand to *Humidify* or *De-humidify.* ***Humidify or IAQ demands may come from a Communicating thermostat or 24v Control. The UT3000 honors De-Humidify demands from Communicating thermostats with Communicating HVAC systems only.***



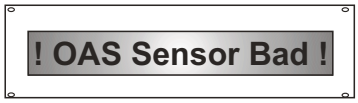


This screen shows the supply air temperature at the location of the supply air sensor in real time. The UT3000 monitors and compares the Actual Supply Air Temperature to the HP Target, Cooling Target or Gas Target Set-points. The UT3000 will increase (by 1% increments) or decrease (by 2% increments) the SYS Demand Output in order to increase or decrease HVAC system capacity. If the Supply Air Sensor is disconnected or fails, the UT3000 will display the "Bad Sensor" screen and will default to "Timed Mode" staging until the Zone T-stat demands are satisfied. *If the UT3000 observes the supply air temperature exceed any Target set-point plus or minus the OT or UT off-set, the UT3000 will display one of these screens.*









This screen shows the real time outside air temperature at the location of the outside air sensor. This OA value could be from the Communicating HVAC system or from a Sensor connected to the UT3000. If the OAS sensor fails or is disconnected , the UT3000 will display the "Bad Sensor" screen and will default to emergency mode.
If you do not want to use an OAS Sensor to stage the system, adjust the OAS SP (Set-Point) value down to the OFF position and the UT3000 will display the screen to the right.



Built-In Delay Timer Settings

The UT3000 has built-in Delay Timers that insure safe HVAC system operation.

*Purge Delay Timer 180 seconds, fixed.

*Short Cycle Timer 2 minutes, fixed.

*Supply Air Limit Delay 3 minutes, fixed.

*Changeover Timer 4 minutes, fixed.

*Opposing System Service Timer 20 minutes, fixed.

EWC recommends that you turn off all thermostat time delays and let the UT3000 built-in Delay Timers protect the HVAC system.

TIMER DEFINITIONS

Purge Delay Timer

At the end of any cooling or heating operation, the UT3000 will hold the last calling zone open for 180 seconds.

Short Cycle Timer

When all Zones are satisfied, the UT3000 will not restart the same call for a minimum of 2 minutes.

Supply Air Limit Timer

If a Heating or Cooling operation cycles down due to excessive Supply Air temperature, the UT3000 will not re-start the HVAC system for 3 minutes.

Changeover Timer

At the end of a call, a 4 minute timer is started and the UT3000 will not switch to the opposite mode of system operation until the timer has expired.

Opposing System Service Timer

A 20 minute delay must expire, or the active zone(s) must satisfy, before the UT3000 will honor a thermostat demand to changeover to the opposite mode of system operation.

One Zone Mode Feature

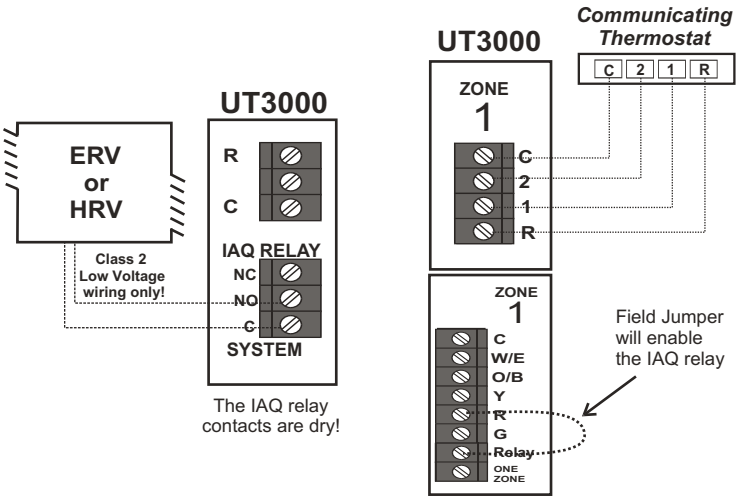
The UT3000 includes the ONE ZONE feature that allows a Commercial Grade Thermostat or Time Clock to Force the UT3000 into the ONE ZONE MODE during Setback Periods. In compliance with California Title 24, when the One Zone Terminal is energized, the UT3000 ignores all Zone T-stat demands except for Zone 1. All Zone Dampers are Forced Open. When the One Zone terminal is de-energized, the UT3000 will resume Zoning Operations.

Ancillary IAQ Dry Relay Functions

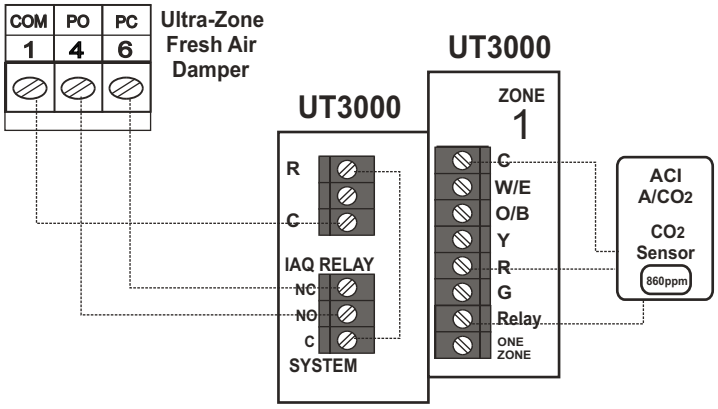
The UT3000 includes a SPDT Indoor Air Quality dry relay with a digital or 24v input Trigger. The IAQ relay can be used to Interlock and Control various IAQ devices. The Indoor Fan will operate automatically, whenever the Relay is Triggered.

A Fan call must accompany the IAQ demand before the IAQ relay will trigger. You must program your thermostat(s) to force a fan call during Humidify demands, or set the thermostats to Constant or Circulate mode.

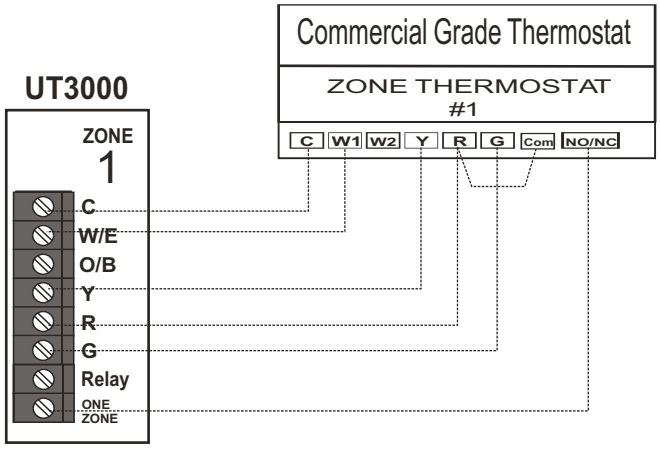
The Following Diagrams reflect ways to utilize the IAQ Dry Relay and ONE ZONE Mode to your advantage.
For Clarity, other wire connections are not shown.



Interlock a Ventilator. Use a jumper to enable the IAQ relay. *Any* call for conditioned air will trigger the IAQ relay and start the Ventilator.

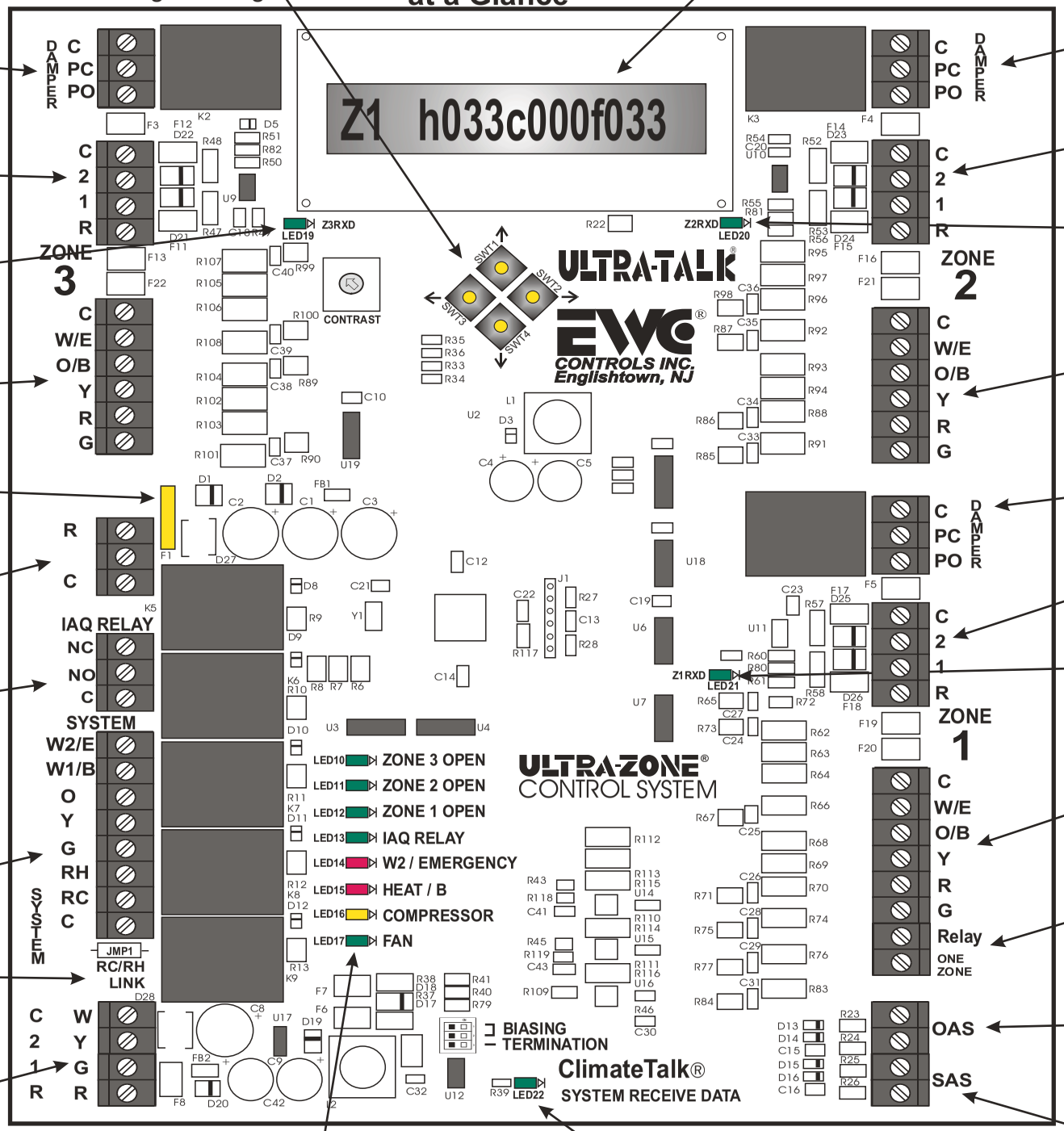


Fresh Air IAQ Solution using a Field Supplied CO_2 Monitor
(The IAQ relay will activate when it detects a "Fan" call from any zone)



Setback "One Zone" Solution using a Commercial Grade Thermostat. If you prefer, you can use a Part # VAC Manual Vacation Switch, or your own Time Clock. Call EWC Controls for assistance with your Setback solution.

UT3000 Features at a Glance



Zone Damper #3

Communicating T-stat #3

Communicating Zone #3 LED Indicator

Regular T-stat #3

Over-Current Breaker 2.5 amp

24vac Power Input

Ancillary Dry (IAQ) Relay Output

Standard Dry Relay HVAC System Output

Rc/Rh Jumper

Communicating HVAC System Output

Color Coded SYSTEM Function LED's

Communicating HVAC SYSTEM LED Indicator

Supply Air Sensor Terminals

Outdoor Air Sensor Terminals

One Zone & Ancillary IAQ Function Inputs

Regular T-stat #1

Communicating Zone #1 LED Indicator

Communicating T-stat #1

Zone Damper #1

Regular T-stat #2

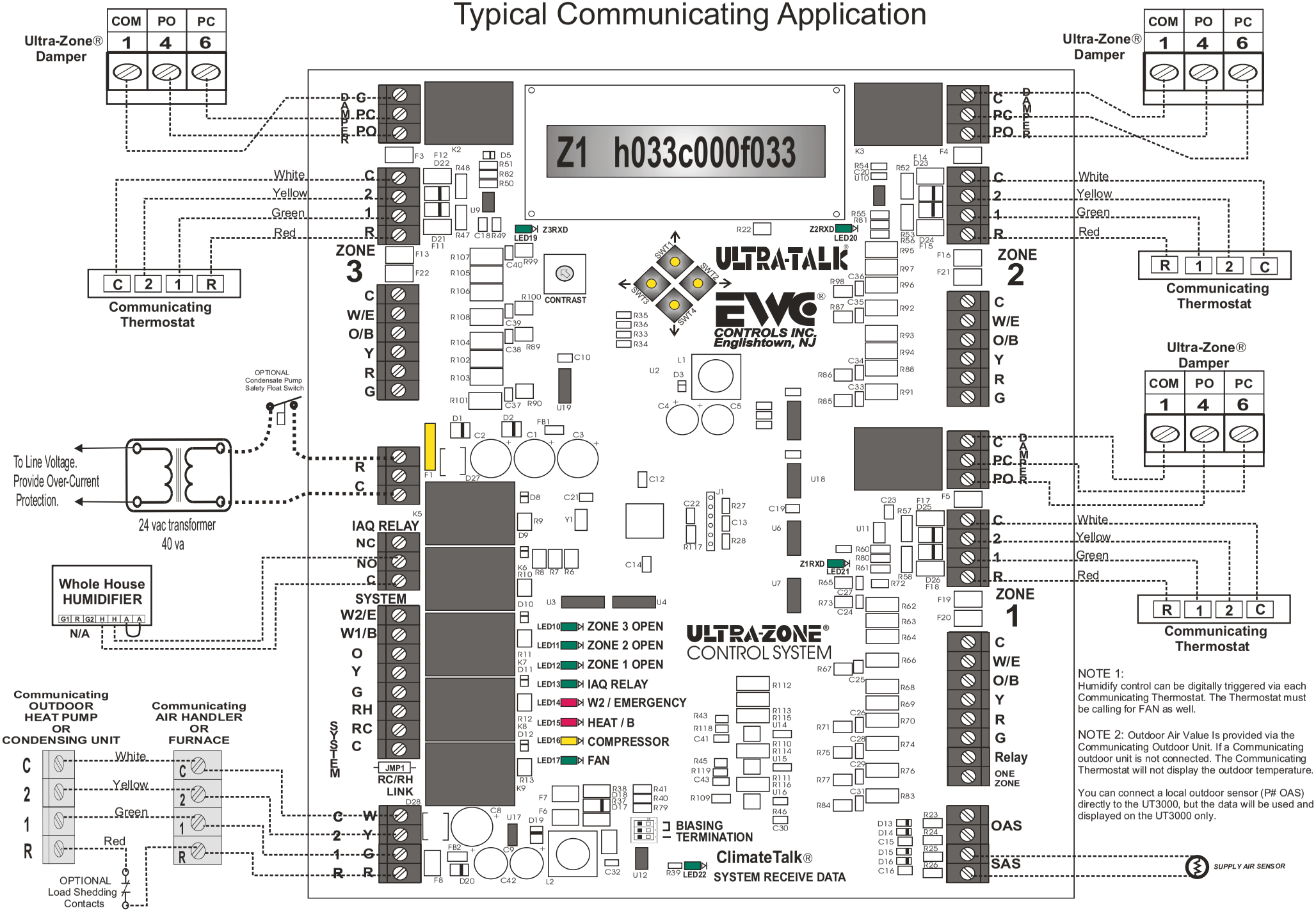
Communicating Zone #2 LED Indicator

Communicating T-stat #2

Zone Damper #2

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Typical Communicating Application



NOTE 1:
Humidify control can be digitally triggered via each Communicating Thermostat. The Thermostat must be calling for FAN as well.

NOTE 2: Outdoor Air Value Is provided via the Communicating Outdoor Unit. If a Communicating outdoor unit is not connected. The Communicating Thermostat will not display the outdoor temperature.

You can connect a local outdoor sensor (P# OAS) directly to the UT3000, but the data will be used and displayed on the UT3000 only.

WIRING INSTRUCTIONS

WARNING: **THESE PANELS ARE DESIGNED FOR USE WITH 24VAC. DO NOT USE OTHER VOLTAGES! USE CAUTION TO AVOID ELECTRIC SHOCK OR EQUIPMENT DAMAGE. ALL WORK SHOULD BE PERFORMED TO LOCAL AND NATIONAL CODES AND ORDINANCES. USE 18 AWG SOLID COPPER, COLOR-CODED, MULTI-CONDUCTOR THERMOSTAT CABLE.**

Thermostat Wiring

Communicating thermostats can be used on all zones for all applications. You can also mix Communicating thermostats with 24v thermostats, or use 24v thermostats in all zones (exceptions apply). You cannot mix 24v Single stage heat/cool thermostats with 24v Heat Pump thermostats. A Comm LED is provided at each Communicating Terminal Block to indicate a "link" has been established with each communicating network. (Z1, Z2, Z3 and SYSTEM). Each Comm LED will pulse rapidly (at random intervals) to indicate the "link" is active. Otherwise, the Comm LED will blink slowly to indicate a loss of communication or the presence of a non-communicating thermostat. Be patient and allow sufficient time for the entire Zoned Communicating HVAC system to discover the network, and all Communicating Thermostats to finish their configuration process. Usually no more than 4 minutes.

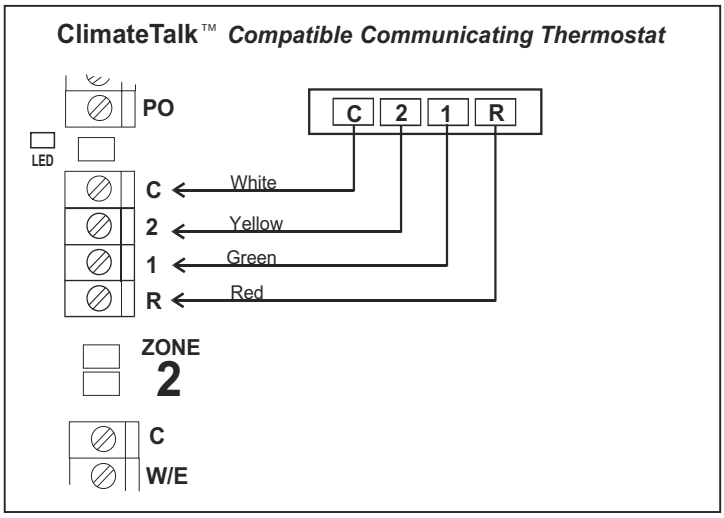


Figure 2a

OEM Mfr's Communicating Thermostat. See thermostat instructions for further details. You can use communicating thermostats on every zone. Or use a communicating thermostat in Zone 1 and less expensive 24v thermostats in Zone 2 and Zone 3.

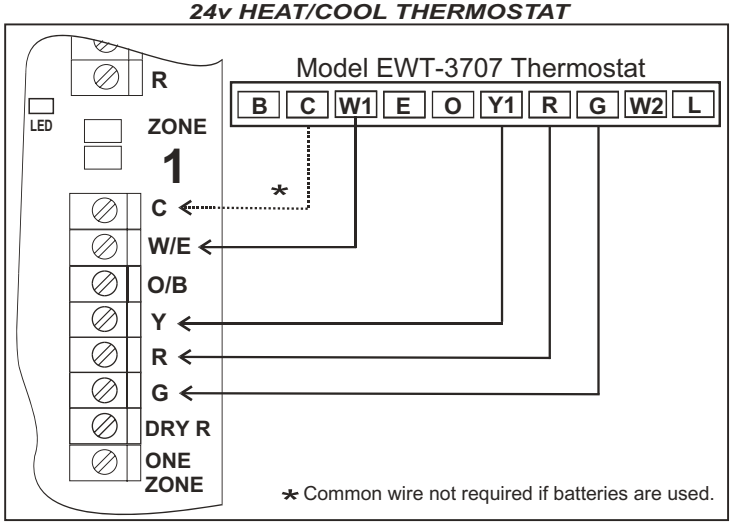


Figure 2c

Model EWT-3707 Thermostat Configured for 1 heat & 1 cool (SS1 mode). See thermostat instructions for details.

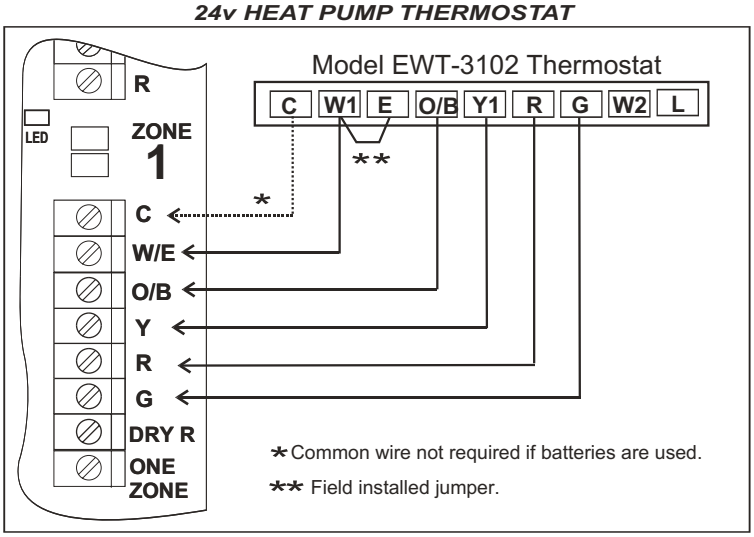


Figure 2b

Model EWT-3102 Thermostat Configured for 2 heat & 1 cool (HP1 mode). See thermostat instructions for details.

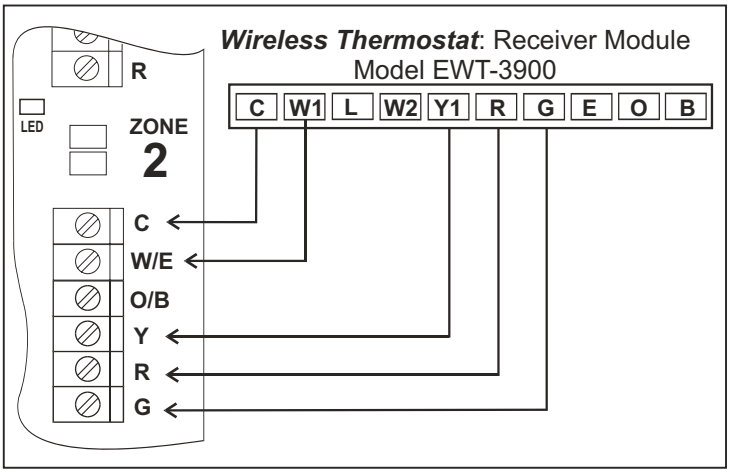


Figure 2d

Model EWT-3900 Wireless Thermostat. Configured for 1 heat 1 cool (SS1 mode). Can be configured for heat pump also. See thermostat instructions for details. Use Wireless thermostats in Zone 2 and/or Zone 3. Always use a hard wired type thermostat for Zone 1.

NOTE: ***The UT3000 allows the user to install Communicating Thermostats on all zones. Communicating thermostats can also be used in combination with 24v thermostats. You may also use regular Heat/Cool type thermostats or Heat Pump thermostats on all zones. This design simplifies the thermostat selection process and allows the installer to easily adapt the UT3000 to most any residential application.***

NOTE: ***Regardless of the type of 24v thermostats used, the W2 Threshold feature or the OAS Set-Point will control the auxiliary system. Once the W2 Threshold is crossed or the Outdoor Air Set-Point is reached, Auxiliary Heat will energize. Auxiliary demands from each thermostat are only used to determine the weight or percentage of demand from that zone, rather than immediately activating Auxiliary operations.***

Note: ***High fire on a two stage furnace is controlled by the W2 Threshold. Modulating furnaces are not affected by the W2 threshold setting.***

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System Wiring

The UT3000 panel was designed to be Plug and Play! We have provided several typical field wiring diagrams for your reference. Your actual field wiring may vary but in most cases will match these diagrams. In full communicating mode, four wires are all that is required from each thermostat and to the HVAC system. The UT3000 will "Talk" to the HVAC system and "Talk" to the thermostats in order to automatically setup and start operating the HVAC system. Your new communicating heat pump may have a non-communicating backup/auxiliary system, or your new communicating furnace still uses the non-communicating condensing unit outside. In all of these cases, the UT3000 is compatible.

Communicating Dual Fuel or Standard Heat Pump System

Four wires are all that is required to each component. **Plug & Play**

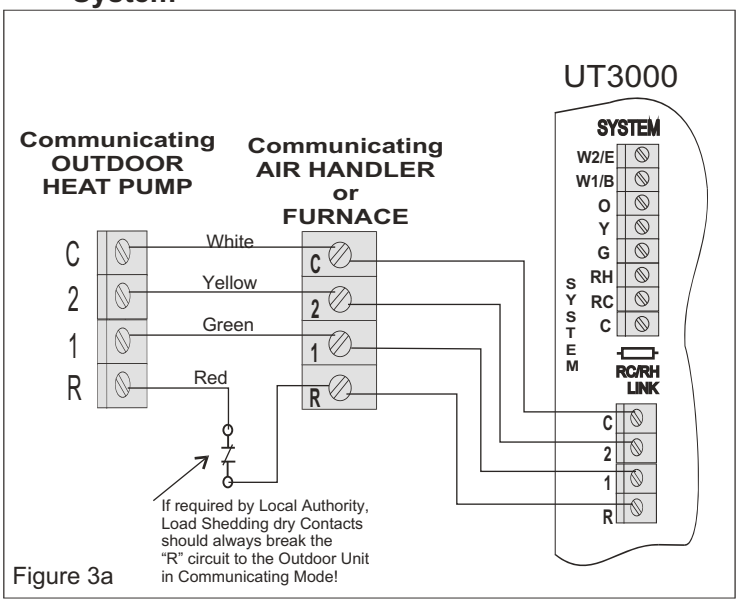


Figure 3a

Communicating Furnace with 24v Legacy Air Conditioner

Four wires are required from the UT3000 to the Communicating furnace. Two wires are required to the 24v air conditioner. The 2 wires can come from the UT3000 or the Furnace. This diagram shows the wires coming from the furnace.

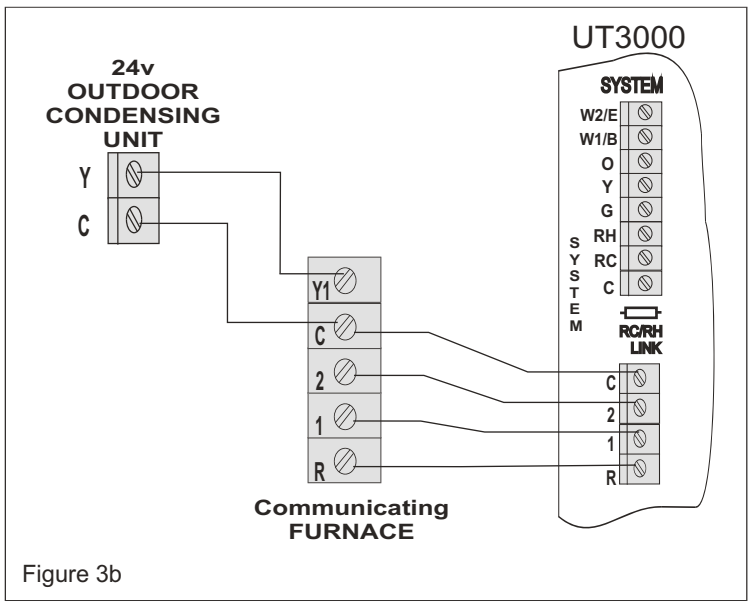


Figure 3b

Communicating *INVERTER* Electric/Fuel System

Three or four wires are all that is required to each HVAC component.

Plug & Play

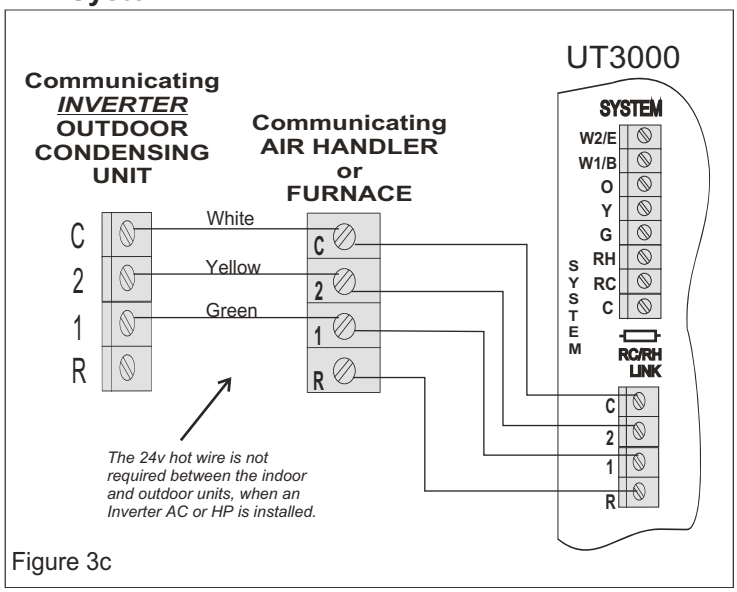


Figure 3c

Existing Boiler with New HP System

You may have a new Communicating Heat Pump but want to use your Old Boiler as the Auxiliary backup rather than electric resistance heat. Connect the T&T circuit from your boiler control panel to the Rh and W2/E terminals on the UT3000. **Plug & Play**

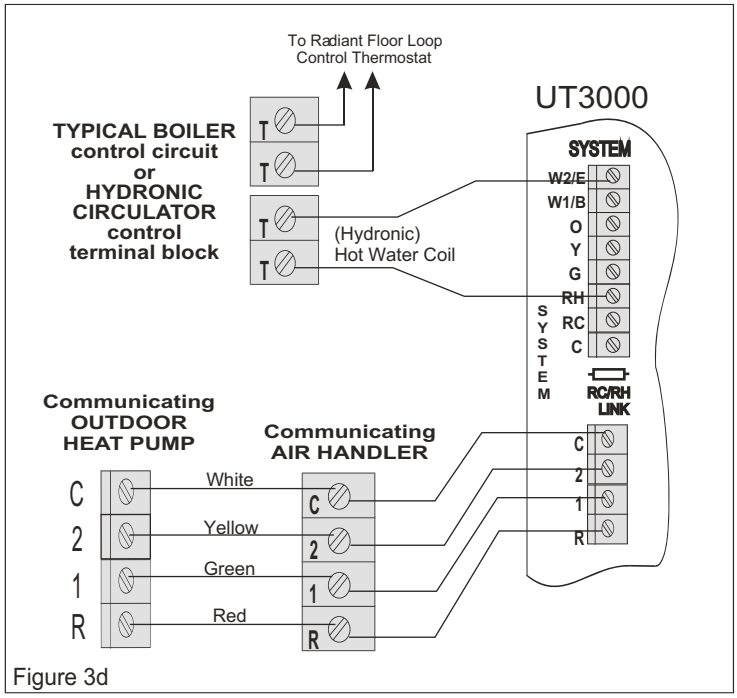


Figure 3d

Contact EWC Controls Technical Support for assistance on these and other Equipment Wiring Solutions.

DAMPER WIRING

Note: The 500mA Damper *Auto-Reset* Circuit Breaker may trip, if too many *Spring Type* dampers are connected to a single zone!...*You can connect only one (1) Model RSD or any other competitor's Spring type damper to a single terminal block (depending on current draw) without tripping the breaker. You can connect up to eighteen (18) Model ND, URD, or SID type dampers to a single terminal block without tripping the breaker.*

Note: *You can select all zone dampers to default "OPEN" or "CLOSE" after all zone demands are satisfied, and no HVAC demands are detected, from any zone thermostats.*

ZONE DAMPER MOTOR TERMINAL BLOCK DESIGNATION & FUNCTION

Terminal PC 24vac Power to Close a Damper
Terminal PO 24vac Power to Open a Damper
Terminal C 24vac Common (Neutral)

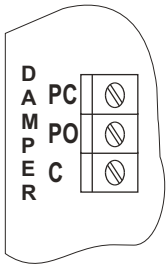


Figure 4

Genuine ND, URD & SID Damper Wiring

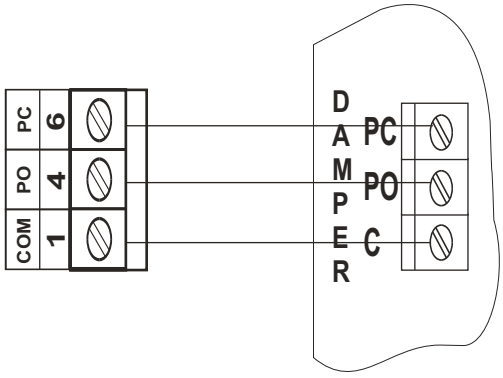
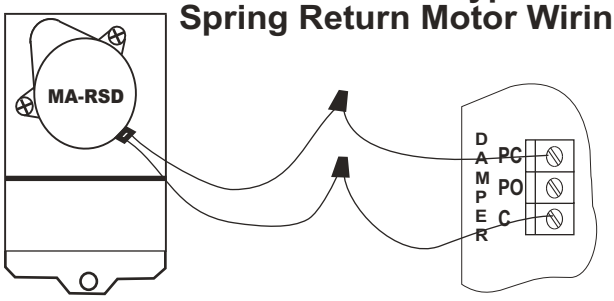


Figure 5a

On all these dampers and most older style dampers, including competitor's dampers, always wire up number to number or by terminal designations. *(C to Com)(PO to PO)(PC to PC) (1-1) (4-4) (6-6)*

EWC Controls Typical Spring Return Motor Wiring

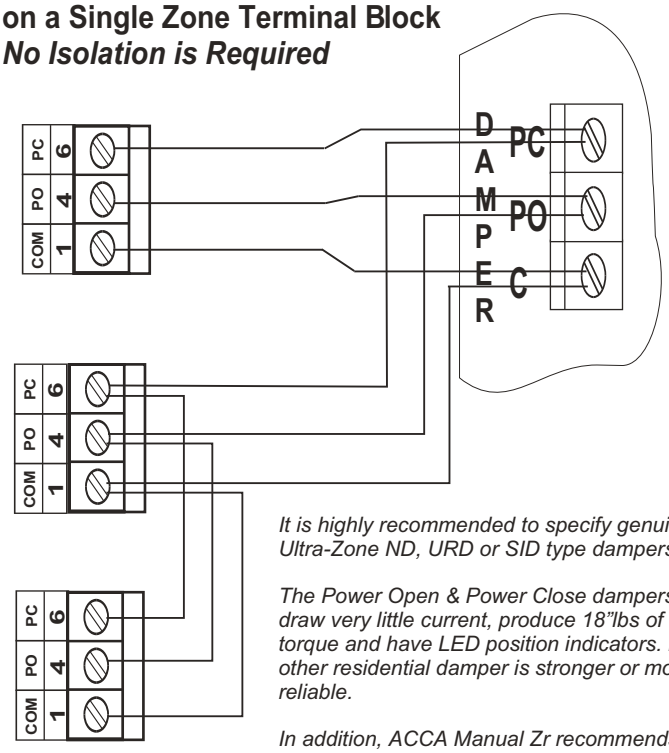


Any Spring Open Damper is wired to C & PC
Any Spring Close Damper is wired to C & PO

Figure 5b

Current Draw for a ND, URD, or SID Type Damper = 26mA
Current Draw for a typical Spring Type Damper = 400mA

Three or More ND, URD, SID Dampers on a Single Zone Terminal Block *No Isolation is Required*



It is highly recommended to specify genuine Ultra-Zone ND, URD or SID type dampers.

The Power Open & Power Close dampers draw very little current, produce 18"lbs of torque and have LED position indicators. No other residential damper is stronger or more reliable.

In addition, ACCA Manual Zr recommends slower moving PO/PC dampers over Spring or Pneumatic type dampers.

Figure 5c

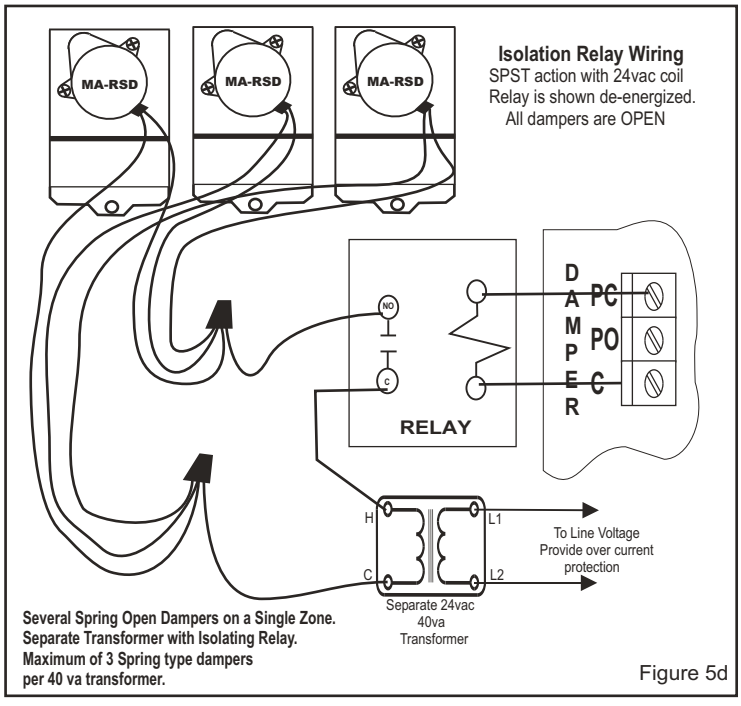


Figure 5d

DO NOT overload the UT3000's Damper Motor Circuit Breakers. If you need to connect more than one (1) Spring Type Damper to a single terminal block, use figure 5d to separate and isolate those dampers.

NEW ZONE WEIGHTING FEATURE

The UT3000 utilizes a new zone weighting feature. You can now select the weight for each zone independently. For example, if zone 1 has more heat loss/gain than zone 2 or zone 3, you can now assign it more weight, which is a big advantage over the old "Legacy DMD" demand feature. Here are some examples on how this new feature works.

LIMIT SAS PID "N" = PID LOOP ACTIVE

The equation for calculating the "SYSTEM" starting and final demand when active zones are calling is the following:

$$\text{WEIGHT} \times \frac{\text{DEMAND}}{100} = \text{"SYS" OUTPUT (Starting System Demand)}$$

"SYS" OUTPUT (x2) = "SYS" Final System Demand

***Unless Thermostat(s) Demand Changes**

EXAMPLE 1 :

Assigned Weight		Thermostat Demand		System Demand	Calculated Starting Demand		Final System Demand
Zone 1 = 50%	x	25%	=	13%	53%	x2	= 100%
Zone 2 = 40%	x	100%	=	40%			
Zone 3 = 10%				53%			

PID Loop Operating Range

***Unless Thermostat(s) Demand Changes**

EXAMPLE 2 :

Assigned Weight		Thermostat Demand		System Demand	Calculated Starting Demand		Final System Demand
Zone 1 = 50%	x	50%	=	25%	33%	x2	= 66%
Zone 2 = 25%	x	30%	=	8%			
Zone 3 = 25%				33%			

PID Loop Operating Range

***Unless Thermostat(s) Demand Changes**

EXAMPLE 3 :

Assigned Weight		Thermostat Demand		System Demand	Calculated Starting Demand		Final System Demand
Zone 1 = 34%	x	50%	=	17%	35%	x2	= 70%
Zone 2 = 33%	x	30%	=	10%			
Zone 3 = 33%	x	25%	=	8%			
*Unless Thermostat(s) Demand Changes				35%			

PID Loop Operating Range

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NEW ZONE WEIGHTING FEATURE

The UT3000 utilizes a new zone weighting feature. You can now select the weight for each zone independently. For example, if zone 1 has more heat loss/gain than zone 2 or zone 3, you can now assign it more weight, which is a big advantage over the old "Legacy DMD" demand feature. Here are some examples on how this new feature works.

LIMIT SAS PID "Y" = PID LOOP INACTIVE

The equation for calculating the "SYSTEM" starting and final demand when active zones are calling is the following:

$$\text{WEIGHT} \times \frac{\text{DEMAND}}{100} = \text{"SYS" OUTPUT (Starting and Final Demand)}$$

***Unless Thermostat(s) Demand Increases**

EXAMPLE 1 :

Assigned Weight		Thermostat Demand		System Demand	Calculated Starting Demand	Final System Demand
Zone 1 = 50%	x	25%	=	13%	53%	53%
Zone 2 = 40%	x	100%	=	40%		
Zone 3 = 10%				53%		

***Unless Thermostat(s) Demand Changes**

EXAMPLE 2 :

Assigned Weight		Thermostat Demand		System Demand	Calculated Starting Demand	Final System Demand
Zone 1 = 50%	x	50%	=	25%	33%	33%
Zone 2 = 25%	x	30%	=	8%		
Zone 3 = 25%				33%		

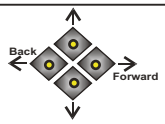
***Unless Thermostat(s) Demand Changes**

EXAMPLE 3 :

Assigned Weight		Thermostat Demand		System Demand	Calculated Starting Demand	Final System Demand
Zone 1 = 34%	x	50%	=	17%	35%	35%
Zone 2 = 33%	x	30%	=	10%		
Zone 3 = 33%	x	25%	=	8%		
*Unless Thermostat(s) Demand Changes				35%		

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T R O U B L E S H O O T I N G

SYMPTOM	SOLUTIONS
LCD & LED's are not responding properly and HVAC system is malfunctioning. Communicating T-stat may display fault messages.	Check HVAC system and UT3000, 24vac power supply transformers. Check HVAC system wiring for shorts/miswiring.Test wires for Continuity/Shorts. Check Zone thermostats for shorts/miswiring. Test wires for Continuity/Shorts. Check BIAS DC voltage: **Data 1 to C = 2.8 & Data 2 to C = 2.2 or Data 1 to C = 1.9 & Data 2 to C = 1.3**
LCD & LED's are responding properly but HVAC system is malfunctioning. BIAS DC voltages are incorrect.	Check Zone system wiring for shorts/miswiring. Test wires for Continuity/Shorts. Check BIAS DC voltage: **Data 1 to C = 2.8 & Data 2 to C = 2.2 or Data 1 to C = 1.9 & Data 2 to C = 1.3** *BIAS/Term switches on the UT3000 panel and Outdoor units should be set OFF.* Check HVAC equipment for faults via a Communicating T-stat & clear all faults.
LCD & LED's function and HVAC system functions normally but dampers do not respond.	Check damper motor wiring for proper connections. Check damper motor 24volt & 500mA Breaker. Test wires for Continuity/Shorts. Check Spring type dampers for sticking/binding. Too many Spring type dampers connected to a single zone. Refer to Page 12 for damper guidance and wiring.
LCD & LED's do not function and HVAC system does not respond.	Check HVAC/UT3000 system transformer supply voltage. Check HVAC/UT3000 system 24vac transformer voltage/Breaker. Test all wires for Continuity, shorts to Common or shorts to earth ground. Check HVAC/UT3000 system wiring for shorts/miswiring.
Time Delay is Active and won't allow Heat or Cool to Function. 	Simultaneously press the Back & Forward buttons for 1 second, to Bypass any Active Time Delay and fast forward to the next mode of operation.

CHECK YOUR WIRING

DETECTING 24vac SHORTS	SYMPTOM: Entire Panel or a Single Zone appears to be dead!
HVAC system not responding and UT3000 LED's are off.	If 24vac short has occurred, 24vac will be present at the UT*3000 24v Input terminals R & C;* but 24vac will not be present at any *Thermostat R&C.*
Dampers not responding and The UT3000 LED's are off.	**SOLUTIONS:** Remove 24vac power from UT3000 and allow F1 circuit breaker to cool! Find and repair short(s) in damper and/or thermostat field wiring. Restore 24 vac power.
ISOLATING 24vac SHORTS *140mA & 500mA circuit breakers protect the UT3000 and react to a short/overload in the damper or thermostat field wiring.*	Disconnect the wire(s) from the 'R' *terminals on the UT3000 thermostat terminal blocks ,* and the *"C/PO/PC" terminals* on the UT3000 damper motor terminal blocks. Restore power. If the short is no longer present, Ohm out the thermostat and damper field wiring for continuity, shorts to common and/or shorts to earth ground. Replace or abandon shorted wires as necessary.

Detecting 24v shorts to common or shorts to earth ground

When the 2.5A breaker is tripped it will get hot to the touch and none of the panel LED's will illuminate. The LCD will also cease to function. To reset the breaker, locate the short by removing each hot wire connected to the panel, one at a time. When the shorted wire is removed, the panel will resume normal functions. Now you must repair or replace the shorted wire. If one or more 140mA or 500mA breakers trip, only the device(s) connected to that block will be affected. Remove each hot wire connected to that block until the voltage is restored. Find and repair the short before re-connecting the wires. If there is a short between the Data 1 & 2 wires or if the Data wires are shorted to 24v or earth ground, the Communicating thermostat on that zone will alert you by displaying "Call for Service". If no communicating thermostat is connected and a short occurs on the 24v wires, that zone will not function. Find and repair the short using the methods described above.

TECHNICAL SUPPORT

EWC® Controls provides superior toll free Troubleshooting Support for the UT3000 when you are on the job site!

Call 1-800-446-3110 Monday - Friday 8am to 5pm EST. Otherwise call 1-732-446-3110 for information on the UT3000 and other ULTRA-ZONE® products. Visit our web site to download this Technical Bulletin and other related information at ***www.ewccontrols.com***

When calling for Technical Support from the job-site, please have a multi-meter, pocket screwdriver, and wire cutters/strippers on hand.

JOB NOTES:

This Technical Bulletin and the UT3000 Addendum sheet are available for download at www.ewccontrols.com

The UT3000 Addendum sheet has very important and detailed information on the Daikin “ComfortNet” Inverter HVAC systems.

Specific “Twinning” guidance and any changes to Menu items or Default values are also detailed in the addendum.

Excellence Without Compromise

EWC® CONTROLS INC.

ULTRA-ZONE®

Field Service Bulletin

05/06/2016

Subject: *Ultra-Zone® UT3000 Zone Control and Daikin® Inverter based HVAC systems with EEV.*

Please be advised that the UT3000 Zone Control is *not yet* compatible with Daikin Electronic Expansion Valve equipped Air Handler line (DV**PEC).

We anticipate releasing an updated code for these EEV equipped systems in the very near future.

In the interim, the UT3000 is still compatible with *any* Daikin Inverter *(ComfortNet)* HVAC system that utilizes a Thermostatic Expansion Valve (TXV) on the indoor DX coil.

EWC Controls Inc.
Engineering

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Service Bulletin

SR-066 Rev. 1

DATE: June 13, 2016

TO: All Service and Parts Managers

SUBJECT: CTK03 and CTK04A Displaying Improper Outdoor Temperature

On a limited amount of communicating systems we have had reports of CTK03 and CTK04A thermostats not displaying the correct outside temperature. The root of this problem appears to be communications between the thermostat and outdoor sensor. This condition may cause an inaccurately initiated lockout of the compressor, errant dual fuel operation or improper electric auxiliary heat cycling in heat pump systems. Work is being done to identify the issue's root cause.

As an interim solution the installation of a Honeywell RedLINK Wireless Outdoor Sensor can be used to resolve the issue and also provide the customer with current outdoor relative humidity. The part number for the Honeywell Wireless Outdoor Sensor is **C7089R1013** and can be ordered from Svc Parts by contacting your CSR.



We will provide labor at the servicer's Class "A" labor rate for installation of the RedLINK Outdoor Sensor when addressing the sticking outdoor temperature display condition. **Claims must be filed using Warranty Express as an Authorization type claim, using Authorization Code number 8792.**

- The claim for the part and labor should be filed as one claim, using the Dealer's account number.
- The CTK03 and CTK04A should be listed as the failed part, using the condenser model and serial numbers in the model section. The **C7089R1013** should be used as the replacement part.

The claim will be paid upon review by the Warranty Department. Please consult the Warranty Department if you need assistance with the warranty process. All claims for this project must be submitted within the first 12 months after installation.

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Main: 888.593.9988 • Service Fax: 713.316.5541

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Service Bulletin

SR-065 Rev. 2

DATE: June 20, 2016
TO: All Service and Parts Managers
SUBJECT: ACNF25**16AA and ACNF31**16AA Motor

Goodman has discovered that the EEM motor used in these models can fail to operate due to it receiving two speed calls at one time. This is a function of the motor controller software and does not cause damage to the motor. When the unit calls for cooling/heat pump mode the thermostat sends a signal to "Y" energizing T4 and "G" energizing T1, which will cause the blower motor to stop operation. When the unit calls for heat mode the thermostat sends a signal to "W" energizing T5 and "G" energizing T1, which again will cause the blower motor to stop.

Any ACNF25 and ACNF31 units that are in your inventory should be put on hold until the motor controller can be replaced. Dealers should be advised not to install any of these units until the motor controller has been replaced.

Service parts listed below have been created for the purpose of resolving this issue with these units. Distributors will need to contact their CSR to order the motor controllers for any affected air handlers they currently have in inventory or installed. **Units shipped after June 10, 2016 have been reworked at the factory and can be identified by the blue dot on the traveler label or by the new Controller part numbers listed below. Units with serial numbers 1606 and later have the new controller and are not affected by this issue.**

ACNF Replacement Controller	
Model	**Controller Part #**
ACNF25**16AA	0131M00779S
ACNF31**16AA	0131M00780S

We will pay $30.00 for each unit in customer inventory that requires a motor controller replacement. Please use the attached Excel claim summary form, listing all units reworked in inventory, so labor and part can be paid against the quantity reworked. All completed Excel claim forms need to be sent to following email techservices@goodmanmfg.com. *Do not file for warranty through Warranty Express as this will start the warranty clock.* **Replaced motor controller must be returned in box to Goodman per the FRA (Field Return Authorization) process before credit will be issued.**

For installed units we will pay Class A labor. For all units installed July 31, 2016 or later, it is expected these units should be repaired prior to installation, so Class A labor will not be paid for installed units with an install date of July 31, 2016 or later. **Replaced motor controller must be returned in box to Goodman per the Warranty Express return process before credit will be issued.**

Claims for installed units must be filed on Warranty Express Authorization Code number **8793**. The homeowner information including phone number must be included for all claims being submitted for installed air handlers. Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.

Claims must be submitted by December 31, 2016.

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Instructions for Field Replacement for EEM Controllers ACNF 25 and ACNF 31 (0131M00756 / 0131M00757)

Attention Installing Personnel

As a professional installer, you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

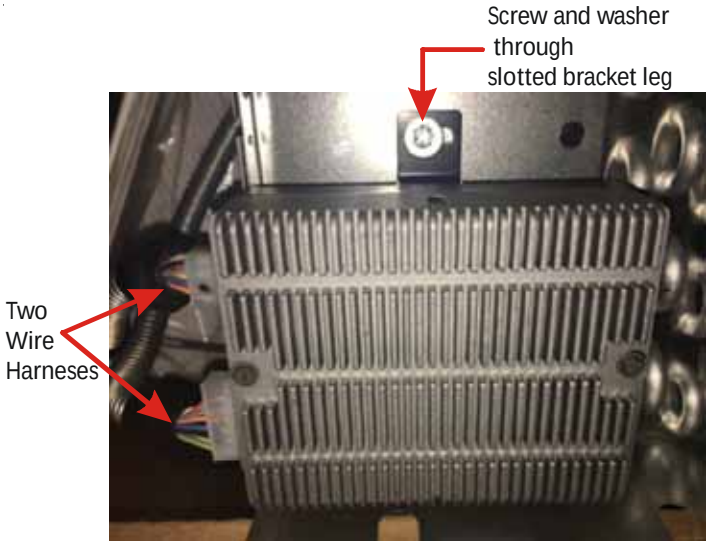
⚠ WARNING

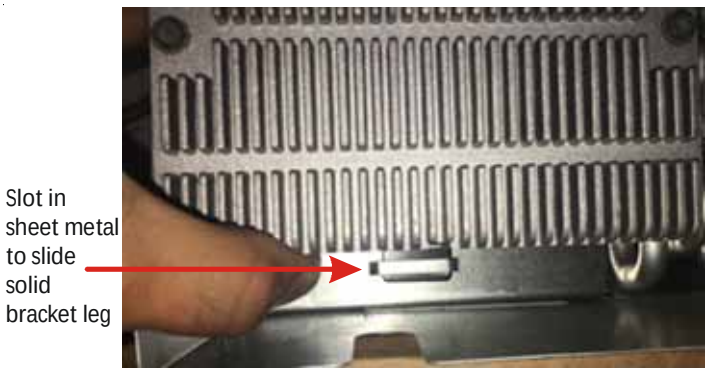
HIGH VOLTAGE !

Disconnect ALL power before servicing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.



1. The EEM controllers 0131M00756 / 0131M00757 are mounted on the side of the ACNF 25 / 31 chassis.
2. As shown in the following pictures, first unplug the 2 wire harness, then remove the screw and washer and pull the controller out of the slot in the sheet metal.
3. For ACNF 25, replace controller 0131M00756 with 0131M00779 and for ACNF 31 replace controller 0131M00757 with 0131M00780.
4. Place the new controller such that the solid bracket leg goes through the slot in sheet metal.
5. Fasten a washer and screw through the slotted bracket leg and sheet metal side on chassis.
6. Plug in the 2 wire harnesses in the appropriate positions into the controller.





7. For installed units, reapply power and check for proper unit operation.
8. Per Service Bulletin SR-065 rev 1 all EEM Motor Controllers replaced under Project Code 8793 must be returned to Goodman before warranty credit will be issued. Parts are to be returned in the box from the Service replacement part.

Visit our website at www.daikincomfort.com, www.goodmanmfg.com or www.amana-hac.com for information on:

- Products
- Warranties
- Customer Services
- Parts
- Contractor Programs and Training
- Financing Options

IO-SR065
6/2016

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Service Bulletin

SR-064

DATE: May 5, 2016

TO: All Service and Parts Managers

SUBJECT: Dip Switch Settings on Inverter 18 & 20 SEER Split Systems DZ18VC0**1A*, DZ20VC0**1A, DX20VC0**1A*, AVXC200**1A* and AVZC200**1A* Models

Technical Services has received information from the field relative to installed units where the Dip Switches were set in the wrong position from the factory or changed in the field causing the unit to run before the System Test was initiated. Improper DS2 dip switch settings could result in condenser operation at power up prior to System Test and can be perceived as a faulty control board (PCB). Please verify DS2 dip switch settings before replacing the PCB.

1. Switches 1 and 2 in switch bank DS2 must be in the **OFF** position for normal operation on 18 SEER **DZ18VC0**1A***. The table below explains the proper dip switch arrangement for the two DS dip switch banks on the 18 SEER models.

Dipswitch Default Factory Settings			
Switch #		**Setting**	**Purpose**
OD DS1	1	ON	CT Communication Enabled
	2	ON	CT Communication Enabled
OD DS2	1	OFF	Cooling Emergency Mode for Future Use *
	2	OFF	Cooling Emergency Mode for Future Use *

*** OD DS2 switch 1 and 2 both must be turned off during normal operation mode**

2. Switches 1 and 2 in switch bank DS2 must be in the **ON** position for normal operation on 20 SEER **DZ20VC0**1A*, DX20VC0**1A* and AVZC200**1A* and AVXC200**1A*** models. The table below explains the proper dip switch arrangement for the two DS dip switch banks on the 20 SEER models.

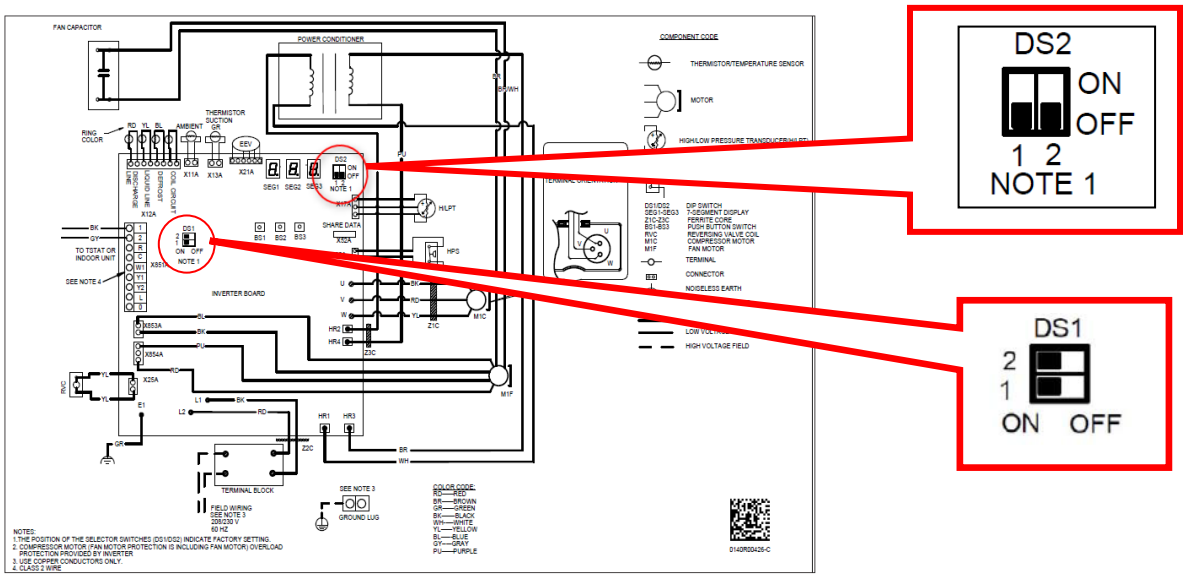
Dipswitch Default Factory Settings			
Switch #		**Setting**	**Purpose**
OD DS1	1	ON	CT Communication Enabled
	2	ON	CT Communication Enabled
OD DS2	1	ON	Cooling Emergency Mode for Future Use *
	2	ON	Cooling Emergency Mode for Future Use *

*** OD DS2 switch 1 and 2 both must be turned on during normal operation mode**

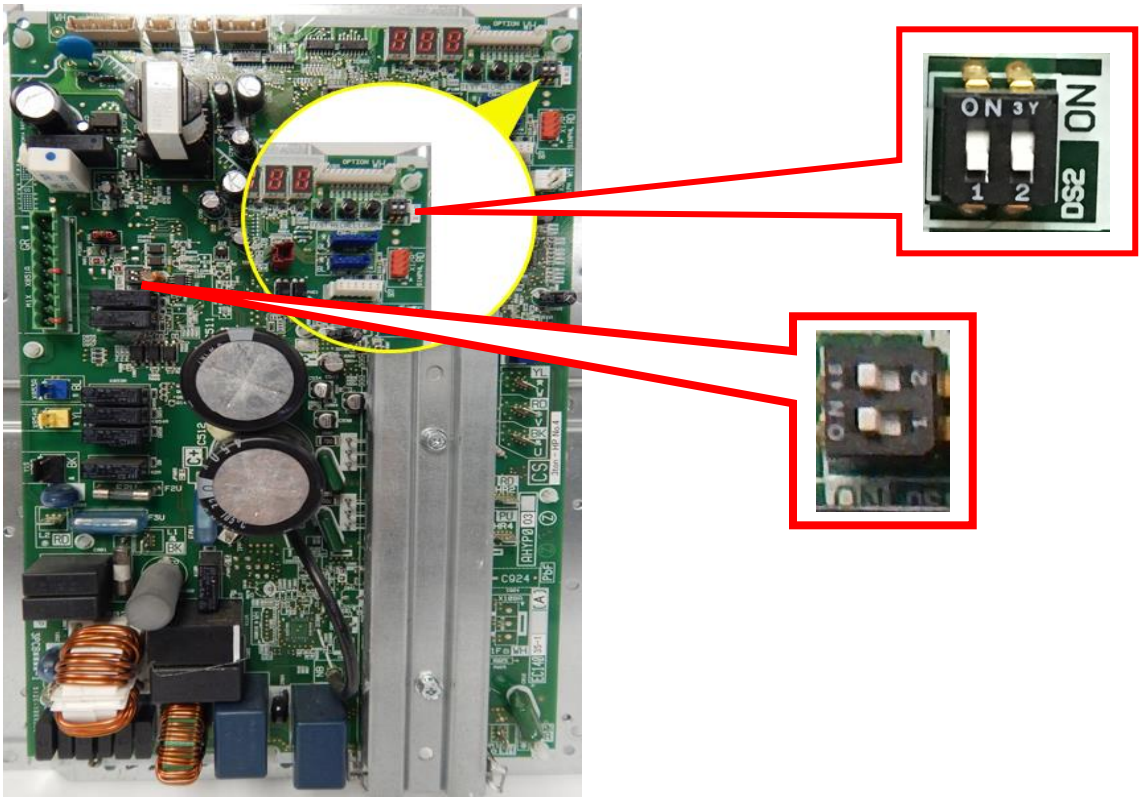
The factory default setting can be verified on the wiring diagram which is attached to the control panel cover and in the installation and operation manual. The Dip Switch settings can also be found in the Service Manual for these products. These settings are being added to a revised I&O - Installation and Operation manual, which is due out in 2-4 weeks. Wiring diagrams and pictures of the PCBs affected are listed on the following pages.

DZ18VC0**1A*

The DS2 dipswitch bank is located on the PCB near the “Recall” button as illustrated below in the wiring schematic along with the exploded view of the PCB:

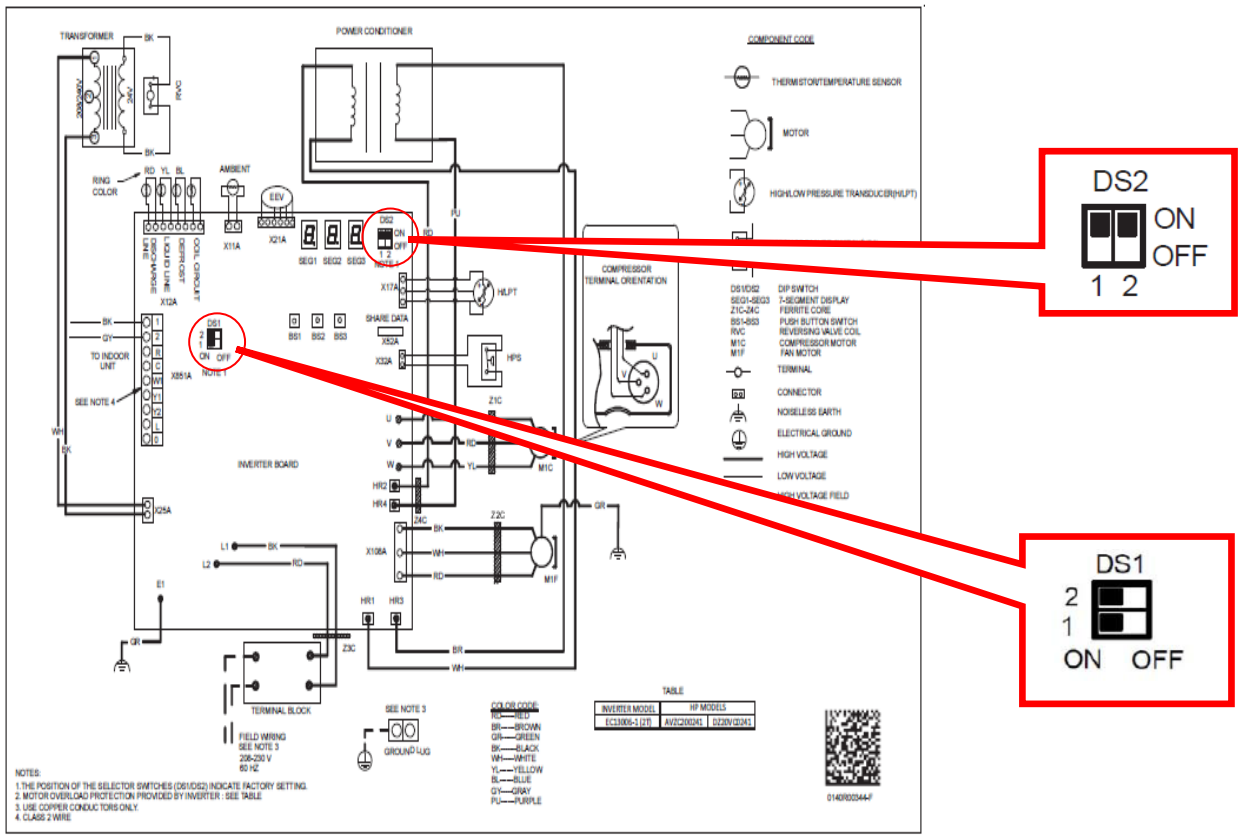


* The Position of the selector switches (DS1/DS2) indicates factory settings.

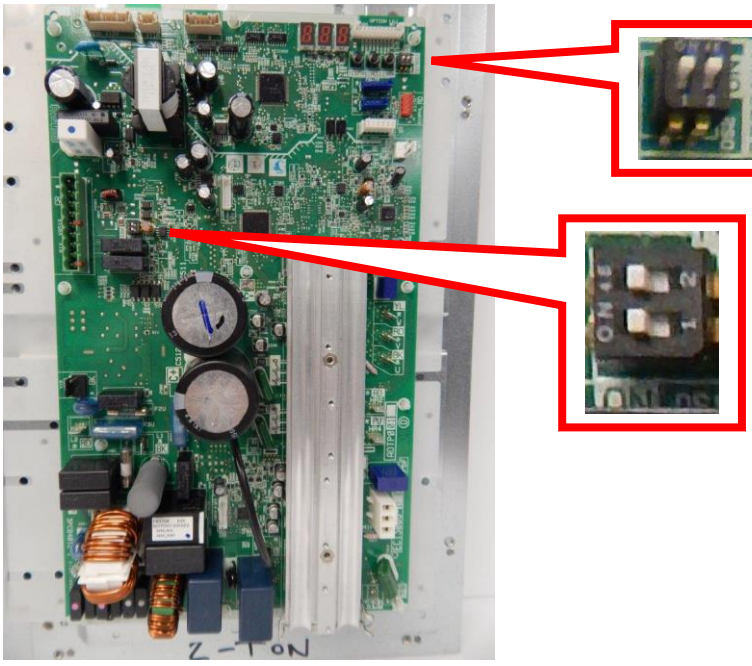


DZ20VC0241A*, DX20VC0241A*, AVZC200241A* and AVXC200241A*

The DS2 dipswitch bank is located on the PCB near the “Recall” button as illustrated below in the wiring schematic along with the exploded view of the PCB:

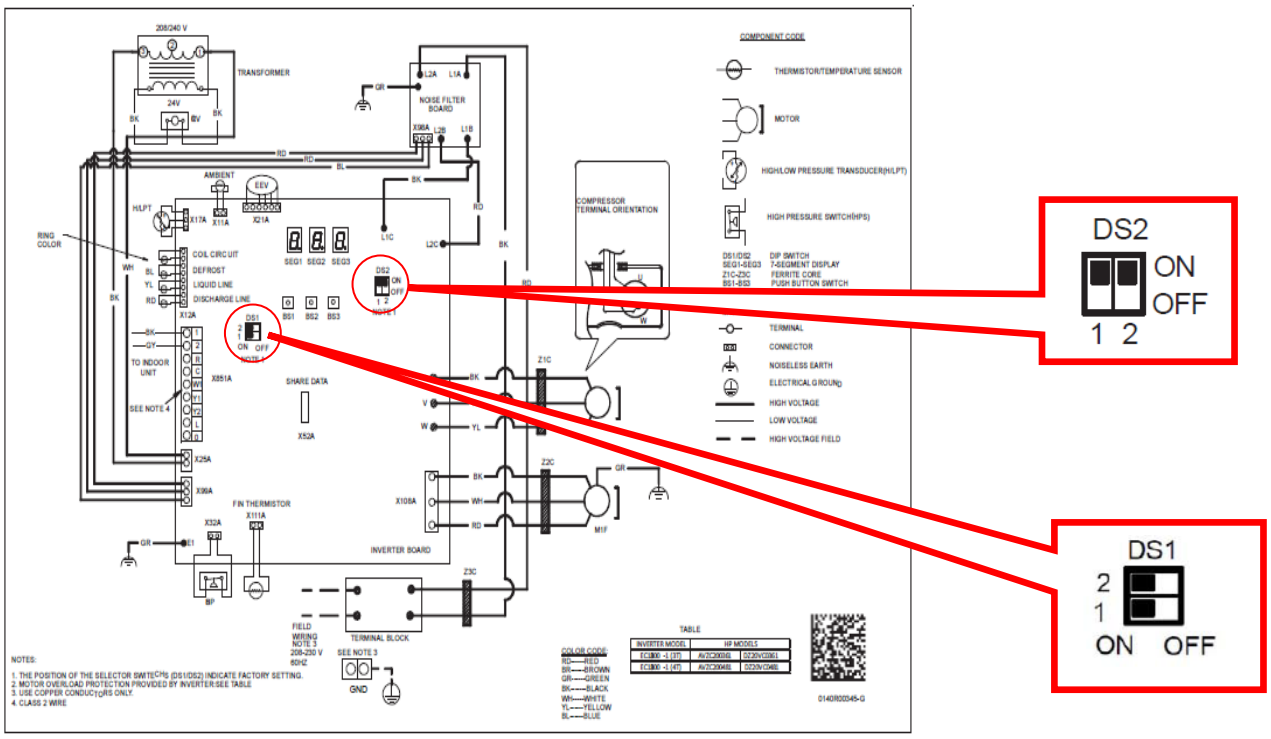


* The Position of the selector switches (DS1/DS2) indicates factory settings.

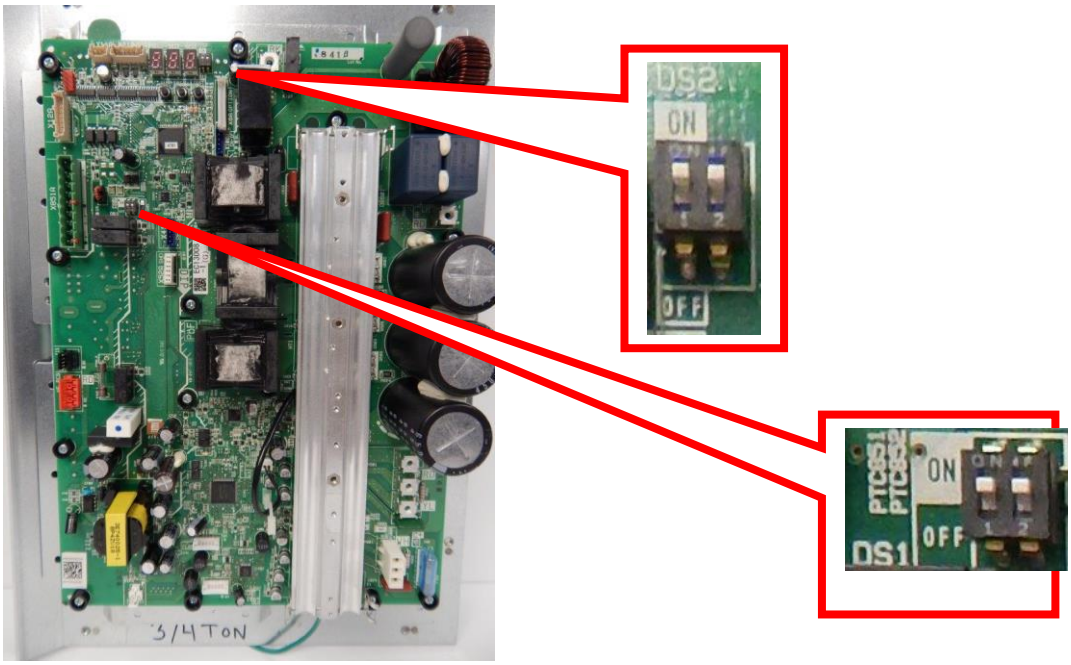


DZ20VC0361A*, DX20VC0361A*, DZ20VC0481A*, DX20VC0481A*, AVXC200361A*, AVZC200361A*, AVXC200481A*, and AVZC200481A*

The DS2 dipswitch bank is located on the PCB near the “7 Segment Display” button as illustrated below in the wiring schematic along with the exploded view of the PCB:

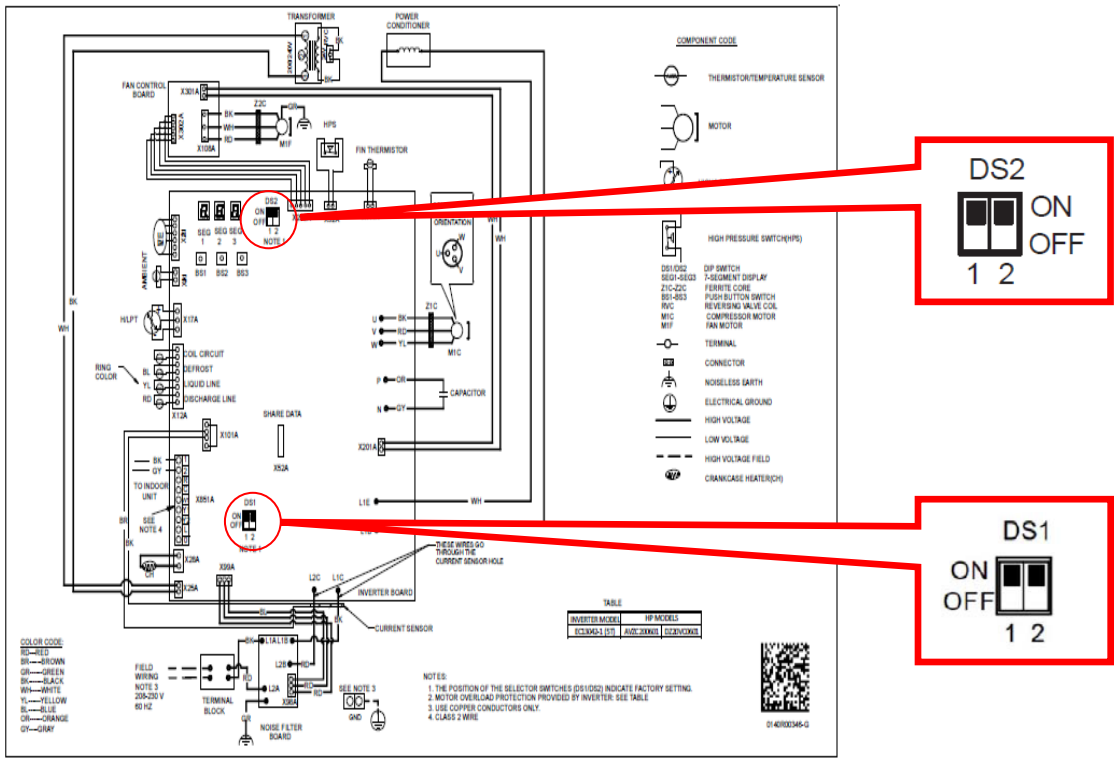


* The Position of the selector switches (DS1/DS2) indicates factory settings.

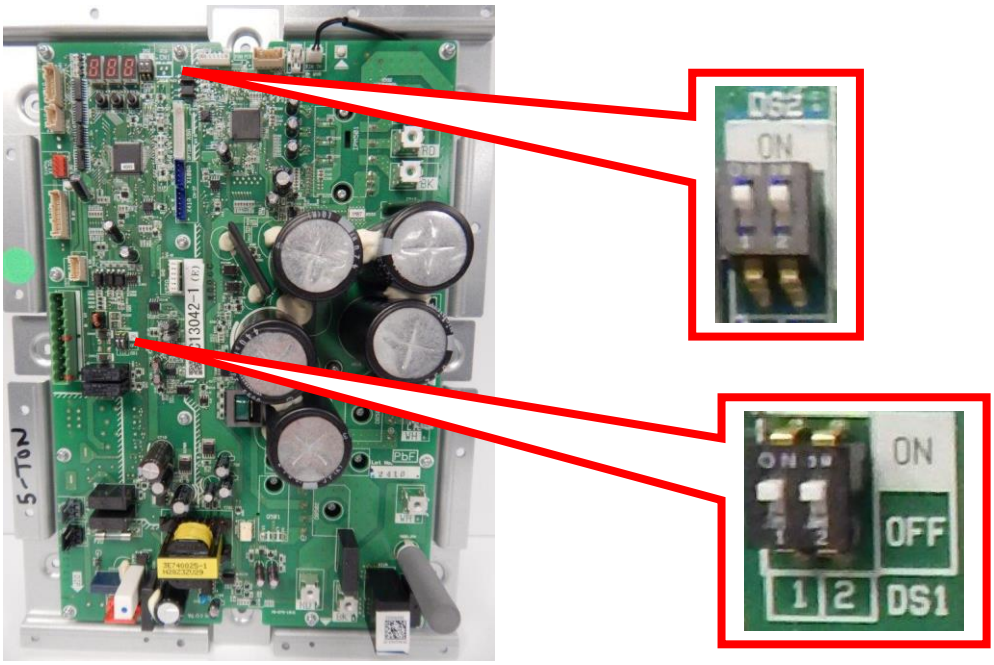


DZ20VC0601A*, DX20VC0601A*, AVXC200601A*, and AVZC200601A*

The DS2 dipswitch bank is located on the PCB near the “7 Segment Display” button as illustrated below in the wiring schematic along with the exploded view of the PCB:



* The Position of the selector switches (DS1/DS2) indicates factory settings.



If you have any questions about this bulletin please contact Rodney White at Rodney.White@goodmanmfg.com.

Service Bulletin

SR-063

DATE: March 16, 2016
TO: All Service and Parts Managers
SUBJECT: Inverter Split Systems DX20VC0361A*, AVXC200361A*

On all 3-ton Inverter Splits System AC condenser models (DX20VC0361A*, AVXC200361A*) when the outdoor unit is connected to main power, the inverter board has a small current draw allowing it to be prepared for operation when needed. Due to this, the PCB components on the inverter board have to be cooled even when the unit is not running and therefore the condenser fan may run even when the unit has no call for cooling or heating.

Any obstruction to the outdoor fan should be avoided at all times when the unit is connected to power.

NOTE: If anyone wants to place a cover over the outdoor fan or the entire unit, all power must be disconnected from the unit. If the power is disconnected from the inverter condenser, you will lose all communication with the outdoor unit until power is restored; this includes the outdoor ambient sensor.

If you have any questions about this bulletin please contact Rodney White at Rodney.White@goodmanmfg.com.

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Service Bulletin

SR-062 Rev 1

DATE: July 18, 2014

TO: All Service and Parts Managers

SUBJECT: Suction Service Valve on GSX16*FB Models

GSX16 model condensers with FB revision use a ball type suction service valve which may trap liquid refrigerant between the internal seals during the production charging process. Under some conditions this small volume of refrigerant can be expelled while brazing in the field supplied line set.

The affected models are as follows, serial number range is between 1405098195 and 1407116421. *This affects FB revisions only; the FA revision units are unaffected*. Units with serial numbers greater than 1407116421 are not affected.

GSX160181FB
GSX160241FB
GSX160301FB
GSX160361FB
GSX160421FB
GSX160481FB
GSX160601FB
GSX160611FB

Goodman is requesting any remaining inventory of these units be put on hold for return to Goodman for rework. No action is required on units already installed.

Distributors/COD Branches please contact your dealers to request any remaining units in their inventory be returned to you, and then contact your CSR to request an RMA to return these units.

Reworked units can be identified by the green dot on the traveler label.

July 18, 2014; We want to apologize for the delay in further communications relative to this Service Bulletin. We are currently working on a procedure that can be done locally by Goodman factory teams without the need to return units to the factory, so we ask that you continue to hold these units in your warehouse. We will provide an update to this service bulletin once this procedure is complete.

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Service Bulletin

SR-061

DATE: June 10, 2014

TO: All Service and Parts Managers

SUBJECT: Missing Charge Amount on GSC130481CC Serial Plate

GSC130481CC R22 condensing units in the serial number range 1405047736 thru 1406737183 were produced without the nominal operating charge printed on the Serial Data Plate that is attached to the unit. The correct charge amount for the GSC130481CC is ***128 ounces***.

This information can be found in the SS-GSC13 specification sheet and RT61120117 technical manual. (See illustration below.) This issue has been corrected and units produced after serial number 1406737183 will have the correct charge amount printed on the serial data plate.

	GSC130421C*	GSC130481C*	GSC130601CB	GSC130601D*
Nominal Cooling Capacity, BTUH	40,000	44,500	57,000	53,000
Compressor				
R.L. Amps	15.4	19.2	19.9	21.8
L.R. Amps	87	112	137	137
Condenser Fan Motor				
Horsepower	1/4	1/4	1/4	1/4
F.L. Amps	1.5	1.5	1.5	1.5
Refrigerant Line Size				
Liquid Line, Inches O.D.	3/8"	3/8"	3/8"	3/8"
Suction Line, Inches O.D.	3/4"	7/8"	7/8"	7/8"
Refrigerant Connection Size				
Liquid Valve Size O.D.	3/8"	3/8"	3/8"	3/8"
Suction Valve Size O.D.	3/4" [4]	7/8" [4]	7/8" [4]	7/8" [4]
Refrigerant Charge	108	128	131	118
Power Supply	208/230-60-1	208/230-60-1	208/230-60-1	208/230-60-1
Minimum Circuit Ampacity[1]	20.8	25.5	26.4	28.8
Maximum Overcurrent Device[2]	35	40	45	50
Electrical Conduit Size				
Power Supply (Inches)	1/2 or 3/4	1/2 or 3/4	1/2 or 3/4	1/2 or 3/4
Approximate Shipping Weight	176	177	242	192

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Service Bulletin

SR-060

DATE: June 3, 2014

TO: All Service and Parts Managers

SUBJECT: Condensate Blow off on ARUF, ARPT and AVPTC Air Handlers

We have received some reports of condensate blow off on ARUF/PT and AVPTC Smart Frame™ air handlers when installed in the horizontal left position. The majority of the reports involve the “D” chassis air handlers.

Testing has determined that air leaks around the triangle endplates and coil top plate caused condensate blow off and to resolve this issue redesigned triangle endplates and insulation on the top plate of evaporator coil has been added in production beginning serial date code of 1405.

The kits in the chart below have been developed to resolve condensate blow off issues with units installed in the field and are available from Service Parts Department.

CONDENSATE MANAGEMENT KITS			
Air Handler	Kit #	Air Handler	Kit #
ARPT36D14	CMK0001	ARPT48D14	CMK0002
ARPT42D14		ARPT60D14	
ARUF48D14		ASPT48D14	
ARUF60D14		ASPT60D14	
ASPT42D14		ASUF59D14	
AVPTC42D14		AVPTC48D14	
ARPT36C14	CMK0003	AVPTC60D14	
ARUF30C14			
ARUF36C14		ARPT18B14	CMK0004
ARUF42C14		ARPT24B14	
ASPT30C14			
ASPT36C14		ARUF18B14	CMK0005
ASUF39C14			
ASUF49C14		ARUF24B14	CMK0006
AVPTC30C14			
AVPTC36C14		ARPT30B14	CMK0007
ASPT42C14		ARUF30B14	
ASPT48C14		AVPTC24B14	
AVPTC48C14		ASPT24B14	
DV48PTCC14		ASUF29B14	

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Refer to IO-820 attached to this bulletin for proper installation of the CMK000* kits. In applications where the air handler is installed in the horizontal left position and the return air environment sees humidity levels above 65% relative humidity coupled with total external static levels above 0.5" e.s.p., a horizontal condensate management kit is available for field application. These kits will be listed in the spec sheets under accessories and listed in the installation instructions.

For installed units with a serial number prefix before 1405 experiencing condensate blow off in the horizontal left position, Goodman will pay a Class “B” labor rate to install the appropriate Condensate Management Kit (CMK000*)

Claims must be filed on Warranty Express as an Authorization type claim, using Authorization Code number 8795. The claim for the part and labor should be filed as one claim, using the Dealer’s account number.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty. All claims for this project must be submitted by December 31, 2014.

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Service Bulletin

SR-059

DATE: April 23, 2014

TO: All Service and Parts Managers

SUBJECT: Memory Chips for the AVPTC***14A* and DV**PTC*14A* Air Handlers

Some system combinations, particularly where the outdoor unit is a significantly smaller capacity than the air-handler can provide undesirable airflow in the heating mode. For these situations, we are releasing Memory Chips for AVPTC***14A* and DV**PTC*14A* air handlers that will update the unit airflow as shown below.

The airflow for the AVPTC36C, 42D, 48D and 60D14A* and corresponding DV**PTC14A* models was revised in production starting April 9, 2014. Airflow on the AVPTC24B14A* and AVPTC30C134A* and corresponding DV**PTC*14A* models will go into production on May 15, 2014. **Note:** Airflow labels in these initial units will not reflect the airflow changes listed below. Updated airflow labels will be added to production units later in April. Revised airflow and additional airflow notes are listed in installation manuals IO-443C for the AVPTC***14A* and IOD4006C for the DV**PTC*14A* air handlers as shipped with these units.

New AVPTC & DV**PTC Airflow Specification for Heater Kits										
Htr kw	S9	S10	S11	24B	30C	36C	48C†	42D†	48D††	60D†††
3	on	on	on	550	600	NR	NR	850**	NR	NR
5	on	on	off	650	700	850	850	1250	1250	1250
6	on	off	on	700	750	900	900	1300	1300	1300
8	on	off	off	800	875	1000	1000	1500	1500	1500
10	off	on	on	850	950	1200	1200	1550	1550	1550
15	off	on	off	NR	NR	1440	1440	1720	1720	1780
19	off	off	on	NR	NR	1500	1500	NR	NR	NR
20	off	off	on	NR	NR	1500	1500	1800	1815	1850
21 or 25	off	off	off	NR	NR	NR	NR	NR	1850	1850

Memory Chips for all AVPTC and DV**PTC air handlers are available in Service Parts and will be listed in the Parts Manuals for these units. See the chart below for the proper memory chips for the AVPTC***14A* and DV**PTC*14A* air handlers.

Model	Chip Part #	Model	Chip Part #
AVPTC24B14	0130A00083S	DV24PTCB14	0130A00085S
AVPTC30C14	0130A00084S	DV30PTCC14	0130A00086S
AVPTC36C14	0130A00077S	DV36PTCC14	0130A00072S
AVPTC48C14	0130A00079S	DV48PTCC14	0130A00074S
AVPTC42D14	0130A00078S	DV42PTCD14	0130A00073S
AVPTC48D14	0130A00080S	DV48PTCD14	0130A00075S
AVPTC60D14	0130A00081S	DV60PTCD14	0130A00076S

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Service Bulletin

SR-058 Rev. 1

DATE: November 4, 2014

TO: All Service and Parts Managers

SUBJECT: ASPT-ASUF Motors without Blower Off Delay

ASPT and ASUF model air-handlers as listed below built from November 19, 2013 through March 27, 2014 do not have the blower off time delay programmed into the motor. This is only an issue on units installed with electric heat; on these installations the heater sequencer can keep the electric heaters energized for several seconds after the blower stops. The limits on the heater kit will cycle preventing an overheating condition.

The serial number range for affected units is 1311290727 through 1403382308. Units in this serial number range shipped after 3/28/2014 have been corrected at the factory and can be identified by the green dot adjacent to the traveler label.

Units in customer inventory or units installed with an electric heater kit will require new software uploaded to the motor. Goodman will be distributing motor programmers beginning approximately April 15, 2014 with instructions for this purpose and the programmers need to be returned after rework is completed to Technical Services at address listed in footer of bulletin.

Goodman is requesting that the 6 models listed here with serial numbers 1311290727 through 1403382308 in your inventory be put on hold until the motor software can be updated.

Model	Motor Part #
ASPT24B14AC	0131M00612
ASPT30C14AB	0131M00611
ASPT36C14AC	0131M00609
ASUF29B14AB	0131M00612
ASUF39C14AB	0131M00609
ASUF49C14AC	0131M00610
Service Motors end in "S"	

Also any service motors in your inventory as shown in the table will also require a software update. Use the same motor programmer to update your service parts inventory. Service motors shipped from the HLC on 4/1/2014 and later have been reprogrammed and can be identified by the green dot on the carton.

Goodman will pay $25 labor for each unit in customer inventory that requires the software upgrade. For installed units with electric heater kits installed Goodman will provide labor at the servicer's Class "A" labor rate. The Class "A" installed unit labor rate will only be paid on units installed prior to May 1, 2014 as all units in distributor inventory should have been updated by this time.

Units that have been installed, claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number ***8798*** **the claim for the part and labor should be filed as one claim, using the Dealer's account number.** Units that have **not** been installed in the field, a list with model and serial numbers should be sent to HACPRODSPC@goodmanmfg.com for labor reimbursement.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by March 31, 2015.

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Service Bulletin

SR-057

DATE: August 28, 2013

TO: All Service and Parts Managers

SUBJECT: Incorrect MOP and MCA listed for GSX130601B* Condensing Unit

We have discovered an error on the spec sheet for the GSX130601B* (spec sheet literature number **SS-GSX13, r38**). This spec sheet shows the GSX130601B* with MOP of 35 amps and MCA of 24.1 amps which is incorrect.

The MOP should be listed as 50 amps and MCA listed as 32.8 amps for the GSX130601B*. The spec sheet and all other affected literature is being revised to reflect the correct information. Please note that the serial rating plates on these model units were printed correctly.

If you have any questions about this information, please contact Steve Perry at stephen.perry@goodmanmfg.com.

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Service Bulletin

SR-056

DATE: August 12, 2013

TO: All Service and Parts Managers

SUBJECT: Requirements for Low Ambient Kits on Split System Coolers and Heat Pumps

Currently the I&O manuals for split system coolers and heat pumps are being updated to reflect a new allowable minimum outdoor temperature rating while running systems in cooling mode. Installation manuals will state ("Outdoor units are approved for operation above 55 °F in cooling mode. Operation below 55 °F requires the use of an approved low ambient kit.").

Currently, the only approved low ambient control is the **LAKT01** low ambient control.

Note: These kits are not approved for any 16 and 18 SEER outdoor units that utilize an ECM condenser fan motor.

If a low ambient control is used on a split system cooler or heat pump, the following accessories must be installed:

1. Crankcase heater must be installed if not factory installed.
2. Hard start kit for single phase units. (See spec sheet for accessories)
3. TXV kit installed on indoor evaporator coil if not factory installed.
4. FSK01A - Freeze protection kit must be installed on the indoor coil.
5. Wind buffer must be installed for temperatures below 0 °F or areas with high prevailing winds. Wind buffer can be a wall fabricated from wood or masonry material that will prevent the prevailing wind from causing the outdoor fan to rotate. **NOTE**: When wind buffer is installed, it is necessary to use minimum 4" risers to elevate the unit off of the pad to provide better airflow for moderate and high ambient temperatures.

Refer to IO-709F for installation of all LAKT01, 02 and 03 low ambient kits.

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Service Bulletin

SR-055

DATE: July 8, 2013

TO: All Service and Parts Managers

SUBJECT: Potential Incorrect Fan Wiring on ASUF and ASPT Air Handlers

We have recently discovered that a small group of ASUF and ASPT air handlers with serial numbers from 1303129141 to 1306724076 were found to have been miss-wired in the factory. If this occurs the electric heat can remain energized with no call from the thermostat. The heater limits will prevent the electric heaters from remaining on.

The following models listed below should be quarantined and inspected to determine if the wiring to the relay is correct. Please follow the instructions below to inspect and if necessary correct the wiring issue. As it will be necessary to keep track of the units inspected/reworked Goodman will be sending a follow up letter with a list of serial numbers shipped to each distributor/branch with instructions on how to record these inspections/reworks.

ASUF29B14	ASPT24B14
ASUF39C14	ASPT30C14
ASUF49C14	ASPT36C14
ASUF59D14	ASPT42D14
	ASPF48D14
	ASPT60D14

1. Remove the upper access panel and visually check to see if the relay B1370752 relay or 0130M00129 relay is used; see the pictures on the right.
2. If relay B1370752 relay is used, then wiring is correct. Repackage unit. If the 0130M00129 is used continue to step 3.
3. Using the following pictures for reference the Red wire should be on the second terminal from the right and the purple wire should be the on the third terminal from the right as seen in the picture on the right.



B13707052



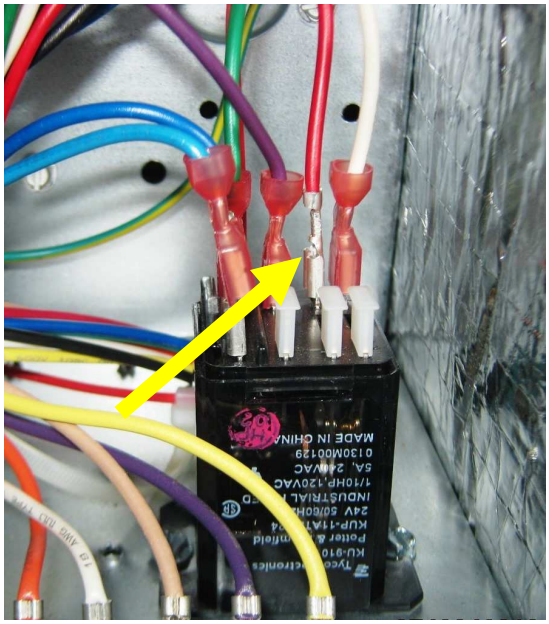
0130M00129

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Incorrect Wiring



Correct Wiring

4. If found incorrect remove the purple and red wire and swap them. Red wire should be on terminal 4 (second from the right) and purple should be on terminal 7 (third from the right).
5. Repackage Unit

All units shipped from Goodman after July 3, 2013 have been inspected and can be identified by the green sticker on the traveler label.

For products in customers inventory Goodman will pay $20 to inspect and correct the wiring as necessary. Please notify your dealers to inspect and correct as described above if necessary any units in their possession at the time of installation.

If the unit is already installed and you have to go back and inspect & repair Goodman will pay $80 to complete the repair described above. For all units installed after July 14, 2013, it is expected these units should be inspected and repaired as required prior to installation so labor will not be paid for installed units with an install date of July 15, 2013 or later.

Labor as described above will be paid upon return of the completed spreadsheet as described above and after submission of the warranty claim as described below. It is not necessary to file Service Bench claims for units inspected/reworked in distributor inventory, just return the spreadsheet provided with the completed information.

Claims for installed units **must** be filed on Service Bench as Service Bulletin, Authorization Code number 8711. The homeowner information including phone number must be included for all claims being submitted for installed units. **The claim for labor should be filed submitting the "Dealers Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

Claims must be filed by December 31, 2013.

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Service Bulletin

SR-054 Rev 1

Supersedes SC-020

DATE: June 27, 2013

TO: All Service and Parts Managers

SUBJECT: Split System Service Condenser Coils Manufactured Incorrectly

Some of the coil part numbers listed on page 2 contained incorrect dimensions, see revised list below

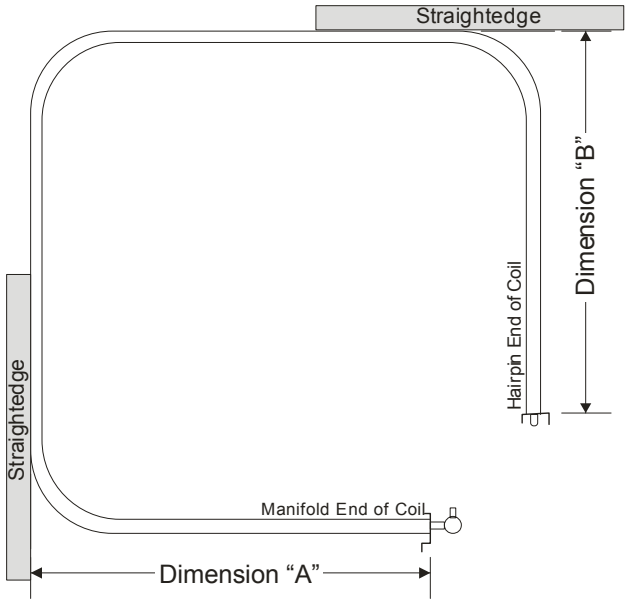
A small number of service condenser coils were found to have been formed incorrectly during the bending process; as a result these replacement coils may not fit in the basepan or align with the louver panels correctly. This only affects coils manufactured and shipped in April and May.

As a result we are asking you to check all service condenser coils in your inventory listed in the chart below. Because of the way service coil serial numbers are generated this is not restricted to serial numbers beginning with 1304 and 1305. The serial number is on the carton label below the part number.

Use the drawing and chart below to check the coil size. Dimensions listed below are in inches and dimension tolerances are +/- .25". Defective coils are measuring 1.5" to 2" off the dimensions shown below.

Lay a straight edge across the back of the coil as shown using care not to damage the fins; then measure from the coil header plate to the straight edge as shown. Dimension "A" is the manifold end of the coil and Dimension "B" is the hairpin end of the coil.

Please quarantine and notify your CSR of any coils found out of tolerance. We apologize for this inconvenience.



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The coil part numbers and dimensions shaded below had incorrect dimensions in the original bulletin, these are now shown with the corrected dimensions. We apologize for any inconvenience this has caused.

Coil Part Number	Dim "A"	Dim "B"	Coil Part Number	Dim "A"	Dim "B"	Coil Part Number	Dim "A"	Dim "B"
0201R00052S	19.40	18.78	0201R00196S	16.40	15.78	1262222	17.57	18.57
0201R00060S	25.57	24.95	0201R00230S	19.40	18.78	1262226	17.66	18.66
0201R00061S	19.40	18.78	0201R00239S	19.40	18.78	1262230	17.66	18.66
0201R00062S	19.40	18.78	0201R00242S	19.40	18.78	1262236	17.57	18.57
0201R00066S	19.40	18.78	0201R00250S	16.40	15.78	1262242	17.57	18.57
0201R00068S	19.40	18.78	0201R00251S	16.40	15.78	1272142G	21.70	27.50
0201R00070S	19.40	18.78	0201R00263S	19.40	18.78	1272147G	21.70	27.50
0201R00072S	25.57	24.95	0201R00271S	16.40	15.78	1272151G	15.36	21.50
0201R00073S	25.57	24.95	0201R00273S	19.40	18.78	1272152G	15.36	21.50
0201R00075S	25.57	24.95	0201R00279S	19.40	18.78	1272153G	12.40	14.20
0201R00079S	25.57	24.95	0201R00285S	19.40	18.78	1272232G	16.53	22.40
0201R00081S	25.57	24.95	0201R00299S	19.40	18.78	1272236G	16.53	22.40
0201R00137S	25.57	24.95	0201R00304S	19.40	18.78	1362101	16.40	15.78
0201R00140S	19.40	18.78	0201R00312S	25.57	24.95	1362103	16.40	15.78
0201R00147S	25.57	24.95	0201R00316S	19.40	18.78	1362104	16.40	15.78
0201R00150S	16.40	15.78	0201R00317S	16.40	15.78	1362105	16.40	15.78
0201R00151S	19.40	18.78	0201R00338S	19.40	18.78	1362106	25.57	24.95
0201R00152S	19.40	18.78	1262105	11.57	12.57	1362110	25.57	24.95
0201R00154S	19.40	18.78	1262107	17.57	18.57	1362111	16.40	15.78
0201R00155S	25.57	24.95	1262109	17.57	18.57	1362112	16.40	15.78
0201R00156S	16.40	15.78	1262110	17.57	18.57	1362200	19.40	18.78
0201R00157S	16.40	15.78	1262115	24.14	25.21	1362202	19.40	18.78
0201R00176S	16.40	15.78	1262215	17.66	18.66	1362203	19.40	18.78
0201R00177S	16.40	15.78	1262216	17.57	18.57	1362207	19.40	18.78
0201R00181S	16.40	15.78	1262218	17.57	18.57	1362211	25.57	24.95

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Service Bulletin

SR-053

DATE: April 02, 2013

TO: All Service and Parts Managers

SUBJECT: Goodman Mini Split Analyzer - MEDIATBK

Goodman is pleased to introduce the MEDIATBK diagnostic service tool for Goodman MSC & MSH model 15 SEER and 19 SEER Inverter Mini Splits. The MEDIATBK analyzer features an easy to read L.E.D screen and simplifies diagnosing sensors and other system components. The MEDIATBK analyzer is in stock and available to order from Goodman Service Parts.



Note: Provided with this Service Bulletin on the following two pages are the analyzer instructions, which provides connection hook up to unit and error codes. These instructions are shipped with the Analyzer.

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INVERTER SPLIT ANALYZER

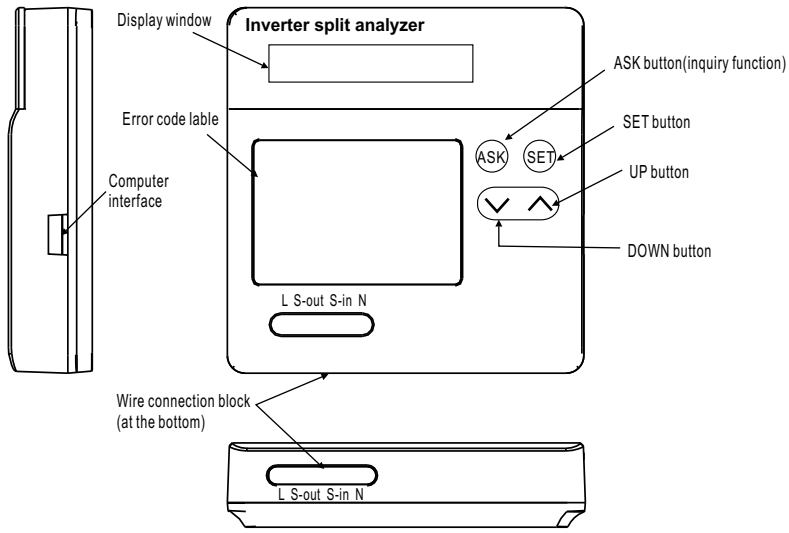
(Applicable to MONO split units only)

- **Before using this equipment, please read this manual carefully and keep it for future reference.**

⚠ WARNING

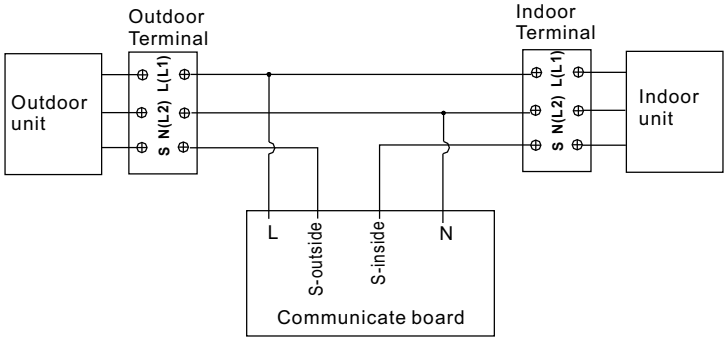
- Before performing any electrical work, turn off the main power to the system.
- All wiring must comply with local and national electrical codes and be installed by qualified and skilled electricians.
- Wiring routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will overheat at connection point of terminal, fire or electrical shock.
- Use the specified cable and connect tightly and clamp the cable so that no external force will be acted on the terminal. If connection or fixing is not perfect, it will cause heat-up or fire at the connection.

1. INVERTER SPLIT ANALYZER



2. WIRING CONNECTION

Connect the connective cables to the terminals as identified with their respective matched numbers on the terminal block of indoor/outdoor unit and inverter split analyzer.



3. DISPLAY PANEL

The digital display panel of the Inverter Split Analyzer displays by ten numbers:



After power on, the ten numbers illuminate for 3 seconds, the digital display panel has four types of display: Frequency display, Error display, Inquiry display and Settings display(optional function).

1. Frequency display:

After power on, if there is no fault existing, the first number to the third number indicates the operation frequency, and the sixth number to the eighth number indicates the target frequency.

Digital Display						Indication	Display forms	Display range
Operation frequency			Indoor target frequency					
X	X	X.	X	X	X	Frequency	Decimal	0~999

2. Error display:

- If malfunction occurs on indoor unit or outdoor unit, it will display the corresponding error codes. The original information and the error codes will alternate display at 0.5 Hz. After failure recovery, it keeps displaying the error codes for another 30 seconds.
- The first number to the third number indicates the outdoor unit malfunctions, and the sixth number to the eighth number indicates the indoor unit malfunctions.

Digital Display						Indication
Outdoor unit error code			Indoor unit error code			
X	X	X	X	X	X	Malfunctions

Error code:(IDU=indoor unit, ODU=outdoor unit)

Display code	Problems	Possiblely caused by
E0	IDU EEPROM error	IDU PCB
E1	ODU communication error	ODU PCB or communication cable
E11	IDU communication error or IDU is off	IDU PCB or IDU is off
E2	Zero-crossing signal detection error	IDU PCB
E3	Indoor fan motor speed out of control	IDU fan motor/wheel/PCB
E51	ODU EEPROM error	ODU PCB
E52	ODU temperature sensor open circuit error	ODU temperature sensor/PCB
E53	ODU temperature sensor short circuit error	ODU temperature sensor short/PCB
E54	ODU condenser pipe sensor open circuit error	ODU condenser pipe sensor/PCB
E55	ODU condenser pipe sensor short circuit error	ODU condenser pipe sensor/ PCB
E56	ODU discharge pipe temperature sensor open circuit error	ODU discharge pipe temperature sensor /PCB
E57	ODU discharge pipe temperature sensor short circuit error	ODU discharge pipe temperature sensor /PCB
E7	ODU DC fan motor speed out of control	ODU DC fan motor/fan blade/PCB
E6	IDU temperature sensor error	IDU temperature sensor/PCB
E61	IDU temperature sensor open circuit error	IDU temperature sensor/PCB
E62	IDU temperature sensor short circuit error	IDU temperature sensor/PCB
E63	IDU evaporator pipe temperature sensor open circuit error	IDU evaporator pipe temperature sensor /PCB
E64	IDU evaporator pipe temperature sensor short circuit error	IDU evaporator pipe temperature sensor /PCB
P0	ODU IPM module protection	Compressor connective cable/IPM module/ODU fan motor/ IPM module radiator /Refrigeration system /Compressor
P1	Voltage over low/over high protection	Power source/Rectifier/PFC inductance/IPM module
P2	Compressor top temp.protection	Refrigerant leakage/Toptemperature sensor/Sensor connective cable/IDU control board
P3	Outdoor extremly low temperature protection	Outdoor temp. Extremly low/ODU temp. Sensor/ Condenser freezed/ ODU contol board
P4	Compressor feedback protection	Compressor connective cable/IPM module/Connection of IPM module and ODU control board/ODU fan motor / IPM module radiator/Refrigeration system/Compressor

3. Inquiry display:

- Keep pressing the ASK button for 2 seconds under frequency displaying status, it will shift to inquiry display. Keep pressing the ASK button for 2 seconds again will cancel the inquiry display and revert back to frequency display.

Digital Display						Indication
Inquiry code		Display items				
X.	X.	X	X	X	X	Operation Information of indoor and outdoor unit

- Press the UP(∨) or DOWN(∧) button to inquiry the operation information of indoor and outdoor unit:

Inquiry code	Display items	Indication Information
Fr.	0~999Hz	Operation frequency
FT.	0~999Hz	Target frequency
T1.	-15~99°C	Indoor temperature
T2.	-15~99°C	IDU evaporator pipe temperature
T3.	-15~99°C	ODU condenser pipe temperature
T4.	-15~99°C	Indoor ambient temperature
TP.	30~129°C	Discharge temperature
TT.	0~99°C	Indoor setting temperature

Inquiry code	Display items	Indication Information
1d. (Indoor unit)/ Od. (Outdoor unit)	HEAT	Heat mode
	COOL	Cool mode
	Dry	Dry mode
	FAn	Fan mode
	Forc	Forced cool mode
	dEF	Defrosting
	OFF	Turn off

Service Bulletin

SR-052

DATE: October 13, 2011

TO: All Service and Parts Managers

SUBJECT: Excess Flux in Flowrator on ACNF Air Handlers

There have been a small numbers of occurrences of excess flux getting into the flowrator assembly on ACNF Air Handlers with serial numbers beginning with 1103 through 1109, causing the piston to stick. Therefore, we are requesting that the piston be checked at install to ensure it moves freely in the flowrator body.

If the piston is sticking due to flux, applying a couple of drops of isopropyl alcohol to the inside of the flowrator body will loosen the piston so it can be removed and further cleaned with isopropyl alcohol. Also clean the internal surfaces of the flowrator body to remove any flux buildup. After cleaning, replace the piston after ensuring it is the correct size orifice for the application by checking the Piston Kit Chart shipped with the unit.
NOTE: When using isopropyl alcohol to clean the flowrater assembly, do not oversaturate the flowrater assembly with excess isopropyl alcohol. The isopropyl alcohol should evaporate but it is recommended to purge the coil with nitrogen to assist in removal of all the isopropyl alcohol before connecting the tubing to the coil.



If isopropyl alcohol will not sufficiently loosen the piston for removal, then a small screw can be inserted into the orifice hole to assist in removing the orifice. **NOTE: If this method is employed, the piston should be discarded and a new piston installed after ensuring the flowrator body is free of flux.**

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Service Bulletin

SR-051

DATE: March 3, 2011

TO: All Service and Parts Managers

SUBJECT: Noisy Defrost on *SZC16 and *SZC18 Units when Wired in Legacy Mode

We have received reports of noisy defrost cycles on the *SZC16 and *SZC18 heat pumps when wired in the legacy mode. On the majority of legacy installations the 5 second compressor time delay on the PCBHR102 UC board is sufficient to allow the pressures to equalize and the reversing valve to shift smoothly during initiation and termination of the defrost cycle. However, in certain outdoor conditions the 5 second compressor time delay does not allow enough time for the pressures to equalize and allow for a quiet shift of the reversing valve. After testing, it has been determined that changing the compressor time delay to 30 seconds resolves the noisy defrost issue on units wired in the legacy mode.

The noisy defrost issue can be resolved on units matched with communicating air handlers or furnaces wired in the legacy mode, by installing the CTK01AA communicating thermostat and going to the advanced setup menu and programming the compressor time delay for 30 seconds. For fully communicating systems experiencing this issue, the dealer should go to the advanced setup menu on the CTK01AA thermostat and change the factory setting from the 5 second compressor time delay to 30 second compressor time delay.

A new UC board part# PCBHR103 has been developed with a factory programmed 30 second compressor time delay. All communicating heat pumps with serial numbers starting with **1103** will contain the new **PCBHR103** board. The new **PCBH103S** service board is available from service parts.

In our continuing effort to offer product improvements to our customers; Goodman has elected to upgrade the existing distributor inventory of PCBHR102S boards to the **PCBHR103S** board. Distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement boards must be ordered by the distributor from service parts to replace their returned inventory.

For installed units experiencing noisy defrost cycle due to the 5 second compressor time delay, Goodman will pay $75.00 to replace the PCBHR102 board with the new **PCBHR103S** board.

Claims **must** be filed on Service Bench as **Service Bulletin SR-051**, using Authorization Code number 8704. For installed units, the homeowner information including phone number must be included for all claims. **The claim for the part and claim for labor should be filed as one claim by submitting the claim using the "Dealers Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. All claims for this program must be submitted by **December 31, 2011.**

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Service Bulletin

SR-050

DATE: November 29, 2010

TO: All Service and Parts Managers

SUBJECT: New TXV Kit TX2N4A

We have received reports of TX2N4 expansion valve kits that in some applications usually on the high SEER models will not provide proper superheat or subcooling when installed on evaporator coils matched with 2 ton condensing and heat pump units. In these cases the expansion valve in the TX2N4 kit cannot be adjusted to provide the proper superheat and subcooling for 2 ton outdoor units.

A new TXV kit (**TX2N4A**) has been developed and will be in production in mid-November and should be used with the 1.5 and 2 ton outdoor units and will be available from the HLC. The TX3N4 also provides proper performance and may be used as a replacement for the TX2N4 until you have inventory of the TX2N4A's.

The existing TX2N4 kits should be used on evaporator coils matched with 1.5 ton outdoor units only. If you are experiencing Superheat control issues with a properly installed TX2N4 equipped Goodman, Amana, GMC or Whirlpool two ton system, replacement of the TX2N4 with a **TX2N4A** should resolve the issue.

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Service Bulletin

SR-049

DATE: November 17, 2010

TO: All Service and Parts Managers

SUBJECT: *SXC/*SZC16/*SXC/*SZC18 Dehumidification Feature

We have received reports of *SXC/*SZC16 and *SXC/*SZC18 units that did not have the dehumidification feature enabled on the outdoor control board. The issue has been traced to the data sets programmed into the outdoor units on the assembly line.

The dehumidification feature is not present on any communicating condensing units or heat pumps that were manufactured prior to October 2010 production. As a corrective measure, we began using new data sets in production with units starting with serial number **1010765347,** these units should have the dehumidification feature enabled.

Units will work properly without this feature enabled except for the dehumidification feature. Any units installed in the field that require this feature will need to be reprogrammed by downloading the information to the board from the factory supplied Communicating Upgrade Kit listed below.

Model	Communicating Upgrade Kit	Model	Communicating Upgrade Kit
*SXC160241	0130R00038S	*SZC160241	0130R00007S
*SXC160361	0130R00039S	*SZC160361	0130R00009S
*SXC160481	0130R00040S	*SZC160481	0130R00012S
*SXC160601	0130R00044S	*SZC160601	0130R00016S
*SXC180361	0130R00019S	*SZC180361	0130R00010S
*SXC180481	0130R00013S	*SZC180481	0130R00014S
*SXC180601	0130R00017S	*SZC180601	0130R00018S

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Install the correct memory card for your outdoor unit and perform the following steps to upgrade:

1) Turn off all power to the indoor and outdoor units.
2) Do not touch the memory card or integrated outdoor control or any wire connected to the control prior to discharging your body's electrostatic charge to ground. Firmly touch a clean, unpainted metal surface of the outdoor unit away from the control.
3) Install the memory card on the outdoor control board by plugging it into the white colored socket on the control board of the outdoor unit.
4) Apply power to the indoor and outdoor unit and test operation.

Note: The memory card may be removed from the control for use on another outdoor unit of the same model or left on the control permanently.

Goodman will provide $50.00 labor for claims filed within the first year after installation.

A warranty claim form (RF000007) must be completed for each unit and must reference Project Code 8701 in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type "Epidemic" using 8701 as the "authorization" number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-048

DATE: July 2, 2010

TO: All Service and Parts Managers

SUBJECT: Shared Data in Communicating Split System Condensers and Heat Pumps

Goodman has discovered that a small percentage of split system condenser and heat pumps with model numbers beginning with ASXC, DSXC, ASZC and DSZC may not have been populated with the Shared Data during assembly.

This issue only affects these outdoor units when installed in a communicating system utilizing the CTK01 ComfortNet room thermostat. If you install one of these outdoor units in a communicating system and the CTK01 fails to identify the outdoor unit and the outdoor unit's Green and Yellow diagnostic LED's are both indicating 1 flash then the system is missing its shared data.

If you have this condition contact Goodman Technical Services at 888-593-9988 or via email at TechServices@goodmanmfg.com to obtain a data card for your unit. The shared data contains the model and serial number of the outdoor unit therefore it will be necessary to provide the outdoor unit Model and Serial number as well as the address of where the data card is to be shipped. Goodman will make every effort to provide the data card in the most expedient way possible.

Goodman has modified our manufacturing processes to ensure all units produced with serial numbers 1006xxxxxx and later contain shared data. Further all units prior to this serial number shipped from the Houston Logistics Center (HLC) after 5/11/2010 have been inspected to ensure these units contain shared data prior to shipping. All reworked units coming from the HLC will be marked with a blue dot.

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Service Bulletin

SR-047

DATE: July 2, 2010

TO: All Service and Parts Managers

SUBJECT: Incorrect Aluminum Service Replacement Coils

We have received reports of incorrect aluminum service coils substitutions for the #1262404 and #1262405 copper service coils for some AR*F and A*PF air handlers, these substitutions have been deleted from our system. Air handlers listed in Table 1 require a 4 row/4 circuit coil and will continue to use the **#1262405 or #1262405C** coated coil.

Air handler Model
AR*F496116AA
AR*F374316BA
AEPF426016*A
A60-00-2RB
WAHMS4961P4AAA
WAHME4260P4ACA
ADPF486016BA
ASPF426016BA
WAHMS3743P4ABA

Table 1

Air handler models listed below in Table 2 will use the new aluminum service coils listed and are available from the Service Parts Department at HLC.

Air Handler Model	New Alum Service Coil
AR*F364216*A	0270A00412S
ADPF304216*A	
WAHMS3642P4A*A	
A48-00-2R*A	
AR*F486016*A	0270A00413S
AEPF313716*A	
ASPF313716*A	
WAHMS4860P4A*A	
ADPF182416*A	0270A00423S
AR*F182416*A	
WAHMS1824P4A*A	

Table 2

The Service Bulletin will be updated as new aluminum service coils are released for service and available from the Service Parts Department at HLC.

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Service Bulletin

SR-046

DATE: June 18, 2010

TO: All Service and Parts Managers

SUBJECT: Float Switches in Secondary Drains on AWUF Air-Handlers

If you are required to install a float switch in the secondary drain pan of an AWUF air handler you should note the following. AWUF air handlers were designed to utilize both drain lines as stated in the paragraph below from the Installation Instructions shipped with the product.

> Units are equipped with both a bottom primary and secondary drain. **Both drains must be trapped.** Failure to install a trap could result in condensation overflowing the drain pan resulting in substantial water damage.

The secondary drain opening on these units is not shielded from any condensate which may drip off the coil and if the secondary drain is restricted with the installation of a float switch there will be nowhere for the condensate to go.





If you are installing the product without a secondary drain as required in the Installation Instructions then you will need to modify the installation. The following are two suggested solutions:

1. Install a drip shield over the secondary drain opening to prevent condensate from dripping off the coil and into the secondary drain opening. The first picture shows the drain pan connections from the coil side of the pan. Goodman has available the DHAT-01 Drip Hat which fits over the secondary drain (second picture) to prevent condensate from dripping off the coil into the secondary opening.
2. An alternate solution is to install the field supplied float switch in the primary drain line between the drain pan and the P-trap.

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Service Bulletin

SR-045

DATE: May 19, 2010

TO: All Service and Parts Managers

SUBJECT: Incomplete Defrost on the A/GSZ13024 and A/GSZ13030 Heat Pumps

We have received field reports of AGSZ13024 and A/GSZ13030 model heat pumps that do not defrost completely when the temperature is below 25 degrees and high humidity conditions are present, and this can result in ice buildup at the bottom of the outdoor coil. This condition can be caused by not elevating the unit as specified in the installation instructions as outlined below.

NOTE: These units require special location consideration in areas of heavy snow accumulation and/or areas with prolonged continuous subfreezing temperatures. Heat pump unit bases have cutouts under the outdoor coil that permit drainage of frost accumulation. Situate the unit to permit free unobstructed drainage of the defrost water and ice. A minimum 3" clearance under the outdoor coil is required in the milder climates. In more severe weather locations, it is recommended that the unit be elevated to allow unobstructed drainage and air flow.

The following elevation minimums are recommended:

Design Temperature	Suggested Minimum Elevation
+15° and above	2 1/2"
-5° to +14°	8"
Below -5°	12”

If this ice buildup is encountered, ensure that the unit is elevated as specified in the installation instructions the unit drain holes are clear, and there is unobstructed drainage of water away from the unit, in addition to the previously stated items, Goodman recommends during the inspection that the defrost sensor be relocated on the units listed above from the third return bend to the bottom return bend **(Figure 1).** This will extend the defrost cycle and reduce ice build-up at the bottom of the coil during the heat mode. The revised defrost location is not applicable for Amana revisions AB and later and Goodman revisions AC and later. All the later revisions have enhanced circuiting. Changing the defrost location on the new revisions will hurt the defrost performance of the heat pump.



(Figure 1)

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Service Bulletin

SR-044 Rev 3

DATE: August 1, 2012

TO: All Service and Parts Managers

SUBJECT: Return of Failed all Aluminum Coils

The RMA program on Aluminum Coils has been very helpful in identifying improvement opportunities in these new coils and with the low incident rate we are seeing on aluminum coils we are terminating the mandatory aluminum coil return program on all models except as follows.

The only coils required to be returned are the newly released aluminum coils as listed below:

- ARUF**14AA/ARPT**14AA air handler aluminum evaporator coils
- Aluminum evaporator coils from all package units
- CAPT aluminum coils (when introduced in late August)

Note: The air handler evaporator coils and package evaporator coils will be set up as service parts and will be handled as a Service Bench required part return. The CAPT coils will be handled in the same manner as the previous coils and it will be necessary to request an RMA for their return as explained in the instructions below. This bulletin will be updated as new units are introduced with aluminum evaporator coils.

1. Contractors must return any aluminum coil reported to be defective for whatever reason to the distributor from which they were purchased.
2. Distributor must contact Technical Services for an RMA to return the aluminum evaporator coil. Steve Perry is the primary contact and can be reached at Stephen.Perry@goodmanmfg.com or by phone at 931-438-2224. Also any of the Product Specialists in Technical Services can assist.
3. We will need the following information to issue an RMA.
    a. Model and Serial Numbers for the coil or coils to be returned.
    b. Precise reason the coil was replaced under warranty. (A statement that the coil was “Defective” is not acceptable)
    c. Distributor Name and Address where the coils are to be picked up.
    d. Distributor Contact (name, email address and phone number) who will be coordinating the RMA.
    e. Contractor Name and Address including City, State, Zip Code and phone number.
4. Goodman will issue a RMA and will arrange to have the coil or coils picked up from your location.
5. Once the coil has been evaluated the contact person identified in step 3 will be notified of our findings.

Your help with this important quality initiative is appreciated to ensure Goodman continues to produce a high quality all aluminum evaporator coil. ***Note:*** *Following this process is a requirement for continued payment of a warranty claim on an aluminum coil*. As with any warranty claim, Goodman reserves the right to deny any claim made on a part that is found without a defect.

The homeowner information including phone number must be included for all claims.

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Claims **must** be filed as Service Bench Code number **8696** as the “authorization” number. The homeowner information including phone number must be included for all claims. **The claim for the coil should be filed using the Dealers Service Bench ID#.** Please consult the Warranty Department if you need assistance with this process. The claim, if valid, will be paid upon review by the Warranty Department.

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Service Bulletin

SR-043

DATE: March 5, 2010

TO: All Service and Parts Managers

SUBJECT: DFTD-1 Defrost Time Delay Kit

With many consumers now installing heat pumps in place of gas furnaces, they may not be familiar with the typical operation of a heat pump. In some cases they can be concerned with the operational noises that are generated during the heat pumps defrost cycle. These noises can vary significantly depending on the unit's capacity, location and application. In an effort to minimize customer concerns related to these noises, Goodman is making the defrost time delay kit Model DFTD-1 available. The DFTD-1 is available as an option to potentially reduce the outdoor unit sound associated with the defrost cycle.

The DFTD-1 kit is designed to shut the compressor off for 20 seconds when the defrost cycle is initiated and 15 seconds at termination of the defrost cycle. This will allow dealers to offer a Quiet Shift feature when the unit is installed near a customer's window or if they are experiencing a slow shifting reversing valve. This Defrost Time Delay Kit has demonstrated significant reduction in the compressor sound at the initiation and termination of defrost in many installations.

This kit is available through Service Parts by contacting your CSR.

If you have a *PH15 package heat pump or *SZ14, *SZ16 and *SZ18 split system heat pump with a 2007, 2008 or 2009 serial number that that is exhibiting excessive sound at the initiation of defrost this kit may be installed and claimed under warranty, and Goodman will provide $100 labor for installation of the DFTD-1 on these models.

Claims **must** be filed as Service Bench Code number **8695** as the "authorization" number. The homeowner information including phone number must be included for all claims. **The claim for the part and claim for labor can be filed as one claim by submitting the claim using the "Dealers Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-042

DATE: December 4, 2009

TO: All Service and Parts Managers

SUBJECT: Reversing Valves on *SZ14018, *SZ14024, *SZ16024 Model Heat Pumps manufactured in 2009

Goodman is changing to a smaller body reversing valve on the models/revisions listed below. Goodman is requesting that all new uninstalled inventory of these models as identified below be returned to Goodman. Please contact your CSR with a list of model and serial numbers of these units and request an RMA for these units in your inventory.

ASZ140181AD	with serial numbers from 0901 up to and including 0908
SSZ140181AC	with serial numbers from 0901 up to and including 0908
ASZ140241AE	with serial numbers from 0901 up to and including 0910
SSZ140241AF	with serial numbers from 0901 up to and including 0909
ASZ160241AC & AD	with serial numbers from 0901 up to and including 0911
SSZ160241AD	with serial numbers from 0901 up to and including 0911
DSZ160241AA	with serial numbers from 0901 up to and including 0911

The following models already have the smaller body reversing valve and should not be returned to Goodman.

ASZ140181AE	with serial numbers beginning 0909 and later
SSZ140181AD	with serial numbers beginning 0909 and later
ASZ140241AF	with serial numbers beginning 0911 and later
SSZ140241AG	with serial numbers beginning 0910 and later
ASZ160241AE	with serial numbers beginning 0912 and later
SSZ160241AE	with serial numbers beginning 0912 and later
DSZ160241AB	with serial numbers beginning 0912 and later

Installed units as listed in the first group above that need repairs on reversing valves should be replaced using the B1227315S reversing valve. Goodman will provide $350 labor plus refrigerant and recovery ($50 each) for reversing valves changed to the B1227315S within the first year after installation.

A warranty claim form (RF000007) must be completed for each unit and must reference Project Code 8692 in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using 8692 as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-041

DATE: September 25, 2009

TO: All Service and Parts Managers

SUBJECT: AEPF3036/3137 Air Flow Settings with 14 and 16 SEER Outdoor Units

We have received reports of excessive airflow when the AEPF3036/3137 air handlers are matched with AS*/SS*140241, SS*160241, AS*/DS*160241 and GS*14024 outdoor units.

For AS*/SS*140241, SS*16024 and GS*14024 single stage outdoor units matched with the AEPF3036/3137 air handlers, the following settings will reduce the airflow to acceptable CFM levels for two ton units.

1. Dipswitch # 4 should be set in the off position.
2. The remaining dipswitches should be set in the following position.
3. Connect Y from thermostat to Y1 on the control board.

AEPF3036/3137 air handlers matched with 2 ton single stage units.

Dipswitch settings

1	2	4	CFM	5	6	CFM	7	8
ON	ON	OFF	720	ON	ON	720	OFF	OFF
ON	ON	OFF	792	ON	ON	792	ON	OFF
OFF	ON	OFF	880	OFF	ON	880	OFF	OFF
OFF	ON	OFF	755	OFF	ON	755	OFF	ON

Connect Y from thermostat to Y1 on the board.

For AS*/DS*160241 two stage outdoor units dipswitches should be set according to the following settings. Dehum jumper should be cut to lower the airflow by 15% in the cooling mode only. **Note: Heat pump mode and Electric heat CFM will not be affected. Dehum feature requires the presence of 24 volts on terminal "O".**

AEPF3036/3137 air handlers matched with 2 ton two stage unit.

Dipswitch settings

1	2	4	CFM	5	6	CFM	7	8
ON	ON	OFF	1020	ON	ON	1020	OFF	ON

Dehum jumper should be cut to lower CFM additional 15% in cooling mode only. CFM in heat pump mode or electric heat will not be affected.

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Service Bulletin

SR-040

DATE: August 18, 2009

TO: All Service and Parts Managers

SUBJECT: Revised MCA/MOP for the AWUF30,36 and 37**16BA Air Handlers

When the AWUF-BA revision aluminum coil air-handlers were released earlier this year, the electrical characteristics for these models were recalculated per agency requirements. As a result, the MCA (Minimum Circuit Ampacity) and MOP (Maximum Over-Current Protection) changed slightly on some models.

While these changes were depicted on the unit rating plate, they were not picked up in the Specification Sheets and Technical Manuals. The rating/serial plate on the unit should always be consulted for electrical requirements. The Specification Sheets and Technical Manuals are updated and are available on the Goodman website.

The chart below lists the MCA and MOP for both the previous “AA” and current “BA” revisions. Note: No wire change is required for these MCA/MOP changes.

Model Number	Motor Amps	Heater Amps with Single Circuit		Min Circuit Amps with Single Circuit		MOP with Single Circuit	
		208 V	240 V	208 V	240 V	208 V	240 V
AWUF300516AA	1.61	17.3	20	23.6	27	30	30
AWUF300516BA	**1.58**	17.3	20	23.6	27	**25**	30
AWUF300816AA	1.61	26	30.4	34.5	40	40	40
AWUF300816BA	**1.58**	**26.4**	30.4	**34.9**	40	**35**	40
AWUF301016AA	1.61	35.1	40.8	45.9	53	50	60
AWUF301016BA	**1.58**	**35.4**	40.8	**46.2**	53	50	60
AWUF360516AA	1.61	17.3	20	23.6	27	30	30
AWUF360516BA	**1.58**	17.3	20	23.6	27	**25**	30
AWUF360816AA	1.61	26	30.4	34.5	40	40	40
AWUF360816BA	**1.58**	**26.4**	30.4	**34.9**	40	**35**	40
AWUF361016AA	1.61	35.1	40.8	45.9	53	50	60
AWUF361016BA	**1.58**	**35.4**	40.8	**46.2**	53	50	60
AWUF370516AA	4.1	17.3	20	26.8	30.1	30	30
AWUF370516BA	4.1	17.3	20	26.8	30.1	30	**35**
AWUF370816AA	4.1	26	30.4	38.1	43.2	40	50
AWUF370816BA	4.1	**26.4**	30.4	38.1	**43.1**	40	**45**
AWUF371016AA	4.1	35.1	40.8	49.3	56.2	50	60
AWUF371016BA	4.1	**35.4**	40.8	**49.4**	56.2	50	60

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Service Bulletin

SR-039

DATE: June 26, 2009

TO: All Service and Parts Managers

SUBJECT: TX3N4 Expansion Valve Kit Containing R-22 Expansion Valves

We have received some reports of TX3N4 R-410A Expansion Valve Kits containing R-22 expansion valves.

TX3N4 Expansion Valve Kits with date codes of 051209 and 051309 stamped on the outside of the box are suspect, and should be inspected to ensure the valve contained in the kit is a R-410A (Part # BT1369068) valve and not a R-22 (Part # BT1369064) valve.

Service Parts has inspected their inventory and any TX3N4 kits that had the incorrect expansion valve, have been reworked with the correct expansion valve.

If you have any TX3N4 Expansion Valve Kits that contain an R-22 expansion valve, you can either re-label the kits as TX3N2 or contact your CSR to have the Expansion Valve Kits returned to Service Parts. You will need to re-order any TX3N4 kits you need for your inventory.

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Service Bulletin

SR-038

DATE: February 11, 2009
TO: All Service and Parts Managers
SUBJECT: Field Repair Kit for Aluminum Coils

We would like to introduce the **Aluminum Coil Repair Kit (Part # ALCRKT01)** for the new AWUF and CHPF Aluminum coil units. This kit will be required to repair any leaks in aluminum coils installed in the field. The kit contains the following items necessary to make field repairs to coils.

Items	Part No.	Qty.
Braze rod	0328M00000	3
Stainless Steel Brush	358804	1
Kit Instructions	IO-719	1

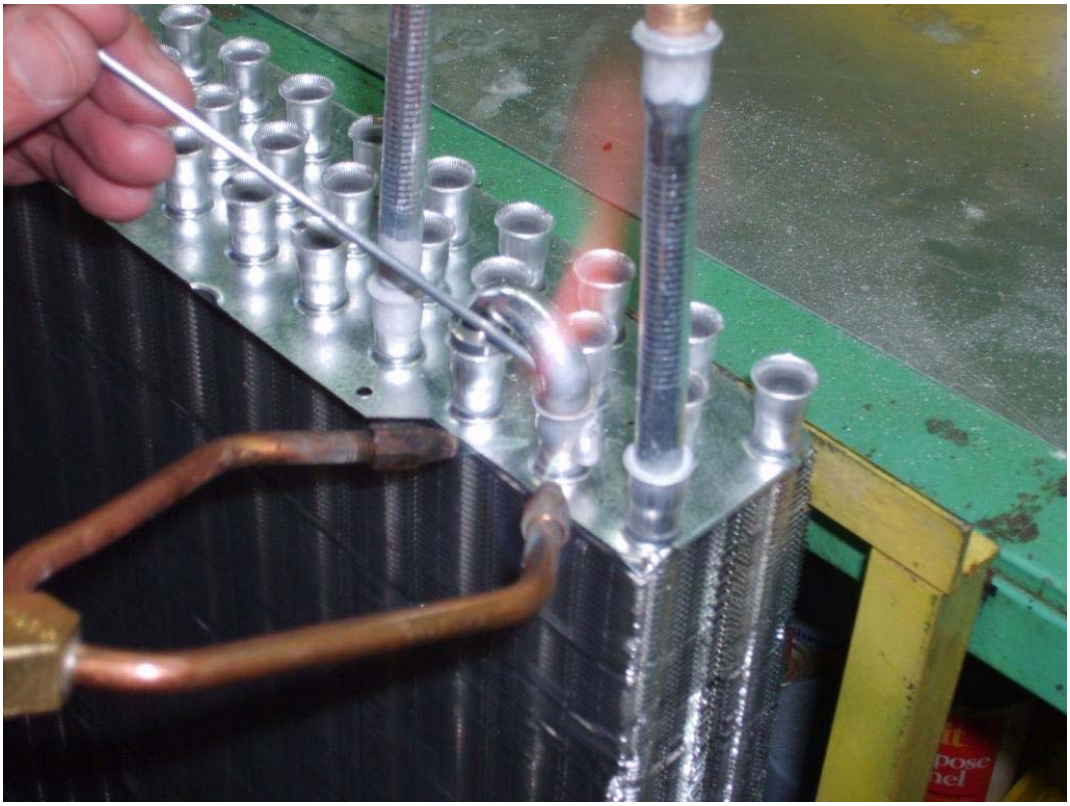
WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Repairing Leaks in Aluminum Coil Joints and Hairpins:

1. Turn off all power to the unit.
2. Recover all refrigerant from the unit in accordance with EPA regulations.
3. Remove the black plastic cap from the brass Schrader assembly.
4. Remove the Schrader valve stem from the brass Schrader body to ensure there is no pressure remaining in the unit and also to prevent overheating of the Schrader valve stem if repairing a leak near the valve stem.
5. Clean the joint area of any visible excess oil and or dirt. A clean rag should be sufficient to remove the excess oil or dirt.
6. “Sweep” the refrigerant line with nitrogen or inert gas during brazing to prevent the formation of aluminum-oxide inside the refrigerant lines.
7. Apply heat to the joint area with the torch. **Note: Set the flame at about half the heat of a normal copper brazing application**. Brush the alloy out of the joint using a stainless steel brush. It may be necessary to continue to heat the joint lightly while using the brush to remove the alloy. **Caution:** Watch the color of the flame and when an orange tint is seen, the aluminum is approaching its melting point. **(Figure 1).**



(Figure 1)

8. Once the alloy has been brushed from the joint area, reapply the torch flame to the joint and when an orange tint to flame is seen, apply the braze alloy to complete the joint.
9. When repairing a leak on coil hairpin, apply heat to the hairpin with the torch in the same manner as joint repair. When an orange tint to flame is seen, apply the braze alloy to complete the joint.
10. Allow the joint to cool down before applying pressure to verify that the leak was successfully repaired.
11. Evacuate the system to 250 microns or less using suction and liquid service valves. Using both valves is necessary as some compressors create a mechanical seal separating the sides of the system.
12. Charge the system by weighing the charge into the unit based on charge specifications on the rating plate, along with making any charge adjustments as needed based on line set length.
13. Set thermostat to call for cooling and then heating mode of operation (if heat pump) and verify proper unit operation.

The **Aluminum Coil Repair Kit (Part # ALCRKT01)** may be obtained from the Service Parts Department by contacting your customer service representative.

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Service Bulletin

SR-037

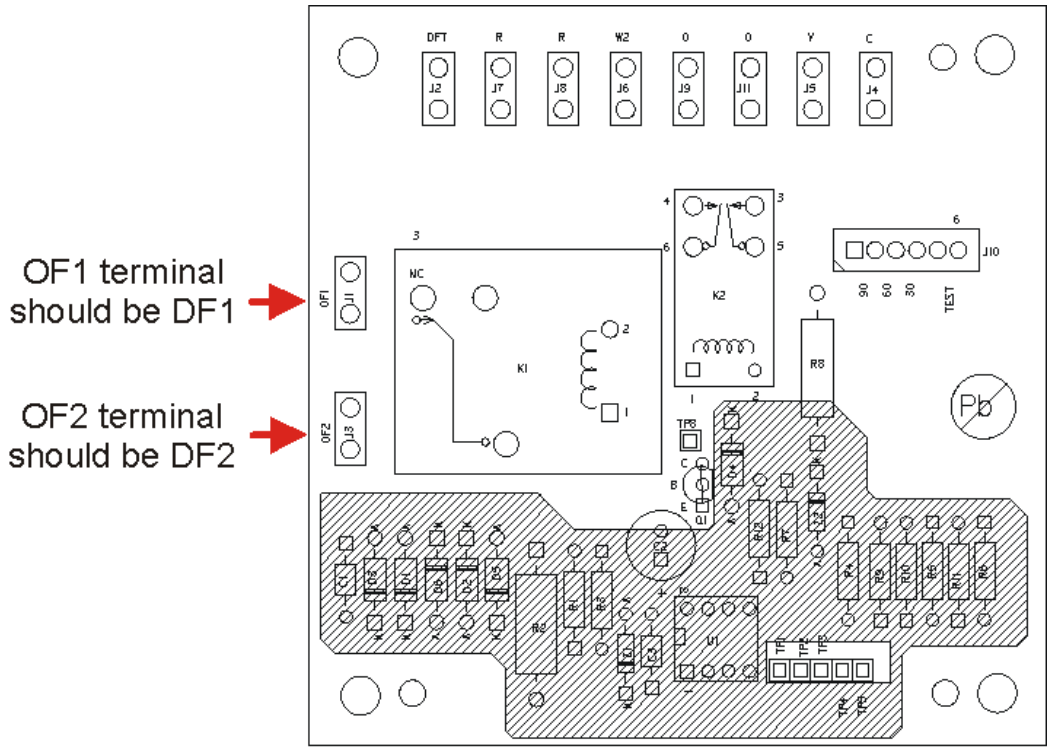
DATE: January 26, 2009

TO: All Service and Parts Managers

SUBJECT: New **PCBDM130** Defrost Control Board

The new defrost control board, Part **# PCBDM130,** due to be in our manufacturing plant November 17, 2008, has a typographical error on the circuit board. The connections for the condenser fan motor have been incorrectly labeled with OF1 and OF2 instead of DF1 and DF2 respectively (see illustration below). The supplier has been made aware of the error and is in the process of making the correction; however, there may have been controls shipped before the changes are made.

Therefore, should you encounter the new **PCBDM130** Defrost Control Board either in your stock or in any of our split system or package unit heat pumps, please note the difference in the condenser fan terminal nomenclature and keep in mind that OF1 is the same as DF1 and OF2 is the same as DF2.



PCBDM130

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Service Bulletin

SR-036

DATE: January 21, 2009

TO: All Service and Parts Managers

SUBJECT: Dunan Reversing Valves

In a continuing effort to improve our products, our supplier has made design improvements to their reversing valves. In November 2008, the redesigned B1227317 valve was introduced in production and then the new B1227318 and B1227316 valves were implemented in production starting in December 2008. With these improvements, we have elected to upgrade the existing distributor inventory to the redesigned reversing valves. All reversing valves have an identification label on the body of the valve **(refer to following illustration).**



The code on the original valves will end in the letter “A” and the redesigned valves will end with the letters “B”, “C” and “D” as listed in the chart below.

Part Number	Rev Letter
B1227317S	“B”
B1227316S	“C”
B1227318S	“D”

All valves in distributor inventory with code ending in **“A”** should be removed from stock and returned to Goodman.

Distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement valves must be ordered by the distributor from HLC to replace their returned inventory.

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Service Bulletin

SR-035

DATE: November 19, 2008

TO: All Service and Parts Managers

SUBJECT: Changing Lugs on HKR-15C Heat Kit

We have received reports that installing contractors may be using Cutler-Hammer jumper kit Part # QCDJ4T in conjunction with our HKR-15C electric heat kit for the purpose of having single point entry for high voltage wiring. In order to apply this jumper, a contractor would have to change the lug on the 30 amp circuit breaker to a lug with a larger opening and this process is **not** approved by any safety agency or Goodman Manufacturing. The HKR-15C heat kit, as shipped, is approved by ETL for use in several Goodman products and is designated as such in the specification sheet for that specific product. Any kit with a changed lug would no longer carry ETL approval. Similarly, the circuit breaker is a UL recognized component and a circuit breaker with a changed lug would no longer be a UL recognized component and would not be approved by Goodman.

Distributors should inform all contractors that changing lugs on Goodman heater kits to allow the use of the Cutler Hammer Part # QCDJ4T jumper kit is **not** an approved practice and will void the warranty on the equipment.

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Service Bulletin

SR-034

DATE: November 6, 2008,

TO: All Service and Parts Managers

SUBJECT: High Pressure Issue on GSH14036, SSZ/ASZ14036 and SSZ/ASZ16036 Heat Pumps

We have received field reports of the SSZ/ASZ14036 and SSZ/ASZ16036 heat pumps tripping the high pressure switch in the heating mode when matched only with the **AEPF303616CA** air handler. After testing, we have discovered that the motor does not provide the listed airflow at the specified settings. We have developed a new program for this motor that does provide the specified airflow and units produced after October 13, 2008 (serial number 0810070690 or later) have the updated airflow.

All units shipped from Goodman® after October 13, 2008 have been updated with the revised airflow program. These units can be identified by the green dot on the motor label and an orange dot centered on the side of top carton at rear of the unit and is visible in the bulk packs. Service replacement motor assemblies and ECM End Bell as listed below, shipped after October 13, 2008, will also contain the revised airflow programming. These parts can be identified by the green dot on the box adjacent to the part number label. Service Parts will have a green dot on the box thru the end of year.

If you have an AEPF303616CA air handler matched with a heat pump that is causing the high pressure switch to trip due to insufficient airflow, the airflow can be increased by changing the dip switches to the revised settings as listed in the following chart.

Model	Switch		Switch		Nominal Cooling Tonnage	CFM
	5	6	7	8		
AEPF3036	ON	OFF	OFF	OFF	3	1268
	OFF	ON	OFF	OFF	3	1170

Testing has determined that there is a charge imbalance with the AEPF303616CA and the ASPF303616BA when matched with the GSH14036, SSZ/ASZ14036 and SSZ/ASZ16036 heat pumps. The chart below shows the amounts of refrigerant that needs to be removed when charging in the heat mode and the revised subcooling setting when charging these units in the cooling mode.

Outdoor Model Numbers	Rev(s)	Indoor Metering Device	Outdoor Metering Device	Cooling Mode Charge / Method		Heating Mode/Weight Method		
						Factory Charge	Charge Adjust	Modified Charge
GSH140361**	AA, AB, AC, AD, AE	TXV	TXV	5°	Subcooling	220 oz	- 20 oz	200 oz *
GSH140361**	AF	Piston	Piston	5°	Superheat	220 oz	- 20 oz	200 oz *
SSZ/ASZ140361**	AA, AB, AC or AD	TXV	TXV	5°	Subcooling	220 oz	-30 oz	190 oz *
SSZ/ASZ160361**	AA, AB, AC or AD	TXV	TXV	5°	Subcooling	230 oz	-30 oz	200 oz *
ASZ180361**	AA or AB	TXV	TXV	5°	Subcooling	195 oz	-30 oz	165 oz *

* Add .6 oz per ft for lineset lengths greater than 15'. Subtract .6 oz per ft for lineset less than 15'.

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The AEPF303616CA and ASPF303616BA air handlers are no longer listed in AHRI as approved matches with the GSH140361**, SSZ/ASZ140361**, SSZ/ASZ160361** and ASZ180361** heat pump units.

We are requesting all distributor inventory of AEPF303616**CA** air handlers, replacement ECM motors and service end bells be returned to the HLC for reprogramming. The following list below shows the air handler and service parts that should be returned to HLC.

Air Handler	Mtr/End Bell Part #	End Bell Part #
AEPF303616CA	B13400704ABS	13500704AAS

Distributors will need to contact their CSR to request an RMA to return their current inventory of AEPF303616CA Air Handlers, Motors and End Bells. Replacement inventory must be ordered by the distributor from HLC to replace their returned air handler inventory, motors and service end bells.

Goodman will pay $250.00 labor to adjust dipswitch settings on installed AEPF303616CA units and to correct the charge imbalance when using the AEPF303616CA and ASPF303616BA on the heat pumps listed above where the customer is experiencing a high pressure switch tripping. A warranty claim form (RF000007) must be completed for each unit requiring the repair and must reference Project Code **8684** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using **8684** as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-033

DATE: October 14, 2008

TO: All Service and Parts Managers

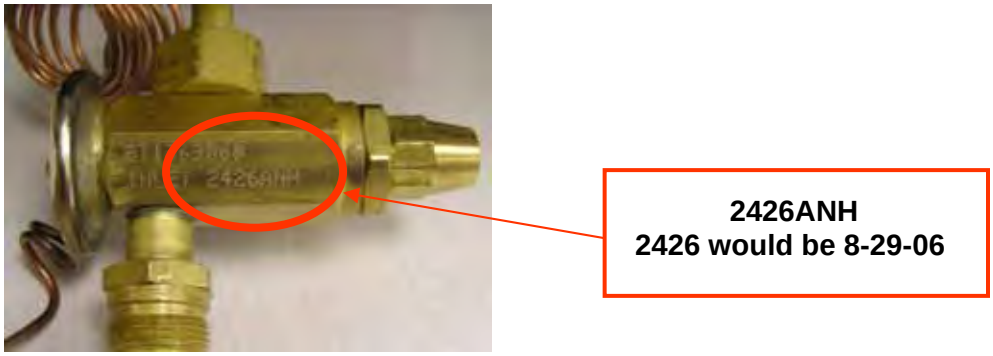
SUBJECT: TX*N* TXV kits and TXV Parts Inventory.

Parker has made design improvements to their R410A and R22 TXV valves. In April 2008, TXVs for R-410A benefited from improvements to the upper and lower housings with coined edges. The coined edge provides a more suitable joint for welding, and reduces the energy input required to successfully complete the weld. In addition to the coined edges, two support plates have been added to the internal diaphragm to provide additional strength for R-410A operating pressures.

R22 valves will also utilize the improved upper and lower housings with coined edges, but will continue to use a single diaphragm with no support plates.

In our continuing effort to offer product improvements to our customers; Goodman has elected to upgrade the existing distributor inventory to the redesigned valves. All TXV valves have a date code stamped on the body of the valve **(Refer to illustration below).** The Parker date code is based on the Julian calendar which is a count down of days from January 01.

Distributors should inspect all TX*N* kits and any TXV valves in service parts inventory and any kits or valves that have date code before the following date ranges; R410A valves with date code before **1118(A, B, or C) NH** and R22 valves with date code before **2178(A, B, or C) NH,** should be returned to Goodman® and will be replaced with the redesigned valve.



Distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement valves must be ordered by the distributor from HLC to replace their returned inventory. The list below shows the valves that should be returned to HLC.

TXV Part Number		TX*N* Kits
0151M00002	0151D00000	TX2N2
0151M00003	0151D00001	TX2N4
0151M00004	BT1369064	TX3N2
0151M00005	BT1369066	TX3N4
0151M00006	BT1369068	TX5N2
0151M00010	BT1369070	TX5N4
0151M00011		

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Service Bulletin

SR-032

DATE: June 20, 2008

TO: All Service and Parts Managers

SUBJECT: Replacement Caps for Service Valves on Split System Units

Goodman is pleased to announce the introduction of **Replacement Service Base Valve Caps.** These caps can be ordered from Service Parts Department to replace caps lost during shipment or installation. The chart below shows the Service Valve Part Number and the Replacement Service Valve Cap Part Numbers.

Service Valve	Size	Cap Part Number
B1285171	3/8"	803040510
0151R00002P	3/4"	803131000
0151R00003P	7/8"	803160510

The **Replacement Service Valve Caps** may be obtained from the Service Parts Department by contacting your customer service representative.

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Service Bulletin

SR-031

DATE: June 20, 2008

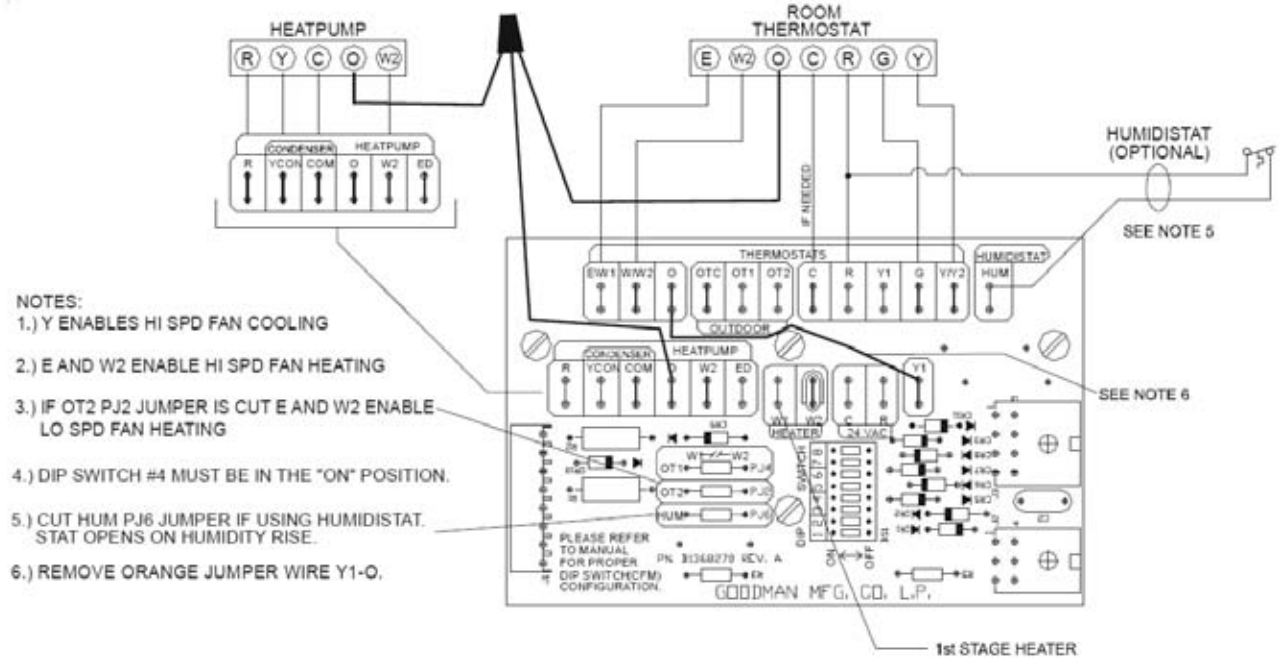
TO: All Service and Parts Managers

SUBJECT: Wiring Change on AEPF Air Handlers

Goodman has received a few reports of broken solder connections at “O” terminal on the control board of AEPF air handlers. The wiring on this terminal touches the front cover and apparently breaks the solder connection on the board during shipment.

The wiring to the “O” terminal has been revised to resolve this issue and starting with units produced June 23, 2008, there will be only one orange wire from the control board. The low voltage wiring from the “O” terminal on the thermostat and the outdoor unit will be connected to this single orange wire with a wire nut. The wiring diagrams in IO-287B supplemental installation instructions for the AEPF air handlers have been revised to reflect this wiring change.

Example: Wiring diagram below shows the wiring revision that will be implemented June 23, 2008.



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Service Bulletin

SR-030

DATE: June 19, 2008

TO: All Service and Parts Managers

SUBJECT: Leaking Service Valves on Split System Condensers and Heat Pumps

Goodman has received a few reports of service valves on Split System Condensers and Heat Pumps leaking over the winter months. Our investigation has found that the service valves on these units were turned out past the location specified in the Installation Instructions, along with the valve caps not being tightened during installation.

Our installation instructions (IO-258E and IO-259F) specify the following “Open each valve only until the top of the stem is 1/8” from the retainer. To avoid loss of refrigerant, do not apply pressure to the retainer.” In both laboratory test at -40°F and with installed units, we have found that if the valve stem is turned out past the retainer ring, leakage can result. When the service valve is turned back in to the proper position (1/8” below the retainer ring), the leakage has subsided.

When installing split system condensers and heat pumps or inspecting previously installed units, ensure the service valve stems are positioned 1/8” below the retaining ring on the service valves as per the installation instructions, and tighten the service valves caps 1/6 turn (one flat on cap) past finger tight.

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Service Bulletin

SR-029

DATE: May 29, 2008

TO: All Service and Parts Managers

SUBJECT: Top Plate Kit for ARUF374316, ARUF486016 & ARUF496116 Air Handlers

Goodman is pleased to announce the introduction of **Top Plate Kit Part # 0263A00000**. This kit is being released to eliminate water blow off from the coil if experienced when the ARUF374316, ARUF486016 and ARUF496116 air handlers are installed in the horizontal position. The new top plate replaces the original top plate on the coil and has a drain tube to drain any blow off water into the drain pan. Figure 1 and Figure 2 below show the proper installation of the kit on the coil.



Figure 1

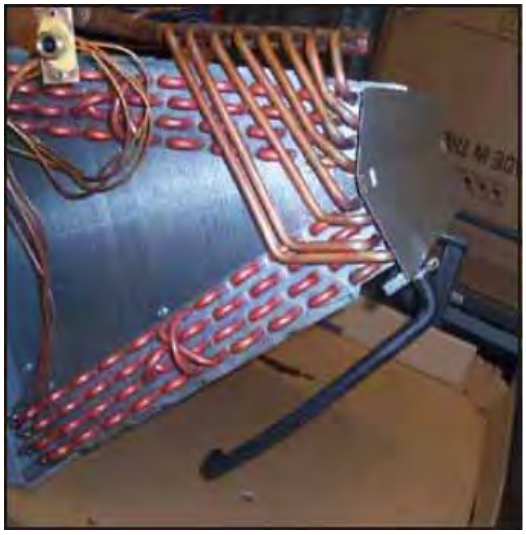


Figure 2

The **Top Plate Kit Part # 0263A00000** may be obtained from the Service Parts Department by contacting your customer service representative.

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Service Bulletin

SR-028

DATE: May 22, 2008

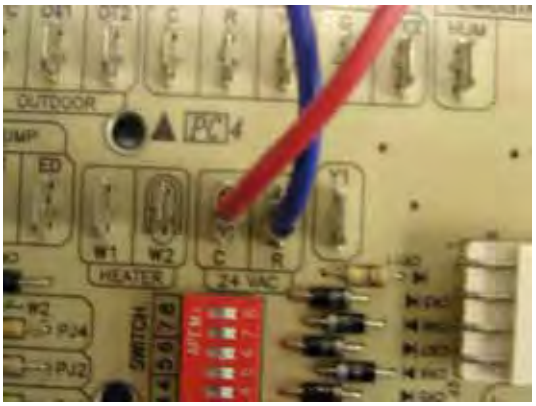
TO: All Service and Parts Managers

SUBJECT: Improperly Wired Transformers on MBE2000 Air Handlers

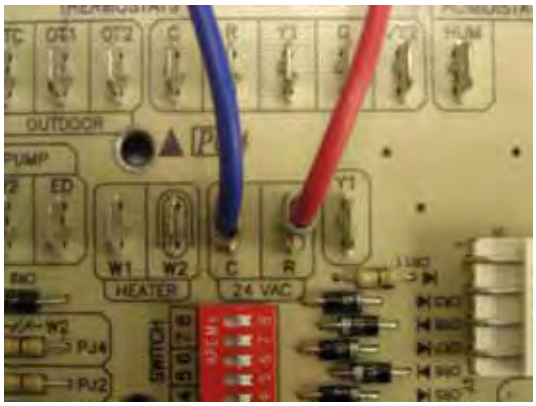
We have had a few reports of the blower running continuously with no call from the thermostat on MBE2000AA-1 model air handlers. This is the result of the transformer low voltage terminals being reversed at the control board. This affects units built in April 2008 (serial numbers **0804050874 to 0804050981)**.

The affected MBE2000AA-1 model air handlers have the red and blue wires from the transformer connected to the wrong terminals on the control board causing the ECM™ fan motor to run continuously. The red wire from the transformer should be connected to R terminal on the control board and the blue wire from transformer should be connected to the C terminal on the control board.

All MBE2000AA-1 model air handlers currently in Goodman inventory have been placed on hold and will be inspected and reworked if needed prior to being released for shipment.



Incorrect Wire Connections



Correct Wire Connections

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Service Bulletin

SR-027

DATE: April 24, 2008

TO: All Service and Parts Managers

SUBJECT: Crankcase Heaters for Copeland Reciprocating Compressors

Goodman is pleased to introduce crankcase heaters for the following Copeland reciprocating compressors. These heaters are required for all long line set applications and some heat pump and air conditioning installations in cold climates. The crankcase heaters have 48” wire leads to fit the various applications. The kits are matched with the proper reciprocating compressors according to voltage and watts. The following chart shows the correct crankcase heaters for the reciprocating compressors listed.

Copeland Model	Goodman Part #	Volts	Watts	Type
Models Ending in 60 or 70	018-0031-02	600 Max	27	Insertion
CR**K7	018-0074-02	240	58	Belly Band
	018-0074-03	480	50	Belly Band
CR16-32KQ-CR33-53KQ	018-0075-00	240	58	Belly Band
CR33-53KQ	018-0075-01	480	50	Belly Band

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Service Bulletin

SR-026

DATE: February 28, 2008

TO: All Service and Parts Managers

SUBJECT: CAPF/CAUF3642D6BA Evaporator Coils

CAPF/CAUF3642D6BA coils were mis-circuited during production; note only the BA revision is affected by the mis-circuiting. All CAPF/CAUF3642D6BA coils in your inventory should be removed from stock and returned to Goodman. Distributors should contact their CSR to request an RMA to return all affected coils.

Any CAPF3642D6BA or CAUF3642D6BA coils that have already been installed will need to be replaced with a **CAPF3642D6AA/AB** or **CAUF3642D6AA/AB** coil from distributor inventory. **NOTE:** If CAPF/CAUF3642D6AA/AB coils are not available, then current production CAPF/CAUF3642D6**BC** coils will need to be ordered from HLC to replace the affected coils.

Goodman® will pay $200.00 labor plus refrigerant recovery and refrigerant for each unit that requires an evaporator coil replacement. Please remember that on any sealed system repair, the filter drier must be replaced. Evaporator coils should be claimed under warranty. A warranty claim form (RF000007) must be completed for each unit requiring the repair and must reference Project Code **8660** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using **8660** as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-025 REV 1

DATE: June 18, 2008

TO: All Service and Parts Managers

SUBJECT: Superheat/Subcooling Calculators and Pressure/Temperature Chart

To provide our dealers with the necessary technical information to properly install and maintain the Goodman® and Amana® brand HVAC equipment, Technical Services is pleased to announce that the Superheat/Subcooling Calculators for R-22 and R-410A refrigerants along with the Pressure/Temperature Charts can now be purchased from the Service Parts Department

The part numbers listed in the table below should be used to order the Superheat/Subcooling Calculators and the Pressure/Temperature Chart.

Service Item Description	Part Number
Superheat/Subcooling Calculator for R-22	2006CC-36-R22
Superheat/Subcoling Calculator for R-410A	2006CC-36-R410A
Pressure/Temperature Chart	2003FC-75

Distributors can order these items from Service Parts Department by contacting their Customer Service Representative. Please note that shipping charges may apply to these orders.

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Service Bulletin

SR-024

DATE: August 29, 2007

TO: All Service and Parts Managers

SUBJECT: Loss of Charge Switch for R-410A Split System Heat Pumps

Goodman has received field reports of the loss of charge switch opening at low ambient temperatures on the Goodman® and Amana® brand R-410A split heat pumps (SSZ & ASZ respectively). The switch is designed to open at 50 PSI and close at 95 PSI. At temperatures below 2º F, the switch will open and shut down the heat pump until the ambient temperature rises to approximately 30º F. On units experiencing this nuisance loss of charge switch tripping, it will be necessary to install Loss of Charge Service Kit **Part # 0130R00000S** that contains a new loss of charge switch (Part # 0130R00000) that is designed to open at 25 PSI and close at 50 PSI.

The Loss of Charge Service Kit **Part # 0130R00000S** consists of a refrigeration tee, wire nuts and a new loss of charge switch (Part # 0130R00000). The refrigeration tee is equipped with a valve core and is screwed on the liquid line service valve. The loss of charge switch kit may be obtained from the Service Parts Department by contacting your customer service representative.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Installation Procedure for Refrigeration Tee and the Loss of Charge Switch:

1. After de-energizing the outdoor heat pump and indoor air handler, remove electrical service panel cover of the condenser and remove the screws from the electrical panel in order to swing it open. Next, remove the bottom service valve access panel. Note: Doing this will provide adequate access to the loss of charge switch in the liquid line.

2. Attach the new loss of charge switch to the refrigeration tee and screw the tee on the liquid line service valve. (Note: Refer to Installation instructions with the kit.) After the loss of charge switch (Part# 0130R00000) is installed, check the area for refrigerant leaks using an electronic leak detector or a liquid leak detector product.

3. Cut the two wire leads connected to the existing loss of charge switch and then strip approximately ½" of insulation from the end of the wires feeding back to the control panel. Wire nut the two wire leads from new loss of charge switch previously installed (Note: it may be necessary to cut additional wire length from existing loss of charge switch leads) to the wire leads that were previously cut and stripped at the new loss of charge switch.

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4. Replace the panels previously removed in Step 1 and then restore power to both the remote condenser and indoor air handler.

5. Verify that the system is functioning in all modes of operation (cooling & heating).



Goodman will pay $75.00 labor for installation of Loss of Charge Kit Part # 0130R00000S on SSZ & ASZ models experiencing nuisance tripping of loss of charge switch. This Loss of Charge Service Kit Part # 0130R00000S should be claimed under warranty. A warranty claim form (RF000007) must be completed for each unit requiring the repair and must reference Service Bulletin **SR-024** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty claim. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-023

DATE: March 23, 2007

TO: All Service and Parts Managers

SUBJECT: Condenser Fan Noise on the GSH130241A*, GSH130251A* and GSH130301A* Heat Pumps

We have received reports of noisy condenser fan blades on the GSH130241A*, GSH130251A* and GSH130301A* split heat pumps manufactured January 2007 and February 2007 (serial date codes **0701** and **0702) that were** produced with the Broad Ocean motor. Units manufactured December 2006 (serial date code **0612)** or earlier that were produced with the Regal Beloit motor and are not affected by this issue.

If you encounter GSH13024 or GSH13030 model unit built with Broad Ocean motor with a noisy condenser fan blade, replace the current condenser fan blade (Part # B1086775) with condenser fan blade (**Part # B1086750)**.

When installing the new condenser fan blade, it is important to position the blade on the motor shaft in the original position and the set screw on the flat of the shaft

Manufacturing has replaced the Broad Ocean motor in the above mentioned models with the Regal Beloit motor beginning March 9, 2007, until a revised B1086775 fan blade becomes available.

Goodman will pay $75.00 for each installed GSH13024, GSH13025 and GSH13030 split heat pump that requires a new condenser fan blade. This only applies to the above mentioned models manufactured January 2007 and February 2007 (serial date codes 0701 and 0702) that experience the noisy and/or vibrating condenser fan blade.

This claim can be filed on ServiceBench (preferred), or by completing a warranty claim form (RF000007) for each unit requiring the B1086750 fan blade. The claim will be paid upon review by the Warranty Department.

All claims for this program must be submitted by August 1, 2007.

The new condenser fan blade (**Part # B1086750)** can be ordered through Service Parts by contacting your Customer Service Representative.

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Service Bulletin

SR-022

DATE: March 13, 2007

TO: All Service and Parts Managers

SUBJECT: Charge Adjustment on ASX16*, SSX16* and GSC14* Units

Goodman® has determined that the refrigerant charge in ASX160361AB/AC, ASX160601AB/AC, SSX160361AB, SSX160481AB, SSX160601AB and GSC140601AB units produced after November 30, 2006 had to be adjusted to reflect the use of redesigned condenser coils.

The following chart provides the models affected and the charge adjusted made to each unit.

Model #	Current Charge (ozs.)	New Charge (ozs.)
ASX160361AB	180	160
ASX160361AC	180	160
ASX160601AB	225	200
ASX160601AC	225	200
SSX160361AB	180	160
SSX160481AB	270	250
SSX160601AB	225	200
GSC140601AB	285	255

Units manufactured with serial date code 0611 and earlier were not be affected by this charge adjustment. If these units need to be charged in the field they should be charged with the refrigerant charge shown the S&R data plate on the unit.

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Service Bulletin

SR-021
Rev. 1

DATE: May 30, 2008

TO: All Service and Parts Managers

SUBJECT: Harmonic Compressor Noise in Split Heat Pumps

Goodman has received field reports of harmonic compressor noise that can be heard at the indoor coil in the heat mode on some GSH, ASH, ASZ and SSZ model heat pump units. Our testing has determined that if this issue occurs, a discharge muffler **(Part # B1219301)** should be installed in GSH and ASH heat pumps and discharge muffler **(Part # 0162R00007S)** should be installed in the SSZ and ASZ heat pumps.

The discharge muffler should be installed between the compressor and the reversing valve as close to the compressor as possible. The discharge mufflers (# **B1219301 and # 0162R00007S)** can be ordered through the Service Parts Dept. by contacting your customer service representative.

NOTE: Before making the determination that the discharge muffler needs to be installed, the system should be thoroughly checked for proper operation (i.e. system pressures, airflow etc.) along with verification that neither the suction nor discharge lines are touching studs or framing in the structure or are strapped to these without proper isolation hardware.

Heat Pump models listed below will be manufactured with discharge muffler **(Part # B1219301)** starting with units produced after February 23, 2007. Units produced prior to this date may require the addition of a muffler to resolve any noise issue. .

Model #	Model #
GSH130251	ASZ140361
GSH130311	ASZ160361
GSH140361	ASZ140241
ASH130241	ASZ140301
ASH130301	SSZ140361
ASH130361	SSZ140241

ASZ and SSZ Heat Pump models will have the discharge muffler # 0162R00007 added to the units in phases starting in July, 2008.

Goodman will pay $200.00 labor plus refrigerant recovery and refrigerant for each unit that requires installation of a discharge muffler. Discharge mufflers should be claimed under the warranty. A warranty claim form (RF000007) must be completed for each unit requiring the repair and must reference Project Code **8585** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using **8585** as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-020

DATE: January 15, 2007

TO: All Service and Parts Managers

SUBJECT: Redesigned Tops and Louvers on the Goodman® and Amana® Brand Split System Units

Goodman has redesigned the louvers and tops of the split systems by relocating the holes closer to the corners of the unit in order to make the units more stable during transportation and installation.

These changes are designed to improve the fit and appearance of the units. Units manufactured November 2006 (serial date code 0611) and later will have the newly designed top and louvers. Service replacement louvers and tops shipped after November 2006 will be the redesigned louvers. When replacing the louvers or top of units produced before November 2006 (serial date code 0611), it will be necessary to make the following modifications:

WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Installation Instructions for Replacing the Condenser Top:

1. Disconnect power to the condensing unit.
2. Remove screws that secure control panel access cover and then remove control panel access cover.
3. Next disconnect the condenser fan motor wires.
4. Remove the screws that secure the top to the side panels and remove top. Remove the condenser fan assembly from top panel and install on the new top panel.
5. Reinstall the top with fan assembly and rewire the condenser fan motor. (Refer to wiring schematic for proper wiring).
6. Reinstall the control panel access cover using screws removed in Step 2.
7. Using self tapping screws, drill new holes in the panels that line up with the holes in the new top.
8. Turn on power to the unit.
9. Start unit and check for proper operation.

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Installation Instructions for Replacing Condenser Panels

1. Disconnect power to the condensing unit.
2. Remove screws that secure control panel access cover and then remove control panel access cover.
3. Next disconnect the condenser fan motor wires.
4. Remove the screws that secure the top to the side panels and then remove top and set aside.
5. Remove the screws holding the panels to the base pan saving the screws.
6. Remove panels and install new panels using the screws removed in Step 3.
7. Reinstall top panel and rewire the condenser fan motor. (Refer to wiring schematic for proper wiring).
8. Reinstall the control panel access cover using screws removed in Step 2.
9. Using self tapping screws, drill new holes in the replacement panels to line up with existing holes in the top.
10. Turn on power to the unit.
11. Start unit and check for proper operation.

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Service Bulletin

SR-019
Supersedes CAG-448, CAG-472 and S-177

DATE: January 12, 2007
TO: All Service and Parts Managers
SUBJECT: Revisions to Long Line Set Guidelines TP-106 and TP-107

Goodman® has revised the long line set guidelines for R-22 and R410A. TP-106A guidelines for R-22 long line sets replace Service Bulletins CAG-448 and S-177. TP-107A guidelines for R410A long line sets replaces Service Bulletin CAG-472. The following changes were made to the additional accessories required section for the long line sets after further testing by Engineering.

Additional Accessories:

1. **Crankcase Heater**: A long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a crankcase heater will help minimize this risk. A crankcase heater is required for any long line application (50 watt minimum).
2. **TXV Requirement:** All line set applications over 50 feet will require a TXV.
3. **Hard Start Assist**: Increased charge level in long line applications can require extra work from the compressor at start-up. A hard start assist device may be required to overcome this issue.
4. **Liquid Line Solenoid**: A long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a liquid line solenoid will help minimize this. A liquid line solenoid is recommended for any long line application on straight cooling units.
5. The requirement for an accumulator has been **removed** after Engineering determined it is no longer required in the long line set applications.

Copies of the guidelines are attached with this bulletin. The long line set guidelines can be located on the company websites at www.goodmanmfg.com and www.amana-hac.com

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TECHNICAL
PUBLICATION
TP-106

LONG LINE SET APPLICATION R22

- Only allow qualified, experienced technicians to install or service this unit.
- Units must be installed in accordance with Regulations of the National Fire Protection Association and applicable local codes. Where local regulations are at a variance with instructions, installer should adhere to local codes
- Before connecting tubing, read the outdoor unit installation manual. Pay particular attention to all safety precautions.

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with these guidelines. Pay special attention to all safety warnings posted on the equiment. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

This long line set application guideline applies to all ARI listed R22 air conditioner and heat pump split system matches of nominal capacity 18,000 to 60,000 Btuh. This guideline will cover installation requirements and additional accessories needed for split system installations where the line set exceeds 50 feet in actual length.

Additional Accessories:

1. **Crankcase Heater**- a long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a crankcase heater will help minimize this risk. A crankcase heater is recommended for any long line application (50 watt minimum).

2. **TXV Requirement:** All line set applications over 50 feet will require a TXV.

3. **Hard Start Assist**- increased charge level in long line applications can require extra work from the compressor at start-up. A hard start assist device may be required to overcome this.

4. **Liquid Line Solenoid** - a long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a liquid line solenoid will help minimize this. A liquid line solenoid is recommended for any long line application on straight cooling units.

Tube Sizing:

1. In long line applications, the "equivalent line length" is the sum of the straight length portions of the suction line plus losses (in equivalent length) from 45 and 90 degree bends. **Select the proper suction tube size based on equivalent length of the suction line (see Tables 2 & 3 below) and recalculated system capacity.**

   TABLE 1.

Equivalent length = Length $_{horizontal}$ + Length $_{vertical}$ + Losses from bends (see Table 3)

   Example using ¾" elbow:

   150 feet of straight tubing + (four short radius elbows x 1.7) + (2 long radius elbows x 1.5) = 150 + 3.4 +3 = 156.4 equivalent feet.

2. **For any residential split system installed with a long line set, 3/8" liquid line size must be used.** Limiting the liquid line size to 3/8" is critical since an increased refrigerant charge level from having a larger liquid line could possibly shorten a compressor's lifespan.

3. **Single Stage Condensing Unit:** The maximum length of tubing must not exceed 150 feet.
   - **50 feet** is the maximum recommended vertical difference between the condenser and evaporator when the evaporator is above the condenser. Equivalent length is not to exceed 150 feet.
   - The vertical difference between the condenser and evaporator when the evaporator is below the condenser can approach 150 feet, as long as the equivalent length does not exceed 150 feet.
   - The distance between the condenser and evaporator in a completely horizontal installation in which the indoor and outdoor unit do not differ more than 10 feet in vertical distance from each other can approach 150 feet, as long as the equivalent length does not exceed 150 feet.

Most refrigerant tubing kits are supplied with 3/8"-thick insulation on the vapor line. For long line installations over 50 feet, especially if the line set passes through a high ambient temperature, ½"-thick suction line insulation is recommended to reduce loss of capacity. The liquid line should be insulated if passing through an area of 120°F or greater. Do not attach the liquid line to any non-insulated portion of the suction line.

NOTE: TXV requirement. All line set applications over 50 feet **require** a TXV.

4. **Two-Stage Condensing Unit:** The maximum length of tubing must not exceed 75 feet where the indoor coil is located above the outdoor unit.

   NOTE: When the outdoor unit is located above the indoor coil, the maximum vertical rise must not exceed 25 feet. If the maximum vertical rise exceeds 25 feet, premature compressor failure will occur due to inadequate oil return.

5. **Vibration and Noise:** In long line applications, refrigerant tubing is highly prone to transmit noise and vibration to the structure it is fastened to. Use adequate vibration-isolating hardware when mounting line set to adjacent structure.

Table 2 below lists multiplier values to recalculate system-cooling capacity as a function of a system's equivalent line length (as calculated from the suction line) and the selected suction tube size. Table 3 lists the equivalent length gained from adding bends to the suction line. **Properly size the suction line to minimize capacity loss.**

TABLE 2. CAPACITY MULTIPLIERS AS A FUNCTION OF SUCTION LINE SIZE & EQUIVALENT LENGTH

Nominal capacity Btuh	Vapor line diameter (in.)	EQUIVALENT LINE LENGTH (FT)				
		50	**75**	**100**	**125**	**150**
18,000	**3/4**	.99	.97	.96	.95	.95
24,000	**3/4**	1	.99	.99	.98	.97
30,000	**3/4**	.98	.97	.96	.95	.94
36,000	**3/4**	.93	.90	.86	.83	.79
	7/8	.98	.96	.94	.92	.90
42,000	**3/4**	.93	.90	.87	.83	.80
	7/8	.97	.96	.94	.93	.92
	1-1/8	1	1	.99	.99	.98
48,000	**3/4**	.90	.86	.82	.78	N/R
	7/8	.96	.94	.93	.91	.89
	1-1/8	1	1	.99	.99	.98
60,000	**7/8**	.93	.91	.89	.86	.84
	1-1/8	.99	.98	.98	.97	.97

NOTE: For a condenser with a liquid valve tube connection less than 3/8" diameter, use 3/8" liquid line tubing for a line set greater than 25 feet.

TABLE 3. LOSSES FROM SUCTION LINE ELBOWS

(EQUIVALENT LENGTH, FT)

Type of elbow fitting	I.D. (in.)		
	3/4	7/8	1-1/8
90° short radius	1.7	2	2.3
90° long radius	1.5	1.7	1.6
45°	0.7	0.8	1

Installation Requirements

1. In a completely horizontal installation with a long line set where the evaporator is at the same altitude as (or slightly below) the condenser, the line set should be sloped towards the evaporator. This helps reduce refrigerant migration to the condenser during a system's off-cycle.
2. For a system installation where the evaporator is above the condenser, an inverted vapor line trap should be installed on the suction line just before the inlet to the evaporator (see Fig 1). The top of the inverted loop must be slightly above the top of the evaporator coil and can be created simply by brazing two 90° long radius elbows together, if a bending tool is unavailable. Properly support and secure the inverted loop to the nearest point on the indoor unit or adjacent structure.

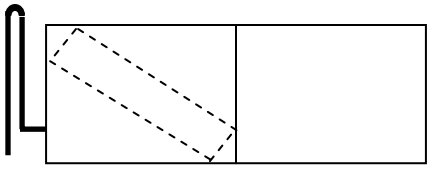


Fig 1. Evaporator unit with inverted vapor loop

3. **An oil trap is required at the evaporator only if the condenser is above the evaporator.** Preformed oil traps are available at most HVAC supply houses, or oil traps may be created by brazing tubing elbows together (see diagram below). Remember to add the equivalent

length from oil traps to the equivalent length calculation of the suction line. For example, if you construct an oil trap using two 45° elbows, one short and one long 90° elbow in a ¾" diameter suction line, the additional equivalent length would be 0.7+ 0.7+1.7+1.5, which equals 4.6 feet (refer to Table 3).

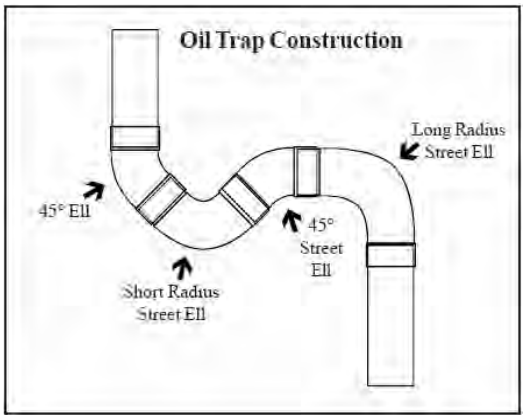


Fig 2. Oil Trap

4. **Low voltage wiring.** Verify low voltage wiring size is adequate for the length used since it will be increased in a long line application.

Initial System Charging

R22 condensers are factory charged for 15 feet of line set. To calculate the amount of extra refrigerant (in ounces) needed for a line set over 15 feet, multiply the additional length of line set by 0.6 ounces. Note for the formula below, the linear feet of line set is the actual length of liquid line (or suction line, since both should be equal) used, not the equivalent length calculated for the suction line.

Use subcooling as the primary method for final system charging of long line set system application. A minimum of 10º subcooling is required to ensure a good seal is present at the indoor TXV.

Extra refrigerant needed = (Linear feet of line set – 15 ft) x **X** oz/ft.
Where **X = 0.6** for 3/8" liquid tubing, **0.4** for 5/16", or **0.2** for ¼"

Remember, 3/8" liquid tubing is required for all long line set applications.

Heat pumps should be checked in both heating and cooling mode for proper charge level. This guideline is meant to provide installation instructions based on most common long line set applications. Installation variables may affect system operation.

NO ADDITIONAL COMPRESSOR OIL IS NEEDED FOR LONG LINE SET APPLICATIONS ON RESIDENTIAL SPLIT SYSTEMS.

Goodman Manufacturing Company, L.P.
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(888) 593-9988
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TECHNICAL
PUBLICATION
TP-107

LONG LINE SET APPLICATION R-410A

- Only allow qualified, experienced technicians to install or service this unit.
- Units must be installed in accordance with Regulations of the National Fire Protection Association and applicable local codes. Where local regulations are at a variance with instructions, installer should adhere to local codes
- Before connecting tubing, read the outdoor unit installation manual. Pay particular attention to all safety precautions.

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.
Prior to actual installation, thoroughly familiarize yourself with these guidelines. Pay special attention to all safety warnings posted on the equiment. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.
Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.
Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.
The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

This long line set application guideline applies to all ARI listed R-410A air conditioner and heat pump split system matches of nominal capacity 18,000 to 60,000 Btuh. This guideline will cover installation requirements and additional accessories needed for split system installations where the line set exceeds 50 feet in actual length.

Additional Accessories:

1. **Crankcase Heater**- a long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a crankcase heater will help minimize this risk. A crankcase heater is required for any long line application (50 watt minimum).

2. **TXV Requirement:** All line set applications over 50 feet will require a TXV.

3. **Hard Start Assist**- increased charge level in long line applications can require extra work from the compressor at start-up. A hard start assist device may be required to overcome this.

4. **Liquid Line Solenoid** - a long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a liquid line solenoid will help minimize this. A liquid line solenoid is recommended for any long line application on straight cooling units.

Tube Sizing:

1. In long line applications, the "equivalent line length" is the sum of the straight length portions of the suction line plus losses (in equivalent length) from 45 and 90 degree bends. **Select the proper suction tube size based on equivalent length of the suction line (see Tables 2 & 3) and recalculated system capacity.**

TABLE 1.

Equivalent length = Length $_{horizontal}$ + Length $_{vertical}$ + Losses from bends (see Table 3)

Example using ¾" elbow:

150 feet of straight tubing + (four short radius elbows x 1.7) + (2 long radius elbows x 1.5) = 150 + 3.4 +3 = 156.4 equivalent feet.

2. **For any residential split system installed with a long line set, 3/8" liquid line size must be used.** Limiting the liquid line size to 3/8" is critical since an increased refrigerant charge level from having a larger liquid line could possibly shorten a compressor's lifespan.

3. **Single Stage Condensing Unit:** The maximum length of tubing must not exceed 150 feet.

   - **50 feet** is the maximum recommended vertical difference between the condenser and evaporator when the evaporator is above the condenser. Equivalent length is not to exceed 150 feet.
   - The vertical difference between the condenser and evaporator when the evaporator is below the condenser can approach 150 feet, as long as the equivalent length does not exceed 150 feet.
   - The distance between the condenser and evaporator in a completely horizontal installation in which the indoor and outdoor unit do not differ more than 10 feet in vertical distance from each other can approach 150 feet, as long as the equivalent length does **not exceed 150 feet.**

4. **Two-Stage Condensing Unit:** The maximum length of tubing must not exceed 75 feet where indoor coil is located above the outdoor unit.

   NOTE: When the outdoor unit is located above the indoor coil, the maximum vertical rise must not exceed 25 feet. If the maximum vertical rise exceeds 25 feet, premature compressor failure will occur due to inadequate oil return.

Most refrigerant tubing kits are supplied with 3/8"-thick insulation on the vapor line. For long line installations over 50 feet, especially if the line set passes through a high ambient temperature, ½"-thick suction line insulation is recommended to reduce loss of capacity. The liquid line should be insulated if passing through an area of 120°F or greater. Do not attach the liquid line to any non-insulated portion of the suction line.

5. **Vibration and Noise:** In long line applications, refrigerant tubing is highly prone to transmit noise and vibration to the structure it is fastened to. Use adequate vibration-isolating hardware when mounting line set to adjacent structure.

Table 2 below lists multiplier values to recalculate system-cooling capacity as a function of a system's equivalent line length (as calculated from the suction line) and the selected suction tube size. Table 3 lists the equivalent length gained from adding bends to the suction line. **Properly size the suction line to minimize capacity loss.**

TABLE 2. CAPACITY MULTIPLIERS AS A FUNCTION OF SUCTION LINE SIZE & EQUIVALENT LENGTH

Nominal capacity Btuh	Vapor line diameter (in.)	EQUIVALENT LINE LENGTH (FT)				
		50	**75**	**100**	**125**	**150**
18,000	**3/4**	.99	.97	.96	.95	.95
24,000	**3/4**	1	.99	.99	.98	.97
30,000	**3/4**	.98	.97	.96	.95	.94
36,000	**3/4**	.93	.90	.86	.83	.79
	7/8	.98	.96	.94	.92	.90
42,000	**3/4**	.93	.90	.87	.83	.80
	7/8	.97	.96	.94	.93	.92
	1-1/8	1	1	.99	.99	.98
48,000	**3/4**	.90	.86	.82	.78	N/R
	7/8	.96	.94	.93	.91	.89
	1-1/8	1	1	.99	.99	.98
60,000	**7/8**	.93	.91	.89	.86	.84
	1-1/8	.99	.98	.98	.97	.97

NOTE: For a condenser with a liquid valve tube connection less than 3/8" diameter, use 3/8" liquid line tubing for a line set greater than 25 feet.

TABLE 3. LOSSES FROM SUCTION LINE ELBOWS (EQUIVALENT LENGTH, FT)

Type of elbow fitting	I.D. (in.)		
	3/4	7/8	1-1/8
90° short radius	1.7	2	2.3
90° long radius	1.5	1.7	1.6
45°	0.7	0.8	1

Installation Requirements

1. In a completely horizontal installation with a long line set where the evaporator is at the same altitude as (or slightly below) the condenser, the line set should be sloped towards the evaporator. This helps reduce refrigerant migration to the condenser during a system's off-cycle.

2. For a system installation where the evaporator is above the condenser, an inverted vapor line trap should be installed on the suction line just before the inlet to the evaporator (see Fig 1). The top of the inverted loop must be slightly above the top of the evaporator coil and can be created simply by brazing two 90° long radius elbows together, if a bending tool is unavailable. Properly support and secure the inverted loop to the nearest point on the indoor unit or adjacent structure.

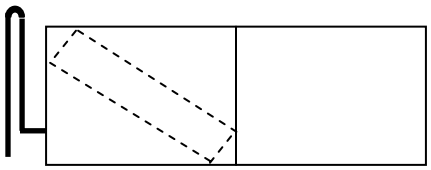


Fig 1. Evaporator unit with inverted vapor loop

3. **An oil trap is required at the evaporator <u>only</u> if the condenser is above the evaporator.** Preformed oil traps are available at most HVAC supply houses, or oil traps may be created by brazing tubing elbows together (see diagram below). Remember to add the equivalent length from oil traps to the equivalent length calculation of the suction line. For example, if you construct an oil trap using two 45° elbows, one short and one long 90° elbow in a ¾" diameter suction line, the additional equivalent length would be 0.7+ 0.7+1.7+1.5, which equals 4.6 feet (refer to Table 3).

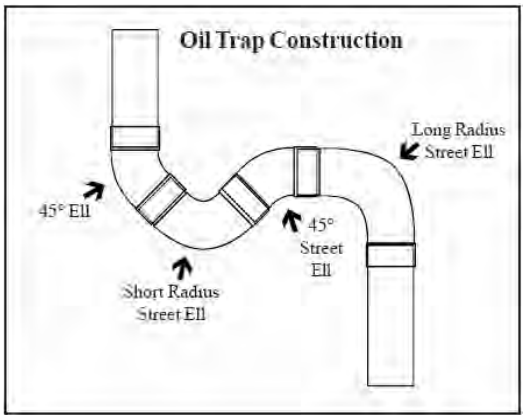


Fig 2. Oil Trap

4. **Low voltage wiring**. Verify low voltage wiring size is adequate for the length used since it will be increased in a long line application.

Initial System Charging

R-410A condensers are factory charged for 15 feet of line set. To calculate the amount of extra refrigerant (in ounces) needed for a line set over 15 feet, multiply the additional length of line set by 0.6 ounces. Note for the formula below, the linear feet of line set is the actual length of liquid line (or suction line, since both should be equal) used, not the equivalent length calculated for the suction line.

Use subcooling as the primary method for final system charging of long line set system application. A minimum of 10º subcooling is required to ensure a good seal is present at the indoor TXV.

Extra refrigerant needed = (Linear feet of line set – 15 ft) x **X** oz/ft.
Where **X = 0.6** for 3/8" liquid tubing

Remember, 3/8" liquid tubing is required for all long line set applications.

Heat pumps should be checked in both heating and cooling mode for proper charge level. This guideline is meant to provide installation instructions based on most common long line set applications. Installation variables may affect system operation.

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Service Bulletin

SR-018

DATE: September 22, 2006

TO: All Service and Parts Managers

SUBJECT: VCC30C2C Condenser Fan Motor Issue

We have received some field reports of nuisance tripping of the internal overload on condenser fan motors (Part # B13400251) used on Amana® brand VCC30C2C condensing units. Engineering has determined that in some conditions the condenser fan blade (Part # 10625731) used on these models can cause the motor to run at higher than normal current draw, resulting in nuisance tripping of the condenser fan motor internal overload.

If you encounter this issue on any VCC30C2C model, the condenser fan blade (Part # 10625731) can be replaced with service condenser fan blade (**Part # B1086750S**) to eliminate this condition.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Installations Instructions for Replacing Condenser Fan Blade.

1. Disconnect power to the condensing unit and remove screws that secure the fan grille to the top of the unit.
2. Remove the condenser fan assembly from unit and lay on the top of unit. Note: There should be enough excess wire to do this but if not it may be necessary to remove the control panel cover and disconnect the condenser fan wires.
3. Next loosen the set screw and remove the existing blade and replace with new service fan blade (Part # B1086750S) and then retighten the set screw making sure the blade is in the original position on the flat of the shaft.
4. Reinstall the fan assembly back in the unit and rewire the condenser fan if wires were removed in Step 2 (Refer to wiring schematic for proper wiring). If wires were removed and reconnected, then reinstall the control panel cover.
5. Turn on power on the unit.
6. Set thermostat to call for cooling and check for proper unit operation.

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Service Bulletin

SR-017

DATE: September 22, 2006

TO: All Service and Parts Managers

SUBJECT: TX5N4 Expansion Valve Kit Label Issue

We have received some field reports that the TX5N4 R-410A Expansion Valve Kits contain expansion valves with labels incorrectly identifying the valve as an R-22 valve **(Figure 1) instead of an R-410A valve.** The part number listed on the label and valve body is correct, and only the refrigerant type noted on the label is incorrect. Please note that these valves are correct for use with R-410A refrigerant and this is not an operational issue but only a label marking issue.



Figure 1



Figure 2

TX5N4 Expansion Valve Kits manufactured from October 20, 2005 thru June 9, 2006 will have the incorrect label, kits manufactured after June 20, 2006 have correctly marked labels identifying the valves as R-410A. **Figure 2** above shows the correctly marked R-410A label.

If you have any incorrectly marked TX5N4 Expansion Valves, new labels can be ordered by contacting Technical Services and we will have them shipped direct to you from our supplier.

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Service Bulletin

SR-016 Rev 1
Supersedes SR-016

DATE: September 18, 2006

TO: All Service and Parts Managers

SUBJECT: GSC14042 / 048 / 0601AA Discharge Tubes Cracking

We have received some reports from the field of the discharge tube cracking after initial startup on GSC140421AA, GSC140481AA and the GSC140601AA model condensing units. Provided below are new discharge tube part numbers for three specific models that can be ordered from Service Parts Department to replace any discharge tube that may have cracked on installed GSC140421AA, GSC140481AA and the GSC140601AA model condensing units:

Model	Part Number
• GSC140421AA	0110R00389
• GSC140481AA	0110R00390
• GSC140601AA	0110R00391

In situations where vibration is reported in connection with the above models, we have developed a vibration dampening kit (**Part # 0270K00019**) to prevent the discharge tubes from cracking. The vibration dampening kit was developed for units that have been installed or existing units in inventory to prevent having to replace the discharge line. The **0270K00019** kit is for use on GSC140**42-60**1AA model units. The vibration dampening kit (**Part # 0270K00019**) can be ordered through Service Parts by contacting your customer service representative.

GSC140421AA and GSC140481AA model units manufactured after August 10, 2006 (serial prefix 0608) and GSC140601AA model units manufactured after August 21, 2006 (serial prefix 0609) will be produced with the new discharge tube and will not require a vibration dampening kit.

For each GSC140421AA and GSC140481AA model unit manufactured prior to August 10, 2006 (serial prefix 0608) and GSC140601AA model unit manufactured prior to August 21, 2006 (serial prefix 0609) in inventory, Goodman will pay $25.00 for each kit (**Part # 0270K00019**) installed.

Goodman will pay $200.00 labor plus refrigerant recovery and refrigerant for each unit repaired with the revised discharge tube. Discharge tubes should be claimed under the warranty. A warranty claim form (RF000007) must be completed for each unit requiring the repair and must reference Project Code **8575** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type “Epidemic” using **8575** as the “authorization” number. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SR-015 Rev. 1
SUPERCEDES SR-015

DATE: January 31, 2008

TO: All Service and Parts Managers

SUBJECT: GSC130361AA/BA and GSH130361A* Nuisance Tripping of Overcurrent Protection Device

We have received field reports of GSC130361AA and GSC130361BA model condensing units and the GSH130361A* model heat pump unit experiencing nuisance tripping of the 20 Amp overcurrent protection devices. In many cases we have found that the required HACR type breaker had not been used and once the HACR type breaker was installed the nuisance tripping was corrected.

After reevaluating the electrical characteristics on these units it was determined that the maximum overcurrent device could be increased from a 20 Amp to a 25 Amp HACR type breaker or time delay fuse of the same size. Therefore Goodman is updating the specifications of these units to approve the use of 25 amp overcurrent protection devices.

Literature and rating plates are being revised to show the 25 Amp maximum overcurrent protection device for the GSC130361AA and GSC130361BA condensing units and the GSH130361A* heat pump unit only. **Note:** Any units installed that are experiencing nuisance tripping of this breaker or fuse should first have the following items checked prior to making the change from 20 Amp to 25 Amp maximum overcurrent protection device.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



1. Breaker must be a **HVACR type breaker or time delay fuse of the same size.**
2. Units matched with TXV equipped indoor coils must have the appropriate hard start kit installed. **Refer to Service Bulletin SR-004, Rev.1 for approved hard start kits.**
3. Unit must have the proper charge verified by superheat or subcooling method as described in the installation instructions.

After checking the above items and the unit continues to experience nuisance tripping of the overcurrent protection device, the 20 Amp breaker or fuse should be replaced with a 25 Amp HACR type breaker or time delay fuse of the same size.

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Service Bulletin

SR-014

DATE: June 20, 2006

TO: All Service and Parts Managers

SUBJECT: ARUF042-1B, ARPT042-1B and AR*F30301BA Air Handler Blower Noise

We have received some reports concerning a high pitched blower noise on some ARUF042-1B, ARPT042-1B and AR*F30301BA air handlers. After investigating the issue, it has been determined that the blower wheel/motor combination used in the air handler models listed above, may create a harmonic noise in certain applications.

If this issue is experienced with any ARUF042-1B, ARPT042-1B or AR*F30301BA air handler already installed in the field, we are recommending replacement of the blower motor and wheel with the following Blower Motor/Wheel Kit, **Part # 0270K00013.**

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Installations Instructions for Blower Motor/Wheel Kit, Part # 0270K00013

1. Disconnect power to the air handler and remove screws from the front panels on the air handler and remove panels and set aside.
2. Unhook motor electrical leads from fan board and capacitor then remove screws securing the blower assembly to the air handler and slide blower assembly from unit and set on flat surface
3. Remove the three bolts holding the motor mount to the blower housing and then loosen the set screw securing the blower wheel to the motor shaft. Next remove the motor and then the wheel from the housing.
4. Replace these parts with the new motor and blower wheel supplied in kit, Part # 0270K00013. Refer the following figure (**Figure 1**) to properly align the blower wheel in the blower housing.

Figure 1 shows the blower wheel centered in the blower housing. To properly center the blower wheel in the blower housing, the following adjustments are required.

1. Loosen the set screw and center the wheel in the blower housing maintaining its center line at a tolerance of ± .125".
2. Tighten the set screw on the motor shaft taking care that the set screw is tightened on the flat of the motor shaft to 150-160 in-lbs of torque.
3. Replace blower assembly in the air handler and replace the mounting screws securing the blower assembly to the air handler. Next reconnect the motor electrical leads to fan board and capacitor
    a. **Note:** Refer to wiring schematic on unit to properly reconnect these wires.

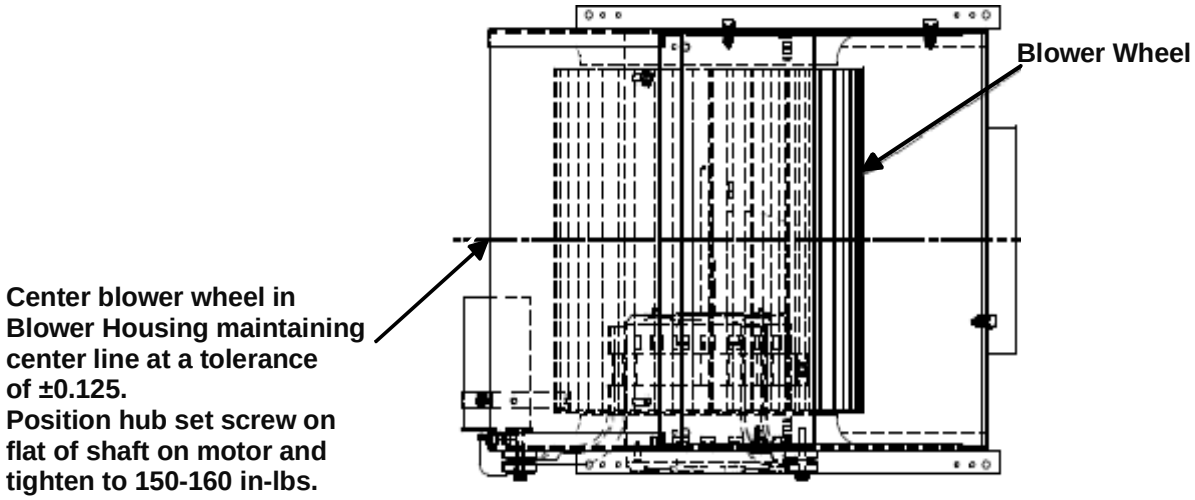


Figure 1

4. Install blower door and reconnect electrical power supply.
5. Check blower operation to verify blower noise has been eliminated.

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Service Bulletin

SR-013

DATE: June 15, 2006

TO: All Service and Parts Managers

SUBJECT: Blower Noise on ARUF049-1B, ARPT049-1B, ADPF30421BA and AR*F36421BA Air Handlers.

We have received some reports of excessive blower noise on ARUF049-1B, ARPT049-1B, ADPF30421BA and AR*F36421BA model air handlers. Our investigation of the problem has determined the issue to be due to the improper positioning of the motor mount belly band on the motor along with an incorrectly centered blower wheel that will cause a resonance frequency issue between the motor/wheel combination and mounting system.

Air handlers experiencing this issue in the field should be inspected for improper motor mount belly band position along with checking to make sure the blower wheel is centered in the blower housing and if either is found to be incorrect, they should be adjusted to proper position as indicated in the following information.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



Figure 1 shows the measurement to properly position the motor mounting belly band on the motor. The belly band should be 2.375” from the lead end of the motor. If the belly band is not at the proper measurement, the following adjustment should be made to the motor mount belly band.

1. Disconnect power to the air handler and remove screws from the front panels on the air handler and remove panels and set aside.
2. Unhook motor electrical leads from fan board and then remove screws securing the blower assembly to the air handler slide blower assembly from unit and set on flat surface.
3. Remove the three bolts holding the motor mount to the blower housing and then loosen the set screw securing the blower wheel to the motor shaft. Next remove the motor and mount from the housing.
4. Loosen the bolt and nut securing the motor mount belly band to the motor and slide the belly band to the proper position as indicated in Figure 1. Tighten the bolt and reinstall the motor in the blower housing assembly.

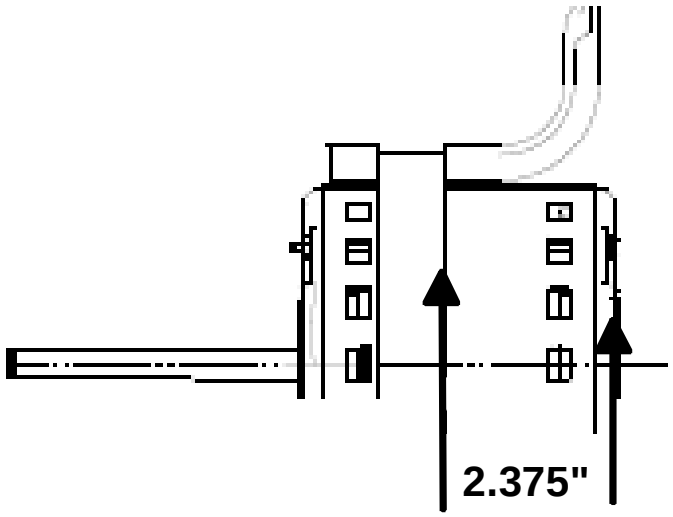


Figure 1

Figure 2 shows the blower wheel centered in the blower housing .If the blower wheel is not centered in the blower housing the following adjustments are required.

1. Loosen the set screw and center the wheel in the blower housing.
2. Tighten the set screw on the motor shaft taking care that the set screw is tightened on the flat of the motor shaft.
3. Replace blower assembly in the air handler and replace the mounting screws securing the blower assembly to the air handler. Next reconnect the motor electrical leads to fan board. **Note:** Refer to wiring schematic on unit to properly reconnect these wires.
4. Replace air handler panels and turn power on and check operation of the blower.

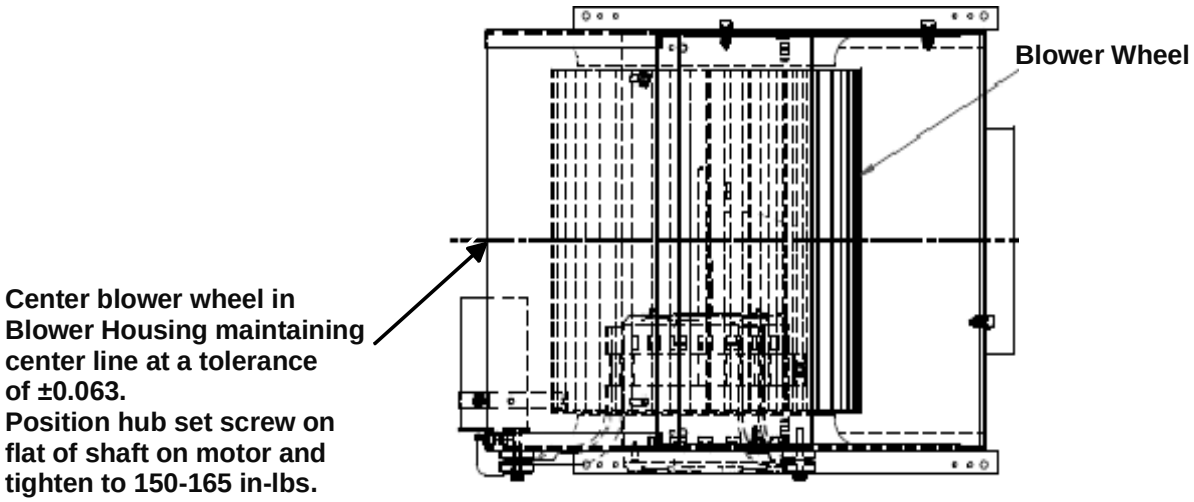


Figure 2

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Service Bulletin

SR-012

DATE: May 26, 2006

TO: All Service and Parts Managers

SUBJECT: Release of Revised IO-258B for Amana® Brand Split System Air Conditioners Equipped with Comfort Alert Module

We have received questions regarding the low voltage wiring on the new Amana® brand split system air conditioners that are using the Comfort Alert Diagnostic Module. With the initial release of these units, the installation and operating manual **IO-258A** being shipped with the units did not provide the additional low voltage "R" wire needed for use with Comfort Alert.

This has since been corrected with revised installation and operating manual **IO-258B** showing three low voltage wires on the single stage condensing unit and four wires on the two stage condensing units.

NOTE: The wiring schematic provided on the control panel of the units does show the correct information and requires no corrections.

The wiring diagrams below show the correct wiring for the single stage and two stage condensing units with the Comfort Alert Module.

Figure 1 shows the single stage unit with three low voltage wires that are required for the Amana® condensing units. The Comfort Alert Module requires a constant 24 volt power source to the module to allow the Comfort Alert to monitor and store any fault codes related to the operation of the unit.

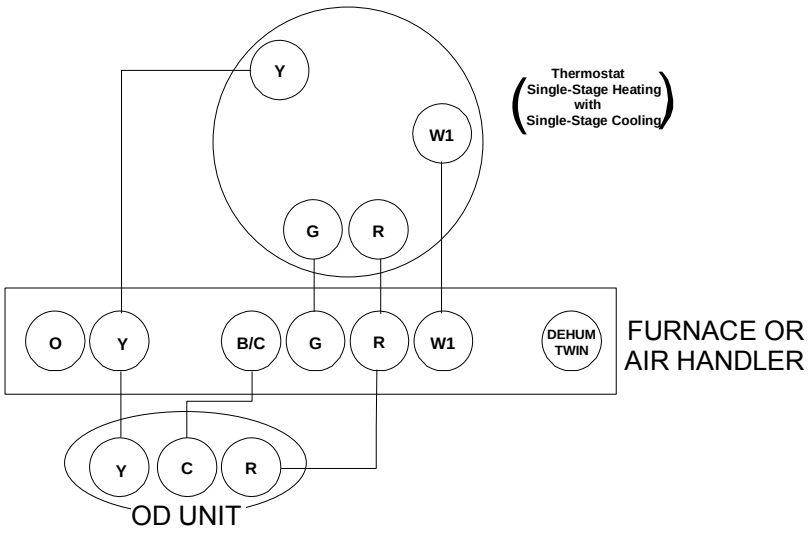


Figure 1

Figure 2 shows the two stage unit with four low voltage wires that are required for the Amana® condensing units. The Comfort Alert Module requires a constant 24 volt power source to the module to allow the Comfort Alert to monitor and store any fault codes related to the operation of the unit.

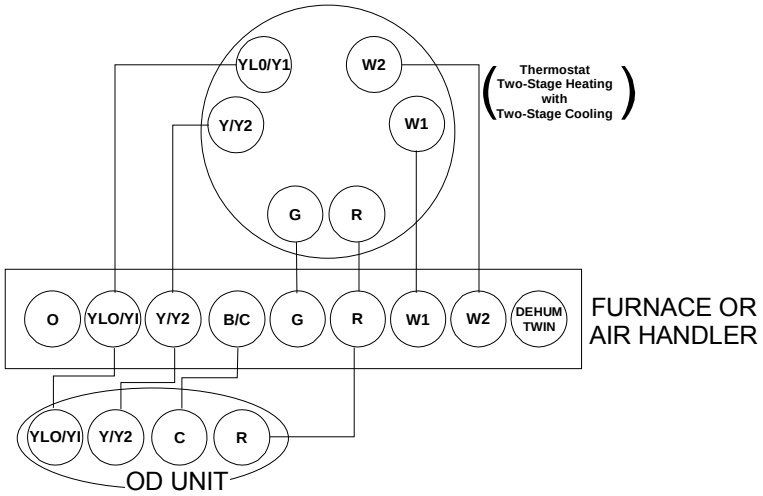


Figure 2

Units produced after date code **0606** will have the revised **IO-258B** installation and operating instructions shipped with the unit that provides the correct wiring schematics showing the additional "R" wire to the Comfort Alert Module on both single and two stage units.

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Service Bulletin

SR-011

DATE: May 26, 2006

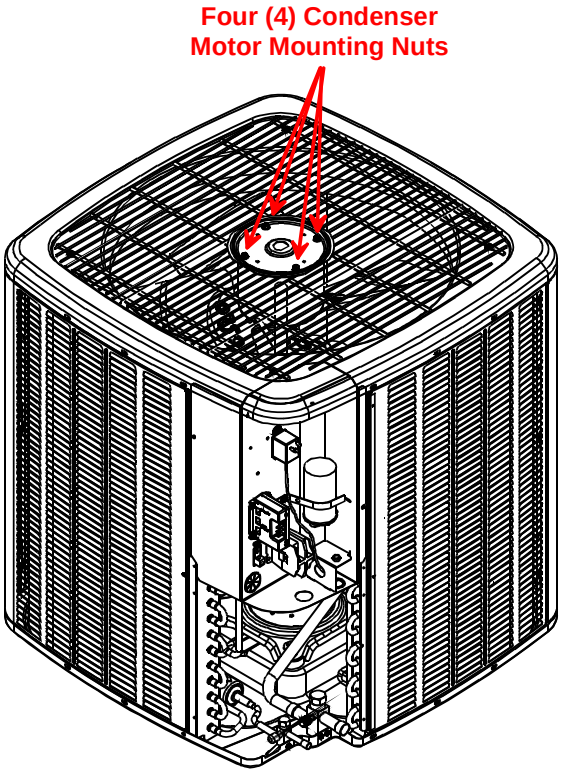
TO: All Service and Parts Managers

SUBJECT: Loose Condenser Fan Motor Mounting Nuts on Amana® Brand Condensers

We have discovered that some condenser fan motor mounting nuts on certain Amana® brand models were not tightened to proper torque setting. Affected models are ASC13, ASH13, ASX14 and ASZ14 Amana® brand Split System units with the “Barbeque Style” Condenser Fan Grille. This could result in the fan motor coming loose.

All units with a date code prior to **0605** should be checked at the time of installation and the motor mounting nuts tightened to 20-27 in/lbs. The motor mounting nuts can be accessed by lifting off the logo plate to expose the mounting nuts as shown below.

Units manufactured after serial date code **0605** should not have this issue.



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Service Bulletin

SR-010

DATE: April 28, 2006

TO: All Service and Parts Managers

SUBJECT: **Cleaning "White-Dust" From Amana®-Brand Condenser Coils**

Due to various environmental contaminants such as grease, oil, dirt, salt water, UV light, etc., some Amana®-brand condensing units with pre-painted aluminum fin material have been observed to acquire a white appearance, sometimes described as a "white-dust" appearance.

This condition may arise with Amana®-brand condensing units with pre-painted aluminum material built from March 2001 to date (Serial date codes 0103 and later). Amana®-brand products built with unpainted aluminum coils are not affected (VCB***, PCA**C, PGB**C, and PHB**C models).

This "White-Dust" coil appearance is simply a cosmetic issue. Should you experience this condition on Amana®-brand condensing units built March 2001 to date (serial date code 0103 and later), we recommend the use of the following two coil treatment solutions to treat the coils to prevent the damaging effects of environmental contaminants. These two solutions are Marine Pre-Treat™ and Corrosion Guard™.

When applying these two solutions to existing Amana®-brand condensing units installed in the field that are experiencing the "white-dust" coil appearance, Marine Pretreat™ **(Part # PIF 1058)** must be applied first to remove any environmental contaminants from the coil. Next apply Corrosion Guard™ **(Part # PIF 2120)** to the coil to provide a protective coating to prolong the life of the coil and metal surfaces of the unit. Also, if replacement of a condensing coil is deemed necessary, we recommend the use of Corrosion Guard™ solution to be applied to the replacement condenser coil before installing the coil to help prevent the "white-dust" coil appearance that may occur in corrosive environments.

NOTE: Please follow the application guidelines for applying either of the two solutions to the condensing coils.

The solutions **Marine Pre-Treat™ Part # PIF 1058 and Corrosion Guard™ Part # PIF 2120** can be ordered directly from Kor-Chem (Telephone (404) 344-9580 or Fax (404) 349-2240). Billing Procedures are as follows: standard orders can be charged to an American Express, Visa or MasterCard and for large ongoing orders credit can be established with this supplier by contacting them for a credit application. These two solutions will be shipped directly from Kor-Chem and can be ordered in the following container size as indicated below:

DESCRIPTION	Container Size	Case Pack	Pack Wt. (lbs)
MARINE PRETREAT PRODUCT INFORMATION Part # PIF 1058	55 Gallon Drum	1	565
	5 Gallon Pail	1	54
	1 Gallon Case	4	43
CORROSION GUARD PRODUCT INFORMATION Part # PIF 2120	55 Gallon Drum	1	478
	5 Gallon Pail	1	46
	1 Gallon Case	4	36

CAUTION

MANUFACTURERS' INSTRUCTIONS FOR THESE PRODUCTS MUST BE STRICTLY FOLLOWED.

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INDUSTRIAL / HVAC/R PRODUCT

MARINE PRETREAT™

Formula 1058

DESCRIPTION

Marine PreTreat™ is a metal conditioner and surface treatment formulated using advanced chemistry for superior results. Marine PreTreat™ easily and effectively removes salt, dirt, grime, algae, scale, grease, oil and other contaminants and deposits. Marine PreTreat™ rejuvenates rusted metal by stopping the corroding action and preventing future rust formation by converting metal surfaces to a phosphate coating. Marine PreTreat™ thoroughly cleans and prepares metal to tightly bond to new paint or coatings. The fast acting formulation requires very little dwell time and may be applied by spray, dip, brush or roller applications with excellent coverage rates on any metal surface.

DIRECTIONS

For cleaning metal surfaces, spray on Marine PreTreat™ and let stand for 15 minutes. Rinse thoroughly with water and allow to dry before coating with Corrosion Guard™. Marine PreTreat™ can be applied by brush, spray or roller. Safety glasses and rubber gloves should be used at all times. A pump-up sprayer can be used to apply Marine PreTreat™ but care should be taken when applying Marine PreTreat™ to avoid contacting plants, shrubs and trees. Plants, shrubs and trees should be protected to avoid spray mist or product to contact them.

For aluminum, the contact time should be limited to 15 minutes followed by a thorough rinsing. For steel or iron surfaces, the contact time can be extended to 1 to 2 hours. In the case of highly rusted steel, the surface should be wire brushed to remove loose rust before the application of Marine PreTreat™.

TYPICAL PRODUCT SPECIFICATIONS

Appearance	Clear, colorless liquid
Odor	Typical
pH, neat	4.0
Specific gravity	1.18
Weight, per U.S. gallon	9.9 lbs.
Flashpoint	Non-flammable
Chemical stability	Stable
DOT Shipping	Corrosive

CAUTION

Do not mix Marine PreTreat™ with any other chemicals. Make sure that the spray applicator is well rinsed before and after use. Corrosion Guard™ is not compatible with Marine PreTreat™ in liquid form. Avoid contact with skin and clothing. Do not take internally. Consult Material Safety Data Sheet (M.S.D.S.) provided with the product for further information on safety. Marine PreTreat™ contains phosphoric acid.

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INDUSTRIAL / HVAC/R PRODUCT

CORROSION GUARD™

PROTECTIVE COIL & METAL COATING
PIF 2120

DESCRIPTION

Corrosion Guard™ is a unique waterborne coating that when applied to air conditioners and other metal surfaces will help protect the metal surface from the damaging effects of water, UV light and salt spray. Corrosion Guard™ is completely environmentally friendly and contains no solvents or VOC's. The coating quickly dries to form a durable, flexible clear coating that expands and contracts with the metal. Corrosion Guard incorporates anti-deposition technology that resists contaminant deposits. Buckets, pails and application equipment can be easily cleaned with water. When surfaces are properly cleaned and prepared, Corrosion Guard™ can help extend the surface life of an air conditioning unit.

DIRECTIONS

All surfaces and substrates to be coated must be free of all dirt, dust, grease, oil, soot, mildew, corrosion, salt deposits and other build-ups or contaminants. Surfaces must be thoroughly cleaned with Marine PreTreat™ or recommended cleaner prior to application of Corrosion Guard™. Follow all instructions on product label for cleaning and safety prior to application. Proper cleaning of surfaces allows Corrosion Guard™ to tightly bind to and seal targeted surfaces. Allow surfaces sufficient time to dry before applying coating. Corrosion Guard™ may be applied to damp but clean surfaces.

Corrosion Guard™ can be applied using a brush, roller, EZ Sprayer™ or pump-up sprayer with a fine mist. Completely coat all surfaces that are to be protected from corrosion (coil, case, grill, etc.). Start at the top of the target area to be coated and work down to bottom spraying or coating surfaces evenly. Wipe off any excess material with a brush or soft clean cloth. Do not apply Corrosion Guard™ at temperatures below 45°F. See product label for more information.

TYPICAL PRODUCT SPECIFICATIONS

Appearance	White, non-viscous liquid
Dry Appearance	Clear, slightly glossy film
Odor	Typical
pH, neat	7.1
Weight, per U.S. gallon	8.3 lbs.
Chemical Stability	Excellent
Flashpoint	Non-flammable
DOT Shipping	Non-hazardous

CAUTION

Do not mix Corrosion Guard™ with any other chemicals. Keep material from freezing and store in a tightly sealed container when not in use. See Material Safety Data Sheet (M.S.D.S.) provided with the product for more information.

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Service Bulletin

SR-009

DATE: April 18, 2006,

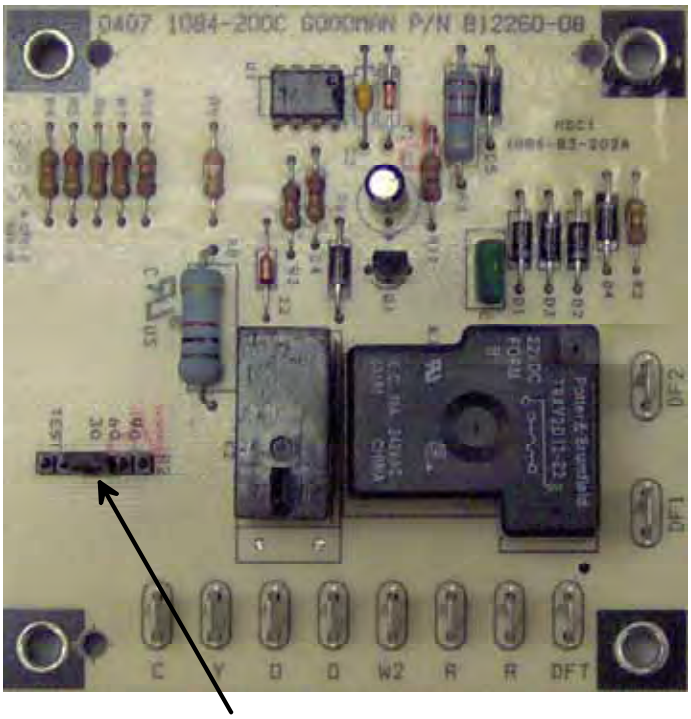
TO: All Service and Parts Managers

SUBJECT: RTG**C2A/C Heat Pumps with Defrost Issues

During this past heating season, we received some field reports of defrost issues with the RTG**C2A/C model heat pump units.

After investigation and further testing in our engineering lab, it has been determined that defrost cycle time on the defrost board needs to be set to 30 minutes. The jumper on the defrost board is shipped from the factory set to 30 minutes (**Figure 1).**This setting will allow the defrost cycle to properly clear the condenser coil of any build up ice. The defrost sensor will not allow the unit to go into the defrost cycle unless the condenser coil temperature is below the 30°F setting of the sensor.

This change in the defrost time improves the defrost board function and ensures the unit will operate at its designed efficiency.



Defrost Jumper
Setting 30 Minutes

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Service Bulletin

SR-008

DATE: April 21, 2006

TO: All Service and Parts Managers

SUBJECT: RTG36C2A/C Units Cycling on High Head Pressure in Heat Mode

During this past heating season, we received reports of some RTG36C2A/C units tripping on high head pressure when started in the heating mode. After investigation and further testing in our engineering lab, it has been determined that the 3/8" line from the compensator must be relocated from the discharge line to the liquid line between the filter drier and the TXV on the outdoor unit to allow for proper compensation of the refrigerant charge in the heating mode.

Units manufactured with serial date code of 0604 and later will not require any field modification, since they have been manufactured with compensator piped to liquid line. Also units shipped with brown dot on shipping label have been reworked and will not require any field modification.

The following field modification procedure has been released to correct any units in the field that may be experiencing this issue.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



1. Turn off all power to the unit.
2. Recover all refrigerant from the unit.
3. Cut the 3/8" line from the compensator at the discharge line **(Figure 1)**, crimp and solder the line shut at the discharge line **(Figure 2). CAUTION:** Nitrogen should be swept thru the tubing while brazing all joints during the field modification of the compensator tube.
4. Cut the liquid line and install a tee in the liquid line between the filter drier and the TXV.
   - **Note:** The filter drier should be replaced to eliminate moisture and prevent possible contamination of the system on any installed unit but is not required on new units that have not been installed.

   Route the 3/8" line from the compensator to the tee in the liquid line. This should require approximately 24" of tubing to make this connection. Next solder tube into the liquid line **(Figure 3)** and then pressurize the system with a nitrogen charge and check for leaks.
5. Evacuate the system to 250 microns or less using suction and liquid service valves. Using both valves is necessary as some compressors create a mechanical seal separating the sides of the system.
6. Charge the system by weighing the charge into the unit. The RTG36C2A/C and 15' line set requires 300 oz. of refrigerant. Add .55 oz. per foot for line sets over 15 feet.
7. Turn on power to the unit.
8. Set thermostat to call for heating mode of operation and verify proper unit operation. Also check unit in cooling mode of operation.

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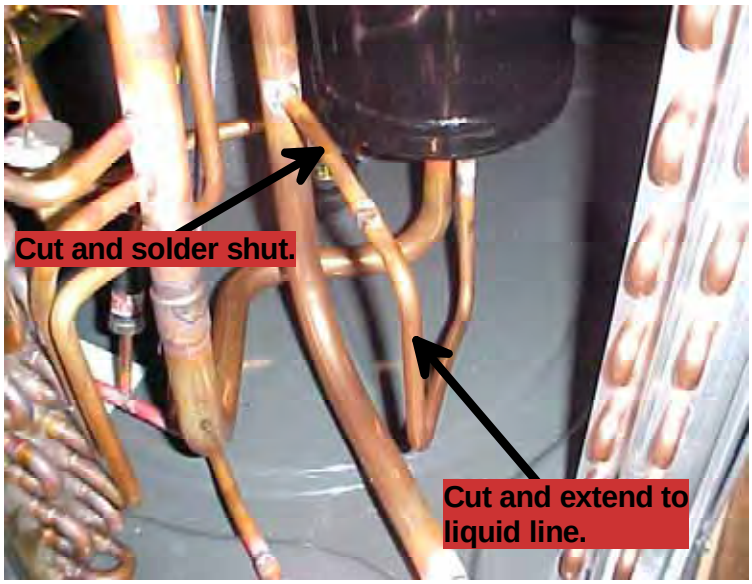


Figure 1



Figure 2

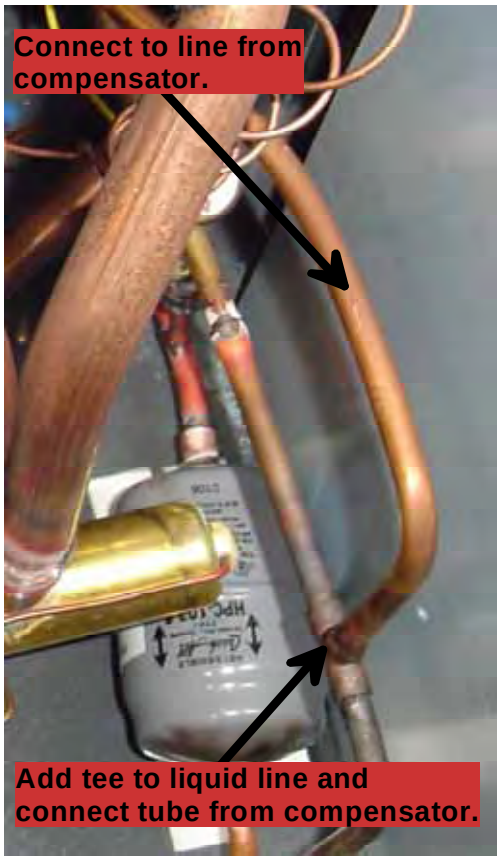


Figure 3

Goodman will provide a "Class D" labor allowance to rework installed units experiencing this issue. A warranty claim, must be completed for each unit requiring the rework and must reference Service Bulletin **SR-008** in section 6 (Project Code: **SR008**) on the warranty claim. All claims must be submitted by May 31, 2007.

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Service Bulletin

SR-007 Rev.1
SUPERSEDES SR-007

DATE: May 22, 2008
TO: All Service and Parts Managers
SUBJECT: Crankcase Heaters for Copeland Scroll Compressors

Goodman is pleased to announce the following substitutions for crankcase heaters that will become obsolete when inventory is depleted. These heaters are required for all long line set applications and some heat pump and air conditioning installations in cold climates. Heaters #0263M00002 and #0263M00012 have 21" wire leads and the remaining crankcase heaters have wire leads in 48" lengths and can be shortened to fit various applications. The following chart shows the current crankcase heaters and the replacement heaters.

Copeland Model	Current Part #	Volts	Watts	Replacement Part #	Volts	Watts	Leads
ZR16KC/4 - ZR29KC/4 ZR16KA - ZR34KA ZP16 - ZP31K5 ZPS20 - ZPS30K4	0263M00002	240	40	0263M00002	240	40	21"
ZR18K3 - ZR48K3 ZR26KC - ZR48KC	0263M00015	240	40	0263M00008	240	70	48"
	0263M00009	240	40				
	0263M00001	240	40				
ZR38KA - ZR54KA ZP34 - ZP54K5	0263M00017	480	40	0263M00006	480	70	48"
	0263M00010	480	40				
ZPS40 - ZPS60K4	0263M00018	575	40	0263M00005	575	70	48"
ZR54K3 - ZR61K3 ZR54K3 - ZR81KC	0263M00000	240	70	0263M00008	240	70	48"
	0263M00008	240	70				
	0263M00014	240	70				
	0263M00012	270	70	0263M00012	270	70	21"
	0263M00004	400	70	0263M00004	400	70	48"
	0263M00013	480	70	0263M00006	480	70	48"
	0263M00006	480	70				
	0263M00011	575	70	0263M00005	575	70	48"
	0263M00005	575	70				

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Service Bulletin

SR-006 Rev. 1
Supersedes SR-006

DATE: November 7, 2006
TO: All Service and Parts Managers
SUBJECT: Amana® Brand Service Replacement A-Coil Assemblies

Amana® brand service replacement A-Coil assemblies are now available in additional assemblies. These coils will be available through our Service Parts department to replace discontinued A-Coils. These coils will be shipped in the following manner:

1. Coils will have drain pans and will be shipped uncased.
2. Coils will not have a serial number.
3. Field supplied filter drier required, when replacing coils in sealed systems (normal sealed system repair procedures).
4. Replacement coils will use existing orifices or expansion valves.
5. New Teflon "O"-Rings and TXV Bulb Clamp.
6. If new expansion device is needed, they **must be ordered separately from Service Parts Dept.**
7. R-410A coils are no longer available as service replacement parts. Please order the current A-Coils supplied through the sales department.

The following chart identifies the service part numbers for the replacement A-Coils that will be available through our Service Parts department. The discontinued coils are listed to the right of the new service coil assemblies

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Replacement Coil Part #	Replacement Coil Height	Replacement Coil Width	Current Coil Model #	Current Coil Height	Cabinet Height
1272400	12 1/2	15	CCA18FSC	12 1/4	14 1/4
		15	CCA18FCC	12 1/4	
		15	CHA18TSC	12 1/2	
		15	CCA24FSC	12 1/2	
		15	CCA24FCC	12 1/2	
1272401	16 1/2	15	CHA24TCC	16 1/4	18 1/4
		15	CHA24TSC	16 1/2	
		15	CHA24TXC	16 1/4	
		15	CHA30TCC	16 1/2	
		15	CHA30TSC	16 1/4	
		15	CHA30TXC	16 1/4	
		15	CCA30FCC	16 1/2	
		15	CCA30FSC	16 1/4	
		15	CCF36FCC	16 1/4	
		15	CCA36FSC	16 1/4	
1272402	18 5/8	15	CHA36TCC	18 5/8	22 1/4
		15	CHA36TSC	18 5/8	
		15	CHA36TXC	18 5/8	
		15	CCA42FSC	18 5/8	
		15	CCA42FCC	18 5/8	
1272403	18 5/8	19	CCA30FDC	18 5/8	22 1/4
		19	CCA36FDC	18 5/8	
		19	CCA36FKC	18 5/8	
		19	CCA42FDC	18 5/8	
1272404	20 1/4	19	CHA42TSC	20 1/4	22 1/4
		19	CHA42TXC	20 1/4	
		19	CHA42TCC	20 1/4	
		19	CCA42FDC	20 1/4	
		19	CCA48FCC	20 1/4	
		19	CCA48FSC	20 1/4	
1272405	22	23	CHA48TCC	21 5/8	26 1/4
		23	CHA48TSC	20 1/4	
		23	CCA48FDC	20 1/4	
		23	CCA54FCC	22	
		23	CCA54FSC	21 5/8	
		23	CHA54TCC	22	
		23	CHA54TSC	22	
		23	CCA57FCC	21 5/8	
		23	CCA57FSC	20 1/4	

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Replacement Coil Part #	Replacement Coil Height	Replacement Coil Width	Current Coil Model #	Current Coil Height	Cabinet Height
1272406	24 3/8	23	CHA57TCC	24	26 1/4
		23	CHA57TSC	24	
		23	CHA60TCC	24 3/8	
		23	CHA60TSC	24 3/8	
		23	CHA60TXC	24 3/8	
		23	CCA60FCC	24 3/8	
		23	CCA60FSC	24	
1272407	16 1/2	15	CHF18TCC	16 1/2	20 1/2
		15	CHF24TCC		
		15	CHF30TCC		
		15	CHF30TCC		
		15	CCF24FCC		
		15	CCF24FDC		
		15	CCF30FCC		
		15	CCF36FCC		
1272408	20 1/2	19	CHF36TCC	20 1/2	20 1/2
		19	CHF42TCC		
		19	CCF24FDC		
		19	CCF36FDC		
		19	CCF42FCC		
		19	CCF48FCC		
1272409	24 1/2	23	CHF48TCC	24 1/2	24 1/2
		23	CHF60TCC		
		23	CCF48FDC		
		23	CCF60FCC		
		23	CCF61FCC		
22301405S			CCH24FCD		30 1/2
			CCH30FCD		
			CCH36FCD		
			CHH24TCD		
			CHH30TCD		
			CHH36TCD		
22301409S			CCH48FCD		34 1/2
			CCH60FCD		
			CHH48TCD		
			CHH60TCD		
BMA Air Handlers					
1272410	16	15	BMA24	12	-
	16	15	BMA30	16	-
1272411	18	18	BMA36	18	-
	18	18	BMA42	18	-

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SERVICE BULLETIN SR-005

DATE: **October 12, 2005**

TO: **All Service and Parts Managers**

SUBJECT: A90-00 and A120-00 Blower Motor Substitute

This letter is to inform you of a parts substitution with the service replacement blower motor used on A90-00 and A120-00 model air handlers. The original motor part # B13400400, which was a 3450-rpm motor is no longer available from our supplier and has been replaced by motor part # B13400405 which is a 1725-rpm motor.

When replacing motor part # B13400400 with the new motor part # B13400405, the fixed sheave on the blower wheel shaft along with the belt **must** be replaced. If the fixed sheave and belt are not replaced, the air handler will not perform as designed.

The A90-00 will require **fixed sheave part # B2120010** and **belt part # B2110005**. The A120-00 will require **fixed sheave part # B2120011** and **belt part # B2110006**. Refer to the chart below for correct replacement parts required for each model air handler.

The A90-00 originally used fixed sheave part # B2120002 which is a 10.5” diameter sheave and the new replacement fixed sheave part # B2120010 is a 5.75” diameter sheave. The original belt part # B2110000 was 49” long and the new replacement belt part # B2110005 is 40” long.

The A120-00 originally used fixed sheave part # B2120003 which is a 13.25” diameter sheave and the new replacement fixed sheave part # B2120011 is a 6.75” diameter sheave. The original belt part # B2110001 was 56” long and the new replacement belt part # B2110006 is 44” long.

Model	Original Motor	Original Fixed Sheave	Original Belt	Replacement Motor	Replacement Fixed Sheave	Replacement Belt
A90-00	B13400400	B2120002	B2110000	B13400405	B2120010	B2110005
A120-00	B13400400	B2120003	B2110001	B13400405	B2120011	B2110006

These service replacement parts are currently available from our service parts department and can be ordered if needed by contacting your customer order representative.

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SERVICE BULLETIN SR-004 Rev. 1

SUPERCEDES SR-004

DATE: **October 13, 2005**

TO: **All Service and Parts Managers**

SUBJECT: **Hard Start Kit Information**

As the majority of products supplied by Goodman are matched to achieve their ratings with flowrator expansion devices, those products do not come equipped with any "Start Components". Should a Goodman product be installed on an expansion valve indoor coil in which the pressures do not equalize within two (2) minutes, a supplemental start kit may be required to prevent non-starting and internal overload trips. Per Copeland® application bulletin AE4-1329, pressure differentials as low as 2 PSIG can prevent compressors from starting without start assist.

Low voltage, slow equalization of high to low side pressures, or a tight compressor are the most common causes for a starting problem. Compressors that are rated 230/208 V. have an operating range of 253 VAC to 197 VAC. However, during start-up, the voltage can drop 10-15 volts due to high start up current draw. Units can not be operated and should not be installed where the supply voltage exceeds 253 V. or the lock rotor voltage is less than 197 V. Contact the local power company and request a correction of the supply voltage if necessary.

Note: Start assist components are not a cure for low voltage applications and will not prevent compressor failure due to continuous operation on low voltage supplies.

Start problems created by a tight fitting compressor will normally be corrected after a run in period and permanent start assist is not necessary.

Field installed Hard Start kits are considered accessory items, and should be purchased as such. Therefore, attached is a start capacitor and start relay cross-reference chart as they pertain to Copeland compressors.

As a supplement to this, Goodman offers the following "Compressor Saver" start kits for use on its HVAC products:

CSR-U-1	**1 to 3 Ton**
CSR-U-2	**3 to 5 Ton**
CSR-U-3	**4 to 5 Ton Scroll**

The specifications for these kits is attached. Use of these kits will NOT void any Goodman warranties. The CS "Compressor Saver" kits may be purchased through our Goodman Service Parts department.

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Unit	Compressor	Capacitor MFD	/ Volts	Relay Pick-up Volts	Relay Drop-out Volts	Relay Coil Voltage
CKLB18-1L	CR16KFPFV230	145-174	250	190-200	40-105	375
CKLB24-1L	CR22KFPFV230	145-174	220	190-200	55-115	383
CKLB30-1L	CR28K6PFV220	145-174	220	190-200	55-115	383
CKLB36-1L	CR34K6PFV220	189-227	330	190-200	40-105	375
CKL18-1L	CR16KFPFV230	145-174	250	190-200	40-105	375
CKL24-1L	CR22KFPFV230	145-174	220	190-200	55-115	383
CKL30-1L	CR28K6PFV220	145-174	220	190-200	55-115	383
CKL36-1L	CR34K6PFV220	189-227	330	190-200	40-105	375
CKL42-1L	CR38K6PFV220	189-227	330	190-200	55-115	383
CKL49-1L	CR42K6PFV223	189-227	330	240-260	60-121	420
CKL60-1L	ZR57KCPFV250	270-324	330	170-180	40-90	332
CKL62-1L	ZR61KCPFV250	270-324	330	170-180	40-90	332
CLJ18-1C	CR16K6PFV220	145-174	250	190-200	40-105	375
CLJ24-1C	CR18K6PFV220	145-174	250	190-200	40-105	375
CLJ30-1C	CR24K7PFV230	189-227	330	190-200	40-105	375
CLJ36-1C	CR30K6PFV223	145-174	250	190-200	40-105	375
CLJ42-1C	CR34K6PFV220	189-227	330	190-200	40-105	375
CLJ48-1C	ZR42K3PFV230	88-108	330	170-780	40-90	332
CLJ60-1C	ZR54K3PFV230	270-324	330	170-180	40-90	332
CLT24-1B	ZR18K4PFV230	88-108	330	170-180	40-90	332
CLT30-1B	ZR24K4PFV230	88-108	330	170-180	40-90	332
CLT36-1B	ZR32K3PFV230	88-108	330	170-180	40-90	332
CLT42-1B	ZR36K3PFV230	88-108	330	170-180	40-90	332
CLT48-1B	ZR40K3PFV230	88-108	330	170-180	40-90	332
CLT60-1B	ZR48K3PFV235	88-108	330	170-180	40-90	332
CLQ24-1B	ZR18K4PFV230	88-108	330	170-180	40-90	332
CLQ30-1B	ZR24K4PFV230	88-108	330	170-180	40-90	332
CLQ36-1B	ZR28K3PFV230	88-108	330	170-180	40-90	332
CLQ42-1B	ZR34K3PFV230	88-108	330	170-180	40-90	332
CLQ48-1B	ZR40K3PFV230	88-108	330	170-180	40-90	332
CLQ60-1B	ZR48K3PFV235	88-108	330	170-180	40-90	332
CPLE18-1C	CR18K6PFV260	145-174	250	190-200	40-105	375
CPLE24-1C	CR22KFPFV270	145-174	220	190-200	55-115	383
CPLE30-1C	CR28K6PFV260	145-174	220	190-200	55-115	383
CPLE36-1C	CR35K6PFV260	189-227	330	190-200	40-105	375
CPLE42-1C	CR38K6PFV260	189-227	330	190-200	55-115	383
CPLE48-1C	CR42K6PFV260	189-227	330	240-260	60-121	420
CPLE60-1C	ZR57KCPFV250	270-324	330	170-180	40-90	332
CPLJ18-1B	CR16K6PFV260	145-174	250	190-200	40-105	375
CPLJ24-1B	CR20K6PFV260	145-174	220	190-200	55-115	383
CPLJ30-1B	ZR28K3PFV230	88-108	330	170-180	40-90	332
CPLJ36-1B	ZR32K3PFV230	88-108	330	170-180	40-90	332
CPLJ42-1B	ZR36K3PFV230	88-108	330	170-180	40-90	332
CPLJ48-1B	ZR42K3PFV230	88-108	330	170-180	40-90	332
CPLJ60-1B	ZR54K3PFV230	270-324	330	170-180	40-90	332
CPLT24-1B	ZR22K4PFV230	88-108	330	170-180	40-90	332
CPLT30-1B	ZR28K3PFV230	88-108	330	170-180	40-90	332
CPLT36-1B	ZR32K3PFV230	88-108	330	170-180	40-90	332
CPLT42-1B	ZR36K3PFV230	88-108	330	170-180	40-90	332
CPLT48-1B	ZR42K3PFV230	88-108	330	170-180	40-90	332
CPLT60-1B	ZR48K3PFV235	88-108	330	170-180	40-90	332

Unit	Compressor	Capacitor MFD	Capacitor Volts	Relay Pick-up Volts	Relay Drop-out Volts	Relay Coil Voltage
VCA18C2C	CR16KFPFV230	145-174	250	190-200	40-105	375
VCA24C2C	CR22KFPFV230	145-174	220	190-200	55-115	383
VCA30C2C	CR28K6PFV220	145-174	220	190-200	55-115	383
VCA36C2C	CR34K6PFV220	189-227	330	190-200	40-105	375
VCA42C2C	CR38K6PFV220	189-227	330	190-200	55-115	383
VCA48C2C	CR42K6PFV223	189-227	330	240-260	60-121	420
VCA60C2C	ZR57KCPFV250	270-324	330	170-180	40-90	332
VCC18C2C	CR16K7PFV230	145-174	250	190-200	40-105	375
VCC24C2C	CR20K6PFV220	145-174	220	190-200	55-115	383
VCC30C2C	CR24K6PFV220	145-174	250	190-200	40-105	375
VCC36C2C	CR30K6PFV223	145-174	250	190-200	40-105	375
VCC42C2C	ZR36K3PFV230	88-108	330	170-180	40-90	332
VCC48C2C	ZR42K3PFV230	88-108	330	170-180	40-90	332
VCC60C2C	ZR54K3PFV230	270-324	330	170-180	40-90	332
VHA18C2C	CR18K6PFV260	145-174	250	190-200	40-105	375
VHA24C2C	CR22K6PFV260	145-174	220	190-200	55-115	383
VHA30C2C	CR28K6PFV260	145-174	220	190-200	55-115	383
VHA36C2C	CR34K6PFV260	189-227	330	190-200	40-105	375
VHA42C2C	ZR40KCPFV230	88-108	330	170-180	40-90	332
VHA48C2C	CR42K6PFV260	189-227	330	240-260	60-121	420
VHA60C2C	ZR57KCPFV250	270-324	330	170-180	40-90	332
VHC18C2C	CR18K6PFV260	145-174	250	190-200	40-105	375
VHC24C2C	CR20K6PFV260	145-174	220	190-200	55-115	383
VHC30C2C	ZR28K3PFV230	88-108	330	170-180	40-90	332
VHC36C2C	ZR34K3PFV230	88-108	330	170-180	40-90	332
VHC42C2C	ZR40K3PFV230	88-108	330	170-180	40-90	332
VHC48C2C	ZR42K3PFV230	88-108	330	170-180	40-90	332
VHC60C2C	ZR54K3PFV230	270-324	330	170-180	40-90	332
RCB18C2C	CR16KFPFV230	145-174	250	190-200	40-105	375
RCB24C2C	CR22KFPFV230	145-174	220	190-200	55-115	383
RCB30C2C	CR28K6PFV220	145-174	220	190-200	55-115	383
RCB36C2C	CR34K6PFV220	189-227	330	190-200	40-105	375
RCB42C2C	CR38K6PFV220	189-227	330	190-200	55-115	383
RCB48C2C	CR42K6PFV223	189-227	330	240-260	60-121	420
RCB60C2C	ZR57KCPFV250	270-324	330	170-180	40-90	332
RCC18C2C	ZR18K4PFV230	88-108	330	170-180	40-90	332
RCC24C2C	ZR22K4PFV230	88-108	330	170-180	40-90	332
RCC30C2C	ZR24K4PFV230	88-108	330	170-180	40-90	332
RCC36C2C	ZR30K3PFV230	88-108	330	170-180	40-90	332
RCC42C2C	ZR36K3PFV230	88-108	330	170-180	40-90	332
RCC48C2C	ZR42K3PFV230	88-108	330	170-180	40-90	332
RCC60C2C	ZR54K3PFV230	270-324	330	170-180	40-90	332

Unit	Compressor	Capacitor		Relay	Relay	Relay
		MFD /	Volts	Pick-up Volts	Drop-out Volts	Coil Voltage
RCE24C2C	ZR22K4PFV230	88-108	330	170-180	40-90	332
RCE30C2C	ZR24K4PFV230	88-108	330	170-180	40-90	332
RCE36C2C	ZR30K3PFV230	88-108	330	170-180	40-90	332
RCE42C2C	ZR36K3PFV230	88-108	330	170-180	40-90	332
RCE48C2C	ZR40K3PFV230	88-108	330	170-180	40-90	332
RCE60C2C	ZR48K3PFV235	88-108	330	170-180	40-90	332
RHA18C2C	CR18K6PFV260	145-174	250	190-200	40-105	375
RHA24C2C	CR22K6PFV260	145-174	220	190-200	55-115	383
RHA30C2C	CR28K6PFV260	145-174	220	190-200	55-115	383
RHA36C2C	CR34K6PFV260	189-227	330	190-200	40-105	375
RHA42C2C	ZR40KCPFV230	88-108	330	170-180	40-90	332
RHA48C2C	CR42K6PFV260	189-227	330	240-260	60-121	420
RHA60C2C	ZR57K3PFV250	270-324	330	170-180	40-90	332
RHE18C2C	ZR18K4PFV230	88-108	330	170-180	40-90	332
RHE24C2C	ZR24K4PFV230	88-108	330	170-180	40-90	332
RHE30C2C	ZR28K3PFV230	88-108	330	170-180	40-90	332
RHE36C2C	ZR34K3PFV230	88-108	330	170-180	40-90	332
RHE42C2C	ZR40K3PFV230	88-108	330	170-180	40-90	332
RHE48C2C	ZR47K3PFV235	88-108	330	170-180	40-90	332
RHE60C2C	ZR57K3PFV250	270-324	330	170-180	40-90	332
RHF24C2C	ZR22K4PFV230	88-108	330	170-180	40-90	332
RHF30C2C	ZR26K3PFV230	88-108	330	170-180	40-90	332
RHF36C2C	ZR32K3PFV230	88-108	330	170-180	40-90	332
RHF42C2C	ZR36K3PFV230	88-108	330	170-180	40-90	332
RHF48C2C	ZR42K3PFV230	88-108	330	170-180	40-90	332
RSC24C2C	ZP20K3EPFVB30	88-106	330	170-180	40-90	332
RSC30C2C	ZP26K3EPFVB30	88-106	330	170-180	40-90	332
RSC36C2C	ZP32K3EPFV230	88-106	330	170-180	40-90	332
RSC42C2C	ZP36K3EPFV	88-106	330	170-180	40-90	332
RSC48C2C	ZP41K3EPFV230	88-106	330	170-180	40-90	332
RSC60C2C	ZP54K3EPFV	270-324	330	170-180	40-90	332
RSG36C2C	ZPS30K4EPFV	88-108	330	170-180	40-90	332
RSG48C2C	ZPS40K4EPFV	88-108	330	170-180	40-90	332
RSG60C2C	ZPS51K4EPFV	270-324	330	170-180	40-90	332
RTC24C2C	ZP23K3EPFV230	88-106	330	170-180	40-90	332
RTC30C2C	ZP26K3EPFV230	88-106	330	170-180	40-90	332
RTC36C2C	ZP32K3EPFV230	88-106	330	170-180	40-90	332
RTC42C2C	ZP36K3EPFV	88-106	330	170-180	40-90	332
RTC48C2C	ZP41K3EPFV230	88-106	330	170-180	40-90	332
RTC60C2C	ZP54K3EPFV	270-324	330	170-180	40-90	332
RTG36C2C	ZPS30K4EPFV	88-108	330	170-180	40-90	332
RTG48C2C	ZPS40K4EPFV	88-108	330	170-180	40-90	332
RTG60C2C	ZPS51K4EPFV	270-324	330	170-180	40-90	332

5-2-1 Compressor Saver ™



CSR-U-1
For 1 – 3 Tons
88 - 108 Mfd



CSR-U-2
For 3 – 5 Tons
189 - 227 Mfd



CSR-U-3
For Scroll 4 – 5 Tons
270 - 324 Mfd

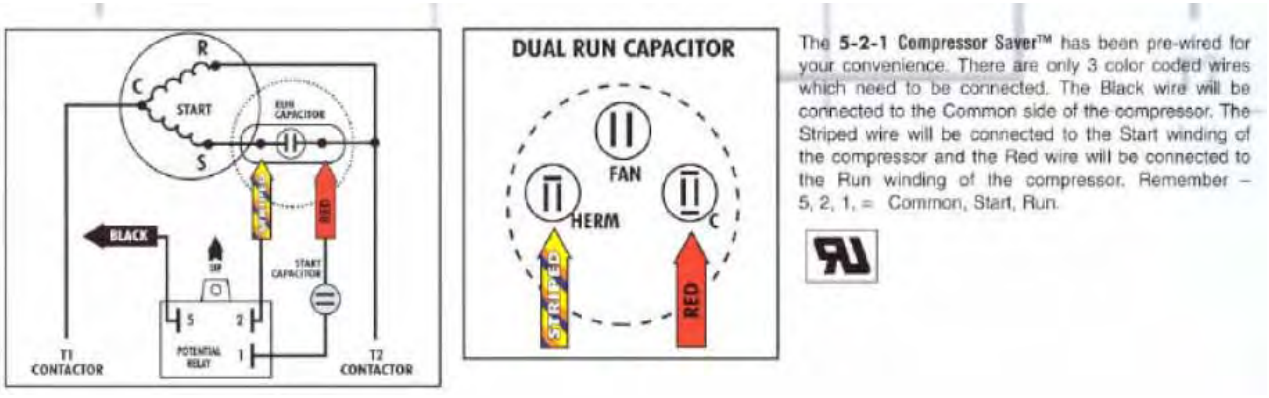


Figure 1.

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SERVICE BULLETIN SR-003

DATE: **August 11, 2005**

TO: **All Service and Parts Managers**

SUBJECT: Airflow adjustment to MBE Air Handler and AMV/GMV Furnace using AFE18-60A All Fuel Kit when Matched with RTG Heat Pump

We have received field reports of the RTG heat pump cycling on high pressure switch because of a low airflow issue with MBE air handler and with AMV/GMV variable speed model furnace when using the AFE18-60A all fuel kit. When the unit is operating in the heat mode, on a call for heat the thermostat signal from Y1 is bringing the blower on at only 60% airflow, resulting in a nuisance tripping of the high pressure switch on the RTG heat pump. Only when the thermostat calls for a Y2 signal is the blower ramping to 100% airflow.

The following field modification procedure has been released to correct any units in the field that may be experiencing this issue.

⚠ WARNING

To avoid property damage, personal injury or death due to electrical shock, disconnect the electrical power supply before servicing this unit. Some models will have two power sources, so be certain to disconnect both power sources. This may include the indoor unit as well as the outdoor unit.

1. Disconnect power from indoor and outdoor units at disconnect switch.
2. Remove control panel cover on the RTG unit.
3. Remove the wires from terminals Y2 and High Comp on the two speed fan control board.
4. Install a jumper wire with piggyback terminals between Y2 and High Comp.
5. Replace the wires that were removed from the Y2 and High Comp terminals.
6. Reconnect the power to the indoor and outdoor units.
7. Replace control panel and check operation of the system.

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This procedure will correct the airflow and prevent the nuisance high pressure switch trips on the RTG heat pump when matched with the MBE air handler or AMV/GMV variable speed model furnace using the AFE18-60A All Fuel Kit. The application will operate in the following sequence:

Heat Pump Heating Mode

When a "Y1" heating demand is initiated, the condenser fan will run on low speed. The two speed control board will energize the compressor relay, K2, and provide 24Vac to the "High Comp" terminal to energize the compressor solenoid to shift to high speed. With the jumper from "High Comp" to "Y2" in place, 24Vac will be provided to the "Y2" wire and sent back inside to the board in the indoor unit. When the indoor unit receives the 24Vac at it's "Y2" terminal, the motor will go to high cfm.

A "Y2" heating demand on the RTG has no affect on the unit operation because it is designed to run on high compressor and low condenser fan for the "Y1" heating demand. The addition of the jumper merely sends a "Y2" demand from the RTG to the indoor unit to change the blower to high cfm to fix the current field problems. When the "Y1" demand is satisfied, the compressor and condenser fan will be turned off and the indoor blower will coast to a stop based on the delay off programming.

Defrost Mode

The installed jumper has no affect on the system during a defrost cycle. Before a defrost cycle is initiated, the unit will be operating with the compressor on high speed, the condenser fan on low speed, and the indoor blower on high cfm as described above under Heat Pump Heating Mode. When a defrost cycle is initiated, the compressor will remain on high speed, the indoor blower will remain on high cfm and the condenser fan will be turned off. When the defrost cycle is terminated, the reversing valve will be de-energized and the condenser fan will start to run again on low speed. The unit will now operate as described under Heat Pump Heating Mode.

Heat Pump Cooling Mode

When a "Y1" cooling demand is initiated, the condenser fan will run on low speed. The two speed control board will not energize the compressor relay, K2, so the compressor will run on low speed and no voltage will be supplied to the "High Comp" terminal. With only a“Y1” demand present, the indoor blower will run on low cfm.

When a "Y2" cooling demand is initiated, the fan relay, K1, on the two speed control board will be energized and switch the condenser fan to high speed. The two speed control board will also energize the compressor relay, K2, and provide 24Vac to the "High Comp" terminal to energize the compressor solenoid to shift to high speed. With the jumper from "High Comp" to "Y2" in place, 24Vac will be provided to the "Y2" wire and sent back inside to the board in the indoor unit. With the "Y2" demand already initiated by the indoor thermostat, 24Vac will already be at the "Y2" terminal of the indoor unit and the indoor blower will run on high speed.

With the jumper in place, the system will be locked in second stage operation with the compressor on high speed, the condenser fan on high speed, and the indoor unit on high cfm until the "Y1" demand is satisfied. This is the way most if not all electronic thermostats operate in two speed applications. When a "Y2" demand is initiated, the thermostat will keep "Y2" energized until the "Y1" demand is satisfied. When the "Y1" demand is satisfied, the compressor and condenser fan will be turned off and the indoor blower will coast to a stop based on the delay off programming.

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SERVICE BULLETIN SR-002

DATE: **August 3, 2005**

TO: **All Service and Parts Managers**

SUBJECT: MBE/MBR Air Handler Rework Update

In response to field concerns with various issues like loose insulation, loose blower wheels, and other issues on the new MBE/MBR model air handlers, we are currently reworking all remaining inventory of 2004 built MBE/MBR model air handlers (serial date code 0407 to 0412). This rework involves all remaining inventory of MBE/MBR units at all our factory warehouses and involves the following items:

1. New Door with New Insulation.
2. Top Panel Insulation.
3. Improved Wrapper Insulation adhesion.
4. Control Panel Changed (slot for circuit breaker mounting).
5. New Blower Housing Mounting Brackets.
6. Torque Checked on Motor Mounting Bolts.

The MBE/MBR air handlers that have been reworked can be identified by a blue dot on the traveler label on the unit.

If after inspecting your inventory of MBE/MBR units you have a significant quantity on hand of 2004 built product (serial date code 0407 to 0412) and would like to have the corrections as indicated above made to these products, please contact your customer order representative to obtain a return authorization to have the units returned for rework. All product will be returned to distributor inventory after being reworked. All products built in 2005 (serial date code 0501 and later) were built with the new processes and procedures in place to prevent the issues as listed above.

We would like to thank our distributors and dealers for their patience, while we make improvements to the air handlers in production and rework the inventory to improve the quality of the MBE/MBR air handlers.

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SERVICE BULLETIN SR-001

DATE: **August 3, 2005**

TO: **All Service and Parts Managers**

SUBJECT: Suction Line Fitting Installation on Corporate Coils and Air Handlers

We have received field reports of problems with the installation of suction line tubing into the suction fitting on corporate coils and air handlers in certain applications. After investigating the issue and testing the procedure, the following guidelines have been developed to assist installers when encountering this issue in the field.

1. Release the holding charge from the coil.
2. Using a good tube cutter, cut the process fitting approximately ½" from the end of the fitting. This allows the cut to be made on the fitting that is not tapered at the end of the tube (See Figure 1).
3. Slowly cut the tube making sure not to crimp the tube. This will ensure that the end of the tube is the correct size to allow for ease of insertion of the suction line tubing.
4. Use a deburring tool, carefully remove the burr on the inside of the tube that may have been created by the cutting process (See Figure 2). **NOTE:** Make sure to clean all copper shavings from inside the fitting before inserting the suction line tubing.
5. Next insert the suction line tubing into the fitting while slowly twisting the tube back and forth as it is inserted into the fitting on the coil.
6. If the tube is difficult to insert into the fitting, it may be necessary to heat the fitting with a torch and slowly slide the tube into the fitting with a slight twisting action (See Figure 3).

NOTE: Please make sure to properly protect the cased coil or air handler cabinet from the torch which could burn the paint on the cabinet if installing a painted cased coil or air handler. Also make sure to wear gloves or other protection to prevent severe burns from the hot tubing when brazing the tubing into the coil.

Using these guidelines the installer should be able to fit the tubing into the suction line fitting without the use of a swedging tool or addition of a coupling.



Figure 1



Figure 2



Figure 3

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Service Bulletin

SL-015

DATE: November 14, 2016

TO: All Service and Parts Managers

SUBJECT: New Single-Groove Sheave with Split-Taper Bushing on Belt-Drive Light Commercial Units

We have enhanced our Light Commercial Belt-Drive units by utilizing a new single-groove sheave with a split-taper bushing. This change has been implemented on production of all new Light-Commercial rooftop units (serial date code 1611******, for all equipment excluding 12.5 ton and serial date code 1612****** for 12.5 ton equipment) as well as the service replacement kits for all current models. Refer to part illustration below.





Please reference the attached Installation and Application instructions IOD-7063 which include torque specifications.

INSTALLING & REMOVING "H" BUSHINGS

INSTALLATION INSTRUCTIONS
FOR LIGHT COMMERCIAL MODELS

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5151 San Felipe St., Suite 500, Houston, TX 77056
www.daikincomfort.com
P/N: IOD-7063 Date: November 2016

ATTENTION INSTALLING PERSONNEL

As a professional installer, you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

DESCRIPTION

This kit illustrates installation of the new single-groove sheave with a split-taper bushing for Light Commercial Belt-Drive units. This change has been implemented on production of all new Light-Commercial rooftop units as well as the service replacement kits for all current models.

KITS

SHEAVE	KIT PART NO.
AK74H	0163L00134S
AK66H	0163L00135S
AK59H	0163L00136S
AK69H	0163L00137S
AK61H	0163L00138S
BK100H	0163L00139S
BK90H	0163L00140S
BK100H	0163L00141S

Disconnect all power to the unit.

⚠ WARNING



HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

1. Make sure the bore of the sheave and the tapered cone surface of the bushing are free of all foreign substances such as paint, dirt, lubricants, etc. Figures 1 and 2.
   NOTE: Do not use lubricants when installing.

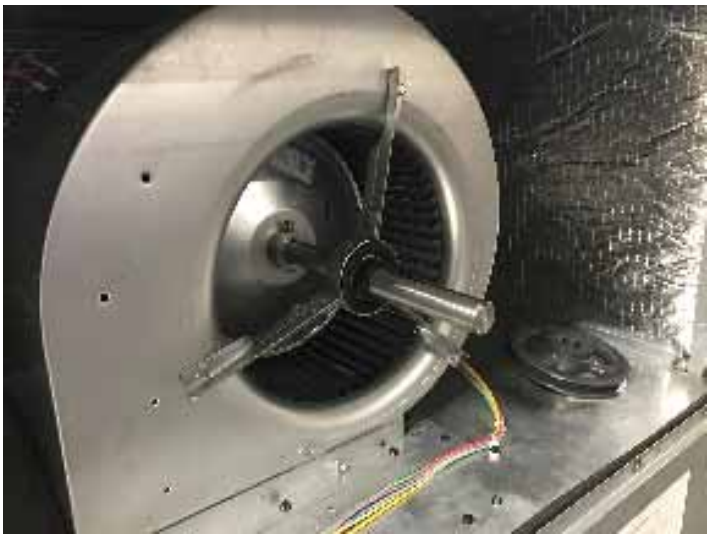


Figure 1

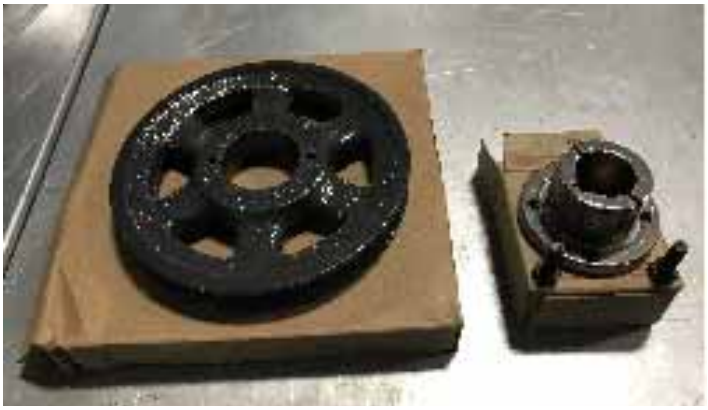


Figure 2

2. Assemble as illustrated in Figure 3, by inserting the two cap screws through the clearance holes in the bushing. Cap screws are to be loosely inserts in sheave so that the bushing easily slides onto the shaft.



Figure 3

3. Place the keyway between the shaft and the bore of the bushing. Figure 4.



Figure 4

TIGHTENING INSTRUCTIONS



Figure 5

CAUTION

IF EXTREME SCREW TIGHTENING FORCES ARE APPLIED IN MOUNTING THE BUSHING, BURSTING PRESSURE WILL BE CREATED IN THE HUB OF THE MOUNTED SHEAVE WHICH MAY CAUSE IT TO CRACK.

CAUTION

DO NOT USE LUBRICANTS ON SCREW THREADS OR TAPERED SURFACES.

IMPORTANT NOTE: Recommended torque ratings: 95 inch pounds.



Figure 6

4. Tighten the bushing screws evenly and progressively. See Figure 5.
5 Adjust the new fixed pulley to align properly with the variable sheave attached to the drive motor. See Figure 6.

REMOVAL INSTRUCTIONS

1. Loosen an remove cap screws.
2. Insert cap screws in the threaded holes of the bushing.
3. Tighten evenly until the sheave is loose on the shaft. See Figure 7.



Figure 7

Service Bulletin

SL-014

DATE: October 10, 2014
TO: All Service and Parts Managers
SUBJECT: SPKT02 Kit Instruction Changes

It has recently come to our attention that the wiring instructions for the SPKT02, single point wiring kits, shows an incorrect diagram in regards to where 3 phase power is to be connected on 3 – 6 ton light commercial equipment.

The current diagram (Figure 1) shows wiring from the single point kit to the blower contactor. If wired this way, it can overload the 16 gauge jumper wires between the compressor and blower contactors. The updated I&O, IOD-7039 shows wiring from the single point kit to the compressor contactor (Figure 2).

We ask any distributor that has inventory of the SPKT02 kit to replace the current I&O instructions with the new IOD-7039 kit instructions. If you contact us at HACPRODSPC@goodmanmfg.com with the quantity of instructions needed we will send you the new IOD-7039 kit instructions or they can be downloaded from InfoFinder on the www.daikincomfort.com website.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage,
personal injury or death.

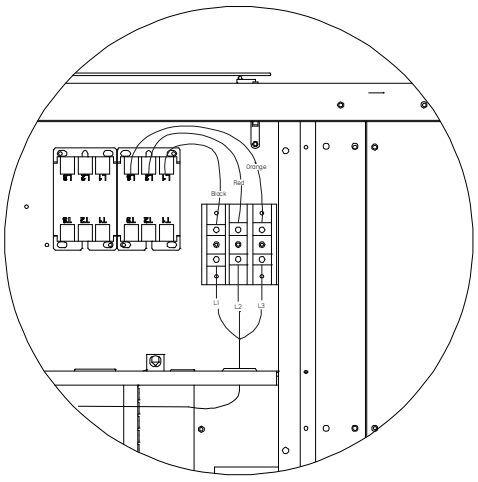


Figure 1

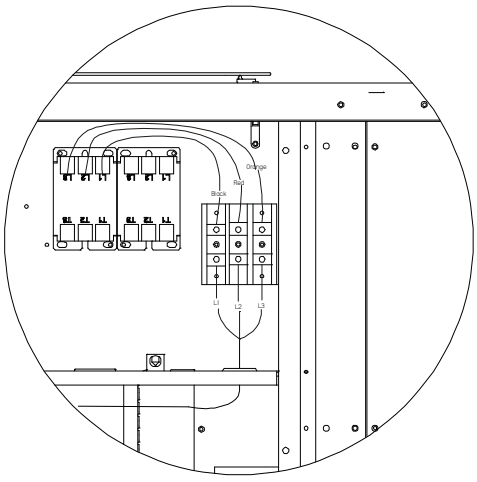


Figure 2

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Service Bulletin

SL-013

DATE: November 7, 2013
TO: All Service and Parts Managers
SUBJECT: Economizer Wiring Harness Miswired

We recently discovered an issue with all DCG, DCC and DCH economizer wiring harnesses when used in conjunction with an economizer. The two yellow wires in positions 1 and 4 of the harness are reversed which sends the wrong signal to the Jade economizer causing it to not operate. This will have no effect on the units operation without an economizer.

All production inventories starting October 4th, 2013 have been changed under deviation so this will only affect inventory out in the field prior to that date.

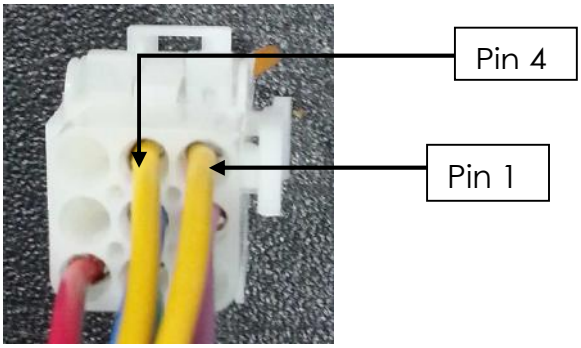
A field correction can be done by one of three methods listed below (A, B, or C):

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

With the power off to the unit

A. Use a pin extraction tool to remove the pins and replace the wires in the appropriate pin position.
B. Swap the Y1 yellow wire on the terminal strip with the yellow to purple wire coming off of the high pressure switch (**Note:** Wrap the connection with electrical tape to prevent possible grounding).
C. Cut both leads far enough back from the wiring harness so the wires can be stripped and then swap the wires and refasten with wire nut connections.



Once wires have been swapped, reapply power to the unit and test for proper operation.

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Service Bulletin

SL-012

DATE: November 16, 2012

TO: All Service and Parts Managers

SUBJECT: DNECONGS180240 Economizer Change

Goodman Company, L.P. has added raised flanges to the supply and return openings on CPG/CPC 15 and 20 ton commercial package units starting with serial numbers 1211. By adding these flanges some changes to economizer DNECONGS180240 needed to take place.

The new economizer part number will be DNECONGS180240**B** and is backwards compatible with previous serial numbers. However the DNECONGS180240 (without the B) is not forward compatible with the 1211 and later units with the supply and return duct flanges.

If you have current inventory of the DNECONGS180240, that is not required to fill sales orders on 1210 and prior serial numbered units, please contact you CSR to request an RMA to return any current inventory of the DNECONGS180240 economizer. Please be aware this economizer is shipped on 2 separate pallets, as shown below, and both need to be returned.

Reorder the DNECONGS180240B as required to replace your inventory.



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Service Bulletin

SL-011

DATE: October 12, 2012

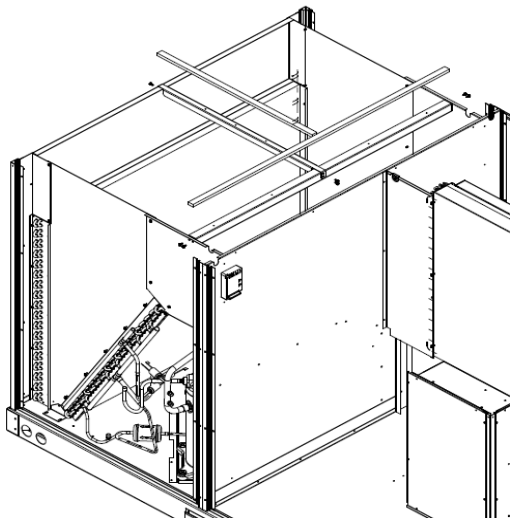
TO: All Service and Parts Managers

SUBJECT: 7.5 – 12.5 ton “T” Top Brace

Goodman Company, L.P. has found a few instances where top panel vibration is causing screws to back out of the condenser fan venturi ring on some 7.5 to 12.5 ton light commercial package units. Starting with serial number 1209636166 all 7.5 to 12.5 ton CPG, CPC and CPH units will have a “T” brace installed under the top condenser panel which will reduce flex and increase the strength of this panel.

If you have a 7.5 to 12.5 ton CPG, CPC and CPH units and are experiencing a vibrating top panel first inspect the condenser fan blades for damage and replace as necessary. If no fan blade damage is observed then check for a bent fan blade by measuring the distance between a fixed point on the condenser fan grille and one of the fan blades, then rotate the fan blade and check again. Check each fan blade the same way measuring from the same point on the fan grille. If the fan blade checks ok then it will be necessary to install the “T” brace described above.

A service kit is available **(part# T top -01),** through service parts**,** for units that are experiencing top panel vibration not due to a damaged condenser fan blade. The kit will consist of the “T” brace, gasket material, screws and instructions for the installation of the braces. Below is a picture of how the “T” brace will be mounted in the unit.



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www.goodmanmfg.com -or- www.amana-hac.com
P/N: T top -01 Date: October 2012

T Brace Kit (for 7.5 - 12.5 Ton)

INSTALLATION INSTRUCTIONS

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

This product is designed and manufactured to permit installation in accordance with national codes. It is the installer's responsibility to install this unit in accordance with national codes and/or prevailing local codes and regulations.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.



⚠ WARNING

HIGH VOLTAGE!
To avoid personal injury or death due to electrical shock, disconnect electrical power before servicing or changing any electrical wiring.



DESCRIPTION

This kit is to be used with Goodman Commercial Package Units.

KIT INCLUDES:

QTY	DESCRIPTION
2	"T" Brace Pieces
11	Screws
1	Gasket Material
1	Installation Instructions

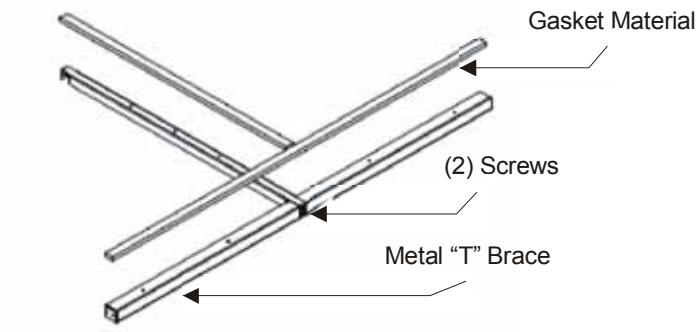


Figure 1

INSTALLATION

1. Turn power off to unit.
2. Disconnect condenser fan wiring behind the blower and filter access panels.
3. Remove the screws from the condenser top panel and flip the panel back so that it is on the evaporator top panel and out of the way.
4. Assemble the "T" bracket with the screws provided. Place the gasket material on the newly formed "T" brace. **(Figure 1)**

5. Measure and pre-drill holes on each side of the condenser block off plate in the locations shown in **Figure 2.**

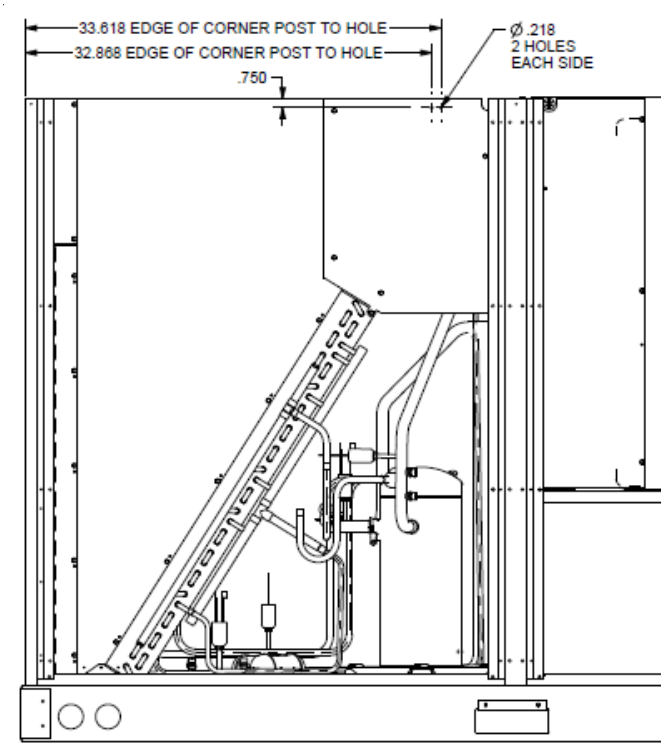


Figure 2

6. Secure the “T” bracket to the coil assembly with (2) screws on each side of the condenser block off and (1) screw to the front coil block off plate. **(Figure 3)**

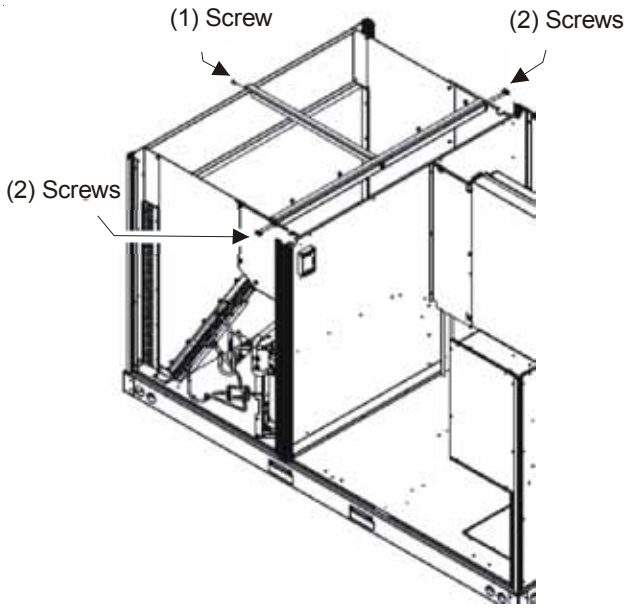


Figure 3

7. Replace the condenser top. Ensure the condenser fan wires do not get pinched between the new “T” bracket and top panel.
8. Reconnect all the wiring, screws and panels.
9. Screw the top panel to the “T” brace as shown in **Figure 4**. It is not critical that the holes on the “T” brace are hit as long as the screws secure the top panel to the “T” brace.

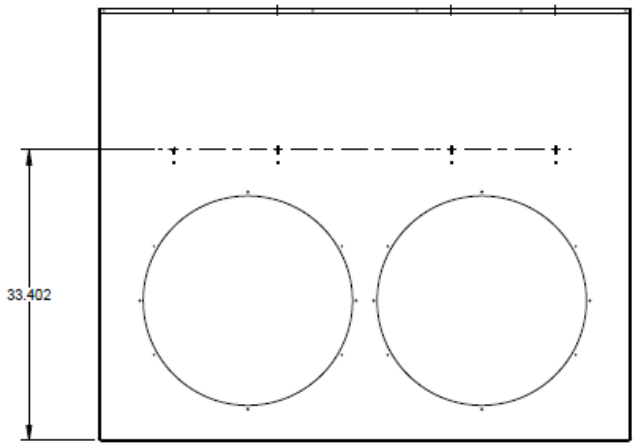


Figure 4

10. Turn power on to unit and verify the unit is operating properly.

Service Bulletin

SL-010

DATE: November 8, 2012

TO: All Service and Parts Managers

SUBJECT: PCBFM131 Control Fuse

Goodman Company, L.P. has received a few reports of the 3 amp control fuse failing on the PCBFM131 fan control board in conjunction with the use of an EHK heater kit. It has been determined that on a simultaneous call for first and second stage heat the current draw exceeds the fuse size.

The kits affected are the; EHK(3,4,7,)-45, EHK(3,4,7,)-46, EHK(3,4,7,)-60 and EHK(3,4,7,)-75.

A time delay kit is available **(part# HKTD01)** for any issues experienced in the field relating to either the 45kw or 60kw EHK heater kits.

Distributors will need to contact their CSR to request an RMA to return any current inventory shipped before 9/27/2012. Replacement EHK Heater Kits must be ordered by the distributor from HLC to replace their returned inventory.

Goodman will pay $100.00 labor for each unit that requires the addition of this time delay kit **(part# HKTD01)**. Claims **must** be filed on Service Bench as Service Bulletin, Authorization Code number ***8712***. The customer information including phone number must be included for all claims. **The claim for the part and claim for labor should be filed as one claim by submitting the claim using the "Dealers Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

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HKTD01
ELECTRIC HEAT KITS
SUPPLEMENTAL INSTALLATION INSTRUCTIONS

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5151 San Felipe, Suite 500, Houston, TX 77056
www.goodmanmfg.com -or- www.amana-hac.com
P/N: HKTD01 Date: October 2012

Attention Installing Personnel

As a professional installer, you have an obligation to know the product better than the customer. This includes all safety precautions and related items.
Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.
Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.
Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.
The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

Description

The following EHK kit instructions supplement is for installation in the 7.5 tons and larger light commercial CPC and CPH models.

These instructions should be used only as a supplement to IO-701* provided with the above units.

Installation

Alternate construction for EHK heater kits, 45kW and 60 kW for the addtion of a time delay relay.

⚠ WARNING

HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

⚠ CAUTION

TO AVOID POSSIBLE PERSONAL INJURY, USE EXTREME CAUTION IF USING POWER TOOLS TO REMOVE THE SMALL BREAKER MOUNTING BRACKETS. THE BRACKETS MAY QUICKLY ROTATE AND CAUSE INJURY.

1. Mount time delay relay onto the heater kit plate or on the side of the heater compartment, using the screw provided. Make sure it is clear of any other wiring and components.
2. Remove the brown wire from the 2nd stage sequencers on the heater to the Molex plug and connect it to “COM” terminal on the time delay relay.
3. Connect the white wire from the kit between T2 on the time delay relay and any open terminal on the white wire side of the 1st stage sequencers on the heater.
4. Connect the brown wire from the kit between “NO” terminal on the time delay relay and the sequencer terminal on the heater where the brown wire from the Molex plug had previously been removed.
5. Connect the blue wire from the kit between T1 on the time delay relay and to any open terminal on the common (blue) side of the 2nd stage sequencers on the heater.

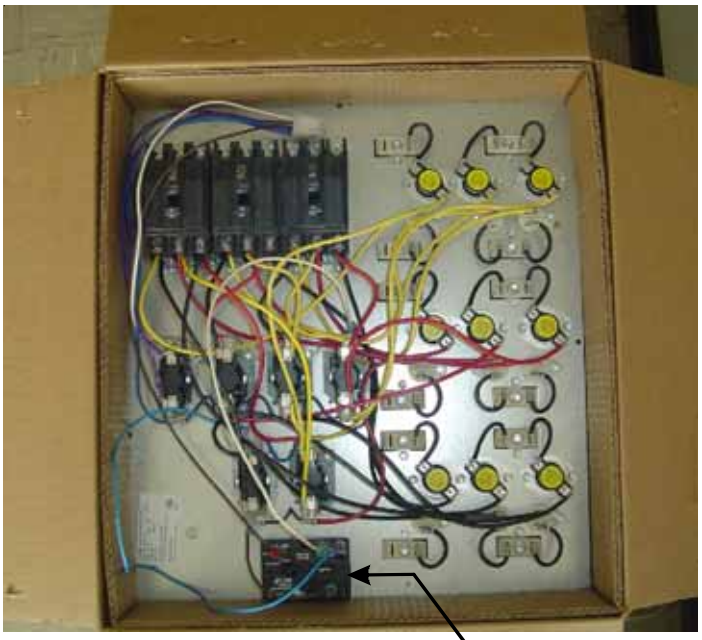


Figure 1

6. Set time delay on the relay to the first setting line above 10 seconds.
7. Replace the 3 amp fuse on the time delay board in the unit control box with the 5 amp fuse from the kit.
8. Affix the wiring label for the correct heater installed to the unit.

Service Bulletin

SL-009 Rev. 1
Supersedes SL-009

DATE: July 2, 2012
TO: All Service and Parts Managers
SUBJECT: Horizontal Discharge Kit

Beginning with serial number 1206605985 on Goodman® brand light commercial 7.5 – 12.5 ton package units and 1207011983 on 3 – 6 ton package units Goodman will be changing the base pan design to include a ¾" raised flange on both the supply and return air openings.

These flanges will not interfere with any existing accessories currently being used on our units. However, if the unit is being installed to deliver air in a horizontal position, a kit is required to attach the duct covers to the bottom of the unit.

These kits will be supplied with every light commercial package unit and secured to the base pan behind the filter access panel. The kit will consist of metal clips, gasket material and installation instructions. If the unit is being installed for use in down flow applications these parts will not be required and should be removed from the unit prior to the commissioning of the system.

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HORIZONTAL INSTALLATION OF DUCT COVERS, 3 - 12.5 TON INSTALLATION INSTRUCTIONS

Goodman Manufacturing Company, L.P. © 2012
5151 San Felipe, Suite 500, Houston, TX 77056
www.goodmanmfg.com -or- www.amana-hac.com
P/N: IO-785 Date: June 2012

⚠ CAUTION

EDGES MAY BE SHARP. IT IS RECOMMENDED PROTECTIVE GLOVES BE WORN WHEN INSTALLING THE DUCT COVERS.

1. Remove supply and return duct cover panels from the end of the unit. Save all washered screws.
2. According to the model size, remove (6 or 8) factory supplied panel clips that are secured to the base pan, behind the filter access panel.
3. With the insulated side of the panel facing up, attach the clips as shown in Figure 1A for 3 - 6 ton models and Figure 1B for 7.5 - 12.5 ton models.

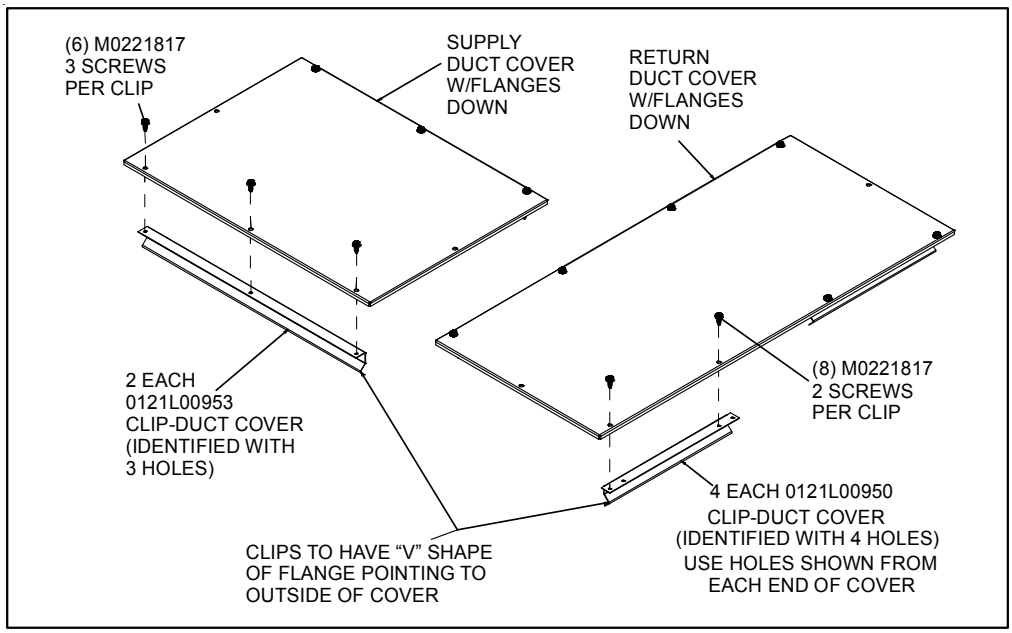


Figure 1A (3-6 Ton Models)

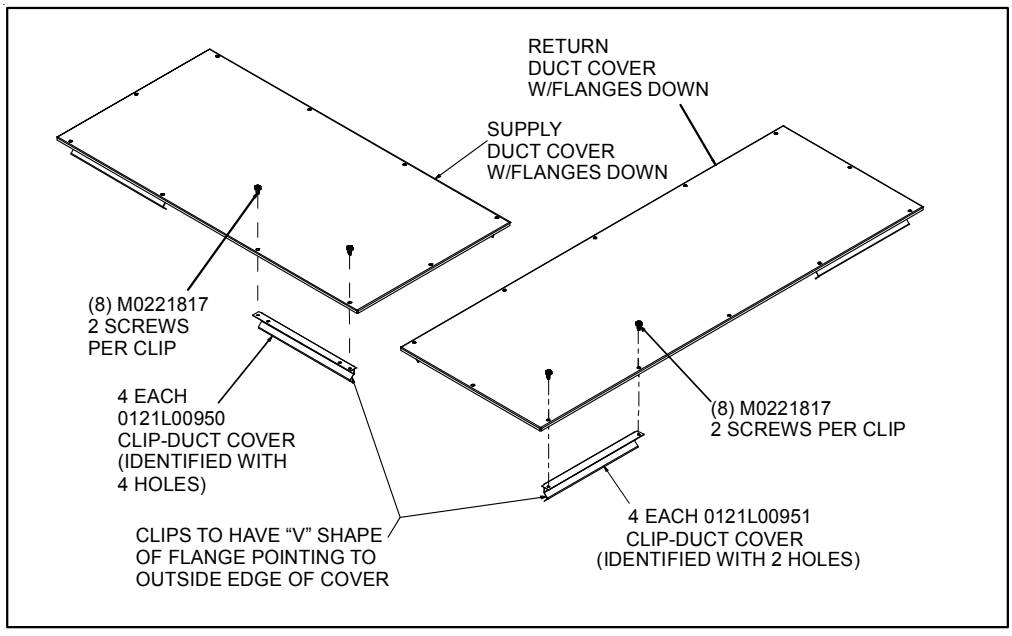


Figure 1B (7.5-12.5 Ton Models)

NOTE: The clips containing (4) holes per clip are for the supply air panel.

4. Place the provided gasket material completely around the perimeter of the clip side on both panels, as shown in Figure 2.

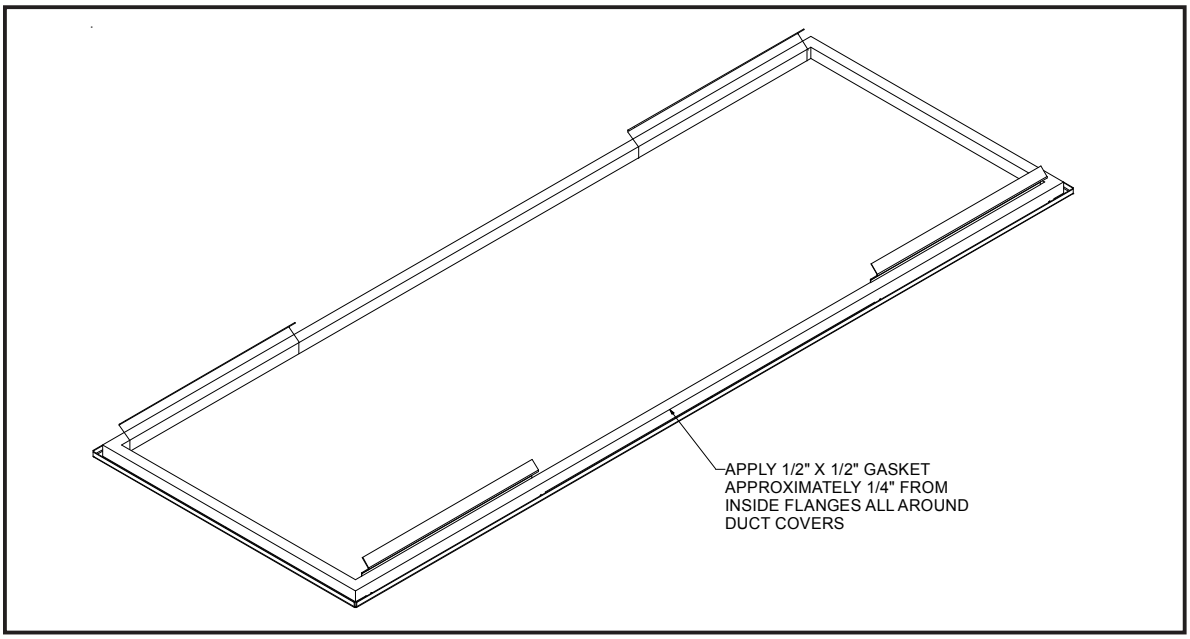


Figure 2

5. Place the assembled panels over the supply and return duct openings in the base pan and push down to snap panels into places, as shown in Figure 3.

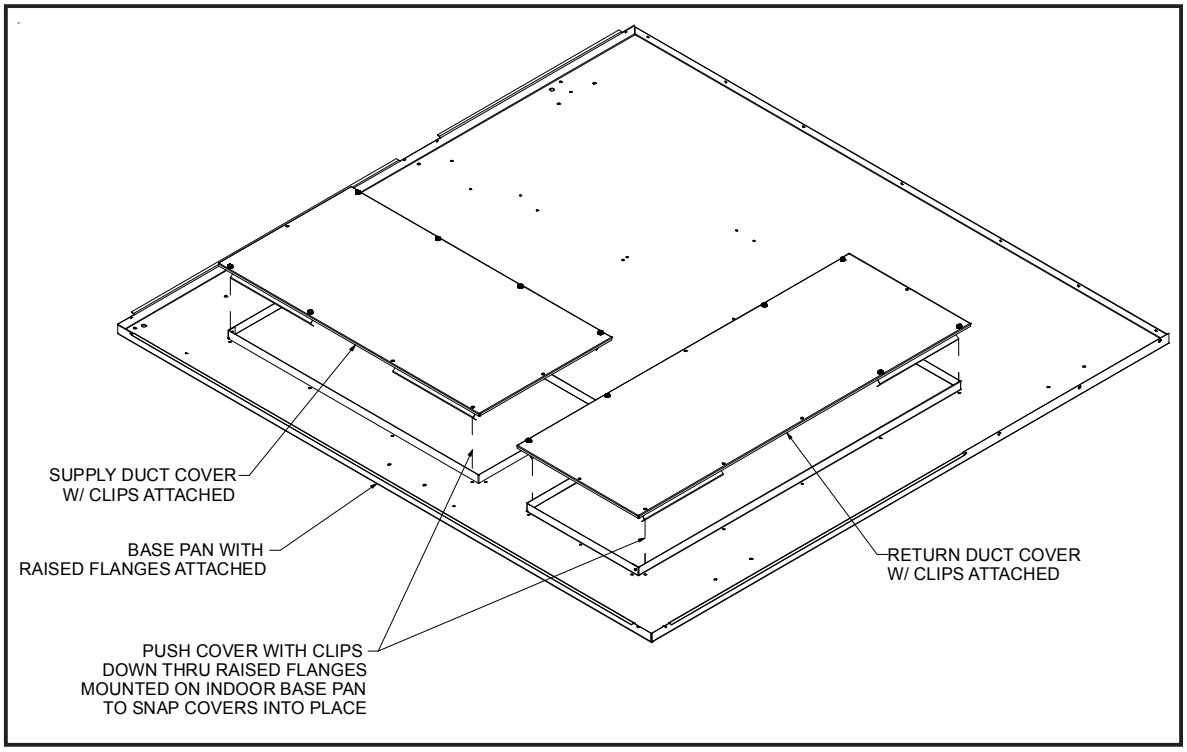


Figure 3

6. Ensure the panel is evenly seated on the flanges around the duct openings and the gasket is creating a good seal.

NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE

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Service Bulletin

SL-008

DATE: May 7, 2012

TO: All Service and Parts Managers

SUBJECT: Utilizing Economizer Minimum Position on CPG Units

Many state and local codes are now requiring that economizers be installed on commercial package equipment to increase the energy efficiency of the building. In addition, some applications require a minimum amount of outside air which is typically 10% - 25% in all modes of operation.

Currently on the Goodman® brand light commercial CPG units the economizer is powered from the "ECON" terminal located on the PCBAG123 ignition control board. This terminal only receives power on a "G" signal call from the thermostat. Many thermostats have a selection for controlling the fan signal by either allowing the thermostat or the unit to control the fan. This will cause an issue if fresh air requirements are needed in the heating cycle.

If outside air is required in the heating mode there are 3 possible means of ensuring the economizer module gets the needed 24 volts to operate:

1. Place fan selector switch on the thermostat to the "ON" position to ensure continuous fan operation.

2. Select the correct fan operation setting on the thermostat to allow the "G" fan signal to operate the blower in gas heating mode.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



3. Relocate the green wire connected to the "ECON" position on the PCBAG123 ignition control board as follows.
    a. Cut off the spade connector and strip the wire back ½".
    b. Secure stripped wire under the R terminal on the terminal strip.

Note: If option 3 is selected, be aware that 24 volts will be applied to the economizer module and will never close from its minimum set point position.

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Service Bulletin

SL-007

DATE: March 22, 2011

TO: All Service and Parts Managers

SUBJECT: Recirculating Flue Gas on CPG Commercial Package Units

Goodman has received a few reports of condensation freezing onto the controls in very cold climates or recirculation back into the burner box on some CPG036 – 072 BA revision commercial equipment resulting in a service call. Indications are this is from flue gas being blown towards the control box due to prevailing winds or due to the equipment being installed too close to another unit or a wall. It is important to maintain clearances as specified in the Installation Instructions.

Extensive wind testing has been performed on all CPG units and we did not see any indication of flue gas recirculation at winds up to 40 miles per hour; however we understand due to equipment location, walls and other unknowns, there could be a turbulence issue that might cause a flue gas recirculation.

Therefore Goodman has available as an accessory a flue extension kit **part # 220-GX-01, 02 and 03** that will vent the flue gas at the top of the unit and eliminate any flue gas recirculation due to prevailing winds or inadequate clearances. This flue extension is available through McDaniel Metals and can be purchased if the situation described above occurs. See the table below for the correct kit.

This kit is not intended to facilitate installations that deliberately violate clearance requirements in the Installation Instructions.

Goodman Flue Extension Kit	Goodman Model
220- GX - 01	CPG036 - 072
220- GX- 02	CPG090 - 150
220- GX- 03	CPG180 - 240

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Service Bulletin

SL-006

DATE: May 3, 2010
TO: All Service and Parts Managers
SUBJECT: Sealing CPC, CPH & CPG 090-150 Light Commercial Package Equipment

It has been reported that some Goodman CPH, CPC and CPG 090 – 150 light commercial package units with serial numbers beginning with 1002 and earlier, when installed in the down shot roof top configuration, have had instances of rain water intrusion into the airside compartments and have leaked that water down into the space below. We therefore, have developed a repair kit **Part Number LCGK-01** that will include gasket materials, rubberized washers and instructions that will provide a water resistant seal for our units and prevent water intrusion and leakage into the space below.

Goodman will provide a $250.00 labor allowance for units installed that require sealing to eliminate the intrusion of water into the unit and leakage into the space below. A warranty claim must be completed for each unit requiring sealing which includes the kit part number and the associated labor to add the gaskets and washers. **Claims must be filed on Service Bench as Service Bulletin Authorization Code number 8697.** The building or equipment owner's information including phone number must be included for all claims. **The claim for the part and labor should be filed as one claim by submitting the claim using the "Dealer's Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department.

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Service Bulletin

SL-005

DATE: February 12, 2010

TO: All Service and Parts Managers

SUBJECT: Wiring Change in the LAKT02

Recently the condenser fan motor wiring was changed on **0909** and later production CPC, CPG, and CPH 090 and 120 light commercial package units to match the CPC, CPG and CPH 150 condenser fan motor wiring. This wiring change while improving the operation of the 090 and 120 model units, has made it necessary to change the wiring procedures (wiring diagram listed on Page 4 of IO-709) outlined in Step **7** of the Low Ambient Kit **LAKT02.**

The revised Step **7** of **IO-709,** which pertains only to **0909** and later CPC, CPH and CPG 090 and 120 units, along with **All** CPC, CPH and CPG150 models, will read as follows and the revised wiring diagram is provide on Page 2 of this letter.

Step 7:

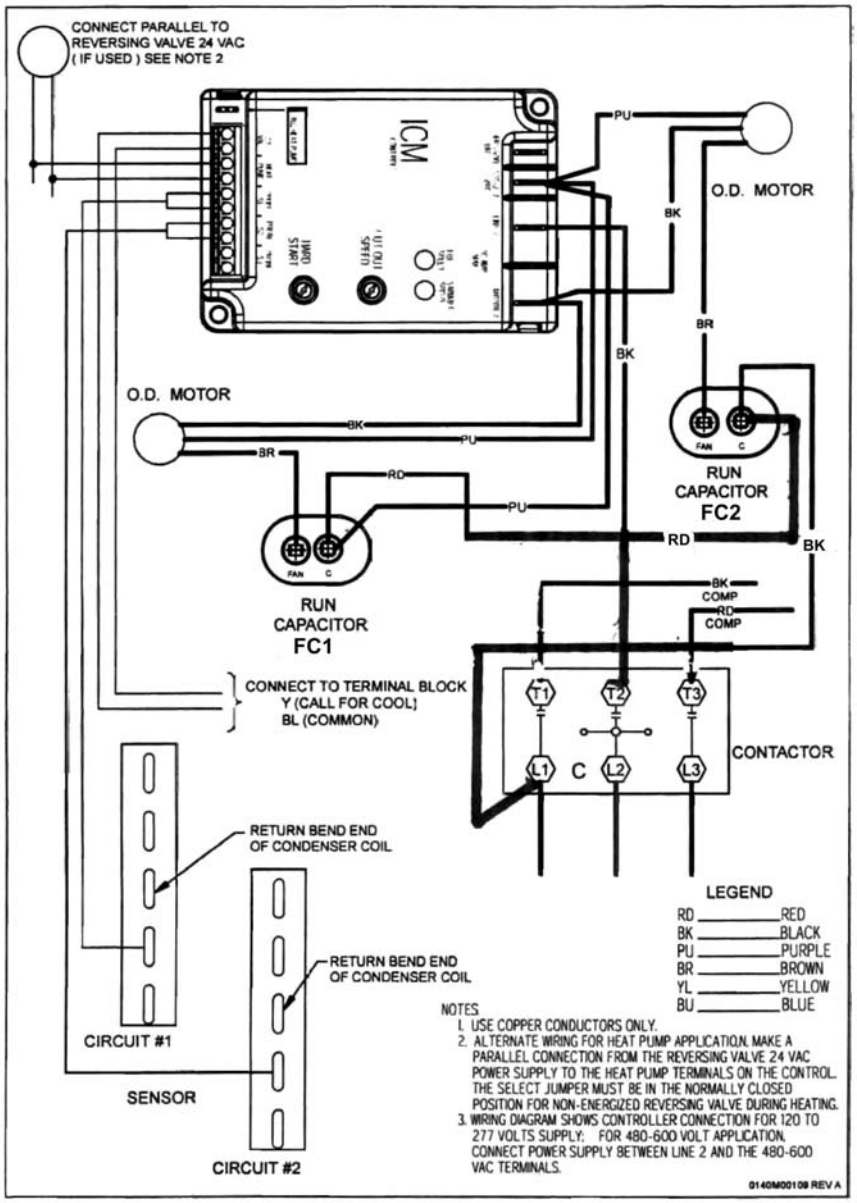
1. Locate the Red wire connecting FC1 (fan capacitor #1) and T2 of compressor contactor #1.
2. Disconnect the wire from T2 and connect it to the C terminal on FC2 (fan capacitor #2) that has three black wires.
3. Remove the black wire from FC1 (Fan capacitor #1) and connect to T2 of compressor contactor #1.

IO-709 for the LAKT-02 is in the process of being updated to reflect this procedural change; however, until the update has been made, please use this letter as a supplement for the current Step 7 and wiring diagram in **IO-709**.

WIRING DIAGRAM

LAKT02

WARNING HIGH VOLTAGE
Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.



Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring

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Service Bulletin

SL-004

DATE: February 9, 2009

TO: All Service and Parts Managers

SUBJECT: Temperature Marking on Rollout Limit Switch (Part # 10123532)

It has been discovered that some of the Rollout Limit Switches (**Part # 10123532**) that we had in service parts inventory were labeled as a 300°F Rollout Switch instead of 350°F. The part number and the gray colored dot on the rollout limit switches are correct but the temperature label of 300 °F is incorrect.

These switches, which are used on all Goodman Light Commercial CPG units, were tested and were found to be a 350°F limits as designed but to eliminate any confusion we are requesting that all of our Distributors examine their inventory of the Rollout Limit Switches (**Part # 10123532**) and return any incorrectly labeled switches.

Distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement Rollout Limit Switches (**Part # 10123532**) must be ordered by the distributor from HLC to replace their returned inventory.

Service Bulletin

SL-003

DATE: January 12, 2009

TO: All Service and Parts Managers

SUBJECT: Chattering Contactors on CPH Light Commercial Package Heat Pumps

There have been reported incidences of chattering contactors during defrost on our CPH Light Commercial Package Heat Pump units with economizers installed. The chattering is caused by a circuit conflict between the defrost control and the economizer. To eliminate the chattering of the contractor an Isolation relay Kit (Part number **IRKT-01**) must be installed between the low voltage terminal strip **"O"** terminal and the defrost control.

On CPH090 and CPH120 model units only, chattering will occur whether or not an economizer is installed if a three heat two cool thermostat is used to control the unit. To prevent chattering in this case, Isolation Relay Kit (Part number **IRKT-01)** must be installed between the low voltage terminal strip **"O"** terminal and the defrost control.

The kit will contain an instruction sheet, relay, the necessary wires for all connections, mounting screws and a wiring label to be placed under the unit's wiring diagram label.

The Isolation Relay Kit (part number **IRKT-01**) will work on all Goodman® 3 thru 10 ton CPH model package heat pump units and can be ordered through Service Parts by contacting your Customer Service Representative.

CPH090 and CPH120 models shipped after December 18, 2008 have been reworked to include the isolation relay kit. These units can be identified by a label below the traveler label and another label below the serial plate which reads "Isolation Relay Installed". CPH090 and CPH120 models with serial prefixes beginning with 0901 will have the isolation relay factory installed. Effective January 5, 2008 the IRKT-01 will be shipped with the economizer for field installation on 3 through 5 ton CPH light commercial heat pumps. The economizer packaging will contain a label stating the IRKT-01 is included.

Goodman will provide a $100 labor allowance for units installed prior to January 1, 2009 that require the IRKT-01 to eliminate the chattering contactor condition. A warranty claim form **(RF000007)** must be completed for each unit requiring the installation of the **IRKT-01** Isolation Relay Kit and must reference Project Code **8686** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as a Warranty Type "Epidemic" using **8686** as the "authorization" number. The claim will be paid upon review by the Warranty Department.

Service Bulletin

SL-002 Rev. 1
Supersedes SL-002

DATE: December 5, 2008

TO: All Service and Parts Managers

SUBJECT: CPG Model Units Tripping the Rollout Switch

In response to field reports of the rollout switch tripping, due to high temperatures, on the CPG model Light Commercial package gas units, we have released a L/C Rollout Kit (part number **LCRKT01**) to address this issue.

If you have a CPG model built prior to 0902 and unit that is experiencing multiple rollout trips, due to high temperatures, you will need to order the LCRKT01 L/C Rollout Kit. The kit includes an instruction sheet, a new rollout switch mounting bracket to relocate the rollout on the burner bracket, and high temperature RTV silicone for sealing the flue duct to the inducer motor. The instructions also cover disposition of the NOx screens and indoor airflow requirements.

Goodman® will pay $100.00 for each unit requiring the installation of the L/C Rollout Kit. A warranty claim form (RF000007) must be completed for each unit requiring the installation of the LCRKT01 Kit and must reference Project Code **8685** in section 6 (Project Code) on the warranty claim form. Claims **must** be filed on Service Bench as Service Bulletin, Authorization Code number **8685**. The home owner information including phone number must be included for all claims. **The claim for the part and claim for labor should be filed as one claim by submitting the claim using the "Dealers Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

The L/C Rollout Kit (part number **LCRKT01**) will work on all Goodman® 3 thru 10 ton CPG model package gas units that are experiencing multiple trips of the rollout switch, due to high temperatures and can be ordered through Service Parts by contacting your Customer Service Representative.

Service Bulletin

SL-001

DATE: July 30, 2008

TO: All Service and Parts Managers

SUBJECT: Sagging Top Panel Insulation on 7½ and 10 Ton Light Commercial Package Units

Goodman has discovered that the top panel insulation on 7½ and 10 ton CPC/CPH/CPG090 & 120 light commercial package units, manufactured prior to June 18, 2008 (serial date code 0806), can begin to sag where the two sections of the top panel meet, after being exposed to high outdoor ambient temperatures. We have determined that four (4) 2" x 2" metal plates are needed; two (2) on each side of the top panels seam to retain the insulation in order to prevent sagging.

We have developed an insulation retainer kit (**Part # 0121L00294S**) that is to be installed on each side of the seam of the top panels to retain the insulation. The 0121L00294S kit can be ordered from Service Parts by contacting your customer service order representative.

Goodman will pay $50.00 labor for installation of the insulation retainer kit on units in inventory and then $125.00 labor for installed units that require the insulation retainer kit. The Insulation Retainer Kit should be claimed under warranty. A warranty claim form (RF000007) must be completed for each unit requiring the repair and must reference Project Code **8682** in section 6 (Project Code) on the warranty claim form. This claim can be filed on Service Bench (preferred) as Warranty Type "Epidemic" using **8682** as the "authorization" number. The claim will be paid upon review by the Warranty Department.

Goodman
Air Conditioning & Heating

TECHNICAL SERVICE BULLETTIN

SA – 035

DATE: June 3, 2022
TO: All Service and Parts Managers
SUBJECT: **Bluetooth**® Plug-In Module

Daikin Comfort Technologies North America, Inc. is excited to announce the release of the **Bluetooth** Plug-In Module **BTPIM01**. The **BTPIM01** provides **CoolCloud HVAC and/or Daikin Data Loader** app access to 9-tap Ultra-Low NOx furnaces (refer to Model chart below). Utilizing the **BTPIM01**, users can download furnace specific shared data to the service replacement control board.

Currently, users cannot modify settings such as fan speed and on/off delays or view furnace status when paired with the **CoolCloud and/or Daikin Data Loader** app.

Goodman	Amana	Daikin
Model	Model	Model
GM9S80-U, GM9S96-U	AM9S80-U, AM9S96-U	DM80SN-U, DM96SN-U

***NOTE: ComfortBridge** products feature built in **Bluetooth** capability and do not require the use of this BTPIM01.*

To order the **Bluetooth** Plug-In Module (part # **BTPIM01**) contact your Daikin or Goodman Customer Service Representative.

Instructions for the BTPIM01 **Bluetooth** Plug-In Module can be found at www.coolcloudhvac.com/btpim01 or by scanning the QR code.

Scan for User Guide

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SA – 034

DATE: July 22, 2021
TO: All Service and Parts Managers
SUBJECT: New Safety Label for Gas Fired Products

ATTENTION: New safety label added to our gas fired products (see below).



Gas-fired appliances (furnaces and package units) use several common safety devices to protect against continued operation when certain faults take place. If one or more of the safety devices open, the electrical circuit is broken, and the furnace control system shuts the gas burner off to eliminate potential hazards.

The primary limit is positioned in the airstream inside the unit. The secondary or auxiliary limit is located on the blower housing. Airflow issues, like a dirty filter or blower failure, are common reasons for a primary or auxiliary limit to open. The flame rollout switch is another common safety device positioned near the base of the gas burner manifold. The switch opens if the flame exits the designed burner compartment.

Gas-fired appliances (furnaces and package units) have other safety devices, such as induced draft and pressure switches. These safety switches prevent the combustion cycle from occurring with inadequate venting caused by a restricted or blocked vent pipe or a failed vent motor. Each pressure switch has been selected to close when the venting system is operating safely and to open when there is a problem with the venting system. Unless the gas-fired appliance is installed in a high-altitude application, **DO NOT** replace the pressure switch with one that closes at a lower negative pressure. This would be considered the same as bypassing a safety and can cause the furnace to operate unsafely.

Any field applied tool used to troubleshoot should **NEVER** be used to bypass safety components, left unattended, and should always be removed when service troubleshooting is completed. Bypassing any safety device may have catastrophic results.

Heating, Ventilation, and Air Conditioning products should be serviced by qualified service technicians who are familiar with the safety procedures required in the repair and who are equipped with the proper tools, parts, and testing instruments. Please adhere to the warnings and cautions located on equipment labels, in the installation manuals and service manuals for any HVAC product when installing, adjusting, servicing, and operating the HVAC product.

T: 888-593-9988 | F: 713-316-5541

Produced by Goodman Business Unit Technical Services | 19001 Kermier Road | Waller, TX 77484

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

SA – 033
Supersedes SF - 079 Rev1

DATE: April 2, 2020
TO: All Service and Parts Managers
SUBJECT: **CoolCloud™ HVAC** APP Technical Guide for Furnaces and Air Handlers with integrated **ComfortBridge™** Controls

With the introduction of the **ComfortBridge** control platform we are releasing this Technical Support Guide for the **CoolCloud** HVAC APP. This guide was developed for the installer and service technician.

This Technical Guide should be used in conjunction with the installation manual for furnaces and air handlers featuring integrated **ComfortBridge** controls as a resource for proper set up when using the **CoolCloud** HVAC APP.

CoolCloud HVAC APP Technical Guide for the ComfortBridge Control Platform

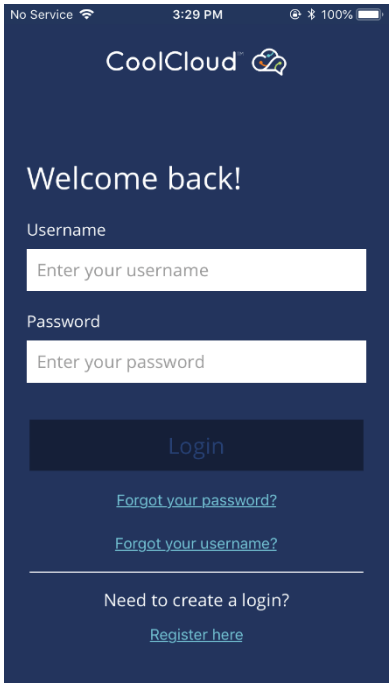
Part 1: Login and Registration
Part 2: Connecting to a Unit
Part 3: The System Overview Screen
Part 4: Viewing Unit Information
Part 5: Setting Up a Non-Communicating System

Ctrl-Click on the Hyperlink above to move directly to that section.

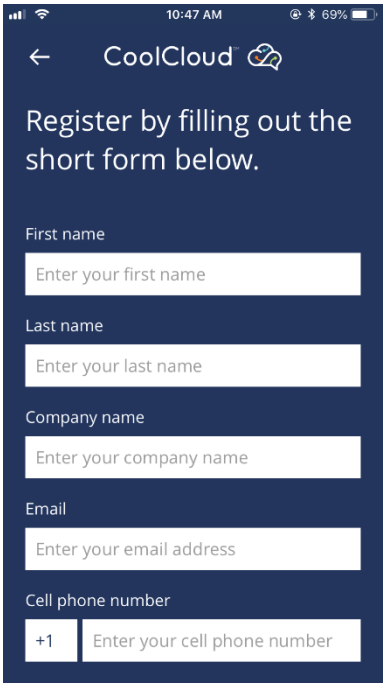
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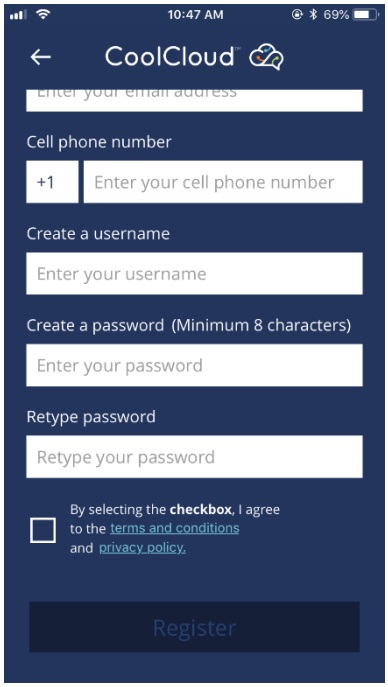
Part 1: Login and Registration Screens



Login Screen



Registration Form Top



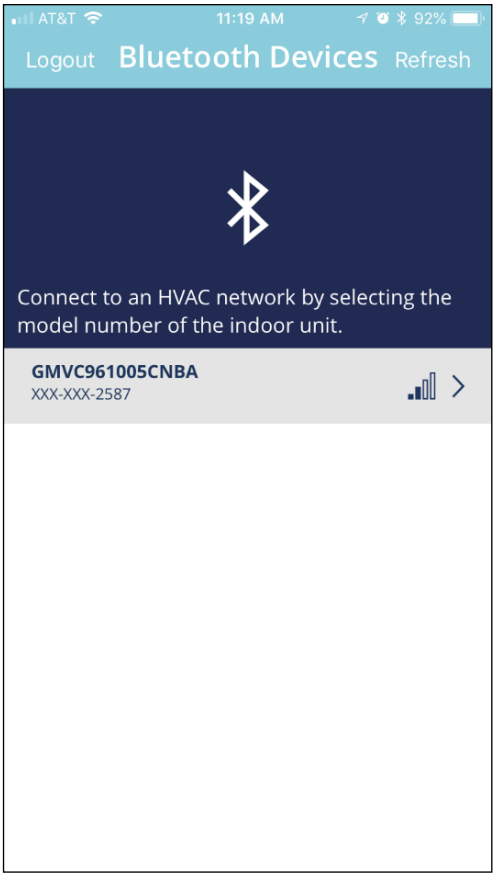
Registration Form Bottom

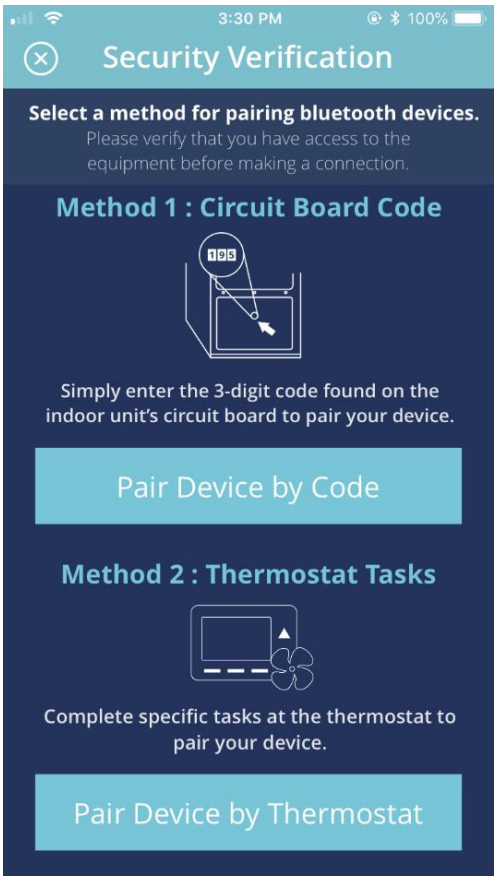
When first opening the app the login screen is displayed; if the user already has an account, the login username and password can be entered at this time.
New users will first have to register for an account by providing the registration information above. Once completed and the *Register* button is depressed, a text message will be sent to the phone number provided containing a verification code. The user uses this code to verify the account. Once verified, the user will be brought back to the login screen where they can then log in with the username and password they just created.
If the password is forgotten, the user can click on the "*Forgot your password?*" button below the login button. They will be prompted to provide their username. After providing their username, a text message will be sent to the phone number associated with their account containing a verification code. The verification code along with the new password will be required to reset the account.
Important Note: Username information cannot be edited once selected by the user. If a user would like to make changes to the account information, a new account will need to be created.

The app will keep the user logged in if it can connect to the internet regularly to check for updates. The login will expire after the app has not been able to connect to the internet for 7 consecutive days, requiring the user to log in again. When traveling to a site where there may not be a reliable internet connection, be sure to open the app before-hand somewhere where with a reliable internet connection and confirm the app has already been logged-in.

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Part 2: Connecting to a Unit





After logging in, the user will be shown a list of indoor devices within **Bluetooth®** range and have a connection available. Each unit can be identified by its model number and the **Bluetooth** board broadcast ID. A unit may not show up on the list if:

- It is out of **Bluetooth** range.
- Another user is connected to the same **Bluetooth** device.
- The indoor unit is experiencing a software issue.
- The unit is not powered on.

While rare, if the unit is experiencing software issues, the **Bluetooth** device may broadcast under a different name than expected. Here are three possible unexpected names and some information about the possible underlying software issues:

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Furnace or Air Handler

- The indoor unit is a furnace or air handler, but its model number could not be retrieved.
    - In this case, the **Bluetooth®** network will not be able to broadcast the model number and will broadcast default, unspecific values instead.
- This issue can be caused by a blower communication error or by a shared data mismatch.
    - The user should connect to the network and view the *Fault Code History* menu of the indoor unit for more information.

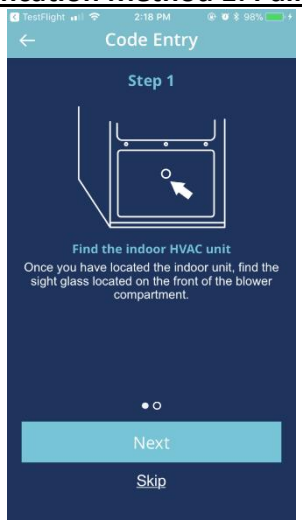
OTA Unknown

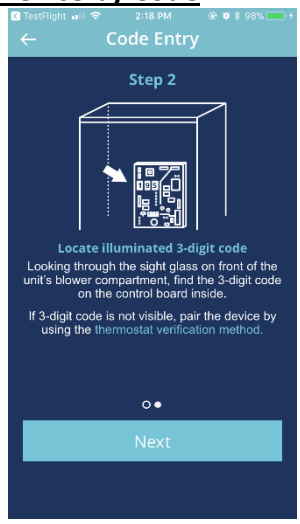
- A **Bluetooth** software update was attempted but was interrupted before completion.
    - The user should immediately connect and complete the software update process.

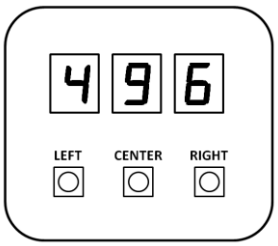
Once the user has identified the **Bluetooth** network (equipment) they would like to connect to, simply tap the equipment on the screen. This will push the user to the *Security Verification* screen shown on the previous page where they will be presented with two options to verify the connection.

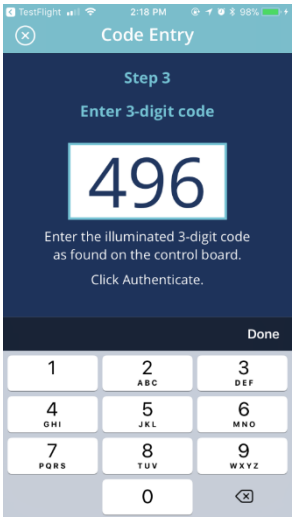
Note: Before an OTA software update can be accepted, all fault codes must be cleared. This includes shared data fault codes. Shared data must be populated before an OTA Software update can be accepted.

Verification Method 1: Pair Device by Code







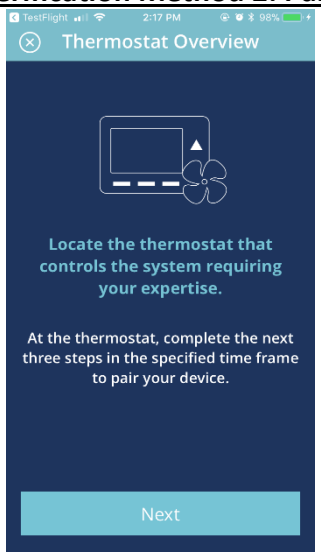


If the user chooses to pair using the *Pair Device by Code* method and the code on the indoor circuit board is visible, a 3-digit code will be displayed for pairing at the indoor circuit board's 7-segment display.
This is the same display used to change settings on the board through the board's three push buttons. If the code is not visible, the user can remove the front panel from the unit to see the code once the unit has been rebooted and the door switch is depressed. The *Pair Device by Thermostat* method on the following page was designed and can be used as an alternative to remove the front panel, which could reset currently active fault codes.

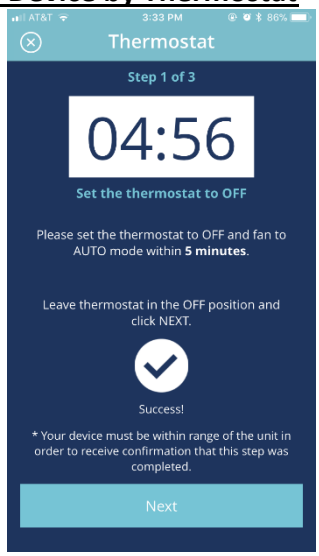
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If power is interrupted to the board when the panel is removed and replaced, the device will be disconnected from **Bluetooth**® and the user will need to restore power and wait for 30 seconds for the **Bluetooth** network to begin broadcasting again.
The user can make up to three consecutive inaccurate code attempts before and a new code will be displayed. Once the code is entered successfully the user will be brought to the System Overview screen.

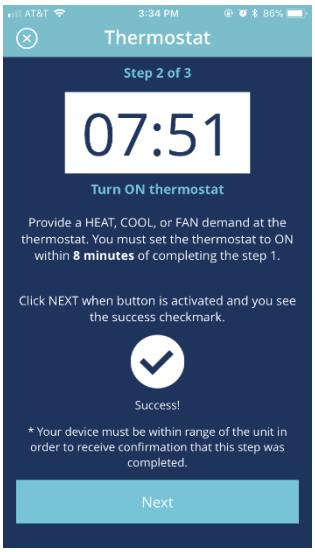
Verification Method 2: Pair Device by Thermostat



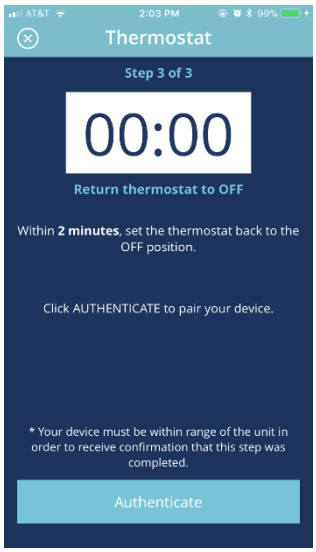
Task Screen 1



Task Screen 2



Task Screen 3



Task Screen 4

If the user chooses to connect using the *Pair Device by Thermostat* tasks method, they will need to locate the thermostat that controls the indoor unit they wish to connect to. In short, the user will have to turn the thermostat off, then on, and then off again within a certain time period. Here is a more detailed description of all the steps:

1. Select the unit you would like to connect to, select the thermostat tasks verification method, and locate the thermostat controlling the unit you are trying to connect to.
2. When ready, select "Next" (see *Task Screen 1* above) to start the first timer.
3. (*Task Screen 2* above) **Within 5 minutes**, ensure there are no calls (W, Y, G, etc.) coming from the thermostat. It may take 5 seconds for the controls to detect any changes. Once the control confirms there are no calls, the user will receive a "**Success!**" message and the "**Next**" button will become active. The user must click "**Next**" to move to the next task.
4. (*Task Screen 3* above) **Within 8 minutes**, use the thermostat to send any call to the unit. We recommend sending a G (constant fan) call as there typically aren't any on or off delays associated with these calls. It may take 5 seconds for the controls to detect any changes. Once the control confirms there is an active call, the user will receive a "**Success!**" message and the "**Next**" button will become active. The user must click "**Next**" to move to the next task.
5. (*Task Screen 4* above) **Within 2 minutes**, remove all calls coming from the thermostat. It may take 5 seconds for the controls to detect any changes. Once the control confirms there are no calls, the "**Authenticate**" button will become active.
6. Press "**Authenticate**" to complete the connection process.

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If a user fails to complete the *Pair Device by Thermostat* task verification method on their first attempt, they will be brought back to the overview screen (*Task Screen 1*).

Software Updates

Once the user has successfully connected to a unit and verified their connection, they may be asked to update the software on the **Bluetooth®** Module. They may skip any optional updates but must apply mandatory updates before continuing. If they update the software on the **Bluetooth** module, they will be disconnected from the network after the update is complete.

> **Note:** Before an OTA software update can be accepted, all fault codes must be cleared. This includes shared data fault codes. Shared data must be populated before an OTA Software update can be accepted.

Staying Connected

Once the user has successfully connected to a **Bluetooth** network, the phone app will remember that unit. The next time they want to connect to the same unit, they will not be asked to re-verify their connection. The connection will be remembered even if the indoor unit is temporarily disconnected from power or if the user updates software on the **Bluetooth** module.

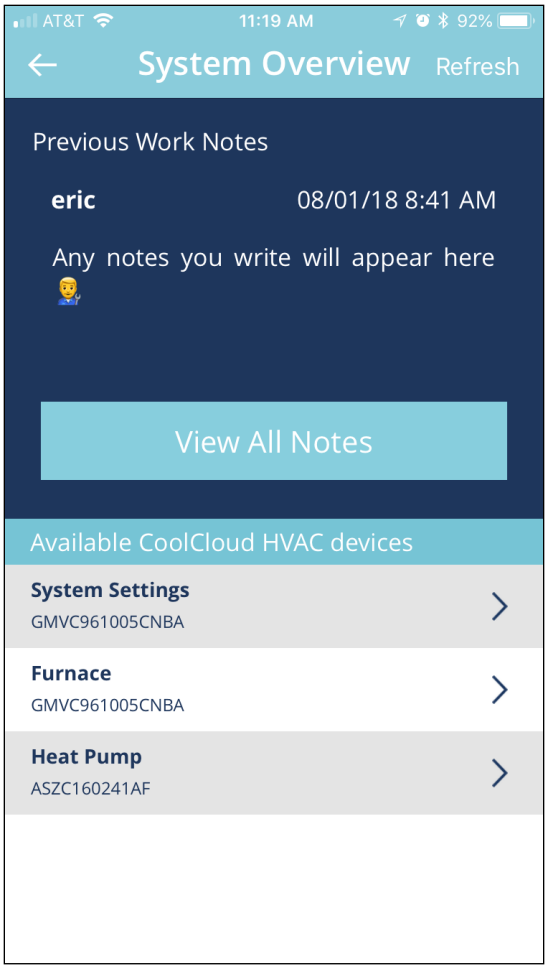
This connection will be remembered for 8 hours or until the user connects to a different unit, whichever comes first.

Part 3: The System Overview Screen

Once the user has successfully connected to a unit and completed any software updates, they will be brought to the System Overview screen. This screen contains a list of devices connected to the system, as well as any Notes that other users may have left during previous visits to the site.

The items listed on this screen will usually appear in the same order, though this is not a guarantee. The usual order is:

1. System Settings, along with the model number of the indoor unit
2. The indoor unit type (Furnace or Air Handler) and the model number of the indoor unit
3. The outdoor unit type and the model number of the outdoor unit



Communicating outdoor units will appear on this list as an AC or Heat Pump with the model number of the unit displayed beneath it. For example, in the screenshot on the top right we can see the heat pump unit connected to this system is a communicating heat pump with the model number ASZC160241AF.

The outdoor unit may also appear as "*Click to Setup Non-Comm Outdoor*" with "*24V Outdoor*" displayed beneath it. This means that the indoor unit could not detect a communicating outdoor unit connected to its 1-2-R-C terminal block. If a non-communicating outdoor unit is installed as part of this system, it will be necessary for the installer to manually configure the settings for this unit

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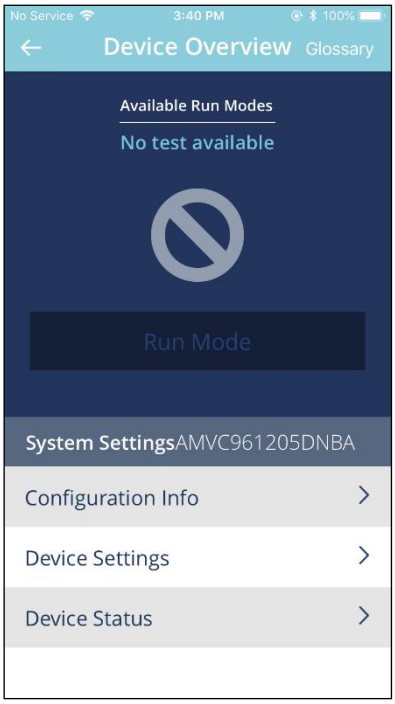
using its device specific menus. See Part 5: Setting Up a Non-Communicating System for more information on how to configure systems with a non-communicating outdoor unit.

In rare cases the screen may say “It looks like the system is still booting up, please wait a few seconds and refresh this page.” The user can refresh the page by selecting *Refresh* in the upper right-hand side of the screen until the device list is visible.

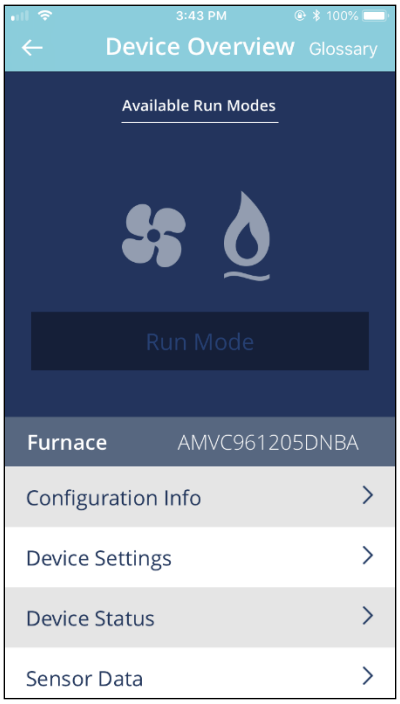
If the user does not see the model number of the indoor unit listed here, it may be necessary to correct an active fault condition on the indoor unit. The active fault will be visible in the *FAULT CODE HISTORY* section of the app and is detailed later. The user can navigate to the *FAULT CODE HISTORY* menu for the indoor unit to find more information on the active fault along with possible solutions. Some menus may not be available until the fault condition is corrected.

If the user installed a communicating outdoor unit, but *24V Outdoor* is being displayed beneath the outdoor unit type, then the communicating outdoor unit has not yet been detected. This may be due to a natural time delay for the communicating outdoor unit to be detected, which could last up to 90 seconds. If the outdoor unit has not been detected after 90 seconds, then the user should check polarity of the communication wires between the indoor and outdoor unit (check that lines 1 and 2 on the 1-2-R-C terminal block are not swapped).

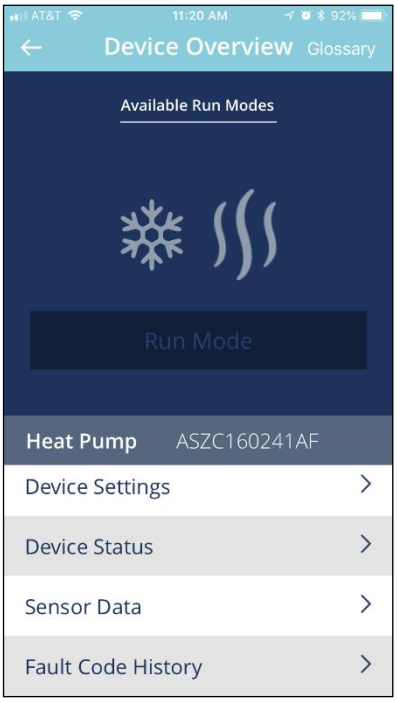
Part 4: Viewing Unit Information



Device Overview 1



Device Overview 2



Device Overview 3

Selecting any unit from the System Overview screen will take the user to the Device Overview screen. From here the user can run the unit in any available run mode or view more detailed information about the equipment.

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Run Modes

Run Modes allow independent testing of specific operational modes. Each unit has a specific set of *Run Modes*, a furnace (see *Device Overview 2*) has constant fan and gas heat run modes. A heat pump (*Device Overview 3*) has cooling and heat pump heat run modes. An air handler will have the constant fan and electric heat run modes, and an air conditioner will have only the cooling run mode. Some devices, such as system settings (*Device Overview 1*), have no applicable run modes.

To run the selected unit in an available run mode, first select the desired mode and click *Run Mode* below the icon. The user can then choose a run mode capacity using the slider that appears on screen.

When activating a unit in the constant fan Run Mode, the capacity the user chooses is the percentage of maximum airflow that the unit will provide during the call. For all other run modes (gas heat, cooling, heat pump heat, and electric heat), the capacity selected represents the stage the user would like to run on the unit. All values less than or equal to 50% represent a low-stage call. All values greater than 50% represent a high-stage call. If the unit only supports single-stage operation, all values greater than 0% will activate the unit in the selected run mode.

Non-communicating outdoor units cannot be activated using run modes on the phone app. The device overview screen will still show the run modes that would typically be available on these units but activating these run modes from the app will not cause the outdoor unit to engage. Instead, activating these run modes will cause the indoor unit to provide the airflow that it would normally provide if the outdoor unit was running in the given mode. This can be useful for confirming the indoor unit's airflow settings for cooling and heat pump heating modes.

Once the desired capacity has been selected the user can click *Run Mode* again to start the run mode sequence. A timer will appear on-screen counting up. This timer will continue running until the user chooses to stop the run mode or they leave the application. The user can look at unit-specific menus for the selected unit while the test mode is active but will not be able to view information about other units without stopping the run mode on the current unit first.

The user can stop the run mode by pressing the *Stop Mode* button that replaces the *Run Mode* button.

If the unit continues running in a *Run Mode* when it appears the phone app has stopped *Run Mode* operation, the user can safely disconnect their app from the unit and the run mode will expire on its own after at most 5 minutes.

Unit-Specific Menus

There are currently six unit-specific menus:

1. Configuration Info
2. Device Settings
3. Device Status
4. Sensor Data
5. Fault Code History
6. Shared Data

The user may select any available unit-specific menu to see what extra information is available for that device. The following sections will cover what kinds of information the user should expect to see under each unit-specific menu.

In general, if a user is attempting to view a unit-specific menu but it is taking a long time to load the menu or no menu loads, it is possible the user needs to either refresh the *System Overview* screen, force-close the application and reconnect to the system, or reboot power to the indoor equipment in that order.

Viewing Configuration Info

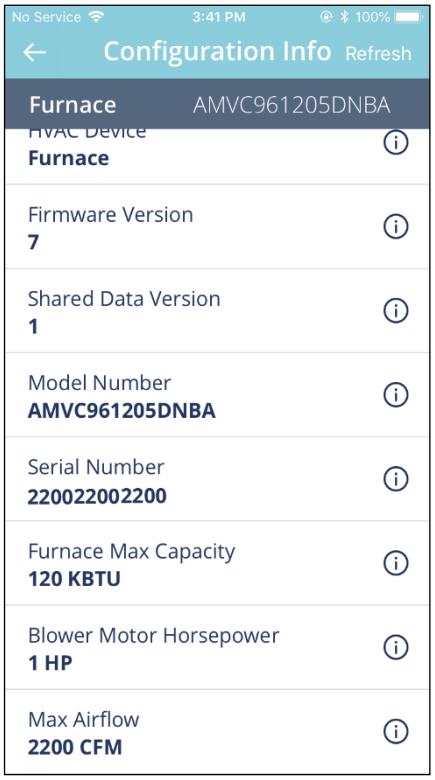
Retrieving the configuration info from a particular unit will show information from the unit that does not and cannot be changed, such as the equipment model number. This is useful for confirming shared data information and determining the max airflow of the indoor unit (see *Configuration Info* menu above). If the model number of

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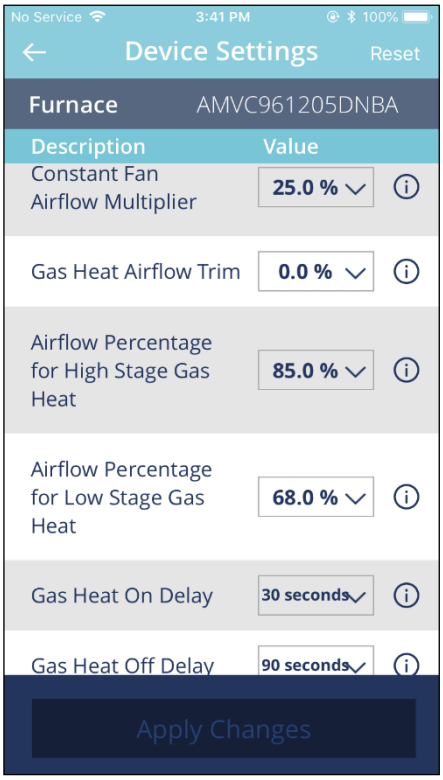
the equipment is present in the *Configuration Info* menu then the equipment control board contains valid shared data. The user may select the (i) icon to the right of each menu item to view the glossary entry for that item.

Viewing and Changing Device Settings

Viewing the *Device Settings* menu shows the user a list of the user-modifiable settings that relate to the given unit. To change these settings, the user must click the box, use the selection tool and select the desired value for that setting. Once the user has made all their desired setting changes, they must click the visible *Apply Changes* button at the bottom of the screen for the change to take effect. Some setting changes may cause new settings



Configuration Info Menu



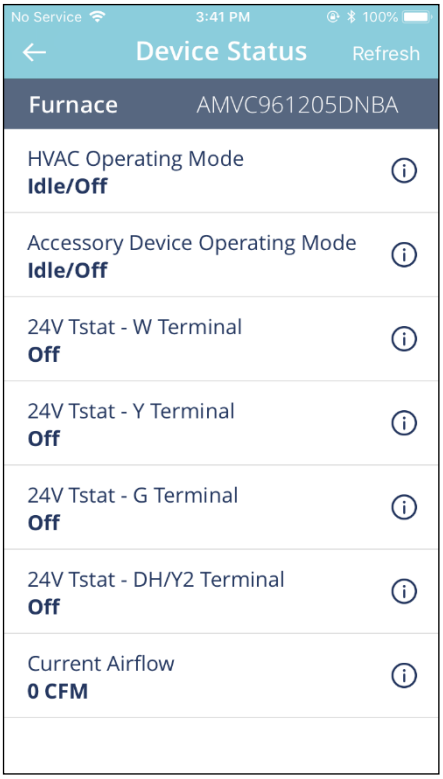
Device Settings Menu

to become available. Users may have to return to the *Device Overview* screen or select *Refresh* to view any new settings. The user can press the *Reset* button in the upper right-hand corner to clear any unwanted changes.

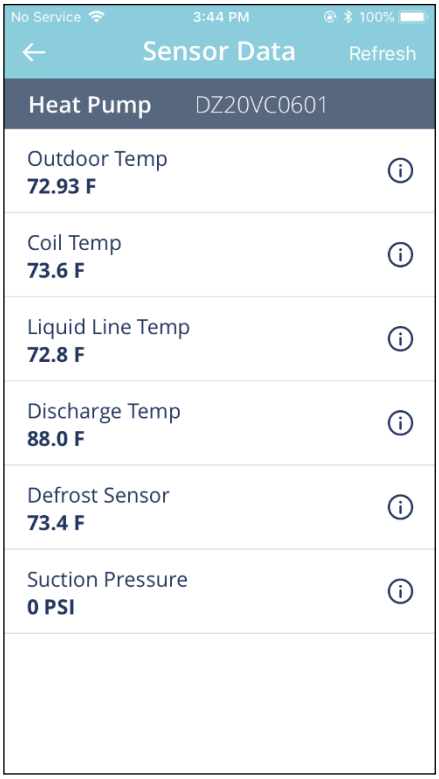
Viewing Device Status

The *Device Status* menu will show any available information about what inputs are currently being sent to the unit and what operational characteristics are being deployed to the heating and cooling equipment. This information does not automatically refresh and must be refreshed using the *Refresh* button to see updated values.

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Device Status Menu



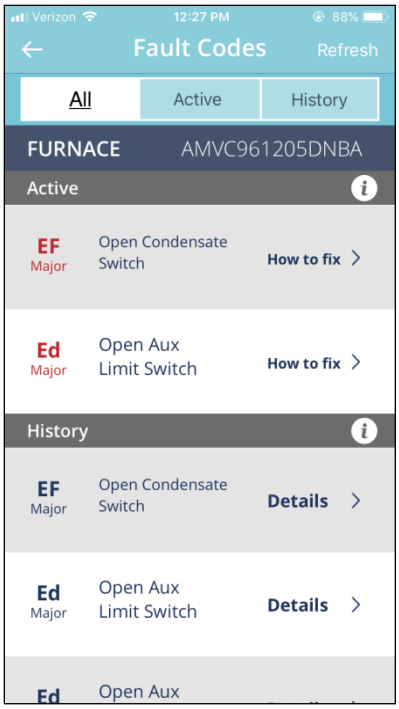
Sensor Data Menu

Viewing Sensor Data

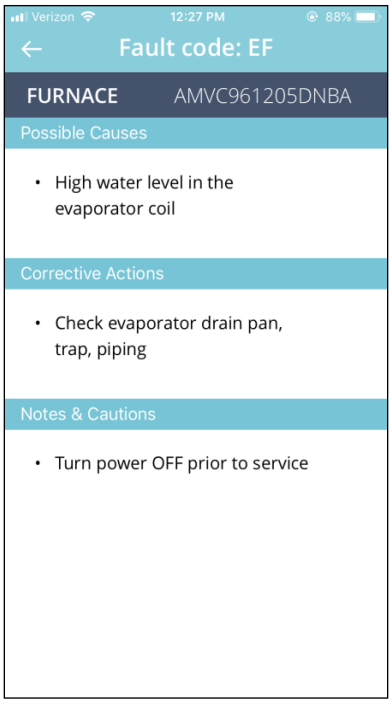
If there are any sensors connected to the unit, information from those sensors will be displayed here. Currently the only units that will have sensor information are communicating outdoor units. This information does not automatically refresh and must be refreshed using the *Refresh* button to see updated values.

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Viewing Fault Code History



Fault Codes



"How-to-fix" Example

The user can view any active or history faults produced by the unit in the *Fault Code History* menu. If there are any active faults, a *How-to-fix* button will appear next to the fault. Pressing this button will open up more information on the fault code with information about possible causes, corrective actions, and notes/cautions. History Faults will appear beneath the Active faults on this screen. These faults are the last 6 faults stored in memory on the device. Though these faults are not active, they may still be caused by an ongoing issue with the unit. Opening the *Details* for these faults will display the same information that is displayed in the *How-to-fix* menu. Faults are displayed differently when using a tablet.

The faults displayed on each device's *Fault Code History* menu are faults for that device only. When multiple units are available at the same site the user should go to each device's *Fault Code History* menu to ensure there are no active faults affecting any of the units connected to the system.

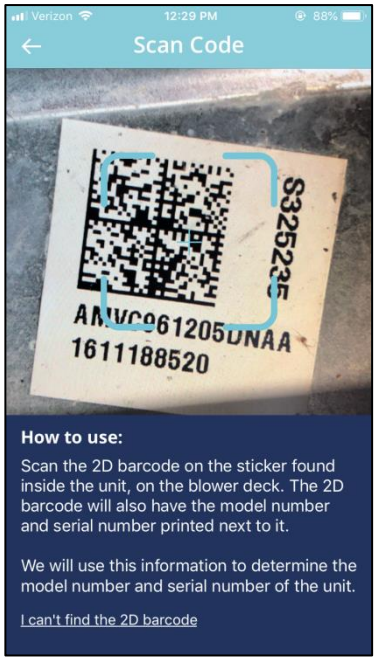
Non-communicating outdoor units have no communication capabilities and will never report active or history faults in the app.

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Shared Data



Shared Data Update Available



Barcode Scanner



Manually Select a Model Number

If a unit supports shared data, the app will display a Shared Data menu on the Device Overview screen for that unit. When the user selects Shared Data from this menu, the app will check for any Shared Data updates that may be available for that unit. If the app determines that the Shared Data of the unit is already up-to-date and the model number provided by the app is accurate, there is no reason to continue with the Shared Data update process.

If the app determines that the unit has outdated shared data, or no shared data, the user can proceed with the shared data update process. Note, however, that this will reset all previous settings on the unit. This includes any setting changes made for non-communicating outdoor units, which will have to be reconfigured after any shared data update.

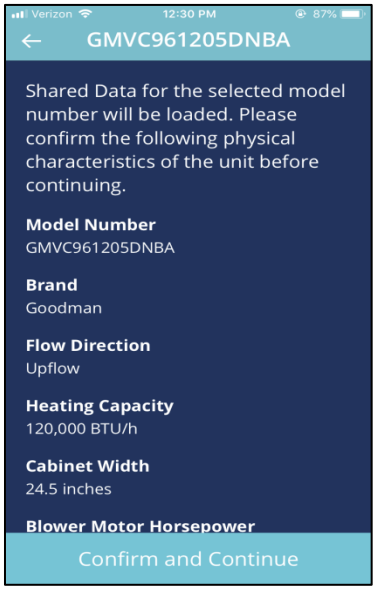
First, the user must choose whether they would like to use the camera on their device to scan the factory 2D barcode which can be found on the unit or manually select the unit's model number from a list of available device models. Using the camera is recommended to avoid the possibility of loading invalid Shared Data, which has the potential to interfere with normal system performance and void the device's warranty.

To use the camera, first locate the 2D barcode on the unit. The barcode can typically be found on the blower deck, however, accessing this sticker may involve removing the front panel from the unit. If this is the case, the user will have to remove the panel, depress the door switch, and allow enough time for the unit to reboot before reconnecting the app to continue. Once the 2D barcode has been found, the user can select "Use Camera" on the left-most screen above to open the app's barcode scanner (middle screen above). Center the capture tool over the 2D barcode, the app will capture the barcode once it comes into focus. If the camera is too close for the barcode to come into focus, it may be necessary to adjust the position of the phone/mobile device until the camera can focus on the 2D barcode.

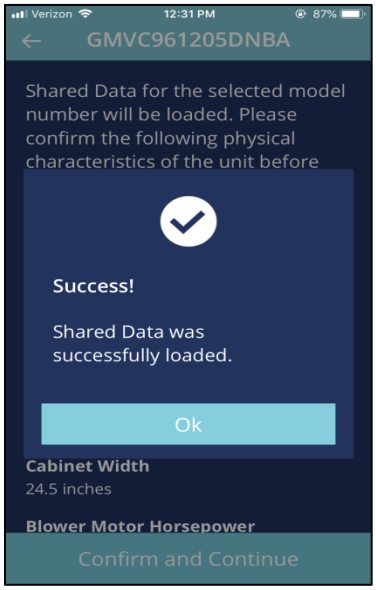
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If the 2D barcode cannot be scanned, it may be necessary to manually select the model number of the unit. In this case, the user can select “Manually Enter Unit Info” on the left-most screen above. The user can then scroll through all available model numbers to find the one they need. The user can type in part of the model number to filter the list.

After providing the model number (either with the camera or by manually selecting it), the user will be brought to a confirmation screen where they can review details about the unit and confirm that the correct model number was selected. See below image for an example of this confirmation screen.



Model Number Confirmation



Success!

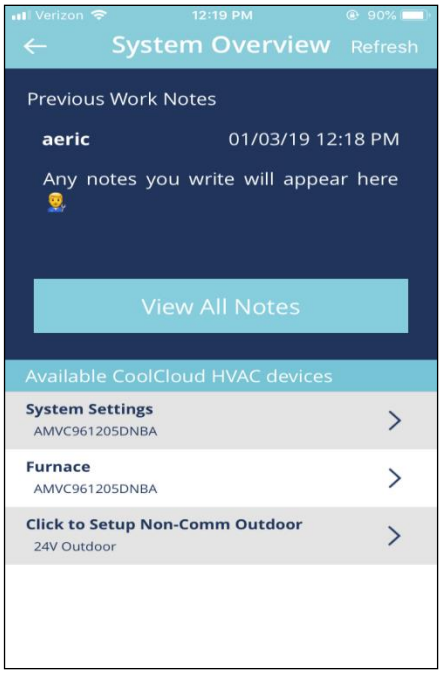
Once the user has confirmed the selected model number is accurate, they may press the “Confirm and Continue” button at the bottom of the screen. This will start the Shared Data update process which may take up to 30 seconds. Once the process is complete, the user will receive a “Success!” message and be brought back to the Device Overview screen.

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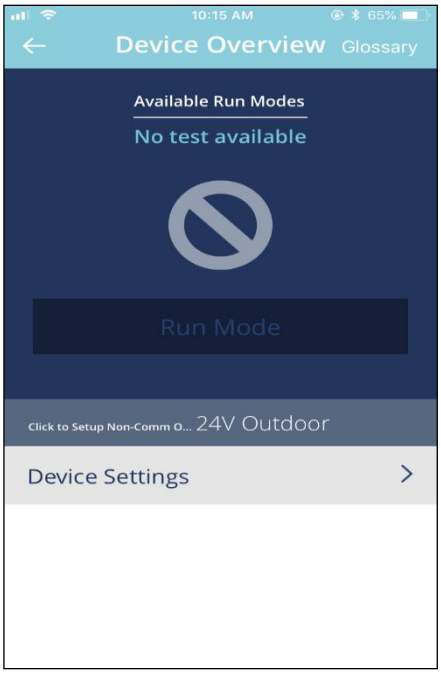
Part 5: Setting Up a Non-Communicating System

This section will explain how to set up non-communicating outdoor equipment. This will only cover what needs to be done on the phone app to complete system setup. See the indoor unit installation manual for other non-app setup requirements.

Setting up a non-communicating system



A System in need of Setup

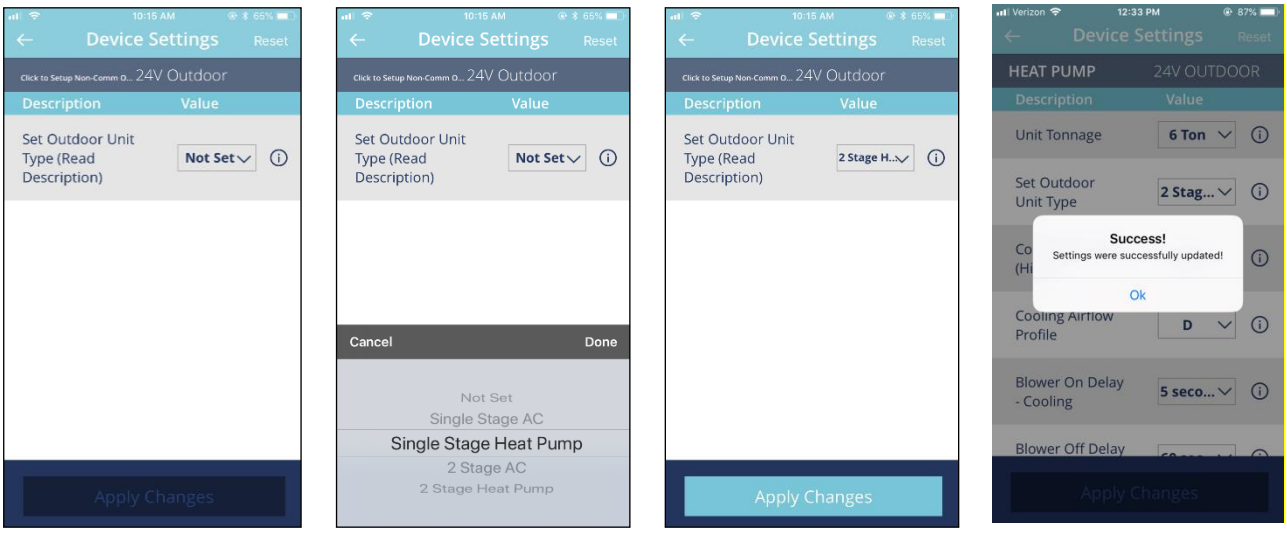


Non-configured Outdoor Unit Device Overview

If a user has just installed a new system with a **CoolCloud**™ HVAC compatible indoor furnace and a non-communicating outdoor unit, their system's airflow will need to be configured through the phone app before the indoor unit can appropriately process calls made to the outdoor unit. This process includes setting the outdoor unit type and tonnage.

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Selecting the *Click to Setup Non-Comm Outdoor* device from the *System Overview* list will take the user to the *Device Overview* screen for that unit where the only available menu is the *Device Settings* menu.



(1) *(2)* *(3)* *(4)*

(1) Select the drop-down menu from the *Set Outdoor Unit Type* menu

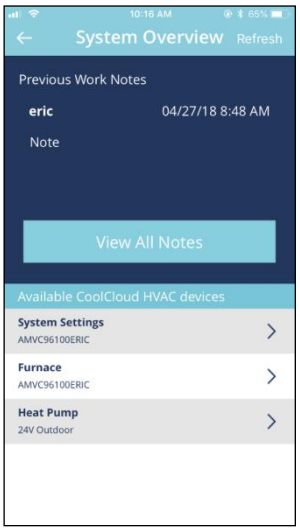
(2) Select *Single Stage AC*, *Single Stage Heat Pump*, *2 Stage AC*, or *2 Stage Heat Pump*.

(3) Select *Apply Changes* at the bottom of the screen.

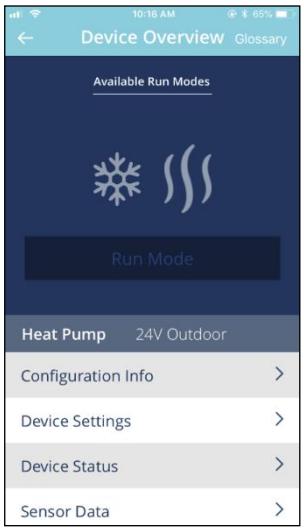
(4) The phone app will display a *Success!* message indicating the change has been applied. The selected unit type will also now be visible in the upper left-hand side of the screen

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After this setting change is applied, the *Click to Setup Non-Comm Outdoor* unit will be replaced with the chosen unit type. The settings page the user is viewing will be updated to reflect these changes. The System Overview screen will also now display the unit type chosen previously.



Updated System Overview



Updated Device Overview



Unit Tonnage Selection

Once the new unit type setting has been applied, the tonnage selection for the outdoor unit will need to be confirmed. This can be found in the *Device Settings* menu of the selected outdoor unit (see the *Unit Tonnage Selection* screen image on the prior page). The indoor unit will use this value to calculate the airflow to provide during high stage calls to the outdoor unit. The indoor unit will provide 400 CFM/Ton and provides tonnage settings in increments of 0.1 Tons (40 CFM).

For example, selecting the 3 Ton setting means the indoor unit will provide 1200 CFM of airflow during a high stage call to the outdoor unit.

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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

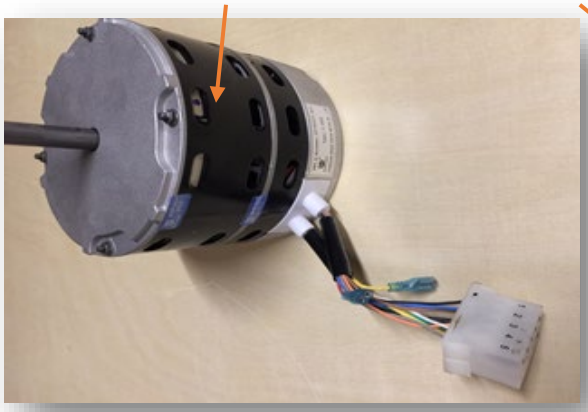
SA – 032 Rev. 1

DATE: July 30, 2021
TO: All Service and Parts Managers
SUBJECT: Broad Ocean DM3 Motor Controllers ***UPDATE on page 2***

Analysis of returned motors has shown that most replacements are the result of failures in the motor controller and not the motor body. As a result, we are releasing the controllers and controllerless motors separately through service parts.

As inventory is consumed of complete motor assemblies all Broad Ocean DM3 motors will sub to programmed controllers and the motor assemblies will no longer be available. New parts catalogs will list the controller and controllerless motor as separate parts. In older parts catalogs the existing Broad Ocean motor will be substituted to the appropriate controller. Refer to the parts catalog for the controllerless motor on the rare occasion one is required.

Complete Motor Assembly **Controllerless Motor** **Programmed Controller**





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SERVICE BULLETIN

Goodman Air Conditioning & Heating

Amana Heating & Air Conditioning

*****UPDATE July 2021*****

The 5-pin PCB has been removed from the original DM3 controller and replaced with electronics below the controller "potting" material (see Image 1). The 5-pin connector from the motor is no longer utilized. A dummy plug is left in place to accommodate the connector and keep the wires organized (*see Image 2*). The motor and controller come apart by removing the 2 screws from the bottom. The motor to controller connections are a 3-pin plug and a 5-pin plug. On the controllerless motor replacement, the 5-pin plug snaps in to a dummy plug located on the controller (see Image 3).

Refer to the product service manual for diagnostic and replacement procedures.

Image 1

Old controller with 5-Pin Plug



Image 2

NEW controller with Dummy Plug

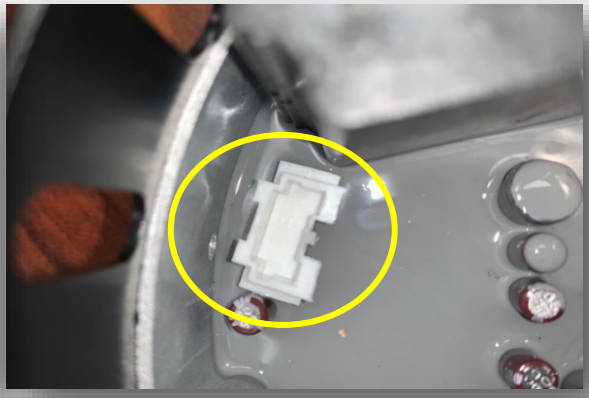
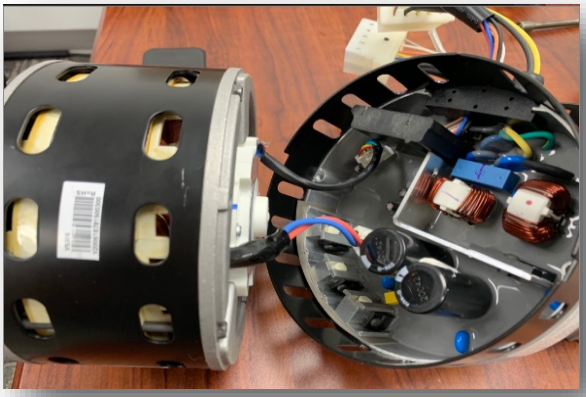


Image 3

New controller plugged into pre-existing motor.



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SERVICE BULLETIN

SA-031 Rev1

DATE: July 23, 2020
TO: All Service and Parts Managers
SUBJECT: **Bluetooth**® Shared Data Loader

We are excited to announce the release of a new tool that will eliminate the need for shared data chips with **ComfortNet**™ products. Now with a one-time purchase of the **Bluetooth** Shared Data Loader, you will have access to all shared data files for **Goodman**®, **Amana**® and **Daikin**® brand products via the cloud. These shared data files can be accessed when using the **Bluetooth** Shared Data Loader with the **CoolCloud™** HVAC App.

ComfortBridge™ products feature built in **Bluetooth** and do not require the use of this **Bluetooth** Shared Data Loader

This process is spelled out in the instruction below or can be found at https://www.coolcloudhvac.com/loaderuserguide by scanning the QR code below with your camera on your smart device:

Scan for User Guide

To order the **Bluetooth** Shared Data Loader (part # BTSDL01) contact your Goodman or Daikin Customer Service Representative.

Listed below is the instruction for quick reference. Happy loading!

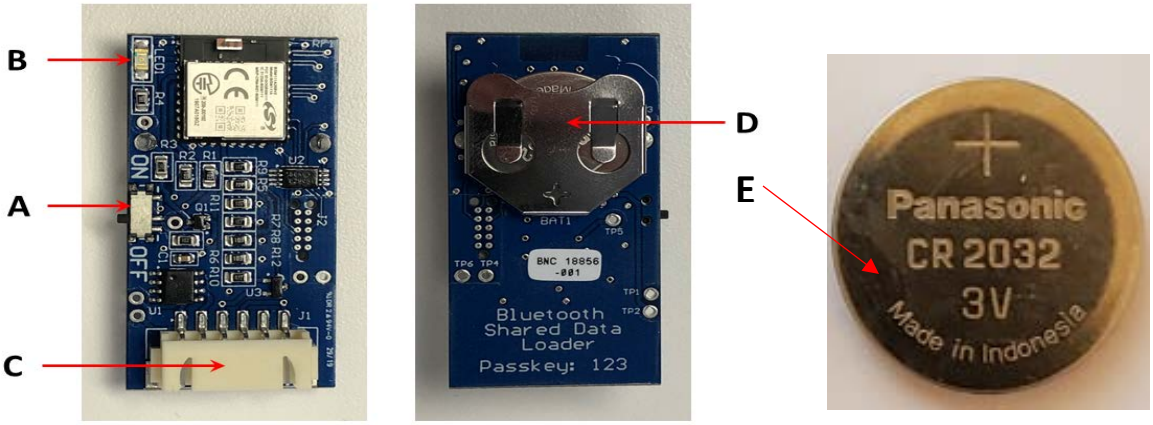
*The **Bluetooth**® word mark and logos are registered trademarks owned by **Bluetooth** SIG, Inc., and any use of such marks are under license.*

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Device Layout



A. **Power Switch** – Can be placed in the ON or OFF position. The device must be powered on to program Shared Data from the **CoolCloud™** HVAC app and to load Shared Data onto any compatible equipment.
B. **Status LED** – Will blink periodically when the device is powered on. The Status LED will blink once every 4 seconds when the device is powered on normally. The Status LED will blink 3 times in quick succession to indicate the battery is low and will need to be replaced soon.
C. **Shared Data Loading Connector**
D. **Battery/Battery Slot** – Accepts a CR2032 3V coin cell battery
E. **Coin Battery –** One-coin battery is provided in the packaging. Ensure the positive side is facing up and slide the battery into the battery slot.

Setup

Before using the card, download the **CoolCloud** HVAC app for iOS or Android using the links below. Be sure to register for an account before continuing.

Download on the App Store

GET IT ON Google Play

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Google Play and the Google Play logo are trademarks of Google LLC

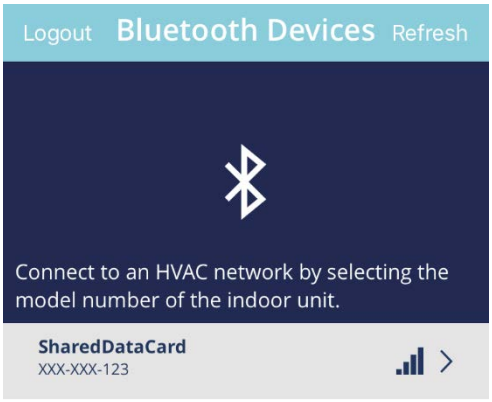
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Connecting to the Device

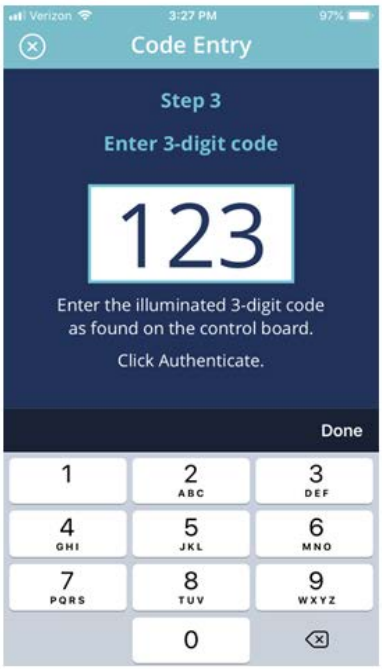
Turn the **Bluetooth®** Shared Data Loader on by switching the Power Switch to the ON position. The blue Status LED should begin flashing periodically. If the **CoolCloud™** HVAC app is open, it will detect the new **Bluetooth** network and display “SharedDataCard” as an available network. Tap on this network to connect.



If the network does not appear, ensure the Status LED on the device is flashing and tap the refresh button in the app to continue scanning for networks.

If the app requires any security verification, choose “Pair Device by Code” and enter the code 123.





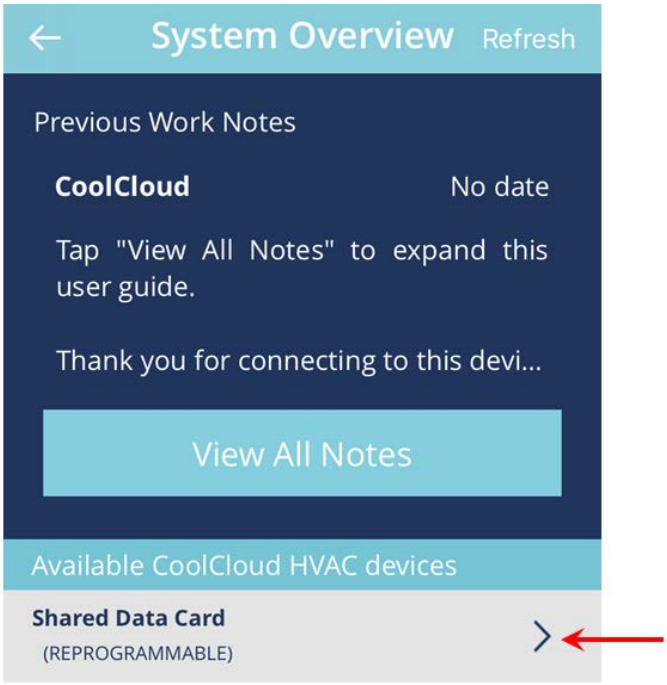
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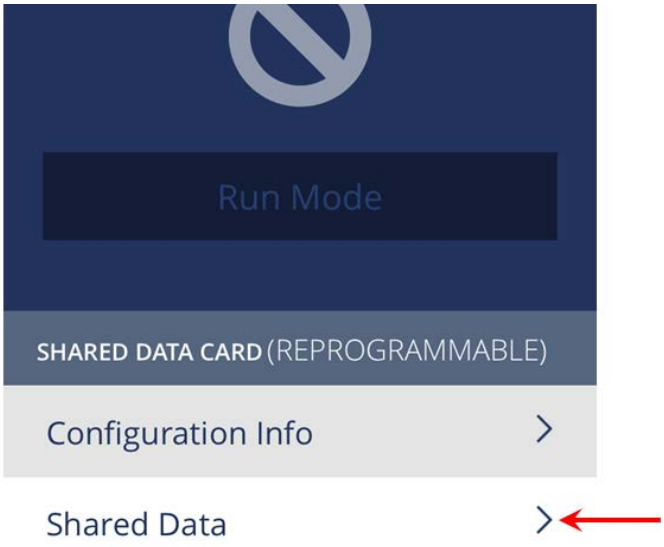
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Reprogramming Shared Data

To select shared data, click on "Shared Data Card" on the system overview screen.



Then click on "Shared Data".

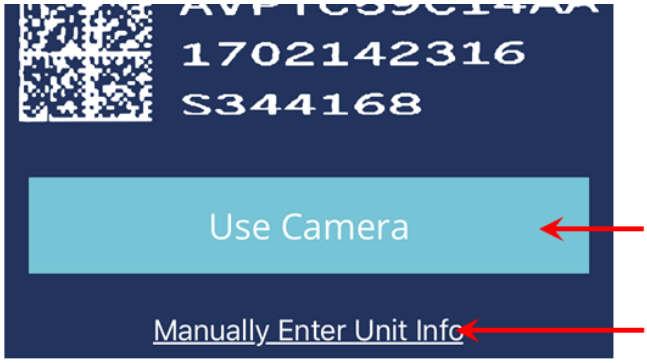


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From here, the appropriate Shared Data can be selected by either scanning a barcode that can be found on the unit or by typing in the model number of the unit. If possible, scanning the 2D barcode is recommended to get the most accurate results. If this barcode is faded, damaged, or can't be found, then it will be necessary to enter the model number instead.



The 2D barcode can typically be found somewhere inside the unit. For indoor units, the barcode can typically be found on the blower deck. For outdoor units, it can typically be found on the inside of the control board compartment. This 2D barcode will always have the model number of the unit printed next to it.



*For this **ComfortNet™** furnace, the 2D barcode is located on the blower deck, its model number is AMVC961205DNAA*

After selecting the desired model number, the app will present a confirmation screen. Review the information on this screen, then, if the information looks correct, click "Confirm and Continue" to program the selected Shared Data onto the card.

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If the information shown on the confirmation screen does not look correct, it may be necessary to choose a different set of Shared Data. Return to the previous screens and ensure the model number provided in the app is correct. If possible, use the camera to scan the 2D barcode instead of manually selecting the model number from the list.

Loading Shared Data onto the Equipment

Once the Shared Data has been programmed onto the card, determine if the equipment being worked on is a **ComfortNet**™ unit or a **ComfortBridge**™ unit. All **ComfortBridge** units have **Bluetooth®** and are designed to work with the **CoolCloud™** HVAC app directly. In most cases, it will be easier to simply connect the app to the **Bluetooth** network of the unit and reprogram the Shared Data on the unit directly from the app.

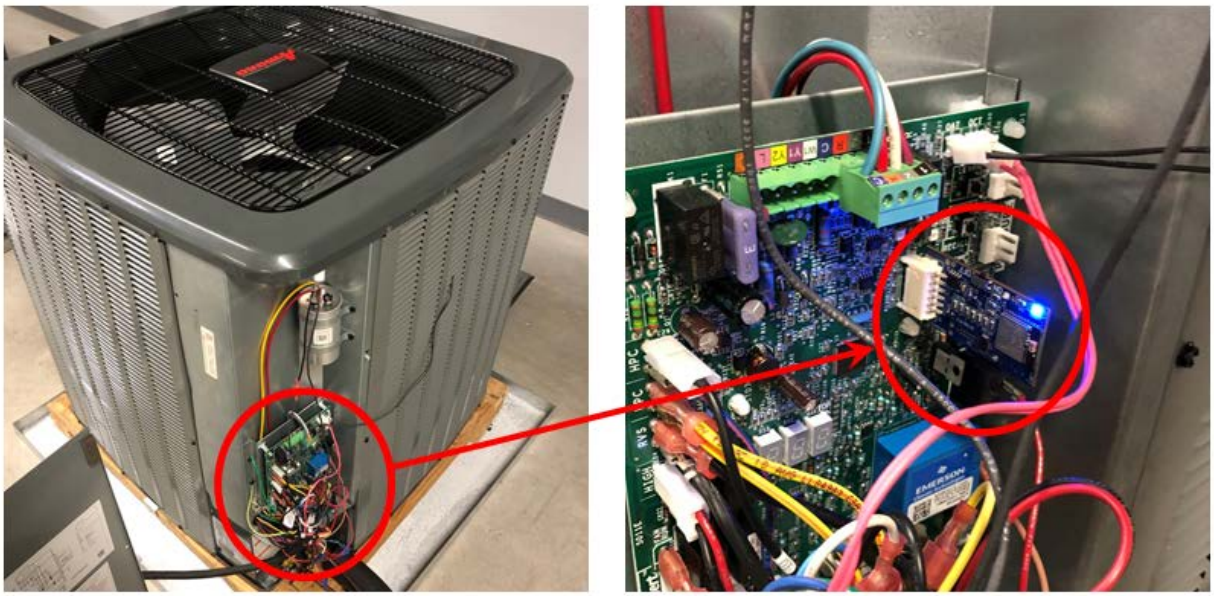
NOTE: When searching for shared data, all model numbers are listed with an asterisk symbol for minor revision. Example: GMVC950905CX **A*.** You will select your corresponding model revision combination from this list to download onto the BTSDL01.

In some cases, it may be necessary to load Shared Data onto a **ComfortBridge** unit (e.g. when the **Bluetooth** connection is not working). If this is the case, please skip to the section labeled "Loading Shared Data onto **ComfortBridge** Equipment" for further instructions. Otherwise, please keep reading.

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Loading Shared Data onto ComfortNet Equipment

When loading Shared Data from the card onto a **ComfortNet** unit, first disconnect power from the HVAC system and insert the card into the Shared Data loading connector on the control board inside the desired **ComfortNet** unit. When plugged into the unit, the card must be powered on to function properly.



The reprogrammable Shared Data loader card must be powered on to load Shared Data onto a unit

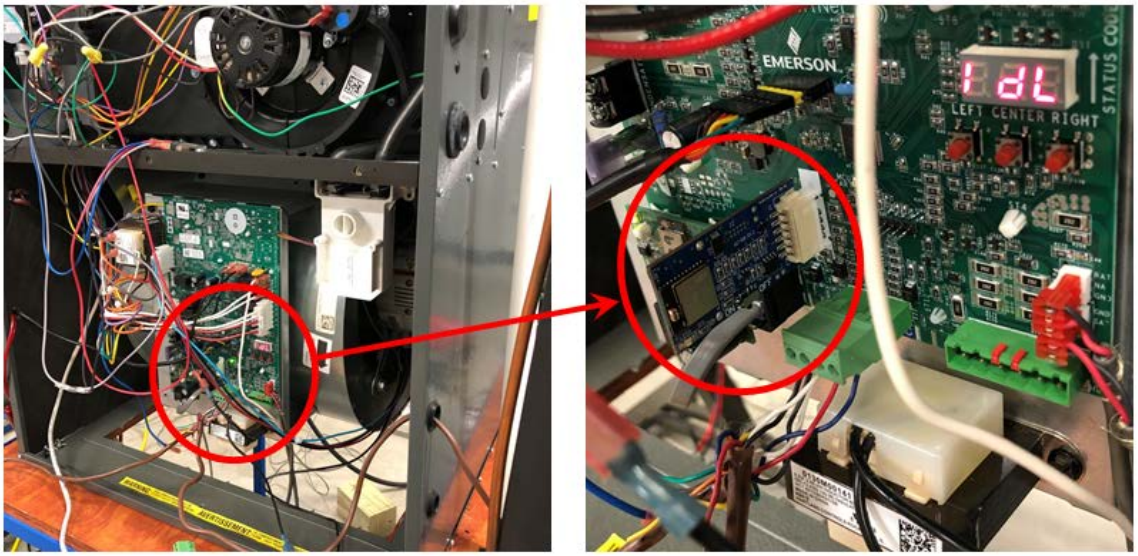
With the card plugged in and powered on, power on the equipment for 30 seconds to allow the Shared Data loading process to complete. When complete, power the equipment off and retrieve the card from the unit. Reconnect power to the system and confirm that the Shared Data loading process was successful, and that the system is operating normally.

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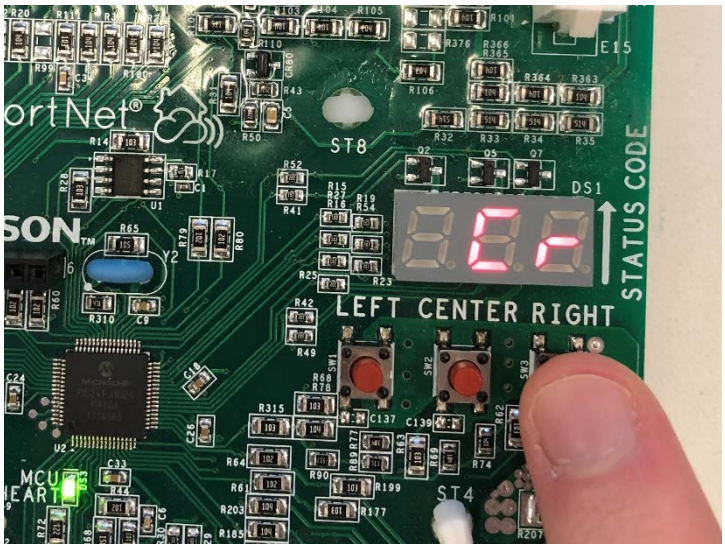
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Loading Shared Data onto ComfortBridge™ Equipment



To load Shared Data onto a **ComfortBridge**™ unit, first insert the card into the Shared Data programming connector on the control board inside the desired **ComfortBridge** unit. Then ensure the board and the card are receiving power. Once the board is fully powered on and displaying the “IdL” code, use the “LEFT”, “RIGHT”, and “CENTER” buttons on the control board to navigate the appropriate menus on the control board.

Press the “RIGHT” button until the display reads “Cr”.



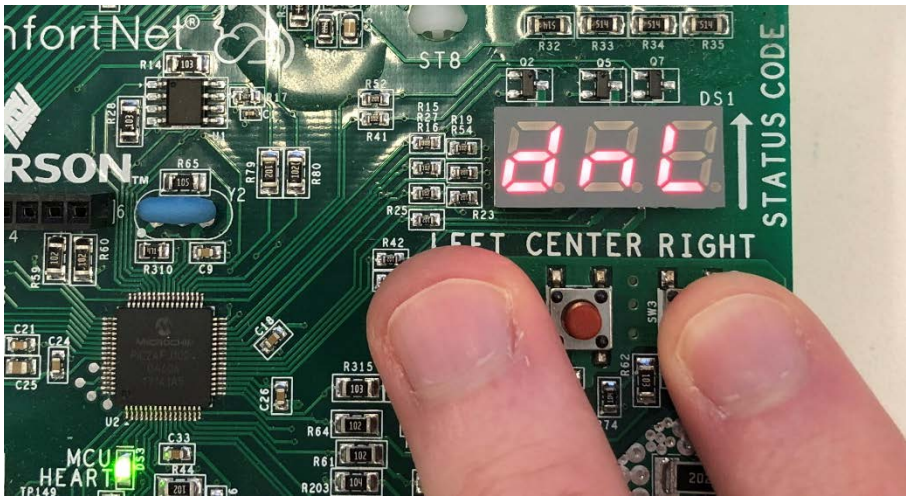
Then press “CENTER” to select the Cr menu. Some codes will begin flashing on the display. Ignore these codes and hold down the “LEFT” and “RIGHT” buttons simultaneously for at least

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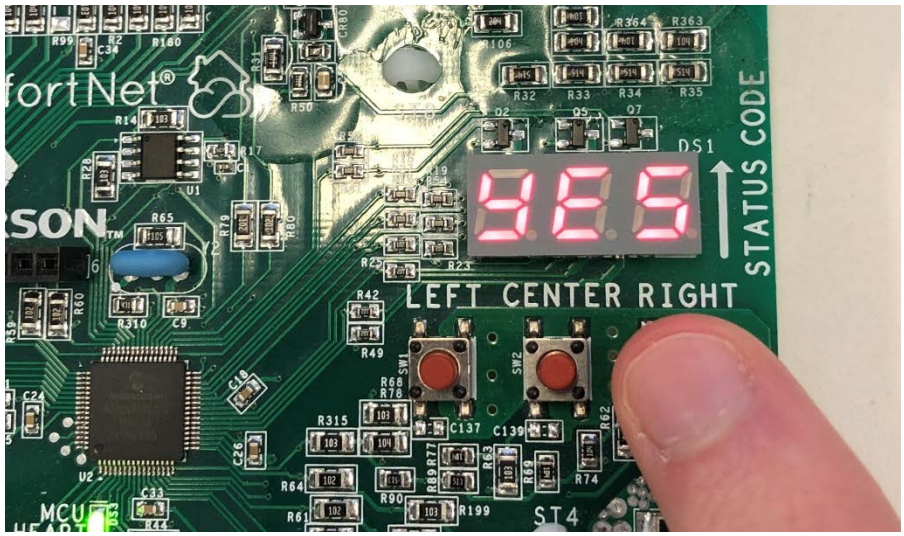
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10 seconds. If the display switches to “Cr” again, check that the **Bluetooth®** Shared Data Loader is inserted fully into the connector and is powered on.



After holding “LEFT” and “RIGHT” for 10 seconds, the display will start flashing a new code (“dnL”), once this new code appears, release the “LEFT” and “RIGHT” buttons. The equipment will display the options “YES” and “no” to confirm or cancel the Shared Data loading process. To confirm the process, press the “RIGHT” button to select “YES”.



Then press the “CENTER” button **twice** to confirm the selection. The board will then start the Shared Data loading process. Once the Shared Data Loading process is complete, the display will return to displaying “Cr”.

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NOTES

What is Shared Data?

There are many different models of equipment offered under the **ComfortNet**™ and **ComfortBridge**™ platforms; however, all these models use only a small handful of control boards. To make sure each control board can work inside its intended chassis, we load each board with a small amount of chassis-specific data when the equipment is assembled.

When the equipment is installed, this chassis data is copied over to any other connected communicating equipment and saved there in case some parts need to be replaced at a later date. Because this data is shared by other equipment on the same network, we call it “Shared Data.”

This means if only one part needs to be replaced in a system, it’s likely the Shared Data will automatically be loaded from the existing equipment. However, if multiple parts need to be replaced all at once and the system loses all the places where this Shared Data is stored, Shared Data will need to be reloaded to make sure the freshly installed parts are compatible with the existing equipment.

When is it Necessary to Load Shared Data?

In short, if a unit reports a d0, d1, or d2 fault code, it will be necessary to load Shared Data from the card.

One of these fault codes may be generated by a unit after some parts of the equipment are replaced. After a system is powered on for the first time, there are two or three places where the Shared Data for the entire system is stored. Shared Data is always stored on the indoor unit control board and the indoor blower motor. If the outdoor unit is a **ComfortNet**™ outdoor unit wired in communicating mode to the indoor unit (i.e. wired using the 1-2-R-C connector), then Shared Data for the system is also stored on the outdoor control board.

Shared Data will only need to be replaced if all sources of Shared Data on a system are replaced at the same time.

Loading Shared Data can be avoided by replacing only one of these parts at a time and powering up the system in standby mode after replacing each part. Standby mode refers to powering up the HVAC equipment without a call for heating, cooling, or constant fan from the thermostat.

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SERVICE BULLETIN

Goodman
Air Conditioning & Heating
Amana Heating & Air Conditioning

SA – 030

DATE: October 12, 2018
TO: All Service and Parts Managers
SUBJECT: Warranty Compressor Return Packaging

As described in the Distributor Manual some compressors are to be returned for analysis purposes. It is important that these compressors be packaged and returned in a manner that will prevent damage, loss of oil or separation from the skid.

The attached bulletin from Copeland describes the way compressors should be secured to a skid and each other for return.

The following pictures are example of how not to package compressors for return and which could result in the delivery being refused. Please communicate this to anyone in your organization responsible for handling compressor returns.







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EMERSON Climate Technologies

Marketing

Copeland brand products

B U L L E T I N

NO: MB2014CC-12
DATE: 12/10/14
TO: **U.S. Air Conditioning OEMs**
FROM: Emerson Climate Technologies, Inc. – Air Conditioning
SUBJECT: **Warranty Compressor Returns**

With an increased awareness on safety and to ensure the integrity of the teardown analysis process, Emerson Climate Technologies is asking our OEMs and service channel to review compressor return shipping methods.

All scroll and hermetic reciprocating compressors must be securely **bolted**, banded, and stretch wrapped to a skid in the **upright** position. For full skids, one bolt minimum for each compressor when the entire group is stretch wrapped and banded securely together. For partial skids, two bolts for each compressor are required.

To prevent possible oil spills which could create slipping hazards in trucks, docks, and manufacturing plants, all compressor ports/tubes should be soldered shut or sealed with rubber plugs. Do not use tape, rags, or putty.

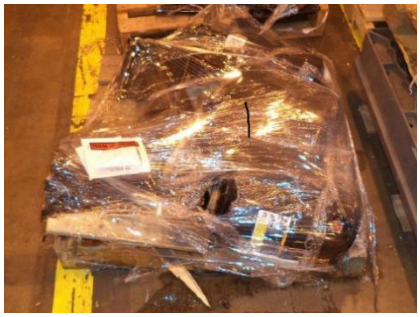
In addition, all compressor nameplates must be intact. Do not remove or cover nameplate with paperwork or tags.

Please see pictures of acceptable and unacceptable shipping examples below.





Examples of acceptable packaging





Examples of unacceptable packaging

If you have any questions, please contact your Emerson Account Manager, Customer Service Representative, or visit the Warranty Information link at EmersonClimate.com.

Service Bulletin

SA-029

DATE: December 16, 2016

TO: All Service and Parts Managers

SUBJECT: Incorrectly Labeled Transformers – 208/240 Volt Models

(AWUF, ACNF, ARPT, ARUF, ASPT, ASUF, AVPEC, AVPTC, AWUT, DVxx, FXTQ, MBR, MBVC, APC, APD, APG, APH, DCC, DCG, DCH, DPxx, DSC, DSG, DSH, DTC, DTG, DTH, GPC, GPD, GPG, GPH)

Earlier this year we added an additional transformer supplier to our list of approved vendors. However, the high voltage terminal arrangement was not the same between the two vendors. Subsequently the transformer was redesigned so that, regardless of the vendor, the terminal arrangement would be the same.

As a result of this change it has come to our attention that some recent **Part# 0130M00138** transformers were incorrectly labeled. This could potentially affect the voltage adjustment from 240 volts to 208 volts. We are only aware of transformers on units serial date code 1609xxxxxx through 1612xxxxxx as potentially having incorrect labels.

We are requesting you make your customers aware of this information by sharing this bulletin with them.

Please refer to the illustrations of the transformers shown below and listed instructions with each picture for proper wiring when adjusting the transformer from 240 volts to 208 volts. Incorrect wiring could result in damage to the transformer and 24 volt circuit components.***NOTE* NO WIRING CHANGE NECESSARY IF UNIT VOLTAGE IS 240 VOLTS. ALL PRODUCTION EQUIPMENT IS PRESET FOR 240 VOLTS.**

Hartland Rev C Trans/Rev C Label	Hartland Rev C Trans/Rev D Label	Hartland Rev D Trans / Rev D Label
		
Original production and service parts transformer made by Tyco and Hartland. ***NO CHANGE NECESSARY***	Original production transformer with incorrect label installed. When changing from 240 volts to 208 volts, move the wire from the tap marked “COM” to the unmarked tap. DO NOT MOVE WIRE ON THE TAP MARKED “240”.	This is the new production and service parts transformer. Follow standard installation instructions for adjusting voltage from 240 volts to 208 volts.

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Service Bulletin

SA-028

DATE: July 12, 2016

TO: All Service and Parts Managers

SUBJECT: Incorrectly Packaged TX5N4 Expansion Valve Kits

It has come to our attention that some recent TX5N4 expansion valve kits were packaged with an incorrect expansion valve. We are only aware of TX5N4's dated 6/21/2016 and 6/22/2016 as having incorrect TXV's in the box and as a result we request you inspect your inventory. Any TX5N4 expansion valve kits that do not contain a 0151R00103 TXV should be returned to Goodman for credit.

If any TX5N4 expansion valve kits need to be returned, distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement TX5N4 Kits must be ordered by the distributor from HLC to replace their returned inventory.

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Service Bulletin

SA-027

DATE: February 4, 2016

TO: All Service and Parts Managers

SUBJECT: Oil in Basepans, on Coils or on Shipping Boxes of Products

Occasionally we receive reports of oil in the basepan, on the coil or on the shipping box as products are being installed. Due to the variability of manufacturing processes used to produce coil fins these surfaces can, on occasion, be left with excess oil which can wick out onto the box or the basepan. These processes are continually monitored and efforts are taken to minimize the use of these oils.

Note that finding excess fin oil in the basepan does not indicate the presence of a leak in the refrigeration system. If a leak is suspected, the standard procedures for locating the leak should be followed, which may include checking the unit for pressure and/or using a leak detector.

Excess fin oil on the coil or in the basepan does not affect the performance of the system.

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Service Bulletin

SA-026

DATE: April 20, 2015

TO: All Service and Parts Managers

SUBJECT: Aluminum Coil Cleaning Recommendations

We have received inquiries concerning the recommended cleaning practice for aluminum evaporator coils. After testing various coil cleaners and drain pan tablets, it has been determined that any cleaner or drain pan tablets containing Chlorine can be harmful to the aluminum tube evaporator coils in our equipment. Constant exposure to the Chlorine in the cleaner and chlorine outgassing from the pan tabs can cause tube corrosion and/or fin pack corrosion causing premature aluminum evaporator coil failures (refer to picture).



The recommended cleaning method for both copper and aluminum tube evaporator coils is to simply flush the coil with water. The cleaners listed below are the only cleaning agents at this time deemed safe and approved for use to clean aluminum coils.

1. Nu-Calgon - **EVAP-Green** - Part/Product #4191-08
2. Sunshine Makers – **Extreme Aircraft & Precision Cleaner** - Part/Product # 13406

Note: Ensure coils are rinsed well after use of any chemical cleaners.

After testing and evaluation of various evaporator coil cleaners, the following recommendations have been added to the Installation Manuals along with a new label being added to all aluminum evaporator coils and air handlers starting in late February, 2015 (see label below).

Aluminum Coil Cleaning Recommendation

This unit is equipped with an aluminum tube evaporator coil. The safest way to clean the evaporator coil is to simply flush the coil with water. This cleaning practice remains as the recommended cleaning method for both copper tube and aluminum tube residential cooling coils.

An alternate cleaning method is to use one of the products listed below to clean coils. The cleaners listed below are the only agents deemed safe and approved for use to clean aluminum coils. Ensure the cleaned coils are rinsed well after the use of these chemical cleaners.

Trade Name	Part/Product	Manufacturer
EVAP-Green	4191-08	Nu-Calgon
Extreme Simple Green Aircraft & Precision Cleaner	13406	Sunshine Makers, Inc.

0140M00460-A

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Service Bulletin

SA-024

DATE: November 4, 2014

TO: All Service and Parts Managers

SUBJECT: Service Literature Update –Technical Manual Phase Out

In our efforts to consolidate and eliminate duplicate information in the technical service literature, over the next several months we will be phasing out Technical Manuals for all product categories (Air Handler & Coils, Split System Coolers and Heat Pumps, Furnaces, Residential Package and Light Commercial).

Any information (i.e. Dip Switch Settings, Gas Product Pressure Switch and Limit Trip Points, Wiring Diagrams, etc.) that was contained in the Technical Manuals and is not in the Installation and Operation Manuals (I&O) or Spec Sheets, will now be included in the Service Manuals for each product category.

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Service Bulletin

SA-023 Rev 1
Supersedes SA-023

DATE: February 9, 2015

TO: All Service and Parts Managers

SUBJECT: Sticking TXV's on 2 and 2-1/2 Ton Split System Evaporator Coils and 15 SEER Package Units

Recently we have received reports of sticking or restricted TXV's (thermostatic expansion valves) on AC and HP product in the 2 and 2-1/2 ton capacity range. Analysis of returned parts shows dark sticky deposits on the pin and the body that are preventing the valve from functioning properly. Chemical analysis suggests this material is, in part, chemically degraded POE oil and that the TXV is not the root cause of the problem. Goodman has found the issue to be a change to a rust inhibitor used by a vendor. The vendor has returned to the original rust inhibitor and this has corrected this issue. **Any units produced with the serial date range of 1411 or later will not have this issue.**

In cases where the TXV has been determined to be sticking causing high superheat and low suction pressures measured at the outdoor unit. We recommend conducting a complete service check to eliminate refrigerant charge, static pressure, air flow, and improper system matchup as a possible cause of this failure.

For any 2 and 2-1/2 ton systems with compressor bearing units produced with serial number prefixes of 1312 thru 1410 that show signs of a sticking TXV and above method does not remedy the issue, Goodman will pay a Class "G" labor rate to replace the TXV and filter drier during the first year of operation based on date of installation. For Dealers without established extended warranty labor rates, the rate will be based on the standard extended warranty base rate. The correct TXV must be used as defined in the product parts catalog if factory installed or per the specification sheet if this is a field installed accessory TXV.

Claims must be filed on Warranty Express as an Authorization type claim, using Authorization Code number 8710. The claim for the part and labor should be filed as one claim, using the Dealer's account number. Refer to Warranty Express for part returns related to this bulletin.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty. All claims for this project must be submitted by December 31, 2015. As more information regarding this issue becomes available the qualifying serial range may be modified and will be communicated in an updated bulletin.

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Service Bulletin

SA-022

DATE: May 9, 2014

TO: All Service and Parts Managers

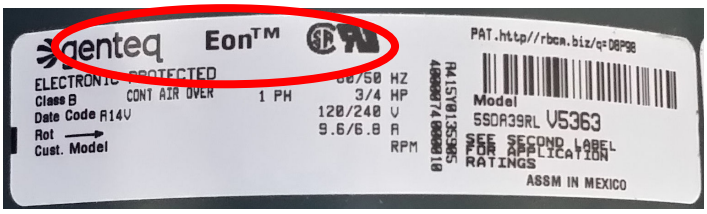
SUBJECT: Service Genteq Eon™ Motor Programming Issue

Due to a programming issue on Genteq Eon™ service replacement motors, these motors will produce airflow lower than what is listed in airflow tables for their related products. Any motors received from Goodman HLC Service Parts between March 1, 2014 and May 2, 2014 with the part numbers listed below will need to be inspected and if they display Eon™ on the motor label (refer to two pictures below for Genteq Eon™ motor identification) they will need to be reprogrammed or replaced.

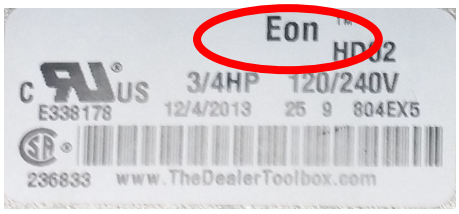
All Eon™ service motors shipped from Goodman after 5/7/2014 will contain the correct reprogramming and can be identified by blue dot on box and a blue dot on the motor or end bell. We will continue to ship service motors with this blue dot identification through June 30, 2014 for easy inventory identification.

Affected Service Motor Part Numbers and Replace End bells

Service Motor	New End bell	Service Motor	New End bell	Service Motor	New End bell
0131M00124S	0131M00651	0231K00021A	0131M00669	0231K00066	0131M00660
0231K00001A	0131M00657	0231K00024A	0131M00670	0231K00070	0131M00650
0231K00004A	0131M00658	0231K00027A	0131M00655	B13400702ABS	0131M00645
0231K00007A	0131M00652	0231K00028A	0131M00665	B13400704ABS	0131M00646
0231K00009A	0131M00654	0231K00029A	0131M00656	B13400803PAS	0131M00647
0231K00011A	0131M00659	0231K00033A	0131M00671	B13400868S	0131M00648
0231K00012A	0131M00668	0231K00034A	0131M00667	B13400912GBS	0131M00649
0231K00013A	0131M00662	0231K00036A	0131M00661	BT1340045S	0131M00643
0231K00017A	0131M00664	0231K00037A	0131M00666	BT1340046S	0131M00644
0231K00019A	0131M00663	0231K00065	0131M00653		



Motor Side Label



Motor Endbell Label

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If you have package units per Service Bulletin SP-032 which require reprogramming use the programming modules as described in this bulletin to reprogram your service motors at the same time. Otherwise contact your CSR to request an RMA to return your current inventory of service motors.

If motors are reprogrammed in your inventory as described above and in Service Bulletin SP-032 Goodman will pay $10 labor for each Eon™ motor in customer inventory that requires the software upgrade. To receive credit a list of motors reprogrammed in inventory must be sent to HACPRODSPC@goodmanmfg.com for labor reimbursement.

For installed products if the original production motor was replaced with one of the service motors listed above after March 1, 2014 it should be inspected for the Eon™ logo. If you find the Eon™ logo Goodman recommends an endbell replacement from Service Parts which contains the updated motor programming, refer to the table above for the end bell which corresponds to your motor part number.

Replacement motors and replacement end bells along with the service part box will be marked with a blue dot for easy identification through the end of June 2014.

For installed units Eon™ service motors Goodman will provide labor at the servicer's Class "B" labor rate. Units claims **must** be filed on Warranty Express as an Authorization type claim, using Authorization Code number **8775. The claim for the part and labor should be filed as one claim, using the Dealer's account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.** All claims for this project must be submitted by December 31, 2014.

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Service Bulletin

SA-021

DATE: March 5, 2013

TO: All Service and Parts Managers

SUBJECT: Service End Bells for Four-Wire ECM Motors

We are pleased to announce the availability of service end bell kits for the Nidec (U.S. Motors®) four-wire serially communicating ECM motor. The Nidec four wire ECM motor is used in AVPTC and MBVC model air handlers, *MVC, *CVC, *MVM, *CVM, and ADVC model furnaces.

In the event of a failed motor assembly, further diagnosis should be performed to determine whether the fault is in the end bell or the motor windings. Often, a replacement end bell is all that is required to make an ECM motor operable. This repair is cost efficient when compared to replacing the entire motor assembly. End bell replacement is a simple repair involving only the removal of three screws and an internal wiring harness connection.

The Emerson Ultracheck – EZ™ diagnostic tool (Pt # UTT-01) should be used to diagnose the Nidec four-wire motor (see Service Bulletin SF-033). Replacement end bell kits are available in three sizes; ½ H.P., ¾ H.P. and 1 H.P. as shown in the chart below for specific model product and can be ordered from Goodman Service Parts.

WARNING: Wait five minutes after disconnecting unit power to service the ECM motor to allow internal capacitors to discharge

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.



1/2 H.P. End Bell Part #0131M00182	3/4 H.P. End Bell Part #0131M00183	1 H.P. End Bell Part #0131M00184
AVPTC1830*	AVPTC3137*	AVPTC4260*
MBVC1200*	MBVC1600*	*MVC950905*
MVC950453	MBVC2000*	*MVC951155*
	ADVC8 (all)	*CVC90905*
	*MVC8 (all)	*CVC9155*
	MVC950704	*CVC95091*
	CVC90704	*MVM960805*
	CVC950714	*MVM961005*
	MVM960603	*MVM961155*
	CVM960604	*CVM960805*
		GCVM961005*

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Service Bulletin

SA-020

DATE: October 4, 2012
TO: All Service and Parts Managers
SUBJECT: New HKA/HKP Heat Kits

Due to new UL requirements, the existing HKR-15C and HKR-20C electric heat kits will be replaced by new electric heat kits. There will be specific electric heat kits available for air handlers and packaged units. These heat kits are not approved for use in the new ARUF**14AA, ARPT**14AA and ASPT**14AA "Smart Frame" air handlers which use the HKS heat kits. The new heat kit models and where they are used are listed in the table below.

Discontinued Heat Kit Model Numbers	New Heat Kit Model Numbers	Where Heat Kits Are Used	Voltage
HKR-15C	HKA-15C	All Air Handlers except ARUF**14,ARPT**14, ASPT**14 units	208/240V
HKR-20C	HKA-20C	All Air Handlers except ARUF**14,ARPT**14, ASPT**14 units	208/240V
HKR-15C	HKP-15C	GP/AP packaged units	208/240V
HKR-20C	HKP-20C	GP/AP packaged units	208/240V

When installing the heater kit, please follow the instructions provided in the operating instructions manual that was shipped with the unit. If required for inspector approvals the attached letter may be provided as a letter of equivalency.

With the launch of these new heat kits we will be discontinuing the HKR-21C 21 kW model due to the upcoming launch of the new HKS25 25 kW heaters for air handlers scheduled for later this year. Current inventory of the HKR-15C, HKR-20C and HKR-21C electric heat kits are not affected by the new requirements and our inventory at the HLC will be depleted first.

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Goodman Manufacturing Co., L.P.
1440 Greengrass
Houston, TX 77008

October 4, 2012

To whom it may concern:

Goodman recently began production of the HKA-series heater kits for use in A-series air handlers and HKP-series heater kits for its GP and AP-series packaged units. The new HKA and HKP heater kits are only available in the 15KW and 20KW sizes. These heater kits have been approved by our certification agency as substitutes for the legacy HKR-series heater kits as follows:

- HKA-15C may be used in air handlers which list HKR-15C* on the ratings plates.
- HKA-20C may be used in air handlers which list HKR-20C* on the ratings plates.
- HKP-15C may be used in packaged units which list HKR-15C* on the ratings plates.
- HKP-20C may be used in packaged units which list HKR-20C* on the ratings plates.

When installing the heater kit, please follow the operating instructions provided with the unit. If you have any questions, please feel free to contact our Technical Service Department at 888-593-9988.

Service Bulletin

SA-019

DATE: June 1, 2012

TO: All Service and Parts Managers

SUBJECT: HKR Heater Kits with HKS Instructions

HKR Heater Kits manufactured from April 23, 2012 through May 25, 2012 were packaged with the incorrect installation instructions. They were packaged with the HKS Installation Instructions rather than the HKR installation instructions. The affected serial number range is 1204812314 through 1205917254.

The HKS installation instructions do not provide the correct instructions for installing the HKR Heater Kits in Goodman Air-Handlers and do not contain any instructions for installing these heater kits in Goodman Package Coolers and Heat Pumps.

As Goodman desires to have the correct installation instructions provided with these heater kits, we will be sending quantities of replacement installation instructions IO-365 to each location where these heater kits were shipped and ask that you replace the installation instructions in the HKR Heater Kits with the HKR installation instructions you receive. Along with the replacement installation instructions, we will send a list of the affected HKR Heater Kit models and serial numbers shipped to each location so that you can identify the affected kits.

Heater kits shipped after May 25, 2012 have been reworked at the factory and can be identified by the green dot on the box next to the model number label.

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SA-019 Supplement

DATE: June 1, 2012

TO: All Service and Parts Managers

SUBJECT: HKR Heater Kits with HKS Instructions

Service Bulletin SA-019 provided information on the HKR Heater Kits shipped with the incorrect installation instructions. This package contains the replacement installation instructions along with a list of the HKR Heater Kit models and serial numbers packaged with the incorrect installation instructions that were shipped to this location.

Goodman is requesting that you replace the installation instructions in these kits with the instructions provided. If your dealers have any of these kits in their inventory, please provide these instructions for their kits as well.

Heater kits shipped after May 25, 2012 have been reworked at the factory and can be identified by the green dot on the box next to the model number label.

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Service Bulletin

SA-018 Rev. 1
Supersedes SA-018

DATE: April 25, 2012
TO: All Service and Parts Managers
SUBJECT: Updated LAKT Low Ambient Kit Instructions

We have recently made changes to our LAKT01, 02 and 03 kits. These kits are currently used as field or factory option on all Goodman® brand light commercial CPC*, CPG* and CPH* package unit models. The LAKT 01 is also used as a field accessory on Goodman® and Amana® brand GSX11090/11120, GSZ11090/11120, GSC10090/10120, GSH10090/10120, G/VSX13*, G/VSZ13*, GSX14*, GSZ14*, SSX14*, SSZ14*, SSX16*, SSZ16*, ASX13*, ASZ13*, ASX14* and ASZ14* split system units.

The changes to the kit are as follows:

- IO-709E has been updated with new mounting instructions for the control.
- New mounting bracket Part # 0121M00047 has been added to the kit.
- The low ambient kit will now be preset at the factory with a label placed over the adjustment screws to prevent field adjustment.

Note: Although the LAKT01 kit is used on Commercial Package and Split systems, the new bracket supplied in the kit will not be used on split system applications.

If you have older kits already installed in the field the proper settings should be set as depicted in Figure 1 (Cutout speed set to max or fully clockwise and hard start set between min and max range). Figure 2 shows the location of the factory preset label.

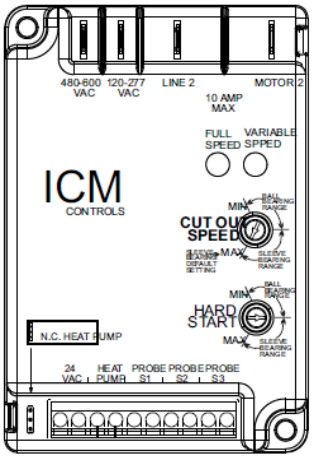


Figure 1



Figure 2

Note: Altering these settings can greatly reduce the life of the motor.

Distributors will need to contact their CSR to request an RMA for their current inventory. Replacement LAKT kits must be ordered by the distributor from service parts to replace their returned inventory.

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Service Bulletin

SA-017 Rev 1
Supersedes SA-017

DATE: August 13, 2012

TO: All Service and Parts Managers

SUBJECT: New Website for Technical Training

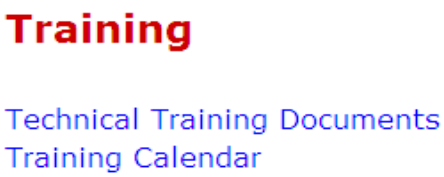
Goodman Technical Training just got better. In our efforts to provide top notch technical training on Goodman® and Amana® brand products, a new website has been created for all technical training information. This new training site contains information arranged under three major categories, **Organizational Documents, Technical Training Presentations and Specialized Technical Information** as well as access to view upcoming training classes available in your area through our online training calendar.

The process for accessing the Technical Training information from either the Goodman or Amana websites is as follows:

1) Log onto Goodman Partner Link website (http://partner.goodmanmfg.com/goodman/) or Amana Partner Link website (http://partner.goodmanmfg.com/amana/).

2) Next, select the Technical Training tab 

at the top of the page, or the Technical Training link in the menu bar on the left. This will direct you to the "Training" page where you have the option to select Technical Training Documents or Training Calendar.



3) The Technical Training Documents category will provide the documents, presentations and technical information that will be used during trainings. The Training calendar allows you to view the dates, topics, and locations where training classes are offered.

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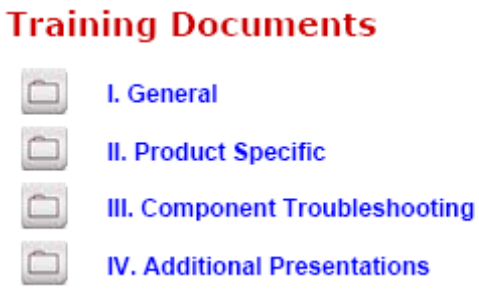
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4) Once selecting Training Documents and are at this location you can select one of the three categories to access the training documents or navigate the submenus for the preferred information.

a) The first category, **Organizational Documents** contains documents that are relevant to the technical training program such as agenda and sign up brochures that can be printed and displayed at your distributor location or contracting company.

b) The second category, **Technical Training Presentations** contains PowerPoint and PDF documents used for classroom or individual education. This category is broken down into four subcategories: **General; Product Specific, Component Troubleshooting and Additional Presentations.**



i. The **General** subcategory contains training topics covering essential technical subjects and specialized areas of interest.

ii. The **Product Specific** subcategory contains Goodman and Amana product training searchable by category types, **Controls, Furnaces, Indoor Air Quality, Mini Splits, PTAC, and Packaged Units and Split Systems.**



iii. The **Component Troubleshooting** subcategory deals with the understanding and diagnostics of individual parts functioning within the heating or cooling system.

iv. The **Additional Presentations** subcategory contains technical training materials from the yearly Tech Managers Meeting or other specialty training.

c) The third category, **Specialized Technical Information** contains technical training articles from vendors or other relative information that will assist the understanding of Goodman® and Amana® system components, installation, and operation.

Notes:

- *Our continuing commitment to provide current technical training materials may mean a change in the technical training information on this site without notice.*

- *Many of these Training Programs are in Microsoft PowerPoint Presentation format and require either PowerPoint or PowerPoint Viewer to open and print these documents. The viewer is available from your Microsoft Office CD or can be downloaded from Microsoft website.*

- *A cost may be associated with some third party documents indicated by the amount located in parenthesis next to the title. To purchase the presentation, click on the document of your choice and follow the link to the merchant website.*

Service Bulletin

SA-016

DATE: March 2, 2012

TO: All Service and Parts Managers

SUBJECT: Memory Chip Rework

Memory chips are a service only item and are not sent out with new equipment. They are used only in the rare occurrence where communicating equipment shared data replenishment is required. It has recently come to our attention that some of the inventoried memory chips are void of shared data.

We are requesting that all memory chips in customer inventory be returned to Goodman® HLC for credit. Distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement memory chips will have to be ordered by the distributor from HLC to replace their current inventory. These new memory chips can be identified by “gray” dot on package and “black” felt pen marking on the chip. We will use these markings on memory chip packaging until the end of May 2012.

We are requesting that current distributor stock of memory chips be returned at the earliest convenience. The end date to receive credit for returned stock is May 30, 2012.



NOTE: Memory chips are not normally required and should not be routinely installed. A memory chip is *not* required when an individual control board or motor is replaced. A memory chip is *only* required when all communicating components have been replaced with service parts containing no shared data.

Furnace Model	Memory Card	Furnace Model	Memory Card	Split Model	Memory Card	Air Handler Model	Memory Card
*CVM960604CXAA	0130F00163S	*CVC950714CXAC	0130F00186S	*SXC160241	0130R00038S	AVPTC180314AA	0130A00022S
*CVM960805DXAA	0130F00164S	*CVC950915DXAC	0130F00104S	*SXC160361	0130R00039S	AVPTC313714AA	0130A00023S
GCVM961005DXAA	0130F00165S	GCVC91155DXAD	0130F00089S	*SXC160481	0130R00040S	AVPTC426014AA	0130A00024S
				*SXC160601	0130R00044S		
*MVM960603BXAA	0130F00166S	*MVC950453BXAD	0130F00090S	*SXC180361	0130R00019S	MBVC1200AA-1AC	0130A00006S
*MVM960805CXAA	0130F00167S	*MVC950704CXAD	0130F00121S	*SXC180481	0130R00013S	MBVC1600AA-1AC	0130A00007S
*MVM961005DXAA	0130F00168S	*MVC950905CXAB	0130F00190S	*SXC180601	0130R00017S	MBVC2000AA-1AC	0130A00008S
GMVM961155DXAA	0130F00169S	*MVC950905DXAD	0130F00122S				
		*MVC951155DXAD	0130F00103S	*SZC160241	0130R00007S		
*MVC80604B*AA	0130F00072S			*SZC160361	0130R00009S		
*MVC80704B*AA		ADVC80603B*AA	0130F00064S	*SZC160481	0130R00012S		
*MVC80805C*AA	0130F00073S	ADVC80703B*AA		*SZC160601	0130R00016S		
*MVC80905C*AB		ADVC80805C*AA	0130F00065S	*SZC180361	0130R00010S		
*MVC81005C*AA	0130F00074S	ADVC80905C*AA		*SZC180481	0130R00014S		
*MVC81155C*AB		ADVC81005C*AA	0130F00066S	*SZC180601	0130R00018S		
		ADVC81155C*AA					

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Service Bulletin

SA-015

DATE: October 13, 2011

TO: All Service and Parts Managers

SUBJECT: Memory Cards for Communicating Equipment

We are pleased to announce the release of Memory Cards for all Goodman® and Amana® brand models of communicating equipment. This includes the following models; AVPTC, MBVC, *MVC8, ADVC, *MVC95, *CVC9*, *MVM96, *CVM96, *SXC16 &18, and *SZC16 & 18.

Memory cards are not normally required and should not be routinely used at the time of installation. A furnace or air handler will contain shared data in both the motor and control board. The replacement of either the control board or the indoor fan motor will not create a “no-data” issue. A memory card would be used to restore data only if all data storage components were removed from the system. This includes the control boards for indoor and outdoor units, ECM motor and communicating thermostat.

A communicating capable furnace or air handler must have shared data to operate, even in a non-ComfortNet, 24 volt installation.
A communicating-capable split condenser will operate without shared data if used in a non-ComfortNet, 24 volt installation.

Furnace Model	Memory Card		Furnace Model	Memory Card		Split Model	Memory Card
*CVM960604CXAA	0130F00163S		*MCV950453BXAD	0130F00090S		*SXC160241	0130R00038S
*CVM960805DXAA	0130F00164S		*MCV950704CXAD	0130F00121S		*SXC160361	0130R00039S
GCVM961005DXAA	0130F00165S		*MVC950905CXAB	0130F00109S		*SXC160481	0130R00040S
*MVM960603BXAA	0130F00166S		*MVC950905DXAD	0130F00122S		*SXC160601	0130R00044S
*MVM960805CXAA	0130F00167S		*MVC951155DXAD	0130F00103S		*SXC180361	0130R00019S
*MVM961005DXAA	0130F00168S		*CVC950714CXAC	0130F00104S		*SXC180481	0130R00013S
GMVM961155DXAA	0130F00169S		*CVC950915DXAC	0130F00187S		*SXC180601	0130R00017S
*MVC80604B*AA	0130F00072S		GCVC91155DXAD	0130F00089S			
*MVC80704B*AA						*SZC160241	0130R00007S
*MVC80805C*AA	0130F00073S		Air Handler Model	Memory Card		*SZC160361	0130R00009S
*MVC80905C*AB			AVPTC180314AA	0130A00022S		*SZC160481	0130R00012S
*MVC81005C*AA	0130F00074S		AVPTC313714AA	0130A00023S		*SZC160601	0130R00016S
*MVC81155C*AA			AVPTC426014AA	0130A00024S		*SZC180361	0130R00010S
ADVC80603B*AA	0130F00064S					*SZC180481	0130R00014S
ADVC80703B*AA			MBVC1200AA-1AC	0130A00006S		*SZC180601	0130R00018S
ADVC80805C*AA	0130F00065S		MBVC1600AA-1AC	0130A00007S			
ADVC80905C*AA			MBVC2000AA-1AC	0130A00008S			
ADVC81005C*AA	0130F00066S						
ADVC81155C*AA							

Note: A “no data” condition on a furnace is indicated by a “d0” on the display. A “no data” condition on an air handler is indicated by the Red Diagnostic LED flashing 9 times and the Green CFM LED off. A “no data” condition on a split unit is indicated by a combination of 1 flash of the Yellow diagnostic LED, Red active protection LED off, 1 flash of the Green status LED and the Y1 LED off.

WARNING

HIGH VOLTAGE!



Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

Install the correct memory card for your unit and perform the following steps to upgrade:

1) Turn off all power to the indoor and outdoor units.
2) Do not touch the memory card or integrated control or any wire connected to the control prior to discharging your body’s electrostatic charge to ground. Firmly touch a clean, unpainted metal surface of the unit away from the control.
3) Install the memory card on the control board by plugging it into the white colored socket.
4) Apply power to the indoor and outdoor unit and test operation.

Note: The memory card may be removed from the control after power is turned off to all units for use on another indoor or outdoor unit of the same model or left on the control permanently.

These memory cards are in stock and available from Goodman Service Parts.

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Service Bulletin

SA-014

DATE: June 3, 2011

TO: All Service and Parts Managers

SUBJECT: TX5N4 TXV Kits with incorrect TXV Valves

We have received reports that some TX5N4 TXV kits distributed in May and early June may have R-22 TXV's instead of the R-410 TXV's as required. As such Goodman is requesting you inspect your inventory of TX5N4 TXV kits to ensure the proper valve is included in the kit.

You will need to open the TXV kit box and look at the label on the powerhead to identify whether the valve in the kit is correct or not. The picture on the left shows a BT1369066 which is the incorrect TXV, the kit should contain the BT1369070 as shown on the right.



Incorrect TXV



Correct TXV

If your kit contains the BT1369066 shown on the left then the kit should be returned to Goodman for credit as described below. Alternately if you have need for these R-22 TXV's you could relabel the box as TX5N2 and return these to your inventory.

Distributors will need to contact their CSR to request an RMA to return their current inventory. Replacement TX5N4 TXV kits must be ordered by the distributor from service parts to replace their returned inventory.

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Service Bulletin

SA-013

DATE: March 10, 2011

TO: All Service and Parts Managers

SUBJECT: Emerson EEM Motor Speed Tap T4

Emerson has notified Goodman Mfg that their Selec-Tech EEM motor that is used in some Goodman and Amana brand products could cause an excessive load on the transformer that could result in a transformer failure or blown fuse if speed tap T4 on the Emerson SelecTech EEM motor is used. This is a result of an internal programming error with the motor and not a wiring issue with the Goodman or Amana unit. **If T4 isn't used, the motor will operate normally.**

Emerson has provided an updated program for the SelecTech EEM motors to correct the issue. All units in Goodman's inventory were put on hold and the EEM motors are being reworked. These units can be identified by a Purple dot with R1 written on it placed on the motor and another located next to the traveler label. Also, all service replacement Emerson SelecTech motors were put on hold and are being reworked. The service replacement motors can be identified in the same manner as the units.

Below are charts listing the model numbers for units that are affected. For the package unit models listed below, the only units that are affected are as follows. A/GPH15 and A/GPH14 with serial numbers between **1007 and 1101**, A/GPG13, GPH13, CPC,CPG, CPH 1D and 3D units with serial numbers between **1007 and 1102**.

Also affected, are AWUF31, AWUF37 air handlers with serial numbers before **1102** and ASPF air handlers with serial numbers before **1101.** The affected air handlers can be identified by the major and minor revision of units that are listed below.

Package Units			
Gas		Heat Pumps	Coolers
APG1348070M41	GPG1348070M41	GPH1348M41	GPC1348M41
APG1348090M41	GPG1348090M41	GPH1360H41	GPC1348M43
APG1348115M41	GPG1348090M43	GPH1360M41	GPC1360H41
APG1360090M41	GPG1348115M41	GPH1424H41	GPC1360M41
APG1360115M41	GPG1360090M41	GPH1430H41	GPC1360M43
APG1360140M41	GPG1360090M43	GPH1436H41	GPC1424H41
APG152407041	GPG1360115M41	GPH1442H41	GPC1430H41
APG153009041	GPG1360140M41	GPH1448H41	GPC1436H41
APG153709041	GPG1360140M43	GPH1460H41	GPC1442H41
APG154211541	GPG152407041	GPH1524M41	GPC1448H41
APG154911541	GPG153009041	GPH1530M41	GPC1460H41
APG156014041	GPG153709041	GPH1536M41	GPC1524M41
	GPG154211541	GPH1543M41	GPC1530M41
	GPG154911541	GPH1549M41	GPC1536M41
	GPG156014041	GPH1560M41	GPC1542M41
			GPC1548M41

Air Handlers
ASPF183016DA
ASPF183016EA
ASPF426016DA
ASPF426016EA
ASPF313716DA
ASPF313716EA
AWUF310816AA
AWUF321016AA
AWUF310516AA
AWUF370516BA
AWUF370816BA
AWUF371016BA

Light Commercial
CPG0600901DXJXB
CPG0600901DXSXB
CPG0600901DXXXB
CPG0600903DXJXB
CPG0600903DXSXB
CPG0600903DXXXB
CPG0601401DXJXB
CPG0601401DXSXB
CPG0601401DXXXB
CPG0601403DXJXB
CPG0601403DXSXB
CPG0601403DXXXB
CPH060XXX1DXJXB
CPH060XXX1DXXXB
CPH060XXX3DXJXB
CPH060XXX3DXXXB

The following chart shows a list of service replacement motors that are affected. You will need to verify whether the motor is an Emerson or a Genteq brand motor. Only the Emerson SelecTech motors are to be returned.

Service Parts			
0131M00105S	0131M00136S	0131M00174S	0231K00059
0131M00107S	0131M00137S	0131M00260S	0231K00060
0131M00109S	0131M00152S	0131M00261S	0231K00061
0131M00119S	0131M00156S	0131M00262S	0231K00062
0131M00122S	0131M00157S	0231K00039	0231K00063
0131M00131S	0131M00159S	0231K00040	0231K00064
0131M00133S	0131M00161S	0231K00041	0231K00068
0131M00134S	0131M00167S	0231K00042	0231K00069
0131M00135S	0131M00169S	0231K00043	0231K00072
0131M00136S	0131M00172S	0231K00044	0131M00262

For installed units that experience a failure of the EEM motor due to the speed tap T4 issue described above, the EEM motor should be replaced with the correct part number motor that has the purple dot with R1 written in it as described above.

For installed units that experience an EEM motor failure due to the speed tap T4 issue described above, Goodman will pay $160.00 to replace the motor and transformer or other components as required.

Claims **must** be filed on Service Bench as Service Bulletin SA-013, Authorization Code number **8703**. For installed units, the homeowner information including phone number must be included for all claims. **The claim for the part and claim for labor should be filed as one claim by submitting the claim using the "Dealers Service Bench ID #".** Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. ***Warranty Claims will be approved only for equipment that is still covered under the terms of Standard Warranty***

All claims for this program must be submitted by December 31, 2011.

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Service Bulletin

SA-012

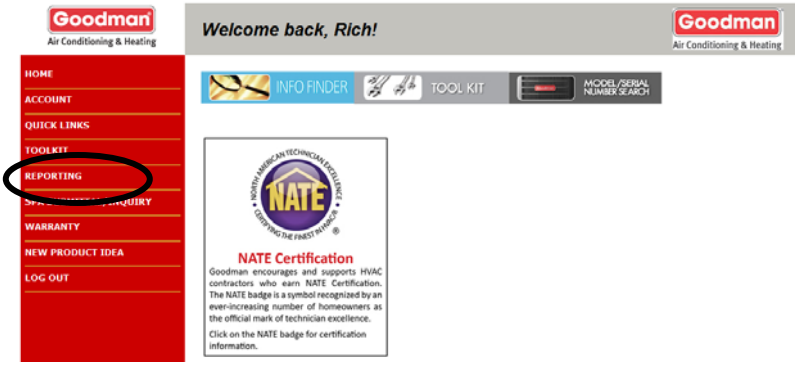
DATE: November 30, 2010

TO: Distributor Principals and Technical Personnel

SUBJECT: Quality RMA Reporting now available on the Goodman Website

As you know from time to time we ask distributors to return failed components or units for quality analysis so we can better understand the failure(s) root cause to help us improve our products. Many times in the past, we have been asked "What happened to that part that I returned?" To provide improved access to the status and reporting of Quality RMA's, Goodman has created a new webpage dedicated to giving you direct access to this information.

Once an approved user has logged into the Goodman PartnerLink website, you will see the page to the right, hopefully with your name instead of mine.

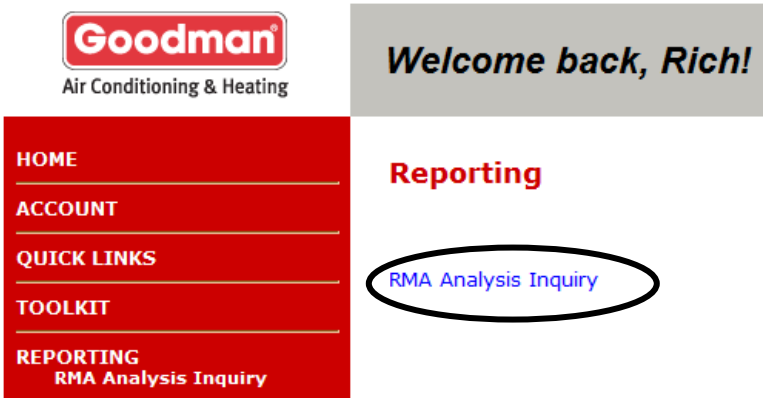


Next select the **Reporting** menu item and select **RMA Analysis Inquiry**.

You will then see the third image "Search for RMA/Serial" listing all of the items in the RMA Database for your company since January 2009.

You can search the database by entering either the RMA Number or the Serial Number. If you search for an RMA Number where multiple items were returned on a single RMA, each of those items will be listed in the results table.

Clicking either the blue RMA Number or Serial Number in the table will display the details relative to that RMA.



If you clicked on the RMA Number where multiple items were returned, as is the case with RMA 8183 shown in fourth figure, then on the RMA Model Analysis page shown in fourth figure you will see another menu in the upper right corner "Other Items this RMA" followed by Model and Serial number of the item you are viewing. This menu allows you to quickly view the other items retuned on that RMA without going back to the main menu.

Each distributor has an individual setup as a Super-User to grant PartnerLink access for their users and customers, it will be necessary to contact your companies Super-User gain access to this report, Technical Services cannot provide this security access.

We hope you find this new tool to be a valuable addition to your organization and to the Goodman PartnerLink website. Thanks

Search for RMA/Serial

Search for RMA Number: **Search for Serial Number:** Search Reset

RMA	Model Number	Serial Number	Status
11232	amvc80704bx	1008372041	Not Received
11215	GPG156481541AB	0905655165	Received, RMA Open
11147	Chpf3636b6	1006615331	Closed
11073	MBVC2000AA1	1005723478	Not Received
11072	MBVC2000AA1	1005025892	Not Received
11072	MBVC2000AA1	1006080551	Not Received
8295	chpf4860d6	0907203738	Closed
8294	CHPF3636B6	0906600064	Closed
8293	CHPF3636B6	0905726958	Closed
8293	CHPF1824A6	0905726549	Closed
8293	CHPF4860D6	0905726114	Closed
8183	ASZ130481	0907766864	Closed
8183	ASZ130481	0909725519	Closed
8183	ASZ130481	0909725520	Closed
8166	CPH1448H41	1006607223	Closed

<< Previous Next>> Get Page 1 of 1 pages

RMA Model Analysis

Other Items this RMA: 3. ASZ130481/0909725520

RMA #: 8183 Model Number: ASZ130481 Issued To:

RMADate: 07/19/2010 Serial Number: 0909725520 Reported By:

Complaint DD: Fan blade issues Req'd By:

Complaint: Fan blade hitting the coil

RMA Note: Fan blade is hitting the condenser coil on all three units.

Transportation Information

PickUp Date: 08/16/2010 Delivery Date: 08/18/2010 Carrier: AAA Cooper

Analysis of Returned Product

Date Received: 08/25/2010 Date Closed: 09/10/2010 Analysis Report Emailed: 09/11/2010

Result: Coil Damage Plant: Cooling

Action: Root Cause: Coils were formed wrong on the bender and To Many program recipies in control selection. Containment: Short term will be adding check to CO form 751.AL0119 for varification With base pan. Remove and montior the equipment programs. Permenant Corrective action: 1) Make Check fitures for all sizes of coils 2) Current Add to Form 751.AL0119 "Change Over Form" a spot to verify coil fits base pan or jig correcly with a sign off.

Comments:

Warranty Disposition: Product was determined to be defective as described in the RMA. Credit for this product should be provided under the terms of the product warranty.

Close Window

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Heating & Air Conditioning
Amana
LASTS AND LASTS AND LASTS.™

Goodman
Air Conditioning & Heating

Service Bulletin

SA-011

DATE: October 28, 2009
TO: All Service and Parts Managers
SUBJECT: HVAC Leak Check Procedures

Some questions have recent arisen concerning the proper method of leak detection on coils and refrigerant tubing. The following instructions provide a simple step by step procedure for checking HVAC systems for leaks.

Please read and follow these instructions carefully.

⚠ WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

1. Disconnect all power to the unit, both indoor and outdoor.
2. Remove panels, insulation and ductwork as required to gain access to the area being leak checked.
3. Look for traces of refrigerant oil on copper tubing and components in the system. Oil stains are the first indication of a leak in the system.
4. Use an electronic leak detector or soap solution to check the evaporator coil tubing and all soldered fittings for leaks.
    a. Using an electronic leak detector is generally the fastest way to find an unknown leak. They can be used to quickly find a leak, or to find the area in which the leak exists. After you find the area in which the leak is detected, you can usually decrease the sensitivity of some types of detectors to pin point the area of the leak.
    b. The electronic leak detector must be designed to detect the type of refrigerant contained in the system, i.e. (CFC, HFC, HFCF, etc.). It is recommended to select a halogen electronic leak detector that has a sensitivity level of at least 0.50 oz/per year and a good response time of ½ to 1 second



5. A soap solution can be used when you know the approximate area where a leak may exist because of sealed service repair recently done or an electronic leak detector has indicated a leak exists in a particular area of the sealed system.

    Soap solutions are available in many different types. Some have a brush applicator and others have a dabber (an absorbent ball attached to a stiff wire inside of the cap).





Some brands have a spray applicator to quickly cover large areas of tubing in a short amount of time.

Note: Holding the dabber against the suspected leak for a period of time may provide better results for small leaks.

6. If a leak is found, remove the refrigerant from the system by use of recovery equipment and repair the leak.
7. Leak check the copper or component which was repaired. The recommended procedure is to apply a trace amount of vapor refrigerant (approximately two ounces or 3 psig) into the line set and indoor coil, then pressurize with 150 psig of dry nitrogen. Use a refrigerant leak detector to check all joints. The system may also be checked for leaks using an electronic leak detector or pressure and soapy solution. After completion of leak check, relieve all pressure from system before evacuation.

   Note*: Intentional release of CFC or HCFC refrigerant to the atmosphere violates Federal Law. It may also violate State and Local Codes. Check all Federal, State and Local Codes before proceeding.*

WARNING

To avoid the risk of fire or explosion, never use oxygen, high pressure air or flammable gases for leak testing of a refrigeration system.

WARNING

To avoid possible explosion, the line from the nitrogen cylinder must include a pressure regulator and a pressure relief valve. The pressure relief valve must be set to open at no more than 150 psig.

8. Evacuate the system to 250 microns or less using suction and liquid service valves. Using both valves is necessary as some compressors create a mechanical seal separating the sides of the system.
9. Close pump valve and hold vacuum for 10 minutes. Typically pressure will rise during this period.
   - If the pressure rises to 1000 microns or less and remains steady the system is considered leak-free; proceed to startup.
   - If pressure rises above 1000 microns but holds steady below 2000 microns, moisture and/or noncondensibles may be present or the system may have a small leak. Return to step 2: If the same result is encountered check for leaks as previously indicated and repair as necessary then repeat evacuation.
   - If pressure rises above 2000 microns, a leak is present. Check for leaks as previously indicated and repair as necessary then repeat evacuation.
10. Charge the system with refrigerant by weighing in the charge per manufacturers specification.
11. Re-install the panels, insulation and ductwork.
12. Restore power and check for proper unit operation.

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Service Bulletin

SA-010

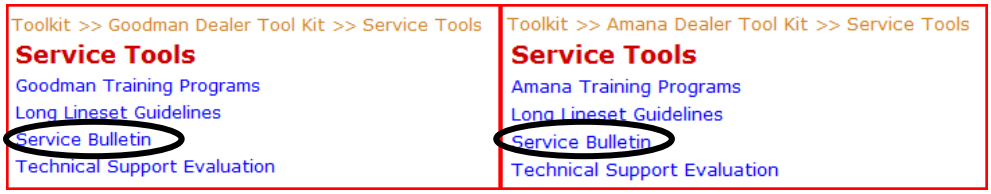
DATE: September 8, 2009

TO: All Service and Parts Managers

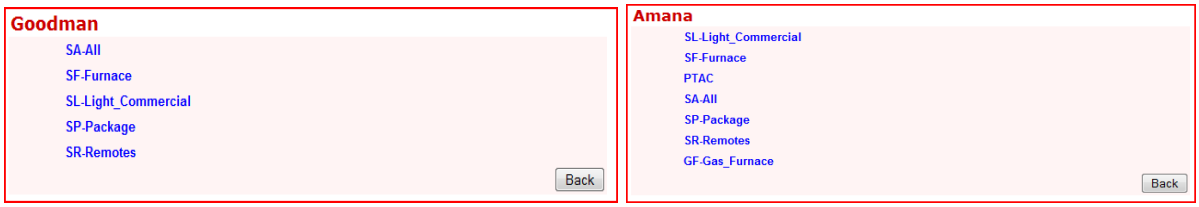
SUBJECT: Website Service Bulletins & Technical Training Presentations

In order to provide a more streamlined process for accessing Service Bulletins from either the Goodman (www.goodmanmfg.com) or Amana (www.amana-hac.com) websites, we have segregated the Service Bulletins into specific categories for faster access. This change allows for opening of an individual service bulletin. The process for accessing Service Bulletins is outlined in the following steps:

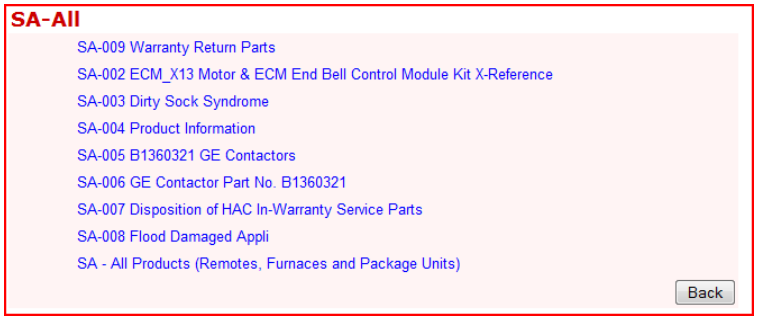
1. Log onto Goodman (www.goodmanmfg.com) or Amana (www.amana-hac.com) website and then scroll to bottom of page to select PartnerLink and then log into PartnerLink.
2. Next selecting either Goodman or Amana toolkit, this will take you to next step of selecting Service Tools and then selecting Service Bulletin category.



3. Once the Service Bulletin category is selected, you will see a list of the Service Bulletins in a specific Service Bulletin category.

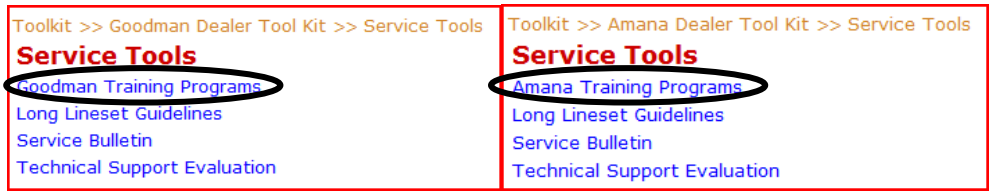


4. Finally after you select a specific Service Bulletin category, this will allow you to see a list of Service Bulletins in a specific category and then you can open each bulletin independent of each other or save them to a specific location on your computer for use later.



Next we are providing notification in this bulletin that Technical Training Presentations (PowerPoint presentations) are also located on the Goodman (www.goodmanmfg.com) or Amana (www.amana-hac.com) websites. The process for accessing the Technical Training Presentations is outlined in the following steps:

1. Log onto Goodman (www.goodmanmfg.com) or Amana (www.amana-hac.com) website and then scroll to bottom of page to select PartnerLink and then log into PartnerLink.
2. Next selecting either Goodman or Amana toolkit, this will take you to next step of selecting Service Tools and then selecting either Goodman or Amana training presentations.



5. Once the Training Programs category is selected, you will see a list of the Training Programs.



3. Finally after you select either Goodman or Amana Training Programs category, this will allow you to either open or save these PowerPoint Training Presentations to a specific location on your computer for use later.

   Note: These Training Programs are in Microsoft PowerPoint Presentation format and requires either PowerPoint or PowerPoint Viewer to open and print these documents. The viewer is available from your Microsoft Office CD or can be downloaded from Microsoft website.

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Service Bulletin

SA-008 Rev 2
Supersedes SA-008 Rev 1

DATE: September 8, 2017
TO: All Service and Parts Managers
SUBJECT: Flood Damaged Appliances

Due to the unfortunate flooding experienced in many areas, we are reissuing the following Flood Damaged Appliance bulletin. GAMA (Gas Appliance Manufacturers Association, Inc.) issued a newsletter addressing the use of appliances after flood damage. The following is an excerpt from that GAMA publication and is succeeded by a copy of a press release sent out by the CPSC (Consumer Protection Safety Commission) regarding safety tips for flood victims. Note that the CPSC flood release advises victims to have their appliances inspected and cleaned after flooding, as well as a warning that consumers should replace all gas control valves, circuit breakers, and fuses that have been submerged.

This information is vital to the safe operation of appliances that have been damaged by water. Therefore, please read the following carefully and share it with your dealers.

Flood-Damaged Appliances Should Be Replaced, Experts Warn.

It is important to remember that all flood-damaged plumbing, heating, cooling and electrical appliances and related systems should be replaced, rather than repaired. This warning was issued by GAMA, the national trade association representing manufacturers of appliances, components and related products used in space heating and water heating, commercial food service and power generation. The organization also recommends that all work on flooded equipment be performed by a qualified licensed contractor, not by homeowners.

The GAMA warning stems from past reports of accidents resulting from improper do-it-yourself repairs of flood-damaged appliances. One homeowner, for example, suffered severe burns in a flash fire that occurred when he tried to re-light the pilot on his flooded gas water heater. The Association stresses that not only gas equipment is at risk, but also units using oil or electricity as the energy source.

Controls damaged by flood water are extremely dangerous. Attempts to use equipment with defective gas or oil control devices can result in fires, flashbacks or explosions. And in the case of electric appliances, the result can be injury or even death from a powerful electric shock. Devices at risk include water heaters, furnaces, boilers, room heaters and air conditioners.

The Association stresses that the repair of flooded appliances and related systems (including damaged venting and electrical connections) is not a job for the do-it- yourselfer, no matter how skilled. This is particularly true of control valves, according to GAMA officials. These components are manufactured to extremely close tolerances. Once submerged in floodwater, they must be replaced. Field repairs should never be attempted by the homeowner.

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Even when controls appear to be operative, the unit should not be used after floodwaters recede. It may work for a while but it will deteriorate over time. It might take a week, a month, or even a year, but once any control has been under water, it presents a serious hazard...fire or explosion in the case of gas controls, fire or shock in the case of electric equipment.

Because so many things can go wrong as a result of floodwater, it's usually cheaper, and always safer to replace, rather than repair. You can have a control valve replaced, but there may be damage to other parts of the unit, like venting, piping, burners and insulation. There are just so many things that can go wrong and the wise choice is always to start over with new equipment.

Note that damage from floods, winds and other conditions beyond the manufacturer's control is not covered by the warranty for Goodman, Amana and Daikin brand products. In some instances, government aid may be available to help consumers finance the replacement of flood-damaged heating equipment. For information, homeowners should contact any of the offices of the Federal Emergency Management Administration (FEMA), set up to help flood victims.

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Consumer Product Safety Commission Alert

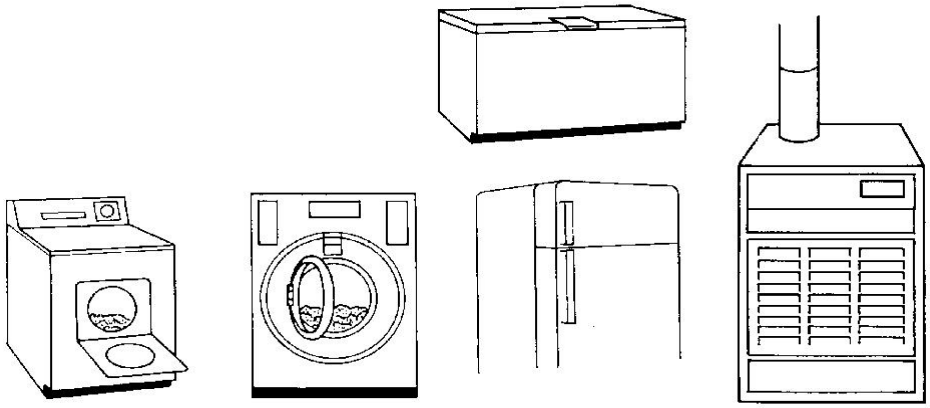
From the U.S. Consumer Product Safety Commission, Washington, D.C. 20207

Safety Tips for Flood Victims

The U.S. Consumer Product Safety Commission (CPSC) recommends several safety tips to the victims of floods. This safety alert illustrates some dangerous practices which consumers may be tempted to engage in during efforts to rebuild or while staying in temporary housing, tents, or partially damaged homes. This information is provided in an effort to prevent injuries and deaths from consumer products as flood survivors make new beginnings.

For more disaster-related information or help with emergency preparedness, visit the Federal Emergency Management Agency (FEMA).

Do not use electrical appliances that have been wet. Water can damage the motors in electrical appliances, such as furnaces, freezers, refrigerators, washing machines, and dryers.

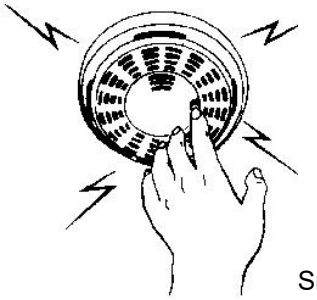


If electrical appliances have been under water, have them dried out and reconditioned by a qualified service repairman. Do not turn on damaged electrical appliances because the electrical parts can become grounded and pose an electric shock hazard or overheat and cause a fire. Before flipping a switch or plugging in an appliance, have an electrician check the house wiring and appliance to make sure it is safe to use.

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To prevent a gas explosion and fire, have gas appliances (natural gas and LP gas) inspected and cleaned after flooding.

If gas appliances have been under water, have them inspected and cleaned and their gas controls replaced. The gas company or a qualified appliance repair person or plumber should do this work. Water can damage gas controls so that safety features are blocked, even if the gas controls appear to operate properly. If you suspect a gas leak, don't light a match, use any electrical appliance, turn lights on or off, or use the phone. These may produce sparks. Sniff for gas leaks, starting at the water heater. If you smell gas or hear gas escaping, turn off the main valve, open windows, leave the area immediately, and call the gas company or a qualified appliance repair person or plumber for repairs. Never store flammable materials near any gas appliance or equipment.

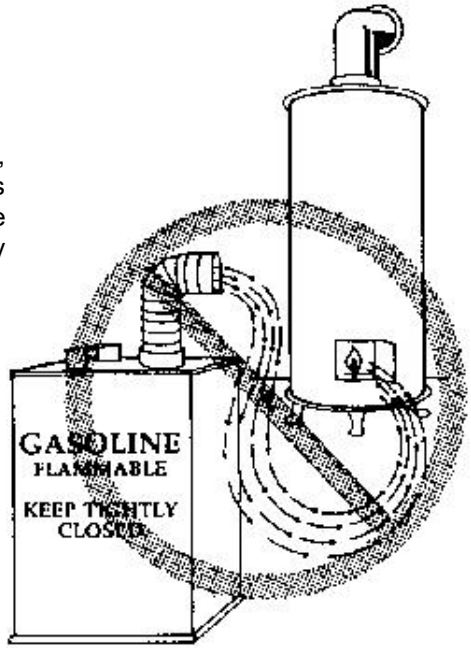


Check to make sure your smoke detector is functioning.

Smoke detectors can save your life in a fire. Check the battery frequently to make sure it is operating. Fire extinguishers also are a good idea.

Gasoline is made to explode!

Never use gasoline around ignition sources such as cigarettes, matches, lighters, water heaters, or electric sparks. Gasoline vapors can travel and be ignited by pilot light or other ignition sources. Make sure that gasoline powered generators are away from easily combustible materials.



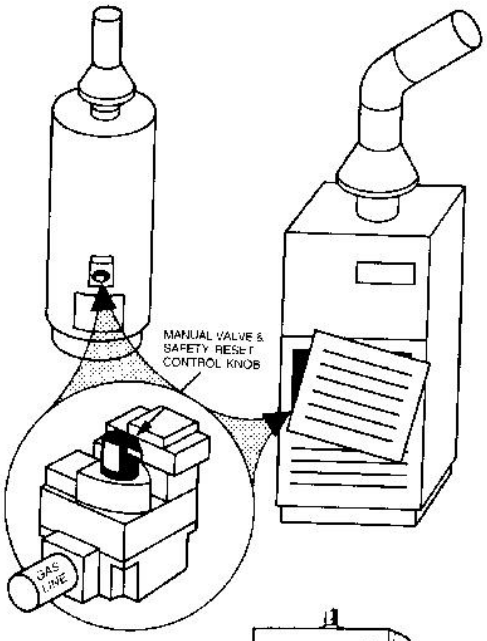
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WARNING

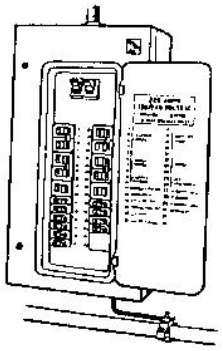
Submerged gas control valves, circuit breakers, and fuses pose explosion and fire hazard!

Replace all gas control valves, circuit breakers, and fuses that have been under water:

GAS CONTROL VALVES on furnaces, water heaters, and other gas appliances that have been under water are unfit for continued use. If they are used, they could cause a fire or an explosion. Silt and corrosion from flood water can damage internal components of control valves and prevent proper operation. Gas can leak and result in an explosion or fire. Replace ALL gas control valves that have been under water.



ELECTRIC CIRCUIT BREAKERS AND FUSES can malfunction when water and silt get inside. Discard ALL circuit breakers and fuses that have been submerged.



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Service Parts Bulletin

SA-009A

DATE: September 11, 2009

TO: All Service and Parts Managers

SUBJECT: Warranty Return Parts

Service Bulletin SA-007 introduced the procedure in Service Bench for identifying and returning specific warranty parts to Goodman for quality analysis as follows:

To reduce the incident rate and improve the overall quality of Goodman® products, we will from time to time be requesting certain parts be returned to Goodman for analysis. To accomplish this, we will be enabling a new function in the Service Bench online warranty system that will notify the person entering the warranty claim if they have entered a part that is on this required return list.

Refer to Service Bulletin SA-007 for instructions on this procedure.

The intent of this bulletin and its future revisions will be to offer another method of communicating changes to the required return list. The list of active parts will continue be available in the "My News" section of Service Bench. Also to make it easier for you the customer, Goodman will only add new parts to the required return list on the 1st of the month and we will endeavor to provide these bulletin updates at least two weeks prior to the activation of these new parts.

The following list shows the warranty parts that must currently be returned to receive warranty credit for the part. Those with a Date Added of 9/11/2009 will not become active in Service Bench until 10/1/2009.

Warranty Return Service Parts		
Part	**Description**	**Date Added**
PCBBF122	Ignition Control board	9/10/2009
PCBBF122S	Ignition Control board	9/10/2009
PCBBF123	Ignition Control board	9/10/2009
PCBBF123S	Ignition Control board	9/10/2009

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Service Bulletin

SA-007

DATE: September 12, 2007

TO: All Service and Parts Managers

SUBJECT: Disposition of HAC In-Warranty Service Parts

To reduce the incident rate and improve the overall quality of Goodman® products, we will from time to time be requesting certain parts be returned to Goodman for analysis. To accomplish this, we will be enabling a new function in the Service Bench online warranty system that will notify the person entering the warranty claim if they have entered a part that is on this required return list.

If the claim has met all warranty rules when a customer submits a warranty claim for a part number on the required return list, the claim status will change to **"Requires Part"** instead of "Approved" (see Warranty Claim Header on following pages). Next, a popup window will appear stating, **"Some parts require return to the manufacturer. Please go to the Packing List for the required parts and print the list. Claim Number (GM7xxxxxx) has been submitted. Parts must be verified for the claim to be approved".** A link to print a packing list will also appear in the menu. Please include this packing list with each returned part. Credit will be issued to the Distributor after Goodman receives the parts.

Please notify your Dealers who are entering claims on Service Bench of this requirement. The parts must be returned to the Distributor for consolidation and shipment to Goodman.

- Print the packing list for each part on the "Required Parts Return List". The packing list will include the pertinent claim information.
- Return the parts to the address on the packing list.
- Mark the parts "QUALITY PARTS RETURN" attention David Fuller and Tripp Martin
- Credit will be issued upon receipt of the part.
- The distributor will be provided a per-part allowance for freight and handling which will be included in the claims reimbursement.
- For a current list of parts on the Returned Parts List, follow the instructions below to the "My News" section in Service Bench
    - From the Main Menu select "*My News*"
    - View the attachment next to Returned Parts List

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For Distributors filing claims using the import option, there is no change in the submission process.

To determine which claims have parts that should be returned follow the steps below:

- From the Main Menu click Import
- Search for the import file by completing the date search fields (this happens automatically after an import)
- The import files are sorted in date order, click on the “view claims link” to view the claims in the import file
- The status of each claim is displayed, the parts on the claims with the status “requires part” should be returned (see Warranty Claim Header on following pages). Select the claim; click the “Parts Packing List link, then print the packing list to be included with the shipment of returned parts.

Please forward this bulletin to the appropriate parties in your organization.

Initial List of Parts Requiring Return to Goodman

Note this list will change, refer to “My News” to view the current list.

Original Part #	Original PCB Part #	New PCB Part #	Description
N/A	PCB00100	PCBAG100	UTEC DSI Ignition Board (15 SEER A/GPG, 2 Stage)
N/A	PCB00100S	PCBAG100S	UTEC DSI Ignition Board (15 SEER A/GPG, 2 Stage)
B1226008	PCB00101	PCBDM101	Defrost board
B1368274	PCB00102	PCBEM102	ECM Primary VSTB
B1370735	PCB00103	PCBFM103	Electronic Blower Time Delay Relay
B1809921	PCB00104	PCBAM104	DSI Ignition Board (PGB 50 Hz Jumbo)
B1809922	PCB00105	PCBAM105	DSI Aux (PGB 50 Hz Jumbo)
B1809927	PCB00106	PCBBF106	HSI Ignition Board (2 Stage, Furnace)
B1809927S	PCB00106S	PCBBF106S	HSI Ignition Board (2 Stage, Furnace) Kit
20481401	PCB00107	PCBCR107	2 Wire AC Control
20487201	PCB00108	PCBCR108	2 Stage HP Control
0130F00006	PCB00109	PCBBF109	HSI Integrated Ignition Board (2 Stage Furnace)
0130F00007	PCB00110	PCBBF110	HSI Integrated Ignition Board (Furnace)
0130F00005	PCB00112	PCBBF112	HSI Integrated Ignition Control w/Acc (Furnace)
10207707	PCB00113	PCBBF113	HSI Integrated Ignition Control (Furnace)
10207708	PCB00114	PCBBF114	HSI Integrated Ignition Control (2 Stage Furnace)
10207712	PCB00115	PCBBF115	HSI Integrated Ignition Control (2 Stage Furnace)
10207713	PCB00116	PCBBF116	HSI Integrated Ignition Control (2 Stage Furnace)
10207713S	PCB00116S	PCBBF116S	HSI Integrated Ignition Control (2 Stage Furnace)
10207719	PCB00117	PCBBF117	HSI Ignition Control (Used in RF000129)
10207720	PCB00118	PCBBF118	HSI Integrated Ignition Control
10207720S	PCB00119S	PCBBF118S	HSI Integrated Ignition Control Svc Kit
20300003	PCB00120	PCBBF120	HSI Integrated Ignition Control (2 Stage Furnace)
20300006	PCB00121	PCBBF121	HSI Integrated Ignition Control (2 Stage Furnace)
B1226006	PCB00122S	PCBDM122S	Defrost Timer w/Jiffy Bag, Service
B1809918	PCB00123	PCBAG123	UTEC Spark Ignition Board (Package)
0130P00012	PCB00124	PCBCP124	Control Board
B1370786	PCB00125	PCBDR125	Defrost Board (DFTD-1 Kit)

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Warranty Claim - Printer Version

10483101-10483101-55 - GDI-HOUSTON CENTRAL (344) **2801 NORTH LOOP W** **HOUSTON, TX 77008-1012 UNITED STATES** **(713)868-2665**	**Claim Number** GM78WYSKX **Account Number** 10483101-10483101-55 **Claim Status** Requires Part **Claim Date** 08/07/2007 **Claim Submitted Date** 08/07/2007 **Amount Approved** $4.00

** IMPORTED CLAIM **

Dealer Payment and Warranty Information
Warranty Contract Code for Model: XVCA Labor Rate: Rate Class: Mileage Rate: $.50
Manufactured Date

******

Manufacturer	GOODMAN - Goodman		
Reference Number	7473531	**Submitting For**	112892541 - GDI-HOUSTON CENTRAL (344)
Additional Reference Number	155848	**Submitting For Location ***	10483101-10483101-55 - GDI-HOUSTON CENTRAL (344)
Customer Information			
Last Name	T MARTIN	**First Name**	
Street Address	7401 SECURITY WAY		
City, State/Province, Zip/Postal Code	HOUSTON TX 770401148		
Country *	UNITED STATES		
Home Phone Number			
Goodman Model Number *	VCA42C2C	**Goodman Serial Number ***	0510155899
Product Description	SELECT -10 SEER COND.		
Other Unit Model No.		**Other Unit Serial No.**	
New Model No.		**New Serial No.**	
		Date Installed	01/15/2006
Reason for Failure		**Date Call Received**	06/08/2007
		Date Repaired *	06/08/2007
		Warranty Type *	Standard Warranty
Service Performed		**Authorization Number**	
		Service Agreement Number	
Cause Code *	Burnt/Shorted	**Component Code ***	
Mileage			
Parts Distributor Account Number	112892541 - GDI-HOUSTON CENTRAL (344)		
Parts Distributor Location	10483101-10483101-55 - GDI-HOUSTON CENTRAL (344)		

Number of Part Lines 1

Part Quantity	Failed Part #	Failed Part Serial Number	Replacement Part #	Replacement Part Serial Number	Invoice #	Unit Price	Extension Cost	Approved Amount
1	B1360321		B1360321 Override Validation		4576480	4.00	$4.00	4.00
	Description: CONTACTOR 25FLA 125LRA 1P 277V							
	Claim Error: NONE							
	Verification: Not Required							

Item	Amount	Approved Amount
Total Parts	$.00	$4.00
Labor Amount		.00
Special Labor Allowance		.00
Travel	$.00	.00
Labor Tax		.00
Parts Tax		.00
Tax (Labor + Parts)	$.00	$.00
Freight		
Handling		
Other		.00
Total Amount	$4.00	$4.00
Servicer Amount		$.00

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Packing List

Packing List

From
GDI-HOUSTON CENTRAL (344)
2801 NORTH LOOP W
HOUSTON, TX 77008-1012

To
GOODMAN QUALITY PARTS RETURN
Attn: David Fuller - Tripp Martin 7401 Security Way
Houston, TX 77040

Claim GM77WYNND
Model GMNT0403
Model Serial Number 0303605803

Claim Reference Number PARTRETN

Print on List?	Tracking Number	Carrier	Manner of Return	Supplier Part Number	Part Number	Part Serial Number	Quantity	Part Description
☑					B14010185		1	SERVICE HOT SURFACE IGNITOR

Import Claims

Description: PART RETURN TEST 2 **File Name:** Part Rtn Test2.csv

Claim Status: ALL

Claim Number	Reference Number	Status	Amount Submitted	Amount Approved
GM78WYSKV	34410306	Requires Part		$3.30
GM78WYSKW	7473532	Approved		$16.60
GM78WYSKX	7473531	Requires Part		$4.00
GM78WYSKY	4743533	Approved		$14.60
GM78WYSKZ	7473535	Requires Part		$4.00

Import List

Date From: 08/07/2007 **To:** 08/07/2007 **File:** **Description:**

Date Submitted	File Name	Description	Status
08/07/2007	goodman7.txt	test7	Completed w/Validation Errors
08/07/2007	goodman6.txt	test6	Completed w/Validation Errors
08/07/2007	goodman5.txt	test5	Completed w/Validation Errors
08/07/2007	Goodman4.txt	test4	Completed
08/07/2007	Goodman3.txt	Test3	Completed
08/07/2007	Goodmancoilwarrantyclaim.txt	TEst2	Completed
08/07/2007	Goodmancoilwarrantyclaim.txt	Test	Completed w/Validation Errors
08/07/2007	Part Rtn Test2.csv	PART RETURN TEST 2	Completed
08/07/2007	Part Rtn Test.csv	Part Return Test	Completed

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Service Bulletin

SA-006

DATE: June 11, 2007

TO: All Service and Parts Managers

SUBJECT: GE Contactor Part # B1360321

Goodman has received reports from some contractors that they are experiencing higher failure rates on the GE version, B1360321 Contactor produced and used in some Goodman products prior to May 1, 2006. Even though the overall incident rate of this part is low, it is higher than what is acceptable and higher than what we typically see on other similar components.

Due to this unacceptable failure rate, Goodman will provide a $50 labor allowance when replacing failed B1360321 GE Contactors installed in our products. To receive this labor allowance under this program the contactor must be returned to Goodman at the address provided below. All contactors must be returned to receive labor for service performed after June 18, 2007. With prior approval, Goodman will provide labor for contactors replaced after January 1, 2007 and before June 18, 2007 without the requirement to return these contactors.

A warranty claim form (RF000007) must be completed for each unit serviced and must reference Project Code 8595 in section 6 (Project Code) on the warranty claim form. Alternately the claim can be filed on Service Bench (preferred) as Warranty Type "Epidemic" using 8595 as the 'authorization #'. The claim will be paid after receipt of the parts and review of the claim by The Warranty Department.

Failed Contactors should be addressed and returned to:

Goodman Manufacturing
"PROJECT 8595"
7401 Security Way
Houston, Texas 77040

To file a claim on Service Bench the Dealer must be set-up in Service Bench (a unique Service Bench ID must be used for the Dealer). The Distributor can file for labor on behalf of the Dealer or the Dealer can file their own claim.

To ensure proper handling of this claim, please include the tracking information (Fed EX, UPS, US Mail, etc) in the "Service Performed" or "comments" section of the claim form. If the part(s) is not received as described within 45 days, the claim will be rejected.

Labor will not be paid for claims where the failed GE B1360321 contactor is not received by Goodman except as described above. This program is valid for 5 years from date of product installation.

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Service Bulletin

SA-005

DATE: May 14, 2007

TO: All Service and Parts Managers

SUBJECT: B1360321 GE Contactors

Goodman has been using Siemens contactors in production on Goodman® and Amana® brand products since early 2006. For quality assurance and consistency purposes, Goodman is requesting all distributor inventory of B1360321 GE contactors be returned to Goodman for credit.

Please inspect your inventory of B1360321 contactors and segregate the GE contactors for return to Goodman. Any inventory you have of Siemens contactors should be retained for service replacement parts.

The Siemens 25 amp replacement contactor is available from Goodman as part number **CONT1P025024V**.

If you have inventory of the B1360321 GE contactors, contact your Customer Service representative for an RMA to return theses contactors. All requests for RMA's must be submitted to Customer Service by June 29th.

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Service Bulletin

SA-004

DATE: November 10, 2006

TO: All Service and Parts Managers

SUBJECT: Amana® Brand and Goodman® Brand Product Information

Some of you may not be aware of the array of technical information available today on the Goodman® brand and Amana® brand websites. While most of you are aware of the consumer side of the websites, there are also distributor and dealer toolbox sections which contain a wealth of technical publications.

Some recent additions available through the InfoFinder portion of the toolkits include Service Manuals for all Goodman brand products produced in the last 5 years and Technical Information Manuals for the new Furnace, Split System and Package equipment.

Repair Parts Manuals are also available in both the ASAP Electronic format under the Model/Service Parts Lookup section or in downloadable PDF format under Literature Search. This information can be found at the following websites:

- www.amana-hac.com
- www.amana-ptac.com
- www.goodmanmfg.com

Some of the information available on the website under the dealer or distributor toolboxes that requires a username and password includes the following:

- Installation & Operation Manuals
- Kit instructions
- Parts Manuals
- Service Bulletins
- Service Manuals
- Technical Information Manuals
- Technical Publications
- Users Information Manuals, etc.

This information can also be found on ASAP/InfoFinder CD ROM that can be order from our publications department by contacting Kristy Tolleson at 931-438-5483 or KTolleson@amanahvac.com.

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SERVICE BULLETIN SA-003

DATE: **September 1, 2005**

TO: **All Service and Parts Managers**

SUBJECT: **Dirty Sock Syndrome**

What is dirty sock syndrome? An unpleasant odor (i.e. wet, dirty sock smell) that comes from micro-organisms growing on the cooling coil surface, in the crevices of the tubes and fin stock of the indoor coil and in the drain pan. This growth of mold and bacteria is more susceptible in high-efficiency heat pumps. It occurs when switching between the cooling cycle and the heat pump cycle (also known as the "defrost mode") because the heating cycle is not hot enough to destroy the microorganisms.

In some homes, the spore phases of these microbes accumulate from changes in moisture and temperature, causing the spore sacks to release gases that result in odors. Poor indoor air quality comes from the release of these and other gases that build up in the home. Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from these indoor sources and by not carrying indoor air pollutants out of the home.

The dirty sock syndrome happens with a very small amount of heat pumps that are installed. The U.S. Environmental Protection Agency (EPA) confirms the primary problem by saying, "There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture." http://www.epa.gov/mold

Homes that have a higher mold spore and moisture content, will add to the possibility of the "dirty sock syndrome." Newer homes that are built "tight" (very little infiltration) can suffer from this syndrome. Homes built off the ground, and enclosed at the bottom, can hold excessive moisture. It may help to install a plastic moisture barrier on the ground, under the house.

Common Questions?

Does the equipment cause this condition? NO! This condition is **not** the result of a design or manufacturing defect.

Why does the odor occur mainly with heat pumps? The indoor coil temperature reaches approximately 120 – 130°F and has a higher humidity at the coil surface area. This is a ideal condition for micro-organisms to thrive. In most gas fired furnaces, the coil temperature can exceed 160° F. This higher heating temperature is a dry enough atmosphere to virtually eliminate this condition and destroy the organisms.

What causes the smell and is it dangerous? Spores, molds and fungi may attach themselves to the coil and water from the drain pan. These substances may be found in systems that have never experienced any odors. In some homes, the spore phases of these microbes accumulate from changes in moisture and temperature, causing the spore sacks to release gases that result in odors.

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There is no medical evidence to establish that the "Dirty Sock" smell is associated with any ailments. It can be a very pungent smell that is said to resemble "sweaty feet" or a smell similar to that experienced in a gymnasium locker room.

Why do I have the odor and my neighbors don't? Duplicate conditions such as the amount of moisture, micro-organism food source and temperature may not be the same.

There are instances in which one home has two heat pump systems, but only one exhibits this condition. It has been found, when removing a unit from one location having the problem and later re-installing it at another location that the odor does not come back in the same unit. However, a newly installed unit at the same location may exhibit the effect.

There are also reports that the odor disappeared for several years after cleaning, sometimes returning and sometimes never returning.

One thing that appears constant is that this condition affects mostly heat pumps located in high humidity areas of the country (i.e. Southeastern United States) and a few scattered reports in other areas of the country.

Will Ultra Violet (UVC) lights help? Yes! Properly designed and installed UVC/UVGI lights will help. UVC is a short-wave ultraviolet radiation, in the "C" band of 200 – 280 nanometers. It has a germicidal ability to destroy viruses, mold and bacteria. UVGI refers to ultraviolet germicidal irradiation, which is the same as UVC. The key is to install the lights on the supply side, just above the evaporator coil. It may be necessary to install a dual tube light to adequately cover the entire coil surface. Additional UVC lights may also be installed downstream in the main supply duct.

Will a whole house dehumidifier help? Yes. According to the EPA, the ideal level of humidity is 30% to 50%. The whole house dehumidifier, with a fresh air exchange option is a good combination. Fresh air exchangers, known as Energy Recovery Ventilators (ERV) are also available for different applications. Exchanging fresh outdoor air with stale indoor air is important to a healthier home.

What will help reduce the "dirty sock syndrome"? The U.S. Environmental Protection Agency (EPA) in publication (EPA 402-K-02-003) states: "Keep indoor humidity low. If possible, keep indoor humidity below 60 percent (ideally between 30 and 50 percent) relative humidity. Vent appliances that produce moisture, such as clothes dryers, stoves . . . to the outside where possible. Run the bathroom fan or open the window when showering. Use exhaust fans . . . whenever cooking."

A clean house, with a high quality air tight filter system, changed regularly, is the first line of defense. Most air filters do not trap tiny particles of mold spores, viruses and bacteria. It is important that the evaporator coil, drain pan and drain lines are clean. Annual cleaning of the coil, drain pan and drain lines is important because there may be some air bypass of the filter. Properly designed and installed UVC/UVGI lights will help.

To help assist you, we evaluated products from Controlled Release Technologies and recommend treating the coil with "Fast Attack" System sanitizer, immediately followed by an application of "First Strike Micro-Coat". See their website at http://www.cleanac.com/EPAMoldSolutions.htm click under Disinfection tab.

These chemicals can be purchased directly from "Controlled Release Technologies" at 1-800-766-9057. Another product called "Klein Shield Mold Encapsulant Plus – Formula 1906" is available from "Kor-Chem, Inc." at (404) 344-9580. We also recommend kit DS-1 or DS-PG for cleaning as these kits include instructions and all the chemicals needed to treat one system. The DS-PG in particular includes an additional chemical to help eliminate any bacteria that may be present in the drain pan. In some cases, this treatment process may need to be repeated annually. Use of all products must be accomplished using strict adherence to the manufacturer's directions.

Conclusion

The “Dirty Sock Syndrome” is an indoor air quality problem. It is not caused, nor prevented by, the air conditioning (Heat Pump) equipment. This problem must be properly recognized and addressed by the homeowner in cooperation with the installing dealer.

If your home has musty, stale odors you may have a poor indoor environment. Poor indoor air quality can increase the chances of getting “dirty sock syndrome”.

We recommend considering the following as suggestions for improving this condition:

(1.) Cleaning the indoor coil, drain pan and drain lines.

(2.) Application and proper use of the suggested products in the section above, entitled: What will help reduce the “dirty sock syndrome”?

(3.) Properly designed and installed UVC/UVGI lights.

(4.) Exchanging stale air for fresh outdoor air. Fresh air exchangers, also known are Energy Recovery Ventilators (ERV), are also available.

(5.) Keeping the humidity level between 30 – 50% by using a whole house dehumidifier.

(6.) A high quality air filtration system, annual maintenance of the equipment and keeping the indoor home environment clean.

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Air Conditioning & Heating

Service Bulletin

SA-002 Rev 3
Supersedes SA-002 Rev 2

DATE: February 14, 2007

TO: All Service and Parts Managers

SUBJECT: ECM™/X13™ Motor and ECM™ End Bell Control Module Kit Cross-Reference List

We are pleased to announce the release of an ECM™/X13™ Motor and ECM™ End Bell Control Module Kit cross-reference list for all variable speed Amana® and Goodman® brand furnaces, package units and air handlers. These lists show the existing service replacement ECM™/X13™ Motors and ECM™ End Bell Control Module Kits, and their corresponding replacement.

The following lists on Pages 4, 5, 6 and 7 show the original ECM™/X13™ Motor for a product and the history of parts substitution(s) for a specific motor along with corresponding service replacement ECM™ End Bell Control Module Kit. These new lists provide new ECM™/X13™ motor and ECM™ End Bell Control Module Kit part numbers for many units on the lists, but some ECM™/X13™ Motor numbers will remain the same.

You will notice that in the Amana® list on Page 4, four of the entries in the list, package cooling and heat pump units (PCC60C, PHB60/PHD42, 48 & 60C), the ECM™ Motor and End Bell Control Module Kits sub over to a Service R Kit which contains the designated ECM™ Motor or End Bell Control Module Kit along with a Door Gasket Kit (Part # RF000179). These kits (Part #'s RF000192, 93, 94, 95, 96 & 97) containing the door gasket material were released to help in reducing infiltration of outdoor ambient air into the conditioned air compartments and improving overall Indoor Air Quality (IAQ) on the package cooling and heat pump units previously called out. The Door Gasket Kit (Part # RF000179) can also be ordered as a separate item for those wishing to add it to package cooling and heat pump units produced prior to the date codes of the units listed in Service Bulletin CAG-453.

With the release of the new ECM™ End Bell Control Module Kits, we have added an identification label to the ECM™ End Bell Control Module which provides the part # of the ECM™ End Bell Control Module and the ECM™ Motor that it is programmed for.

In order to simplify the ECM™/X13™ Motor and ECM™ End Bell Control Module part substitutions and prevent incorrect parts orders, we are making changes to our service parts listings located in ASAP (Amana Service Authorized Parts) CD ROM program, Parts Manuals and the Service Parts system. In the past, all ECM™ Motor part numbers were automatically substituted over to ECM™ End Bell Control Module Kits. This was set up this way in the past due to the fact that 99% of the time the failures were attributed to the ECM™ End Bell Control Module and not the ECM™ Motor. The changes that are currently taking place are the elimination of the automatic substitutions from the ECM™ Motor to the ECM™ End Bell Control Module Kit that were referenced in Service Bulletin CAG-430 that was released August 30, 2001.

In the previous Service Bulletin CAG-430, in the unlikely event that a complete ECM™ Motor was needed, we required the dealer to contact their Distributor Technical Service Manager when ordering the complete ECM™ Motor, but this will not be required with the changes currently taking place. Both the complete ECM™ Motor assembly and ECM™ End Bell Control Module Kit will be listed for a specific unit and it will be necessary for the service technician to determine which component has failed and not arbitrarily change the entire ECM™ Motor assembly. The ECM™

End Bell Control Module will still allow us to be able to offer the homeowners a repair part for the ECM™ motor at a cost comparable to a standard motor when it has been determined that this component has failed and not the motor.

Extensive research by GE and Goodman showed that a failure of the motor portion was **extremely rare** and this was the reason for the previous automatic substitution to the ECM™ End Bell Control Module, but with improved ECM™ Motors, troubleshooting information and test equipment, we are confident that this change in providing both the complete ECM™ Motor and ECM™ End Bell Control Module part numbers will help simplify part(s) orders and eliminate incorrect part(s) orders that have occurred in the past.

WARRANTY PROCEDURES:

Goodman will continue to pay class "B" labor for ECM™ End Bell Control Modules replaced with ASURE or GoodCare labor coverage.

On the few claims where you are claiming warranty on a complete ECM™ motor assembly, you must indicate as such on the warranty claim form and include a copy of the invoice for the complete motor assembly.

MOTOR TESTING:

Troubleshooting information on ECM™ motors is available on the "InfoFinder" CD ROM. To open the ECM™ troubleshooting manual, type in "ECM™" in the literature # field (the third field) on the "Info-Finder opening screen. The ECM™ troubleshooting manual has extensive testing information on the ECM™ Motor and End Bell Control Modules. All of our service manuals are being revised to also provide detailed troubleshooting information on ECM™ Motors and the End Bell Control Modules.

Basically, you are verifying that the signal (24V) from the control is reaching the End Bell Control Module. If you are not reading a signal (24V) to the motor, the control or interface board is defective and not the End Bell Control Module.

If you suspect the motor portion of the ECM™ has failed:

⚠ WARNING

HIGH VOLTAGE.
Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. Disconnect power to the unit. Wait 5 minutes to allow internal capacitor to discharge.
2. Remove the End Bell Control Module (5-pin connector, 16-pin connector, and two screws on the end of the control module.
3. Between the End Bell Control Module and the motor, there is a 3-pin connector linking the motor to the control module. Disconnect the 3-pin connector.
4. Using an Ohmmeter, check the motor windings for continuity to ground. Continuity to ground (3-pin connector to shell) indicates a failed motor and the complete ECM™ motor assembly must be replaced.
5. Using an Ohmmeter, check the motor winding for continuity through the windings (pin to pin at the 3-pin connector). No continuity may indicate the motor is open on internal (thermal) overload. Allow the motor to cool and retest. If, after allowing the motor to cool, you still have no continuity, replace the complete ECM™ motor assembly.

IT IS NORMAL to feel a slight resistance as you rotate the shaft of the ECM™ motor. This is the effect of the stator magnets passing through the field windings. This is not an indication of failed bearings. The motor assembly does not need to be replaced.

Provided with each End Bell Control Module Kit are replacement instructions (**Part # 20299901 – ECM™ Module Replacement**), providing specific instructions for replacement of a defective End Bell Control Module and use of an Ohm Meter for testing for a defective ECM™ Motor.

CAUTION

Using the wrong End Bell Control Module voids all product warranties and may produce unexpected results.

NOTE: You **MUST** have the correct replacement module. The controls are factory programmed for specific operating modes. Even though they look alike, different End Bell Control Modules may have completely different functionality.

Also available from Goodman is the GE TECMATEXL™ service tool (**Part # GETECMATEXL**), which is a low cost, easy to use device that will analyze the GE ECM™ Motor independent of the HVAC system. It operates in the basic HVAC settings of fan-only, heating, cooling and de-humidification. This tool is specially designed to detect and isolate motor failures from other HVAC system failures. To order this service tool, contact Service Parts.

Please provide these ECM™ Motor and ECM™ End Bell Control Module Kit cross-reference lists to all your personnel who will be ordering these parts, so they can correctly identify their part numbers when needing to order any ECM™ components.

Amana® Brand ECM Cross Reference List

ECM™ Motor & End Bell Kit Cross Reference List										
Model	*HP (Horsepower)*	*Original ECM Mtr/End Bell Assy Part #*	*Mtr/End Bell Assy Sub Part #*	*Mtr/End Bell Assy Sub Part #*	*Mtr/End Bell Assy Sub Part #*	*Current ECM Mtr/End Bell Assy Part #*	*Previous End Bell Kit Part #*	*Current End Bell Kit Part #*	*ECM™ Motor with Door Gasket Kit*
AMV90453BXA	1/2	20508513	20508514			**0231K00009A**	20509213	**20509214**	
AMV90704CXA	3/4	20509423	20509425			**0231K00024A**	20510123	**20510125**	
AMV90905DXA	1	20510314	20510317			**0231K00036A**	20511014	**20511017**	
AMV91155DXA	1	20510315	20510318			**0231K00037A**	20511015	**20511018**	
ACV90704CXA	3/4	20509424	20509426			**0231K00025A**	20510124	**20510126**	
ACV90905DXA	1	20510316	20510319			**0231K00038A**	20511016	**20511019**	
ADV80703BX	1/2	0131F00001P	0131F00001PS			**0231K00046**		**20509216**	
ADV80905CX	3/4	0131F00002P	0131F00002PS			**0231K00050**		**20510131**	
ADV81155CX	3/4	B13400914GB	B13400914GBS			**0231K00049**		**20510130**	
AMV80703/4BXA	3/4	B13400909GB	B13400912GB	B13400912GBS		**0231K00047**		**20510128**	
AMV80905CXA	3/4	B13400910GB	B13400913GB	B13400913GBS		**0231K00048**		**20510129**	
AMV81155CXA	3/4	B13400911GB	B13400914GB	B13400914GBS		**0231K00049**		**20510130**	
GUIV070CX/DX40	1/2	10843305	20257702	20508502		**0231K00001A**	20299302	**20509202**	
GUIV090FX50	3/4	20257815	20509415			**0231K00019A**		**20510115**	
GUIV090CX/DX50	3/4	11074704	20257803	20509403		**0231K00012A**	20299311	**20510103**	
GUIV115/140CX/DX50	3/4	11074705	20257804	20509404		**0231K00013A**	20299312	**20510104**	
GUIV070FX40	1/2	20257709	20508509			**0231K00006A**		**20509209**	
GUIV090FX50	3/4	20257815	20509415			**0231K00019A**		**20510115**	
GUIV115/140FX50	3/4	20257816	20509416			**0231K00020A**		**20510116**	
GUVA045AX30	1/2	10843307	20257704	20508504		**0231K00002A**	20299303	**20509204**	
GUVA070AX40	3/4	11074707	20257806	20509406		**0231K00014A**	20299313	**20510106**	
GUVA090AX50	1	10843404	20257904	20510304		**0231K00027A**	20299305	**20511004**	
GUVA115AX50	1	10843405	20257905	20510305		**0231K00028A**	20299306	**20511005**	
GUVA045BX/CX30	1/2	20257708	20508508			**0231K00005A**	20299322	**20509208**	
GUVA070BX/CX40	3/4	20257810	20509410			**0231K00017A**	20299323	**20510110**	
GUVA090BX/CX50	1	20257911	20510311			**0231K00033A**	20299324	**20511011**	
GUVA115BX/CX50	1	20257912	20510312			**0231K00034A**	20299325	**20511012**	
GCVA070BX/CX40	3/4	20257811	20509411			**0231K00018A**	20299327	**20510111**	
GCVA090BX/CX50	1	20257913	20510313			**0231K00035A**	20299326	**20511013**	
BHA24-42TB	1/2	10843301	10843302	20257706	20508506	**0231K00003A**	20299316	**20509206**	
BHA48/60TB	1	10843401	20257908	20510308		**0231K00030A**	20299319	**20511008**	
BBC36A2A	1/2	10843304	20257701	20508501		**0231K00000A**	20299301	**20509201**	
BBC48A2A	3/4	11074703	20257802	20509402		**0231K00011A**	20299310	**20510102**	
BBC60A2A	3/4	11074702	20257801	20509401		**0231K00010A**	20299309	**20510101**	
BBC36A2C	1/2	20257712	20508512			**0231K00008A**		**20509212**	
BBC48A2C	3/4	20257821	20509421			**0231K00022A**		**20510121**	
BBC60A2C	3/4	20257822	20509422			**0231K00023A**		**20510122**	
MBE1200AA-1	1/2	BT1340044	BT1340044S			**0231K00052**		**20509215**	
MBE1600AA-1	3/4	BT1340045	BT1340045S			**0231K00052**		**20510133**	
MBE2000AA-1	3/4	BT1340046	BT1340046S			**0231K00053**		**20510134**	
PCC60C	3/4	20257808	20509408			**0231K00015A**	20299315	**20510108**	**RF000192**
PHB60C/PHD48C	3/4	11074706	11074708	20257805	20257807	20509420	**0231K00021A**	20299314	**20510120**	**RF000193**
PHD42C	1/2	10843308	20257705	20257710	20508510		**0231K00007A**	20299304	**20509210**	**RF000194**
PHD60C	3/4	20257817	20257820	20509420			**0231K00021A**		**20510120**	**RF000193**
PGC24/30/36B	1/2	10843303		20257707	20508507		**0231K00004A**	20299317	**20509207**	
PGC42/48B	3/4	11074701		20257809	20509409		**0231K00016A**	20299318	**20510109**	
PGC60B090	1	10843402		20257909	20510309		**0231K00031A**	20299320	**20511009**	
PGC60B135	1	10843403		20257910	20510310		**0231K00032A**	20299321	**20511010**	
PGD48/60C/E	1	10843406	20257906	20257907	20510307		**0231K00029A**	20299308	**20511007**	
APG1348***1A/AA	3/4	B13400915	B13400915S				**0231K00051**		**20510132**	
APG1360***1A/AA	1	B13400868	B13400868S				**0231K00054**		**20511020**	

Amana® Brand X13 Cross Reference List

X13™ Motor Cross Reference List						
Model	**HP** (Horsepower)	**Original X13 Motor Part #**	**Motor Sub Part #**	**Motor Sub Part #**	**Motor Sub Part #**	**Current X13 Motor Part #**
APG1348***1AB	3/4 (X13)	0131M00032				0231K00041
APG1360***1BA	1 (X13)	0131M00031				0231K00040
APG15240704 1AA	1/2 (X13)	0131M00059				0231K00059
APG15360904 1AA	1/2 (X13)	0131M00057				0231K00060
APG15481154 1AA	3/4 (X13)	0131M00058				0231K00062
APG15601404 1AA	1 (X13)	0131M00056				0231K00061
GPH/C1360H21A/AA	3/4 (X13)	0131M00030				0231K00039
GPH/C1360H21AB	3/4 (X13)	0131M00042				0231K00042
GPH/C1348M2*AA	3/4 (X13)	0131M00036				0231K00043
GPH/C1360M2*AA	1 (X13)	0131M00045				0231K00044

Goodman® Brand ECM Cross Reference List

ECM™ Motor & End Bell Kit Cross Reference List								
Model	*HP (Horsepower)*	*Original ECM Mtr/End Bell Assy Part #*	*Mtr/End Bell Assy Sub Part #*	*Mtr/End Bell Assy Sub Part #*	*Mtr/End Bell Assy Sub Part #*	*Current ECM Mtr/End Bell Assy Part #*	*Previous End Bell Kit Part #*	*Current End Bell Kit Part #*
GMV950453BXA	1/2	20508514				**0231K00009A**		**20509214**
GMV950704CXA	3/4	20509425				**0231K00024A**		**20510125**
GMV950905DXA	1	20510317				**0231K00036A**		**20511017**
GMV951155DXA	1	20510318				**0231K00037A**		**20511018**
GMV90703BXA	1/2	20508514				**0231K00009A**		**20509214**
GMV90704CXA	3/4	20509423	20509425			**0231K00024A**	20510123	**20510125**
GMV90904/5CXA	3/4	20509410	20509427			**0231K00026A**		**20510127**
GMV90905DXA	1	20510314	20510317			**0231K00036A**	20511014	**20511017**
GMV91155DXA	1	20510315	20510318			**0231K00037A**	20511015	**20511018**
GCV90704CXA	3/4	20509424	20509426			**0231K00025A**	20510124	**20510126**
GCV90905DXA	1	20510316	20510319			**0231K00038A**	20511016	**20511019**
GMV80703/4BXA	3/4	B13400909GB	B13400912GB	B13400912GBS		**0231K00047**		**20510128**
GMV80905CXA	3/4	B13400910GB	B13400913GB	B13400913GBS		**0231K00048**		**20510129**
GMV81155CXA	3/4	B13400911GB	B13400914GB	B13400914GBS		**0231K00049**		**20510130**
GMPE075-3*	1/2	13400602BS	B13400902GA	B13400902GB		**B13400902GBS**	13500902GAS	**13500902GBS**
GMPE125-5*	1	13400603BS	B13400903GA	B13400903GB		**B13400903GBS**	13500903GAS	**13500903GBS**
GMPE100-4*	3/4	B13400904GA	B13400904GB			**B13400904GBS**	13500904GAS	**13500904GBS**
GMNTE060-3	1/2	B13400905GB				**B13400905GBS**		**13500905GBS**
GMNTE080-4	3/4	B13400906GB				**B13400906GBS**		**13500906GBS**
GMNTE100-4	1	B13400907GB				**B13400907GBS**		**13500907GBS**
GMNTE120-5	1	B13400908GB				**B13400908GBS**		**13500908GBS**
AEPT024-00A-1	1/2	B13400702AB				**B13400702ABS**		**13500702AAS**
AEPT030-00A-1/00C-1A	1/2	B13400702AB				**B13400702ABS**		**13500702AAS**
AEPT036-00A-1/00C-1A	3/4	B13400704AB				**B13400704ABS**		**13500704AAS**
AEPT048-00A-1	3/4	B13400704AB				**B13400704ABS**		**13500704AAS**
AEPT060-00A-1/00C-1A	3/4	B13400704AB				**B13400704ABS**		**13500704AAS**
AEPF18301AA/BA	1/2	B13400702AB				**B13400702ABS**		**13500702AAS**
AEPF30361AA/BA	3/4	B13400704AB				**B13400704ABS**		**13500704AAS**
AEPF42601AA/BA	3/4	B13400704AB				**B13400704ABS**		**13500704AAS**
AV18-30-05	1/2	13400-602A				**B13400702ABS**		**13500702AAS**
AV18-30-08	1/2	13400-602A				**B13400702ABS**		**13500702AAS**
AV18-30-10	1/2	13400-602A				**B13400702ABS**		**13500702AAS**
AV18-30-15	1/2	13400-602A				**B13400702ABS**		**13500702AAS**
AV36-60-06	3/4	13400-603A				**B13400704ABS**		**13500704AAS**
AV36-60-10	3/4	13400-603A				**B13400704ABS**		**13500704AAS**
AV36-60-15	3/4	13400-603A				**B13400704ABS**		**13500704AAS**
AV36-60-20	3/4	13400-603A				**B13400704ABS**		**13500704AAS**
AER24/30* & AE24/30*	1/2	B13400602AS	B13400702AA	B13400702AB		**B13400702ABS**		**13500702AAS**
AER36/48* & AE36/48*	3/4	B13400603AS	B13400604A2	B13400704AA	B13400704AB	**B13400704ABS**		**13500704AAS**
AER60*	3/4	B13400704AB				**B13400704ABS**		**13500704AAS**
AE60*	3/4	B13400704AA	B13400704AB			**B13400704ABS**		**13500704AAS**
MBE1200AA-1	1/2	BT1340044	BT1340044S			**0231K00045**		**20509215**
MBE1600AA-1	3/4	BT1340045	BT1340045S			**0231K00052**		**20510133**
MBE2000AA-1	3/4	BT1340046	BT1340046S			**0231K00053**		**20510134**
PGJ024/030*	1/2	B13400602D				**B13400802PAS**		**13500802PAS**
PGJ036/042/048*	1	B13400603D				**B13400803PAS**		**13500803PAS**
GPG1348***1A/AA	3/4	B13400915	B13400915S			**0231K00051**		**20510132**
GPG1360***1A/AA	1	B13400868	B13400868S			**0231K00054**		**20511020**

Goodman® Brand X13 Cross Reference List

X13™ Motor Kit Cross Reference List						
Model	*HP (Horsepower)*	*Original X13 Motor Part #*	*Motor Sub Part #*	*Motor Sub Part #*	*Motor Sub Part #*	*Current X13 Motor Assy Part #*
GME80704BX	3/4 (X13)	0131F00013				0131F00013S
GME80905CX	1 (X13)	0131F00014				0131F00014S
GME81155CX	1 (X13)	0131F00015				0131F00015S
GPG1348***1AB	3/4 (X13)	0131M00032				0231K00041
GPG1360***1BA	1 (X13)	0131M00031				0231K00040
GPG13480903A/4A	3/4 (X13)	0131M00032				0231K00041
GPG13600903A/1403A	1 (X13)	0131M00031				0231K00040
GPG13600904A/1404A	1 (X13)	0131M00031				0231K00040
GPG152407041AA	1/2 (X13)	0131M00059				0231K00059
GPG153609041AA	1/2 (X13)	0131M00057				0231K00060
GPG154811541AA	3/4 (X13)	0131M00058				0231K00062
GPG156014041AA	1 (X13)	0131M00056				0231K00061
GPH/C1360H21A/AA	3/4 (X13)	0131M00030				0231K00039
GPH/C1360H21AB	3/4 (X13)	0131M00042				0231K00042
GPH/C1348M2*AA	3/4 (X13)	0131M00036				0231K00043
GPH/C1360M2*AA	1 (X13)	0231K00044				0231K00044

Technical Services Department • 1810 Wilson Parkway • Fayetteville, TN 37334
Main: 888.593.9988 • Service Fax: 931.438.2273

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Service Bulletin

SA-001 Rev 1
Supersedes SA-001

DATE: July 24, 2008
TO: All Service and Parts Managers
SUBJECT: New Service Bulletin Numbering System

Goodman Technical Services is pleased to announce the release of a new service bulletin numbering system. The new service bulletin numbering system is divided up into specific product groups (i.e. remotes, furnaces, package units and light commercial units), and below are the details of how the new numbering system works:

- **SA** - All Products (Accessories, Furnaces, Remotes and Package Units)
- **SF** - Furnaces (80% and 90% Furnaces and Accessories)
- **SL** - Light Commercial Units (Air Handlers, Coils, Remotes, Package Units and Accessories)
- **SP** - Package Units (Package Units and Accessories)
- **SR** - Remote Units (Air Handlers, Coils, Remotes and Accessories)

The new service bulletin numbering system has been changed to eliminate the need for producing two bulletins covering the same issue on Amana® and Goodman® products, since we are one company with two brands of products. As new bulletins are released, subsequent bulletins will be consistent with this new numbering system.

We feel this new numbering system will be easier to manage and eliminate the need for us along with you to maintain the bulletins in two separate locations or distribute the bulletins through separate distribution channels.

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Main: 888.593.9988 • Service Fax: 931.438.2273

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Service Bulletin

PTAC-073

DATE: September 22, 2015

TO: All Service and Parts Managers

SUBJECT: Whining Noise on Power Vent Motors

In some applications it has been reported that there is a whining sound occurring on the Amana® branded PTAC units with a power vent motor installed on the unit. The noise appears to be coming from the power vent motor. As a corrective measure, we will begin installing the power vent motor to the blower scroll instead of the partition panel in production on units starting with serial number 1510*. If you experience this complaint associated with the vent motor, you will need to relocate the vent motor from the partition panel to the blower scroll. Refer to correction procedures below.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

You will need to remove the scroll assembly (contains the fan motor/ wheel and heating element) from the unit. For disassembly instructions, please refer to repair guide RG-007 (Steps 1- 11) provided with this bulletin. Once the scroll assembly has been removed, you will relocate the motor to the scroll assembly as shown below. You will need to drill 2(.1160 holes # 32 drill bit) for a 6-20 type AB tapping screw. You can use the existing screws in the new location.





Goodman will pay Class B labor rate for making this repair. If repairing multiple units at one location, you will need to contact PTAC Technical Services at 1-877-376-0214 option 1 before making the repairs.

Claims **must** be filed on Service Bench as an Authorization type claim, using Authorization Code **8778**.

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

Technical Services Department • 1810 Wilson Parkway • Fayetteville, TN 37334
Main: 877-376-0214 • Service Fax: 713.316.5541

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INDOOR MOTOR, BLOWER WHEEL AND HEATING ELEMENT
INSTALLATION INSTRUCTIONS

Goodman Company, L.P. © 2012
5151 San Felipe, Suite 500, Houston, TX 77056
www.goodmanmfg.com -or- www.amana-hac.com
P/N: RG-007 Date: December 2012

Description

The following are the instructions for installing a indoor motor, blower wheel and heating element on an Amana® brand PTAC

Tools Needed:

1/4 Inch Nut Driver
5/16 Inch Nut Driver
2.5mm Allen Wrench

Kit/Components:

(1) Indoor Motor
(1) Blower Wheel
(1) Heating Element

Installation

WARNING

HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

1. Disconnect power to the unit by unplugging the power cord from the outlet or subbase or disconnecting power at the fuse box or circuit breaker.
2. Remove the front cabinet from the chassis by tilting the bottom of the front forward, lifting slightly up and forward.
3. Remove the six (6) 5/16 inch screws securing the chassis to the wall sleeve and remove the the chassis from the sleeve and place on a sturdy surface or the floor.

Indoor Motor Installation

4. Remove the two 1/4 inch screws on each side of the touch pad and lay touch pad back. Figure 1

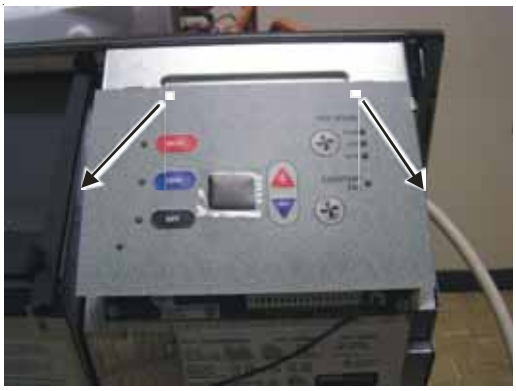


Figure 1

5. Remove the 1/4 inch screw from the right side of the control panel and the control panel will hinge forward. Figure 2



Figure 2

6. Remove the four (4) 5/16 inch screws securing the discharge screen to the scroll, remove the 1/4 inch screw on front left of scroll and remove screen. Figure 3

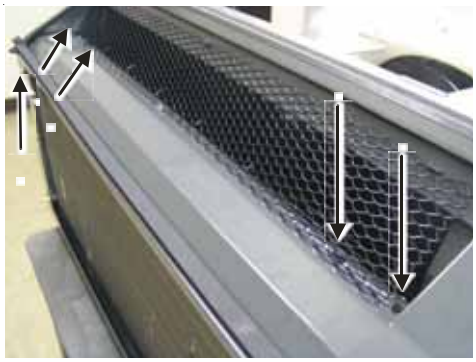


Figure 3

7. Remove the two (2) 1/4 inch screws from the indoor motor cover and remove the cover. Figure 4

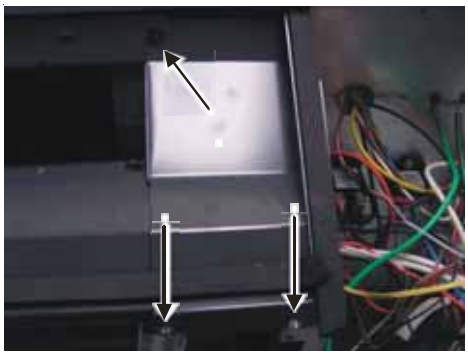


Figure 4

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8. Remove the top rail. Figure 5



Figure 5

9. Remove the ten (10) 1/4 inch screws securing the partition panel top cover and remove the top. Figure 6

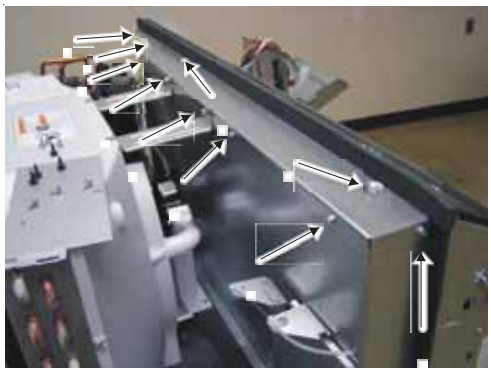


Figure 6

10. Remove the two (2) 1/4 inch screws on the left side of the unit. Figure 7



Figure 7

11. Grasp the blower scroll top and slide the scroll to the right and then lift assembly straight up and out of the unit. Figure 8.



Figure 8

12. Loosen the 2.5mm allen wrench set screw securing the blower wheel to the indoor motor shaft. Figure 9.

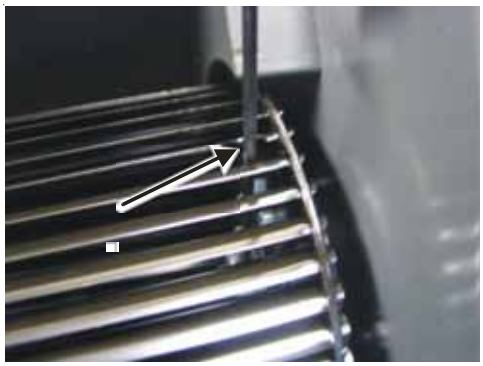


Figure 9

13. Disconnect the wires from the indoor blower motor from the capacitor and control board.
14. Remove the three (3) 1/4 inch screws from the indoor motor bracket and remove the bracket. Figure10

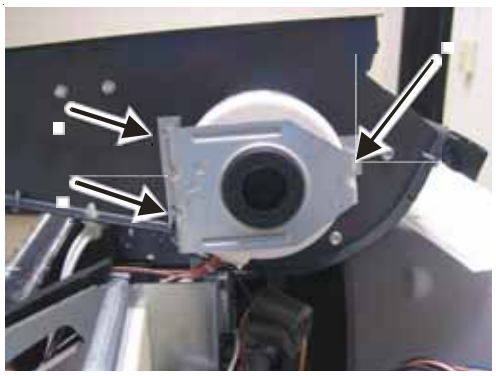


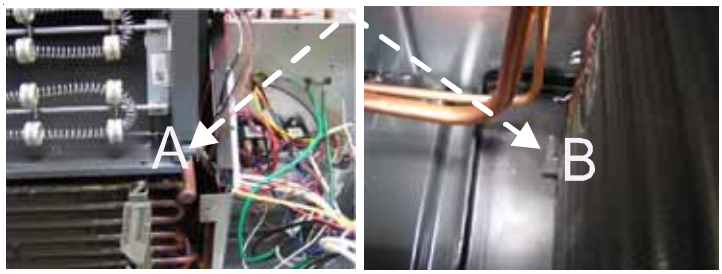
Figure 10

15. Remove the motor and install new motor and reassemble the unit in reverse order. Figure 11.



Figure 11

NOTE: It is very important when installing the scroll assembly that notch A is inserted into notch B as shown below.



16. Restore power to the unit and check for proper unit operation (cooling and/or heating).

Blower Wheel

17. Follow steps 1, 2 and 3 then steps 7 through 14.
18. Remove the blower wheel and install the new blower wheel Figure 12.

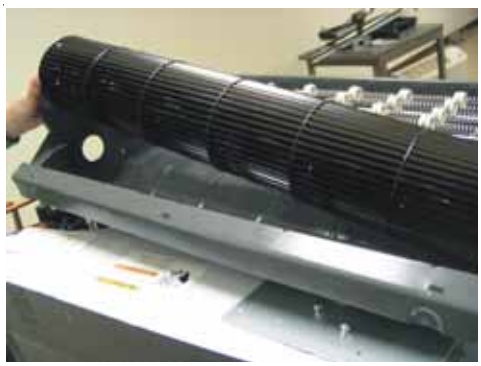


Figure 12

19. Reassemble the unit in reverse order. Refer to Note on step 14.
20. Restore power to the unit and check for proper unit operation (cooling and/or heating).

Heating Element

21. Follow steps 1, 2 and 3 then steps 7 through 14.
22. Disconnect the two (2) white wires from the heating element. Figure 13.

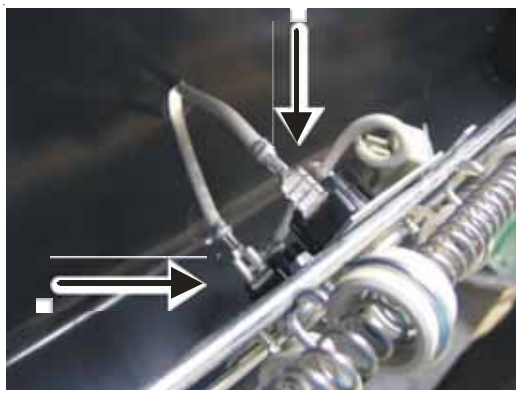


Figure 13

23. Remove the two (2) screws securing the heating element to the scroll assembly and remove the heating element. Figure 14.

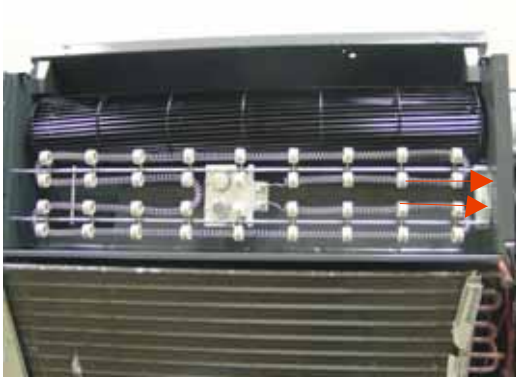


Figure 14

24. Reassemble the unit in reverse order and refer to the note on step 14 page 2.
25. Restore power to the unit and check for proper unit operation (cooling and/or heating).

Service Bulletin

PTAC-072

DATE: August 13, 2015

TO: All Service and Parts Managers

SUBJECT: Whistling Sound on PT*** G****** Model PTAC's

In some applications it has been reported that there is a whistling sound occurring under some windy conditions on the Amana® branded PT***G****** PTAC units that were manufactured prior to June 2015. The noise appears to be coming through the PTAC unit under the condensate drain trough. As a corrective measure, we began installing permagum in production on units starting with serial number 1506119154. To correct this issue, you will need to access the drain trough and place either permagum or RTV sealant under the trough and up the two (2) sides of the drain trough. Refer to correction procedures below.

WARNING

HIGH VOLTAGE!
Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

On PT*** G****** model PTAC units, you will need to remove the scroll assembly (contains the fan motor/ wheel and heating element) to access the drain trough from the front of the unit. For disassembly instructions, please refer to repair guide RG-007 (Steps 1- 11) provided with this bulletin. Once the drain trough is accessed, place either permagum or RTV sealant under and along the two (2) sides of the drain trough as shown below.



Goodman will pay Class B labor rate (this includes amount for field supplied RTV Sealant or permagum) for making this repair. If repairing multiple units at one location, you will need to contact PTAC Technical Services at 1-877-376-0214 option 1 before making the repairs.

Claims **must** be filed on Service Bench as an Authorization type claim, using Authorization Code **8776**. **The claim for the permagum or RTV and labor should be filed as one claim, using the Dealer's account number.**

Please consult the Warranty Department if you need assistance with this process. The claim will be paid upon review by the Warranty Department. **Warranty Claims will be approved for equipment that is still covered under the terms of Standard Warranty.**

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INDOOR MOTOR, BLOWER WHEEL AND HEATING ELEMENT
INSTALLATION INSTRUCTIONS

Goodman Company, L.P. © 2012
5151 San Felipe, Suite 500, Houston, TX 77056
www.goodmanmfg.com -or- www.amana-hac.com
P/N: RG-007 Date: December 2012

Description

The following are the instructions for installing a indoor motor, blower wheel and heating element on an Amana® brand PTAC

Tools Needed:

1/4 Inch Nut Driver
5/16 Inch Nut Driver
2.5mm Allen Wrench

Kit/Components:

(1) Indoor Motor
(1) Blower Wheel
(1) Heating Element

Installation

WARNING

HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

1. Disconnect power to the unit by unplugging the power cord from the outlet or subbase or disconnecting power at the fuse box or circuit breaker.
2. Remove the front cabinet from the chassis by tilting the bottom of the front forward, lifting slightly up and forward.
3. Remove the six (6) 5/16 inch screws securing the chassis to the wall sleeve and remove the the chassis from the sleeve and place on a sturdy surface or the floor.

Indoor Motor Installation

4. Remove the two 1/4 inch screws on each side of the touch pad and lay touch pad back. Figure 1

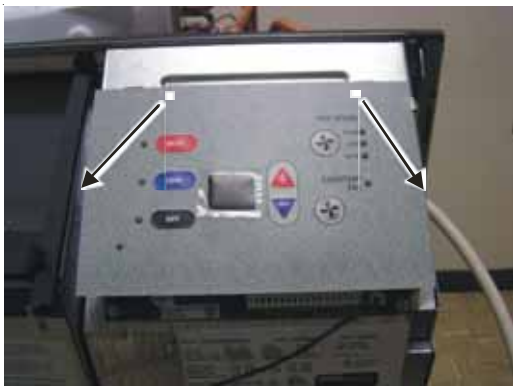


Figure 1

5. Remove the 1/4 inch screw from the right side of the control panel and the control panel will hinge forward. Figure 2



Figure 2

6. Remove the four (4) 5/16 inch screws securing the discharge screen to the scroll, remove the 1/4 inch screw on front left of scroll and remove screen. Figure 3

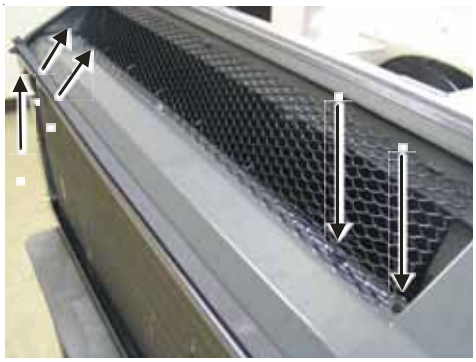


Figure 3

7. Remove the two (2) 1/4 inch screws from the indoor motor cover and remove the cover. Figure 4

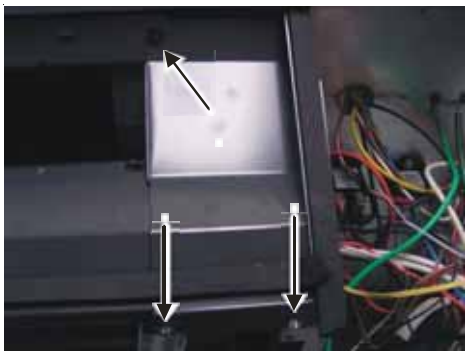


Figure 4

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8. Remove the top rail. Figure 5



Figure 5

9. Remove the ten (10) 1/4 inch screws securing the partition panel top cover and remove the top. Figure 6

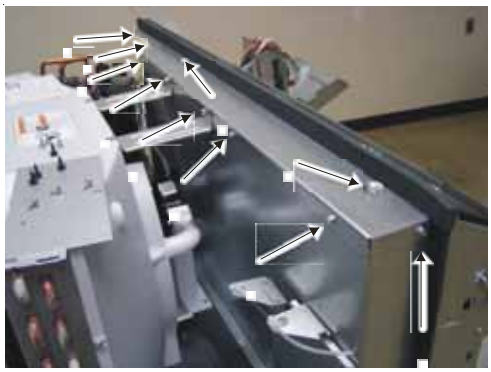


Figure 6

10. Remove the two (2) 1/4 inch screws on the left side of the unit. Figure 7



Figure 7

11. Grasp the blower scroll top and slide the scroll to the right and then lift assembly straight up and out of the unit. Figure 8.



Figure 8

12. Loosen the 2.5mm allen wrench set screw securing the blower wheel to the indoor motor shaft. Figure 9.

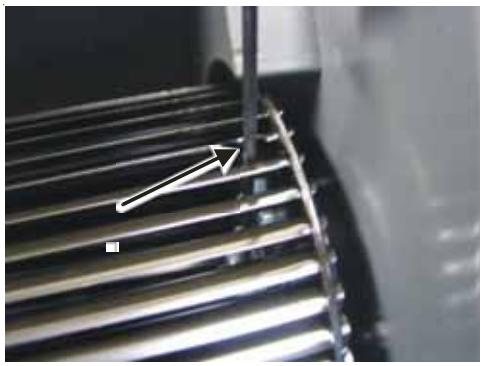


Figure 9

13. Disconnect the wires from the indoor blower motor from the capacitor and control board.
14. Remove the three (3) 1/4 inch screws from the indoor motor bracket and remove the bracket. Figure10

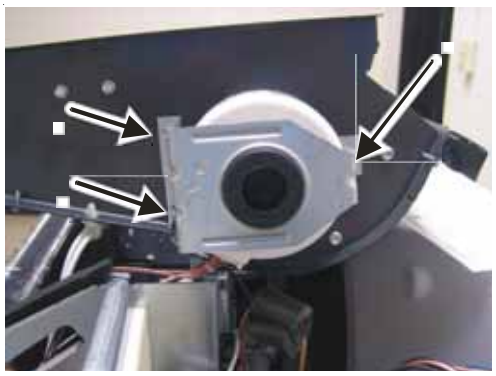


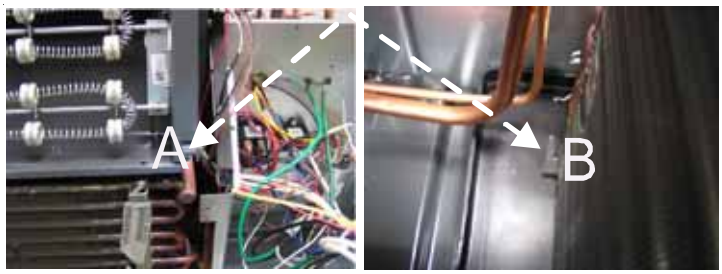
Figure 10

15. Remove the motor and install new motor and reassemble the unit in reverse order. Figure 11.



Figure 11

NOTE: It is very important when installing the scroll assembly that notch A is inserted into notch B as shown below.



16. Restore power to the unit and check for proper unit operation (cooling and/or heating).

Blower Wheel

17. Follow steps 1, 2 and 3 then steps 7 through 14.
18. Remove the blower wheel and install the new blower wheel Figure 12.

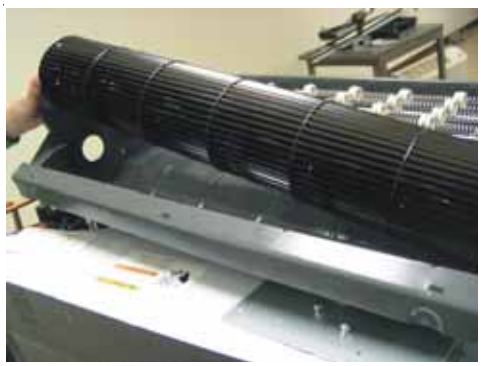


Figure 12

19. Reassemble the unit in reverse order. Refer to Note on step 14.
20. Restore power to the unit and check for proper unit operation (cooling and/or heating).

Heating Element

21. Follow steps 1, 2 and 3 then steps 7 through 14.
22. Disconnect the two (2) white wires from the heating element. Figure 13.

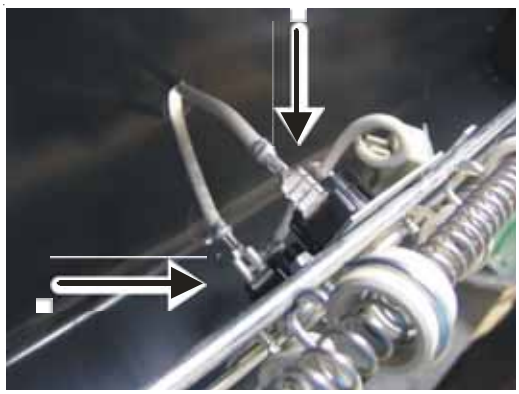


Figure 13

23. Remove the two (2) screws securing the heating element to the scroll assembly and remove the heating element. Figure 14.

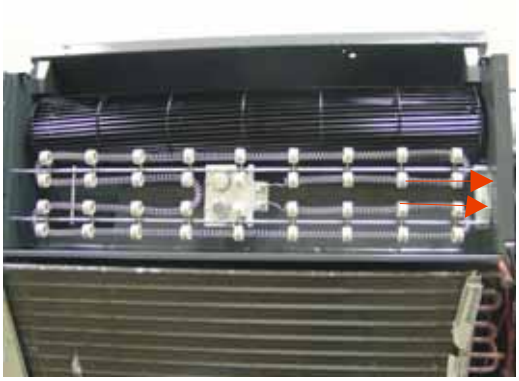


Figure 14

24. Reassemble the unit in reverse order and refer to the note on step 14 page 2.
25. Restore power to the unit and check for proper unit operation (cooling and/or heating).

Service Bulletin

PTAC-071

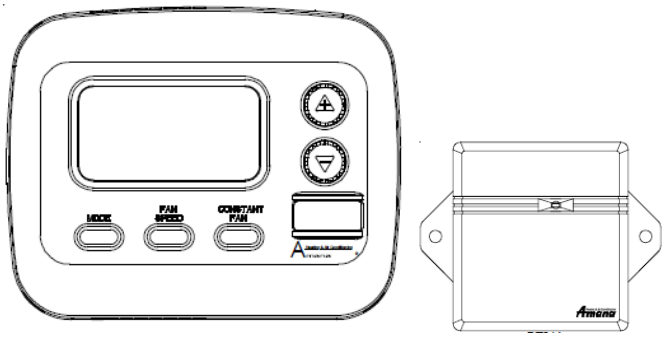
DATE: November 17, 2010

TO: All Service and Parts Managers

SUBJECT: Potentiometer Replacement Kits for Hydronic Units

In some cases, it may become necessary to replace the potentiometer on an Amana® brand Hydronic PTAC unit. If a potentiometer needs to be replaced, the replacement kit will be a Hydro Digikit to replace the operation of the existing potentiometer.

This kit contains a wireless thermostat and antenna along with a set of instructions for installing this kit (Note: The potentiometer part number 0130P00013 will no longer be utilized and the operation is controlled by the wireless stat). The part number for the kit is **Hydro Digikit**.



Hydro Digikit

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Service Bulletin

PTAC-070

DATE: March 4, 2010

TO: All Service and Parts Managers

SUBJECT: Potentiometer and Knob Replacement Kit

When replacing a Potentiometer on an Amana® brand PTAC control board, the control knob will also need to be replaced due to some issues we've seen with the current set screw type knob spinning on the shaft of the potentiometer. We have released a new spline type knob to eliminate the issue of the knob spinning on the shaft of the potentiometer and this new knob and potentiometer will be provided in service kit Part **# PTK-01.**

The new knob is a splined style knob as opposed to the set screw type knob currently in use. The new splined style knob will prevent the knob from spinning on the shaft of the potentiometer which could lead to incorrect temperature setting.





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Service Bulletin

PTAC-069

DATE: December 17, 2007

TO: All Service and Parts Managers

SUBJECT: Disposition of PTAC In-Warranty Service Parts

To reduce the incident rate and improve the overall quality of Amana® brand products, we will from time to time be requesting certain parts be returned to Goodman for analysis. To accomplish this, we will be enabling a new function in the Service Bench online warranty system that will notify the person entering the warranty claim if they have entered a part that is on this required return list.

If the claim has met all warranty rules when a customer submits a warranty claim for a part number on the required return list, the claim status will change to **"Requires Part"** instead of "Approved" (see Warranty Claim Header on following pages). Next, a popup window will appear stating, **"Some parts require return to the manufacturer. Please go to the Packing List for the required parts and print the list. Claim Number (GM7xxxxxx) has been submitted. Parts must be verified for the claim to be approved".** A link to print a packing list will also appear in the menu. Please include this packing list with each returned part. Credit will be issued to the Distributor after Goodman receives the parts.

Please notify your Dealers who are entering claims on Service Bench of this requirement. The parts must be returned to the Distributor for consolidation and shipment to Goodman.

- Print the packing list for each part on the "Required Parts Return List". The packing list will include the pertinent claim information.
- Return the parts to the address on the packing list.
- Mark the parts "QUALITY PARTS RETURN" attention David Fuller and Tripp Martin
- Credit will be issued upon receipt of the part.
- The distributor will be provided a per-part allowance for freight and handling which will be included in the claims reimbursement.
- For a current list of parts on the Returned Parts List, follow the instructions below to the "My News" section in Service Bench
    - From the Main Menu select "*My News*"
    - View the attachment next to Returned Parts List

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For Distributors filing claims using the import option, there is no change in the submission process.

To determine which claims have parts that should be returned follow the steps below:

- From the Main Menu click Import
- Search for the import file by completing the date search fields (this happens automatically after an import)
- The import files are sorted in date order, click on the “view claims link” to view the claims in the import file
- The status of each claim is displayed, the parts on the claims with the status “requires part” should be returned (see Warranty Claim Header on following pages). Select the claim; click the “Parts Packing List link, then print the packing list to be included with the shipment of returned parts.

Please forward this bulletin to the appropriate parties in your organization.

Initial List of Parts Requiring Return to Goodman

Note this list will change, refer to “My News” to view the current list.

Original Part #	Original PCB Part #	New PCB Part #	Description
RSKP0004	PCB00111	PCBBF111	Control, M61, Wireless (PTAC)
RSKP0005			Touchpad (PTAC)

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Warranty Claim - Printer Version

10483101-10483101-55 - GDI-HOUSTON CENTRAL (344) **2801 NORTH LOOP W** **HOUSTON, TX 77008-1012 UNITED STATES** **(713)868-2665**	**Claim Number** GM78WYSKX **Account Number** 10483101-10483101-55 **Claim Status** Requires Part **Claim Date** 08/07/2007 **Claim Submitted Date** 08/07/2007 **Amount Approved** $4.00

** IMPORTED CLAIM **

Dealer Payment and Warranty Information
Warranty Contract Code for Model: XVCA Labor Rate: Rate Class: Mileage Rate: $.50
Manufactured Date

******

Manufacturer	GOODMAN - Goodman		
Reference Number	7473531	**Submitting For**	112892541 - GDI-HOUSTON CENTRAL (344)
Additional Reference Number	155848	**Submitting For Location ***	10483101-10483101-55 - GDI-HOUSTON CENTRAL (344)
Customer Information			
Last Name	T MARTIN	**First Name**	
Street Address	7401 SECURITY WAY		
City, State/Province, Zip/Postal Code	HOUSTON TX 770401148		
Country *	UNITED STATES		
Home Phone Number			
Goodman Model Number *	VCA42C2C	**Goodman Serial Number ***	0510155899
Product Description	SELECT -10 SEER COND.		
Other Unit Model No.		**Other Unit Serial No.**	
New Model No.		**New Serial No.**	
		Date Installed	01/15/2006
Reason for Failure		**Date Call Received**	06/08/2007
		Date Repaired *	06/08/2007
		Warranty Type *	Standard Warranty
Service Performed		**Authorization Number**	
		Service Agreement Number	
Cause Code *	Burnt/Shorted	**Component Code ***	
Mileage			
Parts Distributor Account Number	112892541 - GDI-HOUSTON CENTRAL (344)		
Parts Distributor Location	10483101-10483101-55 - GDI-HOUSTON CENTRAL (344)		

Number of Part Lines 1

Part Quantity	Failed Part #	Failed Part Serial Number	Replacement Part #	Replacement Part Serial Number	Invoice #	Unit Price	Extension Cost	Approved Amount
1	B1360321		B1360321 Override Validation		4576480	4.00	$4.00	4.00
	Description: CONTACTOR 25FLA 125LRA 1P 277V							
	Claim Error: NONE							
	Verification: Not Required							

Item	Amount	Approved Amount
Total Parts	$.00	$4.00
Labor Amount		.00
Special Labor Allowance		.00
Travel	$.00	.00
Labor Tax		.00
Parts Tax		.00
Tax (Labor + Parts)	$.00	$.00
Freight		
Handling		
Other		.00
Total Amount	$4.00	$4.00
Servicer Amount		$.00

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Packing List

Packing List

From
GDI-HOUSTON CENTRAL (344)
2801 NORTH LOOP W
HOUSTON, TX 77008-1012

To
GOODMAN QUALITY PARTS RETURN
Attn: David Fuller - Tripp Martin 7401 Security Way
Houston, TX 77040

Claim	Model	Model Serial Number
GM77WYNND	GMNT0403	0303605803

Claim Reference Number PARTRETN

Print on List?	Tracking Number	Carrier	Manner of Return	Supplier Part Number	Part Number	Part Serial Number	Quantity	Part Description
☑					B1401018S		1	SERVICE HOT SURFACE IGNITOR

Import Claims

Description: PART RETURN TEST 2 **File Name:** Part Rtn Test2.csv

Claim Status: ALL

Claim Number	Reference Number	Status	Amount Submitted	Amount Approved
GM78WYSKV	34410306	Requires Part		$3.30
GM78WYSKW	7473532	Approved		$16.60
GM78WYSKX	7473531	Requires Part		$4.00
GM78WYSKY	4743533	Approved		$14.60
GM78WYSKZ	7473535	Requires Part		$4.00

Import List

Date From: 08/07/2007 **To:** 08/07/2007 **File:** **Description:**

Date Submitted	File Name	Description	Status
08/07/2007	goodman7.txt	test7	Completed w/Validation Errors
08/07/2007	goodman6.txt	test6	Completed w/Validation Errors
08/07/2007	goodman5.txt	test5	Completed w/Validation Errors
08/07/2007	Goodman4.txt	test4	Completed
08/07/2007	Goodman3.txt	Test3	Completed
08/07/2007	Goodmancoilwarrantyclaim.txt	TEst2	Completed
08/07/2007	Goodmancoilwarrantyclaim.txt	Test	Completed w/Validation Errors
08/07/2007	Part Rtn Test2.csv	PART RETURN TEST 2	Completed
08/07/2007	Part Rtn Test.csv	Part Return Test	Completed

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Heating & Air Conditioning
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Service Bulletin

PTAC-068

DATE: October 19, 2007

TO: All Service and Parts Managers

SUBJECT: Digital Control Board Replacement Procedures

All service technicians servicing an Amana® brand PTAC unit with a digital control board must call Technical Services at 1-877-376-0214 and speak with a Product Specialist while at the location if they feel the digital control board needs to be replaced. **DO NOT** replace a control board until you have spoken with the Technical Service Department. We are finding the majority of returned boards to be No-Fault-Found.

There are diagnostics and temperatures that we need to get off the board while the technician is there in front of the unit. When calling in, we will need the model and serial number of the unit along with the voltage to the unit and whether or not there is 24 volts at the "C" & "R" terminals of the low voltage pin connector.

There is a diagnostics routine that will allow you to read what temperatures each of the thermistors are sensing. The unit should be running for approximately 10 minutes before entering the diagnostics routine. To access the diagnostics use the following procedures:

1. Press and hold the plus (+) and minus (-) keys at the same time.
2. While holding the plus and minus keys down, press the COOL button twice within 2 seconds. The display will show either two dash lines or a fault code (example - - ., or C1 or L9). Once this appears in the display, let go of the plus and minus keys and push the FAN SPEED key one time.

NOTE: If the sequence was done correctly, the display will show SP. Once SP is displayed, it will go through all of the thermistor temperature readings on its own. The sequence will be as follows use the spaces provided below to record the temperature readings:

SP		Set Point-The temperature listed immediately following the SP will be the set point that the unit has been requested by the operator
r1	F2	Wire less Thermostat: Will give an F2 unless an Amana wireless stat is being used
IA		Indoor Ambient Thermistor: Will give you the return air temperature of the Black thermistor attached to the indoor coil
IC		Indoor Coil Thermistor: Will give you the temperature of the Red thermistor attached to the indoor coil located behind the access panel
ID		Indoor Discharge Thermistor: Will give you the temperature of the Yellow thermistor as the exhaust air exits the top of the PTAC through the discharge grill
OC		Outdoor Coil Thermistor: If a heat pump unit, the Blue thermistor will give you the outdoor coil temperature
OA	F8	This is rarely used today and unless a thermistor is attached to the OAT on the control board you will get the F9 code
IH	F9	This is rarely used today and unless a thermistor is attached to the IH on the control board you will get the F9 code
25		If the unit has v2.5 or greater, the software version will be displayed I.e. 25 for version 2.5

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To determine if a thermistor has failed, the following example of a faulty Indoor Ambient Thermistor (IA) is being provided. If the ambient temperature of the room is 75°F and the control board is placed in the diagnostics mode, the Indoor Ambient Thermistor (IA) display should be followed by 75. If the IA display shows a 1 or 2 and then two more numbers such as 34, this would indicate a faulty thermistor. This display reading of 1or 2 and then 34 would indicate a room temperature of 134 or 234°F.

Technicians will need to have the information listed above when calling the Technical Services Department. If a digital control board is needed, then the Technical Services Department will send a replacement control board to the servicer.

All digital control boards and touch pads that are replaced MUST BE returned.

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Service Bulletin

PTAC-067

DATE: September 10, 2007

TO: All Service and Parts Managers

SUBJECT: **Motor & Fan Blade Replacement on A*09****MA & A*12****MA Units**

There has been a part number change on the fan motor for the A*09****MA & A*12****MA Amana® brand room air conditioning units. The change in motors involved changing from a sleeve bearing motor (Part # 150113051) to a ball bearing motor (Part # 150110432).

Units produced February 2007 and later (serial date code 0702) are equipped with the new ball bearing motor (Part # 150110432), while units produced prior to February 2007 (serial date code 0701 and earlier) were built with a sleeve bearing motor (Part # 150113051). The new ball bearing motor (Part # 150110432) has a different diameter shaft on the condenser fan blade side of the motor and cannot be used on models built prior to February 2007 due to motor shaft/blade fit up issue.

If you need to replace the fan motor on a unit built prior to February 2007 (serial date code 0701 and earlier) you will also need to replace the condenser fan blade (Part # 10331155), or if you need to replace the condenser fan blade then you will also need to replace the motor with new motor (Part # 150110432).

If you need to replace the fan motor or condenser fan blade on models built February 2007 and later (serial date code 0702), all you will need to order is the motor (Part # 150110432) or the condenser fan blade (Part # 10331155).

We are currently updating the parts manuals on these models to include this information to prevent confusion in the field when there is a need to replace a motor or condenser fan blade.

Technical Services Department • 1810 Wilson Parkway • Fayetteville, TN 37334
Main: 877.376.0214 • Service Fax: 931.438.2199

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Service Bulletin PTAC-066

DATE: October 2, 2006

TO: All Service and Parts Managers

SUBJECT: PTAC Control Board Return Policy

Unless directed by technical services, it is no longer required to return Amana® brand PTAC control boards to obtain warranty credit.

When filing your warranty claim, you will still need to provide the invoice number or a copy of the invoice from which you were billed for the board if the board was purchased from Goodman. If the board was purchased from another parts source, you must return the part claim and a copy of the invoice to the parts source to obtain credit for the board.

FILING PROCEDURES:

The yellow (Copy 2 Labor Reimbursement) copy of the warranty claim form must be submitted to Warranty Administration, 7401 Security Way Houston, TX 77040 for labor payment. The white (Copy 1 Parts Reimbursement) copy of the claim form must be submitted through your part source for part credit. If parts are purchased directly from Goodman, submit both the part and labor reimbursement copies of the warranty claim form to Warranty Administration, 7401 Security Way Houston, TX 77040. The Goodman parts invoice number must be listed in Section 11 of the claim form.

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Service Bulletin PTAC-065

DATE: **September 27, 2006**

TO: **All Service and Parts Managers**

SUBJECT: RSKP0006 CONTROL BOARD REPLACEMENT KIT

The control board replacement kit **RSKP0006** will replace the existing RF000185 control board kit. This kit will be used on PT****A***A through PT****B***J models. Along with a new board, this kit contains new thermistors, a transformer (off-board mounted), control board cover with touch pad attached and installation instructions. The two- knob style boards will no longer be available. The RSKP0006 is a touch pad board with a single- knob thermostat as shown below.



Control board replacement will continue to be paid at a Class “A” service rate.

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(877) 376-0214
FAX (931) 438-2199

SERVICE BULLETIN PTAC-064

DATE: **October 17, 2005**

TO: **All Service and Parts Managers**

SUBJECT: Relay Kit For ME, MH** and PB** Model Units**

In certain applications it has been reported that the LCDI power cord will trip the reset button and continue to trip even after the cord has been reset. The units experiencing this issue are ME**, MH** and PB** model room air units. The date range on the units that could exhibit this condition were manufactured beginning August 1, 2004 to present date (serial number range 0408 to 05*). The corrective action for this condition is to install a relay service kit on these units.

The relay service kit consists of the relay, mounting screws, four wires, wiring diagram and installation instructions. If a relay service kit needs to be installed, the below is a list of the relay service kit part numbers and the corresponding model numbers of the units where each kit is to be used.

Relay Kit Part #	Unit Model – Where used
RSKC0002	MH09A3PB235, MH12A3PB235 and MH18A3PB335
RSKC0003	ME09A3PB235, ME12A3PB235 and ME18A3PB335
RSKT0001	PBE092A35AC and PBE112A35AC

FILING PROCEDURES:

For installing the relay service kit, Amana will pay Class A labor rate. If there is more than one being repaired at a location, the remaining claims will be Class A reduced 25 %.

The yellow copy (Copy 2/Labor Reimbursement) of the warranty form must be submitted to Goodman Manufacturing Company L.P. Warranty Administration 7401 Security Way Houston TX 77040 for labor payment. The white copy (Copy 1/Parts Reimbursement) of the warranty form must be submitted through your part source for part credit. If parts are purchased directly from Goodman, submit both the white and yellow copies of the warranty claim form along with your Goodman parts invoice to the address listed above.

Upon receipt of proper documentation, labor credit will be issued directly to the servicer.

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Service Bulletin

PTAC-063

DATE: 11/4/2005

TO: All Service and Parts Managers

SUBJECT: PTAC Units With Digital Boards (PTH-PTC***B**AG-K)

All technicians servicing a PTAC unit with a digital control board **must call (877)-376-0214 and speak with a Technician or (Product Specialist) while you are at the location of the Digital PTAC unit before replacing the board**. **DO NOT** replace a digital control board until you have spoken with a Technician or Product Specialist.

We will need the technician to supply the technical service department with the following information:

1) **Model and Serial** number of the unit
2) **Voltage** at the receptacle alone with the voltage to the unit and control board
3) A brief **description of the problems and symptoms** being reported
4) Any **warning or diagnostic codes** that are displayed on the control board

The technical service department will assist the servicer in diagnosing the PTAC unit while they are at the location of the unit. If replacement of the digital control is required to repair the unit, we will ship the part to the servicer or the property.

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Configuration Settings

The control can be configured to operate a wide range of options. The options listed below with the * are the factory default settings. If these are acceptable, then the unit does not require any additional configuration and is fully operable. To configure the unit, first select the configuration feature code setting and then an option code to change from the factory default setting.

To **enter configuration feature mode**:

1. **Press** and **continue to hold** the up and down  arrow keys and quickly **press** the **OFF**  key **twice within a two (2) second time frame**. The display will alternate between displaying the feature code **C1** and the option code **0** (factory default setting)**.** The lower right dot on the display will flash. To enter the other option codes for C1 (**rE and L5)** press either the up or down arrow key.

   To select a configuration **feature code** other than C1, press the **HEAT**  key until the desired configuration comes up. To scroll to a previously viewed configuration codes press the **COOL**  key.

   Once you have scrolled to the correct feature, then to select the **option code** for your desired configuration, press either the up or down key  to scroll through the options of the selected feature code.

To **exit configuration mode**:

1. **Press** the **OFF**  key. Configuration feature mode will also exit **if no keys are pressed** for a period of **two (2) minutes**.

   Below are the most common configuration settings. Additional codes are present and may be accessed within this menu. Contact the manufacturer for additional information.

Feature Code	Description	Option Code	Description
C1	Interface Usage	0*	Unit is only controlled by the touchpad behind the door.
		rE	Unit is both controlled by a wireless thermostat and/or the touchpad behind the door.
		L5	Unit is controlled by a wired thermostat only via on the low voltage terminals.
C2	Fan Operation	Au*	The fan only runs with the call for heating or cooling.
		On	The fan runs continuously except in the OFF position.
C4	Room Indentification first two digits (00 to 99)	00-99	Set first two digits of room identification
C5	Room Identification last two digits (00 to 99)	00-99	Set last two digits of room identification
C6	Occupancy	0*	"No Occupancy" detection devices
		1	Wired Door Switch and Motion Sensor present
		18	Enter "No Occupancy" routine 18 hours after last control selection
C7	Motion Sensor Type	1	Normally Closed Device
		0*	Normally Open Device
C8	Cooling Temperature Limiting	60-72 (65*)	Select temperature between 60 and 72 for minimum cooling set point
C9	Heating Temperature Limiting	74-90 (80*)	Select temperature between 74 and 90 for maximum heating set point
C0	Reverse Cycle "B" or "O" selection for thermostat	8*	Mating thermostat has a "B" terminal
		0	Mating thermostat has an "O" terminal
c1			*Not used*
c2	Wired Unrented Set Back	0*	Not Active
		A	Active
c3	Unrented Cooling Temperature	60-90 (79*)	Select temperature between 60 and 90 unrented cooling set point
c4	Unrented Heating Temperature	60-90 (63*)	Select temperature between 60 and 90 unrented heating set point
CA	Twinned Unit	0*	Not Twinned
		5	Twinned (Slave)
Cb	Dehumidification	0*	Not Active
		1	Active
		U	Active in No occupancy / Unrented State
CC	Dehumidistat call for a drop in temperature	3-8	3-8
Cd	English/Metric Temperature	F*	Fahrenheit Scale
		C	Celsius Scale
CE	Freeze Protection	1*	On
		0	Off

* Indicates factory default.

Part No. 20228101
Printed in USA

Effective: April 2004

HAC Technical Services
Fayetteville, TN. 37334

IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers **DATE:** May 25, 2004

NO: PTAC-061

SUBJECT: Control Board Replacement Kits for "PTH/PTC - *A, *B, *C, *D and *E" Series PTAC Units.

Control board replacement kit RF000185 will replace the current Control Board Kits RF000171 and RF000173, which were for use with PTH/PTC - *A, *B, *C, *D and *E series PTAC units. The RF000185 kit has a dual volt transformer, which will accommodate 208/230VAC and 265VAC units. It will no longer be necessary to order the voltage specific replacement control board kits. The transformer will come prewired on the Load (LOAD) Terminals and the Common (COM) terminal. The remaining wire will need to be connected to the transformer based on the voltage (either 230VAC or 265vac) the unit is designed for.

The thermistors, ferrite core and transformer are available as individual service parts, so if one of these parts is needed for replacement, it can be ordered individually. Listed below are part numbers for each of these individual components:

20512501 Transformer

20320702 Ferrite Core

20295701 Indoor Ambient Thermistor

20195702 Indoor Coil Thermistor

20295704 Outdoor Coil Thermistor (Heat Pump PTH - *A, *B, *C and *D Models Only)

20295705 Outdoor Coil Thermistor (Heat Pump PTH - *E Models Only)

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers **DATE:** April 29, 2004

NO: PTAC-060

SUBJECT: Return Parts on 2004 PTAC Units

In an ongoing effort to improve the Amana ® brand PTAC units, we are requiring all parts replaced on any PTAC units manufactured in 2004 to be returned until further notice

Any parts replaced on PTAC units (serial number 0401 and later) must be returned to the distributor for credit.

FILING PROCEDURES:

Copy 5(white ½ sheet) of the claim form is to be attached to the return parts. If the parts are not returned, part and labor credit may be denied.

The yellow (Copy 2 Labor Reimbursement) copy of the warranty claim form must be submitted to Warranty Administration, 1810 Wilson Parkway, Fayetteville, TN 37334 for labor payment. The white (Copy 1 Parts Reimbursement) copy of the claim form must be submitted through your part source for part credit. If parts are purchased directly from Goodman, submit both the part and labor reimbursement copies of the warranty claim form to Warranty Administration, 1810 Wilson Parkway, Fayetteville TN 37334. The Goodman parts invoice number must be listed in Section 11 of the claim form.

Upon receipt of the part and proper documentation at Fayetteville, part credit will be issued to the parts distributor and labor credit will be issued directly to the servicer.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Dealers & Distributor Parts Managers **DATE:** December 18, 2003

NO: PTAC-059

SUBJECT: Revised Company Warranty Claim Form Process

As part of Goodman's commitment to improve the warranty claim process, we have consolidated the warranty claim forms for the Goodman and Amana brands. The new warranty claim form has been restructured to incorporated features of both current claim forms into one universal form to be used by all of customers regardless of the brand of equipment repaired.

The new form has been modified to include more detailed information that is required for claim processing and warranty reporting. In addition to conforming with our "One Company, Two Brand" theme, the new claim form will provide more detailed information that will allow Goodman Warranty Departments to address field issues and process claims faster and more efficiently with fewer rejected claims. The new form includes changes such as requiring the outdoor unit information for claims on indoor coils and blowers. This information is essential since the warranties for these serialized units are dependant on the matching outdoor unit. This will reduce the number of rejected claims requesting outdoor unit information. The new form also requires failure/ component cause coding that will enable Goodman to respond faster and provide more accurate information to the field on service issues.

The process for filing Amana warranty claims has not changed. Dealer responsibilities remain the same as outlined in previous manuals. Dealers are responsible for completing the in-warranty or extended service contract service call. Once the service is complete, the warranty claim form is to be completed (form RF000007 Rev. 1.) in its entirely. Copy 5 (last copy) of the warranty claim form is to be attached to the defective part(s). Defective part(s), with copy 5 attached are to be returned to the distributor from whom the replacement parts were purchased. When the parts are covered by the factory warranty, copy 1 of the warranty claim is also returned to the part source for processing. When the unit repaired has an extended service contract or is covered by a full factory warranty, the labor copy of the claim form (copy 2) is to be forwarded directly to Goodman for payment to be issued to the dealer. If the part replaced is out of factory warranty but covered by an extended service contract, the part reimbursement copy (copy 1) together with the labor copy (copy 2) of the warranty claim form are to be forwarded directly to Goodman to be paid to the dealer per the extended service contract.

As with the previous warranty claim form, it is imperative that all sections of the claim form are complete. This will provide the information necessary to process the warranty claim and minimize claim rejection or delay in processing. Procedures for completing the warranty claim form have been outlined.

1. Warranty type check boxes -- At the top of the claim form, there are four boxes that identify the type of warranty claim being filed. It is mandatory that one of these boxes be checked so the claim can be processed correctly. If requesting part warranty and labor (extended warranty, full factory warranty, or special labor concession), the appropriate box for each must be checked. The box descriptions are as follows:

    a. Product Warranty – this refers to any item (part or labor) covered under the terms of the standard product warranty as stated in the warranty certificate shipped with the product. Labor is included only on specific models.

    b. Extended Warranty – if the product is covered by a Goodman extended service policy (Asure or Goodcare), check this box and enter the contract number and expiration date in section 10.

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c. Part Warranty – replacement parts purchased by the customer for product no longer covered by the standard product warranty are covered by a 1 year replacement part warranty. Check this box if the replacement part is within the 1 year part warranty. Customer's proof of purchase must be attached to the warranty claim.

d. Special Labor Allowance – check this box for any labor request that does not fall under the full product warranty or extended service contract as described above. This includes DOA, concessions, and special programs offered via Service Bulletins. Special labor allowances must be approved prior to service being performed.

2. Section 1 of the claim form provides the unit install date and the date the service was performed. All of this information is required to process your warranty claim.

3. Section 2 contains information necessary for processing the claim. In addition to providing space for the model/serial number of the failed unit, fields have been added to include the model/serial number of the outdoor unit when servicing an indoor coil or blower cabinet (This applies to HAC equipment ONLY). This is necessary as some coil warranties are dependent upon the outdoor unit match. If this information is left blank, the claim will be rejected.

4. Section 3 must list the complete name and address of the service contractor performing the repair. The appropriate servicer's account number must be provided as the contractor number. This information must be listed as it appears on the Authorized Service Agreement.

5. Section 4 contains registration information. Before a warranty claim can be processed, the registration information must be validated in the warranty system. Omitting this information will result in rejection of the warranty claim. Complete homeowner or property name, street address and city, state, and zip code is mandatory. The phone number is optional.

6. Section 5 identifies the part source of the dealer performing the warranty repair. If parts are purchased directly from Goodman, the invoice number must be provided as proof of purchase.

7. Section 6 for Project Code/Special Authorization numbers has been expanded to include Component Cause Coding. If the repair is covered under a Project Code, list the code number in the space provided. Special projects and project codes are provided via service bulletins. In some cases a special authorization may be provided by the factory authorizing repairs outside of the standard warranty. If provided with a special authorization, it is important to list this authorization number in the space provided. This concession number allows warranty administration to identify the claim and provides the necessary information to properly process the claim preventing unnecessary delays in claim processing. Component/Cause Coding must be completed in order for the claim to be processed. Using the claim coding table on the reverse side of Copies 1-4 of the claim form, select the code that best describes the root cause of the repair. Enter the two – two character codes in the appropriate fields. This field is mandatory. Warranty claims will not be processed without the appropriate coding on the claim.

8. Section 7 itemizes the failed part and replacement part information. If the failed part and the replacement part are the same part numbers, enter the part number in the replacement part field and enter "same" in the failed part field. Including both failed part and replacement part will allow Goodman to track failures to specific parts. This section also includes a place to record the old and new compressor or motor serial numbers. When filing a claim for the exchange for equipment authorized by the factory, these same serial number fields are to be used to record the serial number of the scrapped equipment and the serial number of the replacement equipment. A refrigerant drier must be replaced and the part number listed on all sealed system claims where the system is opened to the atmosphere or refrigerant system parts are replaced. Failure to replace the filter drier will result in rejection of any applicable labor reimbursement.

9. Section 8 provides for a detailed explanation of the Reason for Failure to be recorded.

10. Section 9 has been changed to record a detailed explanation of the service performed on the unit.

11. Section 10 has been changed to include both the contract number and expiration date of the extended service contract if the product is covered by an Asure or Goodcare extended service policy.

12. Section 11 lists the part source and invoice number from which the parts were purchased. Customers who file part claims directly with the factory are required to provide a copy of the part invoice as proof of purchase (not required for distributors).

13. Section 12 is to be used by authorized persons to approve DOA labor or a special labor allowance not covered by a full factory warranty or extended service contract. Some products with full warranties provide for a cartage allowance and/or mileage. If applicable, the dealer is to enter the cartage allowance and/or mileage in the space provided.

14. Section 13 provides a space for branch, regional service managers, or factory personnel to include special instructions for processing claims outside the standard warranty policy. This section is for Goodman personnel use ONLY.

15. Sections 14 & 15 are provided for signatures of the service technician and the part source verifying that information contained on the claim form is correct to the best of their knowledge.

16. The distribution has changed slightly. Copy 1 (white copy) is now the part reimbursement copy and Copy 2 (yellow copy) is now the labor copy of the claim form. Please refer to the instructions on the bottom of the claim form for reference.

Servicers purchasing parts through a distributor will continue to obtain claim forms through their part source. Customers purchasing parts directly from Goodman will continue to order the new warranty claim form through the Parts Department. The part number for the new form is RF000007 Rev. 1.

Goodman will continue to accept the current claim forms for repairs performed on or before December 31st, 2003. Repairs performed January 1st, 2004 or later must be filed on the new warranty claim for.

Please call the appropriate Warranty Administration Department with any questions regarding the new form.

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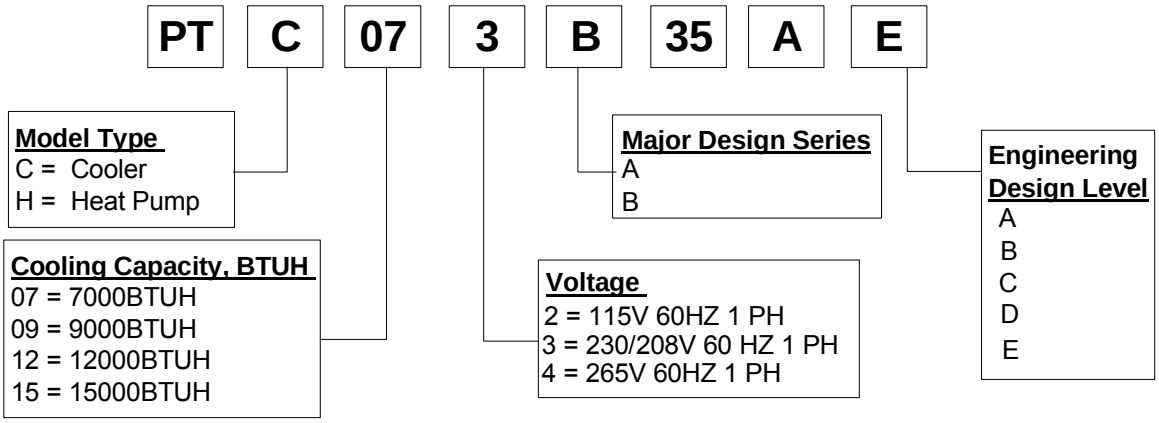
IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers **DATE:** January 12, 2004

NO: PTAC-058

SUBJECT: Control Board Replacement Kits for " *A, *B, *C, *D, and *E" Series PTAC Units

The current control board replacement kit RF000001 will be changing effective 01/12/04. The new part numbers for the control board replacement kits will be as follows RF000173 for 208/230v units, RF000171 for 265/277v units and RF000174 is for 115v units. When ordering or changing a board it is important to ensure the correct control board kit is installed on the unit. The new control board kits are voltage specific. The following nomenclature will help identify the correct control board kit.



The new replacement control board kits will have an external transformer and the wiring to connect the transformer to the control board. Installation instructions are included in the kit. The transformer is available as an individual part, so if the transformer needs replacing it can be ordered separately. If the transformer is out on a current version board, the new kit will need to be ordered and the current board replaced. Only units that have the external transformers will be able to replace just the transformer if it is not functioning. The part numbers for the transformers are:

B1378501 208/230V

11172101 265V

C6349704 115V

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: September 18, 2003

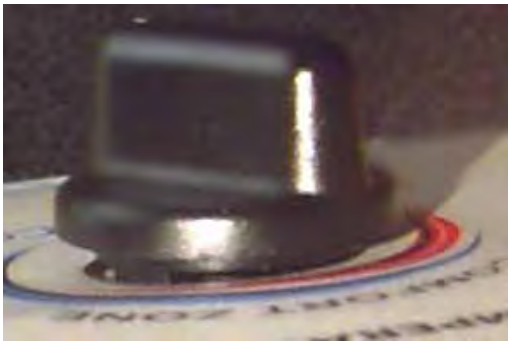
NO: PTAC-056

SUBJECT: PTAC Control Boards

In some applications we have found that if the thermostat knob is not installed correctly, the internal stop on the thermostat may be broken and require a board replacement. The thermostat on the control board has an internal stop to prevent the knob from being turned all the way around. If enough pressure is applied, the internal stop may break and the thermostat will not allow the unit to operate properly. This would require the control board being replaced. The following illustrations indicate the incorrect and correct way of installing the knob.



Incorrect installation



Correct Installation

To ensure that the internal stop does not get broken, it is crucial to make sure that any time the knob is removed and reinstalled that the knob is fully seated on the thermostat stem. **The knob, if correctly seated on the stem, will not turn beyond the five o'clock position in the clockwise direction or the seven o'clock position in the counter clockwise direction.**

To reduce the potential for this condition, units produced after July 1, 2003 (serial number prefixs 0307 and later) will have the stop on the control panel raised from 0.130" to 0.150". For units produced prior to July 1, 2003, the stop on the control board cover can be raised to help prevent this condition from occurring. After the knobs and escutcheon have been removed, insert a straight blade screwdriver under the stop. Carefully press down on the screwdriver handle to raise the stop. Reinstall the escutcheon and knobs.



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IMPORTANT PARTS-SERVICE COMMUNICATION

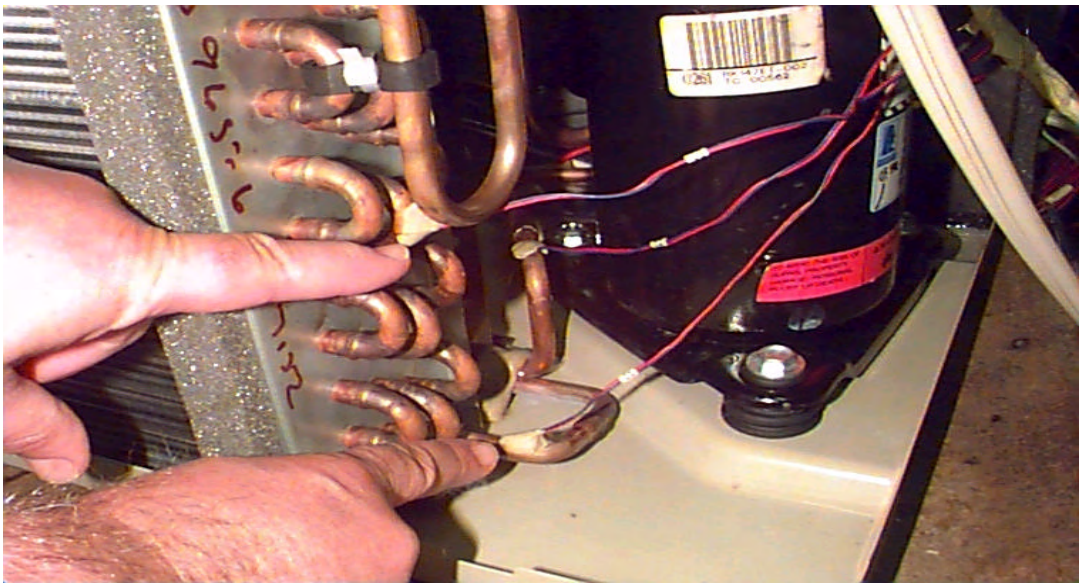
TO: All Service and Parts Managers

DATE: August 4, 2003

NO: PTAC-055

SUBJECT: PBE112AB**

In some applications we have found that the indoor coils are freezing. The conditions that can contribute to the coil freezing could be a result of low refrigerant charge or restricted cap tubes. In order to determine if the unit is low on refrigerant charge or if the cap tubes are restricted, the Delta T must be taken on the outdoor coil. Based on an average mid coil condensing temperature of 100 degrees with the entire unit exposed to a 76 degree room, if the Delta T (mid condenser coil temperature minus the liquid out temperature) is less than 15 degrees then the unit indicates a low charge. If the Delta T is more than 25 degrees then the cap tubes are probably restricted. The following illustration shows the locations of where to measure the temperatures.



Once the temperatures have been obtained, subtract the liquid line temperature from the condensing temperature to determine the Delta T. For example, if the condensing temperature is 100 degrees and the liquid line temperature is 80 degrees, the Delta T would be 20 degrees. 100 – 80 = 20. In this instance, with a 20 degree Delta T the system would be operating normally. If the Delta T is less than 15 degrees and frost is on the evaporator fins for more than 10 minutes then the system is low on refrigerant charge. To correct this condition, recharge unit to name plate specifications. If the Delta T is more than 25 degrees, then the system probably has a restriction. To correct this condition the cap tube and strainer assembly must be replaced. The part number for the cap tube and strainer assembly is 20344301.

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FILING PROCEDURES:

For replacing the cap weld assemblies, Amana will pay a Class D labor rate. If the property has more than one unit that is being repaired on the same day, the labor rate will be reduced by 25% of Class A labor rate.

The white copy (Copy 1/Labor Reimbursement) of the warranty form must be submitted to Warranty Administration, 1810 Wilson Parkway, Fayetteville, TN 37334 for labor payment. The yellow copy (Copy 2/Parts Reimbursement) of the warranty form must be submitted through your part source for part credit. If parts are purchased directly from Goodman, submit both the white and yellow copies of the warranty claim form along with your Goodman parts invoice to the address listed above.

Upon receipt of proper documentation at Amana, Fayetteville, labor credit will be issued directly to the servicer.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers **DATE:** July 22, 2003

NO: PTAC-054

SUBJECT: PTC-PTH*B***E Fan Blade Rub**

In some applications we have found that the condenser fan can hit or bind against the condenser shroud. This condition usually results from improperly positioned wall sleeves, obstructions in the wall sleeve, some competitive sleeves or units that have been damaged during handling.

To correct this condition a washer with a thickness range of .090" - .125" needs to be added to the lower fan motor mounting tab. Remove the bolt from the lower mounting tab and insert the washer between the tab and the partition panel and reinstall the screw. The washers may be field supplied or part number 20103201 may be ordered.

To reduce the potential for this condition, units produced after July 28, 2003 (serial number prefixs 0308 and later) will have the fan motor located higher on the partition panel to provide greater fan clearance.

FILING PROCEDURES:

For units where the wall sleeve is properly installed and the fan hits are not the result of a damaged unit Amana will pay Class A labor rate for installing the washer as described above. If multiple units are being repaired at the same location on the same day the labor rate will be reduced 25% of the Class A on each additional unit repaired.

The white copy (Copy 1/Labor Reimbursement) of the warranty form must be submitted to Warranty Administration, 1810 Wilson Parkway, Fayetteville, TN 37334 for labor payment. If the washer was purchased, the yellow copy (Copy 2/Parts Reimbursement) of the warranty form must be submitted through your part source for part credit. If parts are purchased directly from Goodman, submit both the white and yellow copies of the warranty claim form along with your Goodman parts invoice to the address listed above.

Upon receipt of proper documentation at Amana, Fayetteville, labor credit will be issued directly to the servicer.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: May 16, 2003

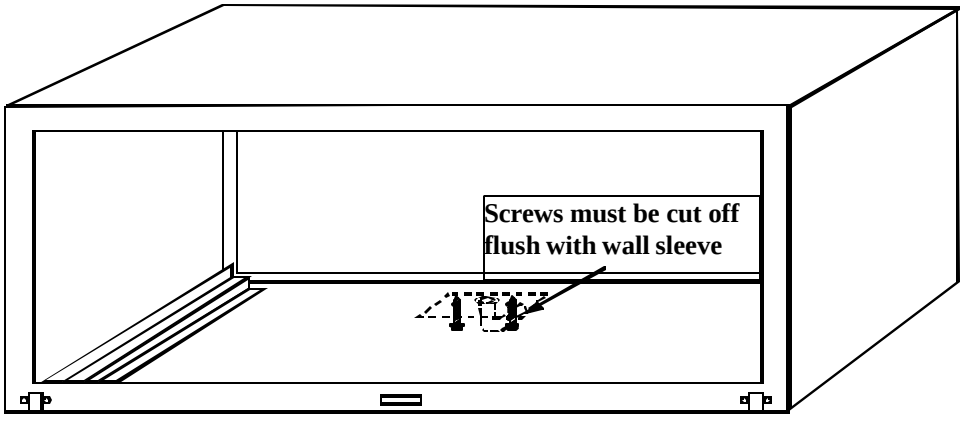
NO: PTAC-053

SUBJECT: Installing new PTAC units into existing wall sleeves with internal drain kits.

If you are installing a new Amana PTAC unit (model PT***B****) into an existing wall sleeve that has an existing (old style) drain kit installed in the sleeve, it will be necessary to cut the drain kit screws off flush with the wall sleeve.

Failure to trim the screws flush with the wall sleeve may cause the chassis to not set flat in the wall sleeve and thereby not be properly leveled.

The drain kit screws must be trimmed flush with the wall sleeve to avoid damaging the chassis base pan.



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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers **DATE:** April 2, 2003

NO: PTAC-051

SUBJECT: PTH15*A***D PTC15*A***D Subcooler Vibration

In some installations of the 15,000 BTU Amana Package Terminal A/C units (models PTH15*A***D and PTC15*A***D), the subcooler assembly may vibrate in a manner that results in objectionable sound complaints and may rub through the basepan paint. Under extreme conditions this may cause rusting of the base pan and possible refrigerant leaks.

To address this condition, Amana has released a "Subcooler Vibration Kit", Amana part # RF000148. The kit consists of split flex tubing, gaskets and wire ties. This kit is to be installed on the subcooler and secured to the condenser.

The date code range of the affected units is 0202 through 0304 (February 2002 through April 2003).

If you should receive a complaint with respect to objectionable sound or rub through of the base pan paint on an Amana PTAC unit (models PTH15*A***D and PTC15*A***D) as a result of vibration in the subcooler assembly, Amana recommends installing the "Subcooler Vibration Kit", Amana part # RF000148 to correct this condition.

FILING PROCEDURES:

Amana will pay Class A rate to install a "Subcooler Vibration Kit" Part # RF000148, in an Amana PTH15*A***D or PTC15*A***D PTAC unit which exhibits excessive vibration. A warranty form RF000007 must be completed on each unit serviced.

The white copy (Copy 1/Labor Reimbursement) of the warranty form must be submitted to Warranty Administration, 1810 Wilson Parkway, Fayetteville, TN 37334 for labor payment. The yellow copy (Copy 2/Parts Reimbursement) of the warranty form must be submitted through your part source for part credit. If parts are purchased directly from Goodman, submit both the white and yellow copies of the warranty claim form along with your Goodman parts invoice to the address listed above.

Upon receipt of proper documentation at Amana, Fayetteville, labor credit will be issued directly to the servicer.

All claims for credit under this program must be submitted to Warranty Administration at Amana Fayetteville for processing by **March 25, 2005**.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: August 8, 2001

NO: PTAC-048-B

SUBJECT: Toll free number for PTAC technical service

The Amana PTAC technical service department has added a toll free technical assistance line to better serve our customers. This number should be used for any technical questions for PTAC units only. Technical assistance for HAC product must continue to be routed through the regional HAC distributor. For technical assistance with Major Appliances and Room Air Conditioners please call **800-843-0304.**

When calling for PTAC technical assistance dial **877-376-0214** the prompt will ask you to press 1 if you want to talk to someone in the technical department. Pressing 2 you will be put in contact with the service contract group. The service contract group can aid a servicer with questions about their PTAC authorized service agreement or assist in locating a PTAC servicer for a specific area.

For questions concerning warranty credits or processing call Amana Heating and Air Conditioning Warranty Administration at **877-688-9191** or send fax to **931-438-2922.**

If you need to speak to Consumer Affairs representative call **877-254-4729** or send a fax to **931-438-4362.**

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: March 7, 2001

NO: PTAC-046-B

SUBJECT: Control Board Replacement Kits for "AA, AB and AC" Series PTAC Units.

Control board replacement kit RF000001 will replace the R9800002. This kit will be used on PT****A**AA and PT****A**AB models. Along with a new control board, this service kit contains new thermistors, a ferrite core (to be attached to the power cord) and a wiring harness kit for units that have any remote accessories. Installation instructions are included in the kit.

Control board replacement kit RF000005 will be used on PT****A**AC models. This kit contains the new control board and installation instructions only.

The thermistors and ferrite core are available as individual parts so if one needs replacing it can be ordered individually. The part numbers for the thermistors and ferrite core are:

20320702	Ferrite Core
20295701	Indoor Ambient Thermistor
20295702	Indoor Coil Thermistor
20295704	Outdoor Coil Thermistor (Heat pump models only)

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: April 4, 2000

NO: PTAC-044-B

SUBJECT: Replacement Control Boards

Amana PTAC units model number PTC* and PTH* with serial number beginning 9601 and later, use an electronic control board. Under certain conditions this control board can fail. The control board part number 110433* or R9800002 have a five (5) year part warranty and must be RETURNED to obtain part credit.

FILING PROCEDURES:

A warranty tag (A173) must be completed for each unit serviced. Amana will also accept these "other" warranty forms Narda form 356 and 360; USA form AC6. The servicer sends the original white (Amana) copy of the warranty tag (A173) or the original of "other" accepted forms to Amana Appliance Attn. : Warranty Administration, 2800 220th Trail Amana Iowa 52204. Attach cardboard section of warranty tag (A173) or last copy of "other" accepted form to defective board. Return defective boards along with copy 1 and 2 (distributor copies) of the warranty tag (A173) or copy 1 and 2 of "other " accepted forms to parts Source (from whom replacement board was obtained).

If Part Source is Amana Distributor: upon receipt of defective board and proper paper work, summarize warranty tags on the Parts Return Form (PRF). Attach copy 1 of warranty tag to the original (white) copy of PRF. Send this paperwork to warranty administration at Amana Appliance (address shown above). Box up boards, (leaving last copy of warranty tag attached to part), enclose yellow (packing list) copy of PRF in box. **Make shipment to Amana Appliances, 2800 220th Trail, Amana Iowa 52204. (Do Not send parts to the Attention of Warranty Administration).** Distributor will issue part credit to Servicer.

If Part Source is Amana Factory Service Center: upon receipt of the defective board and proper paperwork, Amana will verify part purchase. Send copy 1 of Warranty tag or "other" accepted form to warranty Administration at Amana Iowa. Box up boards (leaving last copy of warranty tag attach to part). **Make shipment to Amana Appliances, 2800 220th Trail, Amana Iowa 52204. (Do Not send parts to the Attention of Warranty Administration).**

Upon receipt of white (Amana) copy of warranty tag (A173) or original of "other" form, "at Amana Appliance, Warranty Administration" credit is issued directly to servicer for any labor or mileage.

Upon receipt of copy 1 (distributor copy) of warranty tag (A173) or orginal of "other" form at Amana Appliances,from Factory Service center; credit is issued to the servicer for part, at pricing in effect at time consumer requested service (as shown on warranty tag).

Upon receipt of original Part Return form (with warranty tags attached) at Amana Appliances from Distributor; this paperwork is held in pending file awaiting return of defective board.

Upon receipt of part shipment from Distributor, verification is made of parts in shipment versus those shown on "packing list". Verification is handled by warehouse personnel whom in turn route boards to Fayetteville for evaluation and possible vendor recovery.

Upon verification of parts in shipment and packing list, the packing list is routed to Warranty Administration, matched with Part Return Form (from pending file) and credit is issued to Distributor for the parts, at pricing in effect at time consumer requested service (as shown on warranty tag).

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: March 16 2000

NO: PTAC-043-B

SUBJECT: Control Board Characteristics NT Series

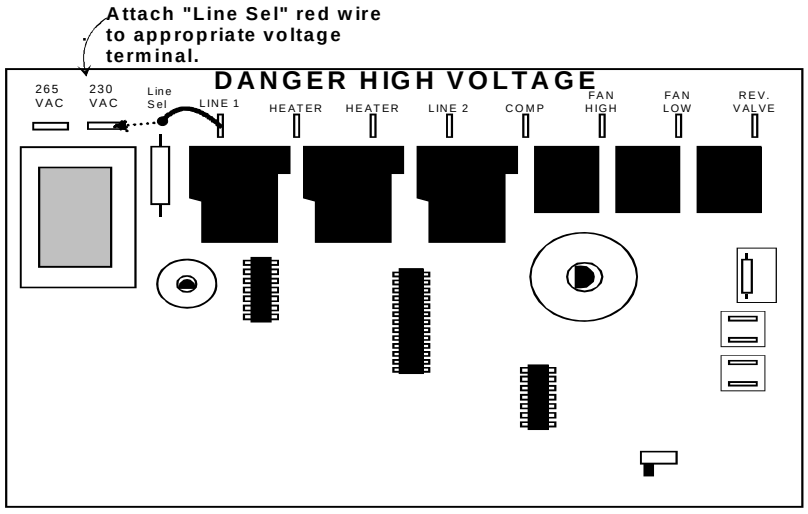
Important Note

Damage to the control board can occur from failure to disconnect power supply voltage. Damage to this board by not following these instructions is considered misuse and not covered under either the standard unit warranty or any extended service contract.

Preparing Service Replacement Control Board Prior to Installation

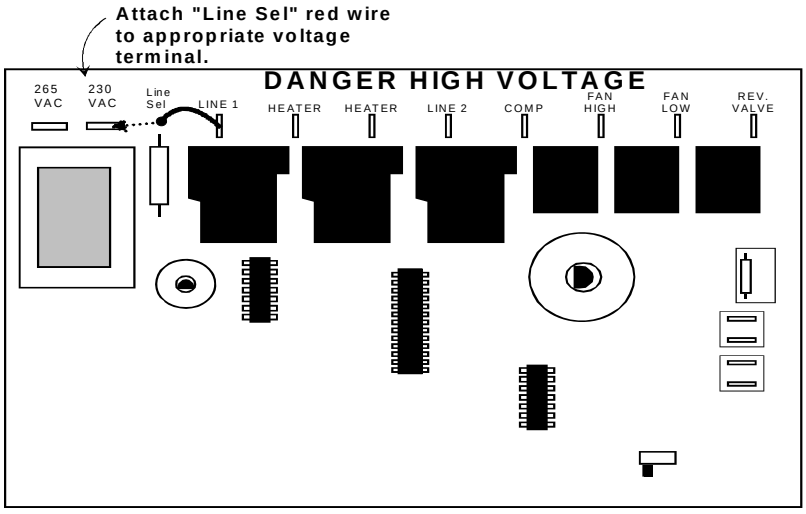
Preparation for Differing Supply Voltages

265-Volt Units - Remove the "Line Sel" red wire from line one and attach it to 265vac terminal.
230/208-Volt Units - Remove the "Line Sel" red wire from line one and attach it to 230/208vac terminal.



Preparation for Electric Heat Only Units or Heat Pump/Electric Heat Units

There is no preparation needed for electric heat. Do not remove resistor as on previous board.



Control Board Characteristics

- **Automatic 3-minute Compressor Lockout -** After the compressor cycles off, it will not restart for three minutes. This feature is enabled in standard or remote thermostat control.
- **Automatic 2nd Stage Electric Heat (Heat Pump Models)-** If the room temperature falls to 4°F below the set point temperature, the reverse cycle heat pump is shut off and the strip heat is turned on.
- **Automatic Freeze Protection -** Whenever power is supplied to the unit, automatic freeze protection is active. If the thermostatic sensor senses temperature below 40°F, the fan motor and electric strip heat (or hydronic heat, if applicable) are switched on. The heater and fan will remain on until the thermostatic sensor senses a temperature of 43°F.
- **Random Restart Delay -** To help eliminate power surges after a power outage, the unit is equipped with a two to four minute random restart delay feature. Whenever the unit is plugged in with the mode switch set in the cool or heat mode, a random restart delay will occur.
  * A random restart condition can be avoided by setting the mode switch in the fan only or off position before applying power to the unit.

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Service Bulletin

PTAC-041-B Rev. 2

Supersedes PTAC-041-B Rev. 1

DATE: **September 8, 2006**

TO: **All Service and Parts Managers**

SUBJECT: PTC-PTH Sealed System Repairs on All "A" Through "M" Series PTAC Units

To ensure proper unit operation, every time a sealed system is repaired, the following components must be changed on all "A" through "M " series PTAC units. Any PTAC unit repaired after 12/01/99 will need to have the capillary tube assembly replaced or the warranty ticket will be rejected and credit denied. The following list contains the proper part number of the cap tube assembly and the corresponding model that it is used on.

Model	Assembly Number
PTC07*A****	20284901
PTC09*A****	20284902
PTC12*A****	20284904
PTC15*A****	20284906
PTH07*A****	20284907
PTH09*A****	20284908
PTH12*A****	20284910
PTH15*A****	20284912

Model	Assembly Number
PTC07*B****	20284915
PTC09*B****	20284916
PTC12*B****	20284917
PTC15*B****	20284918
PTH07*B****	20284919
PTH09*B****	20284920
PTH12*B****	20284921
PTH15*B****	20284922

Model	Assembly Number
PTH15*A***C Units Built Prior to Serial # 010214	20284912
PTH15*A***C Units Built After Serial # 010214	RF000034

Model	Assembly Number
PTH15*A***D Units with serial #'s beginning with 0201	20284913
PTC15*A***D Units with serial #'s beginning with 0201	20284914

Sealed system repair/component replacement will continue to be a Class "D" service rate. On service performed after December 1, 1999, sealed system warranty claims not showing these parts as being replaced will be rejected.

Technical Services Department • 1810 Wilson Parkway • Fayetteville, TN 37334
Main: 877.376.0214 • Service Fax: 931.438.2199

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

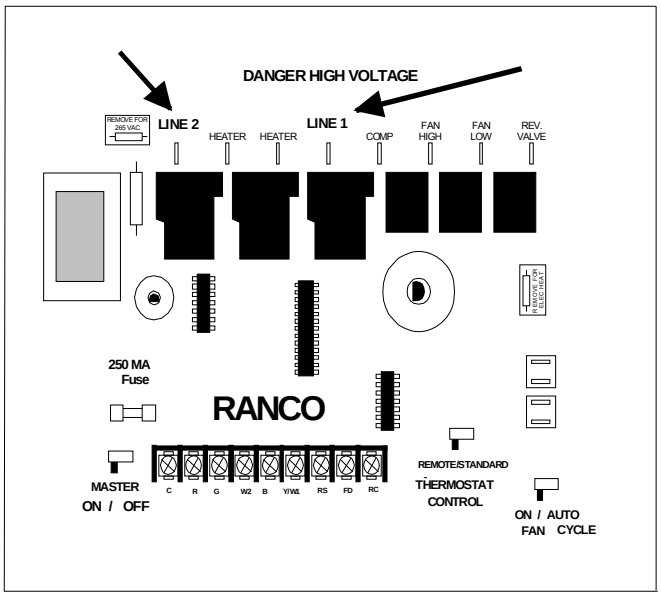
DATE: February 04, 1999

NO: PTAC-040-B

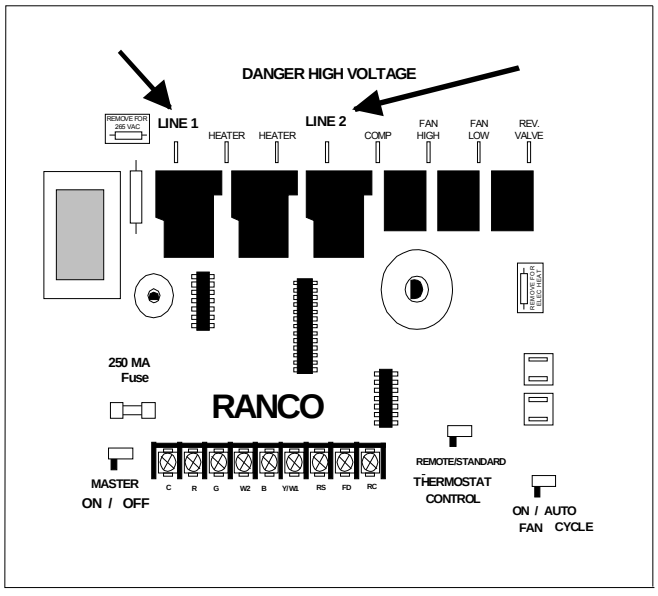
SUBJECT: PTAC Mislabeled Control Boards

PTH and PTC units manufactured with Ranco controls with serial number prefixes between 9812 and 9902, may have the Line 1 and Line 2, 1/4 inch male terminal labels reversed. The internal connections on the board are correct and no wiring change is required. Therefore when installing accessories or reading a wiring diagram the first 1/4 inch male terminal from the left side of the board is Line 1. The fourth 1/4 inch male terminal from the left side of the board is Line 2.

Incorrect labeling



Correct labeling



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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: October 26, 2000

NO: PTAC-039B-B

SUBJECT: Control Board Characteristics "PTH/C***A***C"

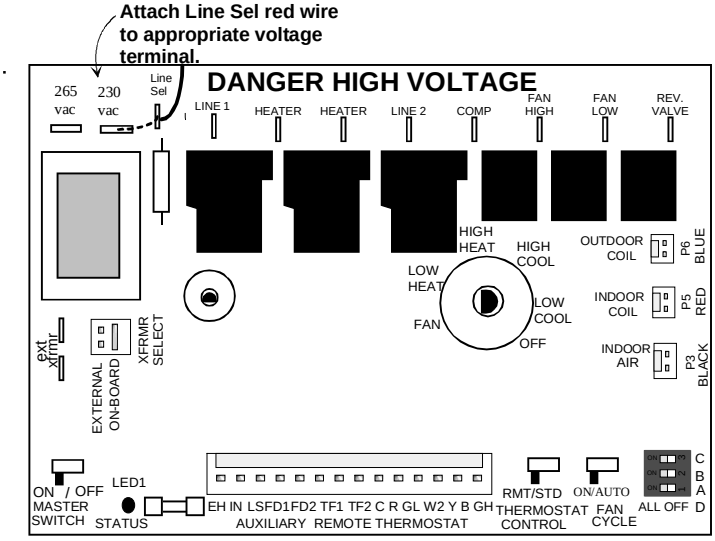
Important Note

Damage to the control board can occur from failure to disconnect power supply or failure to set the master switch (located on the control board) to OFF. Damage to this board by not following these instructions is considered misuse and not covered under either the standard unit warranty or any extended service contract.

Preparing Service Replacement Control Board Prior to Installation

Preparation for Differing Supply Voltages

265-Volt Units - Attach the unconnected side of the "Line Sel" red wire to 265vac terminal.
230/208-Volt Units - Attach the unconnected side of the "Line Sel" red wire to to 230/208vac terminal.



Preparation for Electric Heat Only Units or Heat Pump/Electric Heat Units

There is no preparation needed for electric heat. Do not remove resistor as on previous board.

Control Board Characteristics

- **Automatic 3-minute Compressor Lockout -** After the compressor cycles off, it will not restart for three minutes. This feature is enabled in standard or remote thermostat control.
  NOTE: This delay may be defeated by shorting the “FD1” and “FD2” terminals together for a minimum of 5 seconds
- **Compressor lock-in feature-** Whenever the compressor is switched from off to on because the room temperature has risen above or fallen below the specified limit it will remain on for at least four minutes. However , if the thermostat point is changed during the four minutes this lock in feature is overridden.
- **Automatic 2nd Stage Electric Heat (Heat Pump Models)-** If the room temperature falls to 4°F below the set point temperature, the reverse cycle heat pump is shut off and the strip heat is turned on.
- **Automatic Freeze Protection -** Whenever power is supplied to the unit and the master switch is in the ON position, automatic freeze protection is active. If the thermistor senses temperature below 40°F+/- 5°F, the fan motor and electric strip heat (or hydronic heat, if applicable) are switched on. The heater and fan will remain on until the thermistor senses a temperature of 43°F.
- **Fan Advance/ Delay-** The advance feature will allow the fan to start six seconds prior to the compressor starting in either cooling or heating mode. The delay will keep the fan running for thirty seconds after the compressor stops in either cooling or heating modes.
- **Remote Thermostats -** Always use an approved thermostat supplied by the manufacturer. A wall thermostat that has not been approved by the manufacturer may not work correctly with this unit.
- **Remote Functions -** All functions are controlled by a wall mounted thermostat.
- **Remote Fan-** When GL terminal is connected to R terminal the remote fan speed is switched to low. GH terminal connected to the R terminal fan speed is switched to high.
- **Fuse Protection-** The fuse protection has been maximized on the 24 volt circuit so accidental groundings of the external terminals will not result in a burned out board. The unit may be operated in standard mode if the fuse is blown. There will be an auxiliary fuse supplied with the board. It will be attached to the main fuse by a plastic clip. The fuse is a 500ma fuse. When replacing the fuse always use the correct fuse part #M0804205.
- **Random Delay -** When the master switch is turned on or power is reapplied to the control ,all functionality will be locked out for a random period between two and four minutes, if Y or W inputs are active in remote or the mode switch is set to HI/LO heat or cool. The delay can be avoided if the front desk terminals are closed for more than two seconds, or the mode switch is in the off or fan only position.
- **Transformer Selection-** The board comes with the transformer selection set for on-board use, if an external transformer is utilized move the jumper from "ON-BOARD to EXTERNAL". The wiring for an external transformer then connects to the "EXT XFRMR" terminals.
- **Indoor Ambient Thermistor-** The Indoor Ambient Thermistor senses actual room temperature.
- **Indoor/Outdoor Coil Thermistors-** In the cooling mode, if the compressor is engaged continuously for 20 minutes and the Indoor Coil Thermistor is below 30 degrees the compressor is disengaged until the ICT rises above 45 degrees. The Outdoor Coil Thermistor senses coil temperature which correlates to outdoor air temperature. Heat pump operation can operate as low as 24°F outdoor temperature depending upon humidity conditions and/or the balance point of the system. After defrost is initiated, the compressor remains off for thirty minutes and resumes operation when the outdoor coil temperature reaches 33°F. Electric resistance heat will maintain the ambient room temperature anytime the temperature falls 4°F below the room set point temperature.
- **Load Shedding-**The LS & IN terminals are used for load shedding. A switch can be added to close the circuit to lock out the compressor and electric heat when the power company or energy management system is trying to reduce its load for a specified time.
- **Sample Before Start -** The SBS routine is used in the cooling mode. This routine runs the unit fan on low speed for up to 120 seconds. The sample fan is aborted if compressor demand is detected. To avoid unnecessary sampling the period between samples will be based on specific room conditions. The default sample before start period after a power up is 5 minutes ± 20%. The period is corrected every time a sample run is completed without a compressor demand. The minimum sample period is 5 minutes and the maximum period is 15 minutes.
- **Remote Temperature Sensor -** An auxiliary temperature sensor (RTS02) may be connected to the control that senses actual room temperature. This sensor replaces the Indoor Ambient Thermistor and will connect to the Indoor Air terminals on the control.

- **Front Desk Control -** The front desk control terminals are FD1 and FD2. These terminals will provide a connection for a user supplied switch that will allow the operation of the unit to be remotely defeated.
- **Transfer Fan-** A transfer fan may be used if a user supplied relay is connected to TF1 and TF2. Make sure the relay is a manufactured approved relay. The relay will be energized whenever the blower/fan relay is energized.
- **Emergency Hydronic Heat -** A switch can be added to the EH & IN terminals to close the circuit to enable the fan, enable the heater relay and lockout the compressor to continue minimum operations with auxiliary power, if the main power goes out.
- **On Board Diagnostics -**The LED light will flash once every 6 seconds. If an error occurs the LED will flash from 2 to 8 flashes every 6 seconds. Refer to the chart below for possible causes for the flash codes.

Flashes	Situation	Corrective Action
1 Flash	Control Ok	Board OK
2 Flashes	24vac Fuse Blown	Replace fuse
3 Flashes	Indoor Coil Thermister failure	Replace Indoor Coil Thermistor
4 Flashes	Mode Switch Failure	Replace Board
5 Flashes	Thermostat Control	Replace Board
6 Flashes	Bad Thermostat Input Failure	Replace Board
8 Flashes	Indoor Ambient Thermister Failure	Replace Thermistor

- **Temperature Limiter Switch-** A three position dip switch will modify the temperature desired setting by activating the appropriate switch. Only one switch may be activated at a time.

	Cooling Range		Heating Range	
"A" On	**70**	**78**	**65**	**73**
"B" On	**68**	**81**	**68**	**76**
"C" On	**66**	**81**	**61**	**78**
"D" All Off(Default)	**63**	**88**	**58**	**83**

- **Self diagnostic Mode-**The diagnostic mode is initiated by the following routine. Set the thermostat in the coolest position and the mode switch in the off position. Rotate the thermostat counterclockwise to the warmest setting and rotate the mode switch counterclockwise to the fan only position simultaneously and wait two seconds (or until fan relay engages). Return the thermostat and mode switch to their starting positions by rotating them both clockwise simultaneously. The diagnostic routine will run the unit through each mode in the following sequence:

Mode	Time
Fan Only	17
Off	1
High Cool	17
Off	3 (reversing valve energize)
High Heat (rev cycle)	17
Off	1
Low Heat (elec heat)	5

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: April 3 2000

NO: PTAC-039A-B

SUBJECT: Control Board Characteristics "AA_BA" Series

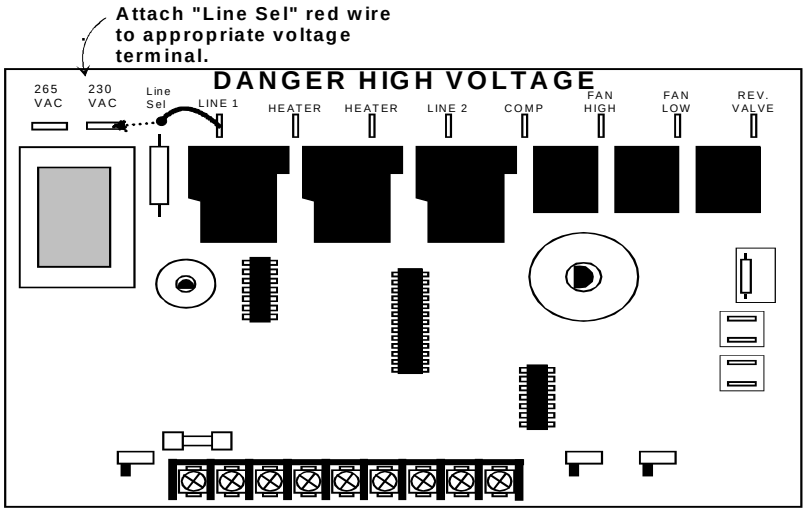
Important Note

Damage to the control board can occur from failure to disconnect power supply or failure to set the master switch (located on the control board) to OFF before removing the low voltage terminal strip cover from an installed control board. Damage to this board by not following these instructions is considered misuse and not covered under either the standard unit warranty or any extended service contract.

Preparing Service Replacement Control Board Prior to Installation

Preparation for Differing Supply Voltages

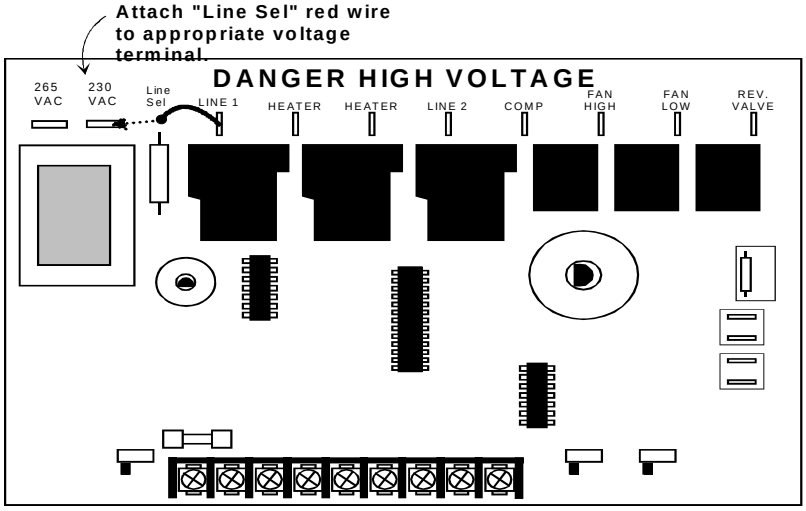
265-Volt Units - Remove the "Line Sel" red wire from line one and attach it to 265vac terminal.
230/208-Volt Units - Remove the "Line Sel" red wire from line one and attach it to 230/208vac terminal.



Preparation for Electric Heat Only Units or Heat Pump/Electric Heat Units

There is no preparation needed for electric heat. Do not remove resistor as on previous board.

Fuse - Each control board is fused. The Ranco board has a 250 MA fuse. When replacing the fuse always use the correct fuse part #M0804205.



Control Board Characteristics

- **Automatic 3-minute Compressor Lockout -** After the compressor cycles off, it will not restart for three minutes. This feature is enabled in standard or remote thermostat control.
  NOTE: This delay may be defeated by shorting the “FD” and “RC” terminals together for a minimum of 5 seconds.
- **Automatic 2nd Stage Electric Heat (Heat Pump Models)-** If the room temperature falls to 4°F below the set point temperature, the reverse cycle heat pump is shut off and the strip heat is turned on.

  NOTE: To override this feature for testing purposes, set the master switch and the mode switch to off, remote / standard switch to standard. Put the thermostat switch on the coldest setting (fully clockwise). Install a 33k ohm resistor across the RS and RC terminals on the low voltage board. This resistance will imitate a constant 75°F room temperature through the remote sensor input. Set the master switch to on and set the mode switch in either heat position. Slowly rotate the thermostat counterclockwise until the heat pump starts. The unit will continue to run in the heat pump regardless of the change in room temperature because the 33k ohm resistor causes the board to sense a constant 75°F. Be sure to remove the resistor before replacing the low voltage terminal strip cover.
- **Automatic Freeze Protection -** Whenever power is supplied to the unit and the master switch is in the ON position, automatic freeze protection is active. If the thermostatic sensor senses temperature below 40°F, the fan motor and electric strip heat (or hydronic heat, if applicable) are switched on. The heater and fan will remain on until the Thermostatic sensor senses a temperature of 43°F.
- **Random Restart Delay -** To help eliminate power surges after a power outage, the unit is equipped with a two to four minute random restart delay feature. Whenever the unit is plugged in with the master switch turned on and the mode switch set in the cool or heat mode, a random restart delay will occur.
  - › This feature is enabled in standard or remote thermostat control.
  - › A random restart condition can be avoided by setting the mode switch in the fan only or off position before applying power to the unit.
  - › The use of a front desk control will not disable this feature.
- **Remote Thermostats -** Always use an approved thermostat supplied by the manufacturer. A wall thermostat that has not been approved by the manufacturer may not work correctly with this unit.
- **Remote Functions -** All functions except freeze protection and fan speed are controlled by a wall mounted thermostat (when used). The unit fan will run at low speed unless a Remote Thermostat High Fan Kit (P/N RTHFK10A) is installed.

Failure Diagnosis - Control Board Diagnostic Kit

To help field technicians in determining whether the control board is operating correctly, a Control Board Diagnostic Kit (P/N PBDK01) is available through your sales representative. This kit includes a test box and instructions that will help determine which component on the unit maybe malfunctioning.

PTAC Electronic Control

Diagnostic

WARNING

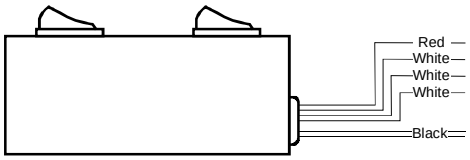
To prevent death, personal injury or property damage due to electrical shock, only qualified service personnel are authorized to use the diagnostic box or this procedure.

Introduction

The PTAC Control Board Diagnostic Box and accompanying procedure provide a method of determining if the unit is functioning properly.

Diagnostic Box

The diagnostics box consists of two switches and six color coded wires.



Diagnostic Box

The black switch is used to activate the front desk override function, and the red switch is used to enable the remote thermostat inputs. The color coded wires are connected to the PTAC control terminal strip as shown in Table 1 (Pages 4 - 5) .

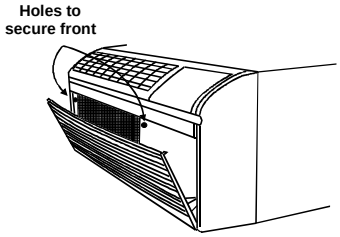
Diagnostic Procedure

The procedure outlined in Table 1 steps the unit through its various functions. In each step, the required control inputs are shown along with the proper unit outputs.

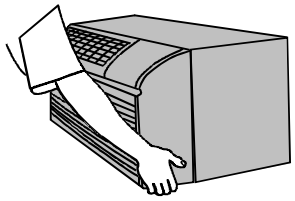
NOTE: To accurately test a unit with this procedure, the steps must be followed in the order presented, always starting with 1.

Unit Preparation

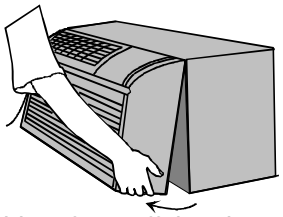
1. Remove the two screws securing the front to the chassis. **NOTE:** Not all installations will use these screws.



2. Grasp the cabinet front as shown.



3. Pull the bottom of the cabinet front away from the chassis until the retaining clips disengage.

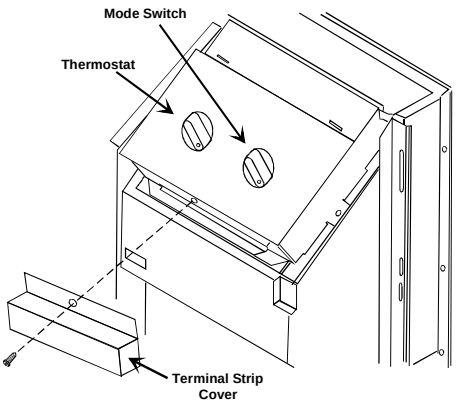


4. Lift the cabinet front off the chassis.

WARNING

To prevent death, personal injury or property damage due to electrical shock, take extreme precautions when using this procedure. Both high (230/208 or 265 VAC) and low (24 VAC) voltages will be present.

5. Remove the terminal strip cover by removing the screw securing it to the control panel cover.



6. Follow testing procedure in Table 1. Refer to page 4 for further details on this diagnostic procedure.

WARNING

To prevent death, personal injury or property damage due to electrical shock, use extreme caution when the front cover, terminal strip and control panel cover are removed and electrical power is applied to the unit.

Test	Function Checked	Procedure	Control Settings	Correct Unit Response: Electric Strip Heater	Correct Unit Response: Com-pressor	Correct Unit Response: Reversing Valve	Correct Unit Response: Low Fan	Correct Unit Response: High Fan	What To Do If Unit Response Is Not Correct
I	Power Up & Temperature Probe	1. Set unit controls as shown 2. Turn Master switch OFF for at least 15 seconds 3. Turn Master switch ON 4. Wait 10 seconds - Refer to POWER UP section on Page 6 for details.							Any component turns on - Replace control.
II	Low Fan with Standard Control	Set Mode switch to LOW COOL					ON		Low fan does not come on - Check for line voltage across L1-L2 terminals and Fan Low-Line 1 terminals - Refer to steps 7 - 9 on Page 6 for disassembly instructions. If line voltage is present, Control is working properly. Check wiring, motor, and/or capacitor. If line voltage is not present between L1-L2 terminals, power is not being supplied to unit. Check power cord and power supply circuit.
III	High Fan with Standard Control	6. Set Mode switch to High COOL						ON	High fan does not come on - Check for line voltage across Fan High and Line 1 terminals (Steps 7-11 on Page 4 for disassembly instructions). If line voltage is present - Control is working properly. Check wiring, motor, capacitor. If line voltage is not present - Replace control **NOTE**: Compressor may turn on if room temperature is greater than approximately 85° F.
IV	Fan Cycle Switch	7. Toggle Fan Cycle switch ON-AUTO-ON						ON — OFF — ON	Fan does not toggle off - Check that the indoor thermostat is set fully CCW. Replace control. **NOTE**: If the room temperature is greater than approximately 85°F or the compressor is running, the fan should not toggle.
V	Remote Control	8. Set Mode switch to OFF 9. Set Remote/Standard switch to REMOTE							Any unit components turn on - Replace control.
VI	Fan with Remote Control	10. Connect Front Desk switch black wires to RC and FD terminals 11. Connect red wire to R terminal and white wire to G terminal 12. Press red switch for unit operation in LOW FAN					ON		Low fan does not come on - Check for line voltage across Fan Low and Line 1 terminals. If line voltage is present - Control is working properly. Check wiring, motor, capacitor. If line voltage is not present - Replace control board.

Table 1

NOTE: The room ambient air temperature must be above 40° F for this procedure to work. Below 40° F the board will go into the freeze protection mode, preventing this procedure from operating properly.

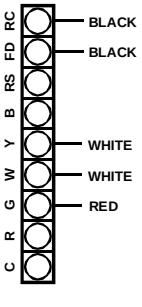
VII	Cool with Remote Control	13. Connect white wires to G & Y terminals 14. Press and hold Front Desk switch (black switch) for five seconds, then release switch and wait five seconds - Refer to the SHORT			ON		Compressor does not come on - Check floodback protector resistance - Refer to the FLOODBACK AND OUTDOOR COIL THERMOSTAT section on page 6 Repeat Step 14 and while pressing the red switch (Step 15), check for line voltage across Comp and Line 1 terminals Control is working properly. Check wiring, compressor, capacitor, overload. If line voltage is not present (Make sure the Remote/Standard switch is in Remote mode) - Replace control.
VIII	Reverse Cycle Heatwith Remote Control (Heat Pump Units Only)	16. Connect white wire to G & Y & B terminals 17. Press and hold Front Desk switch (black switch) for five seconds, then release switch and wait five seconds - Refer to the SHORT CYCLE COMPRESSOR DELAY section for details. 18. Press red switch for unit operation in LOW REVERSE CYCLE HEAT			ON	ON	Compressor is not on - Check outdoor thermostat resistance - Refer to the FLOODBACK AND OUTDOOR COIL THERMOSTAT section on page 6 Repeat Step 17 and while pressing the red switch (Step 18), check for line voltage across Comp and Line 1 terminals. If line voltage is present - Control is working properly. Check wiring, compressor, capacitor, overload. If line voltage is not present (Make sure the Remote/Standard switch is in Remote mode) - Replace control. Reversing valve is not energized - Check for line voltage across REV.
IX	Electric Heat with Remote Control	19. Connect white wire to G & W terminal 20. Press red switch for unit operation in LOW ELECTRIC HEAT			ON		Electric heat is not on - Check for line voltage across Heater terminals while pressing the red switch. If line voltage is present - Control is working properly. Check wiring, heater thermal protectors, heater element. If line voltage is not present - Replace control.

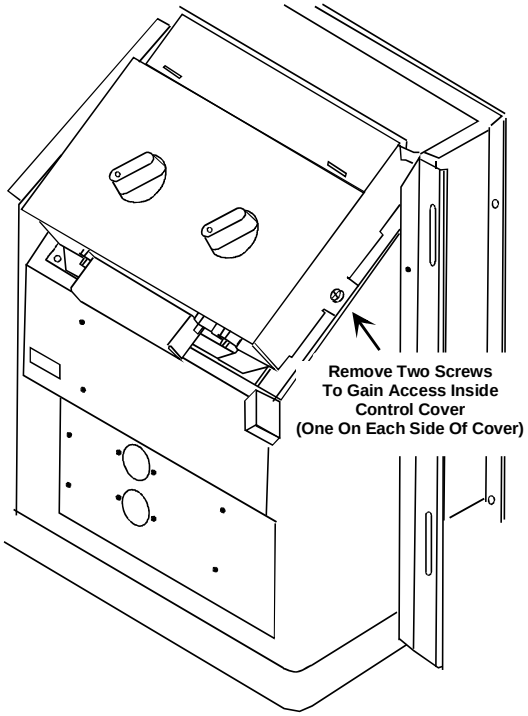
Table 1

Disassembly to access Control Board Line Voltage Terminals

7. Disconnect power to the unit.
8. Remove the unit control knobs by pulling the knobs off the control shafts.
9. Lifting the front edge of the escutcheon, slide the tabs at the top of the escutcheon out of the retaining holes and remove the escutcheon.
10. To gain access inside the control cover, after removing the knobs and escutcheon, remove the two screws holding control cover in position and remove cover. Control cover will pivot forward.
11. Restore power to the unit and repeat power up procedure in Test 1.

⚠ WARNING

High Voltage is now present.



Power-up

The master switch *must* be turned off for 15 seconds and then turned back on (Test I) to allow the control time to fully power-down. Waiting 10 seconds after turning the master switch back on allows the control time for self diagnosis and timer reset.

Short Cycle Compressor Delay

Activating the front desk override function by pressing the black switch for approximately 5 seconds resets the 3 minute compressor short cycle timer. This eliminates the need to wait three minutes between compressor cycles.

NOTE: If the short cycle timer is aborted and there is a significant high side pressure, restarting the compressor may open the compressor overload (the automatic resetting of the overload may take longer than the three minute compressor short cycle timer).

NOTE: In Tests VII and VIII where the front desk switch is used to override the three minute short cycle timer, the black switch *must* be released before pressing the red switch.

Floodback Protector and Outdoor Coil Thermostat

The Floodback Protector, located on the suction tube, protects the compressor against slugging.

The Outdoor Coil Thermostat, located on the header side of the outdoor coil, switches the reverse cycle heat off and the electric heat on to protect the compressor against slugging.

In Tests VII and VIII of the diagnostic procedure, the resistance of these controls is listed as a possible reason for improper functioning. To check these controls, disconnect them from the board and check the continuity of the switch. The resistance must be less than 200 ohms when the switches are closed.

Floodback Protector will open when the temperature falls below 30° ± 5° F and will close again only when the temperature rises above 60° ± 5° F.

Outdoor Coil Thermostat will open when the temperature falls below 25° ± 5° F and will close again only when the temperature rises above 50° ± 5° F.

Results of the Diagnostic Test

If a unit does not appear to be functioning properly, re-run the diagnostic procedure beginning with Step 1 before replacing the control.

NOTE: If any of the tests, I - IX, are performed out of sequence, the control may not respond as indicated.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: January 05, 1999

NO: PTAC-039-B
Page 1of 4
Replaces PTAC-033-S

SUBJECT: Control Board Characteristics

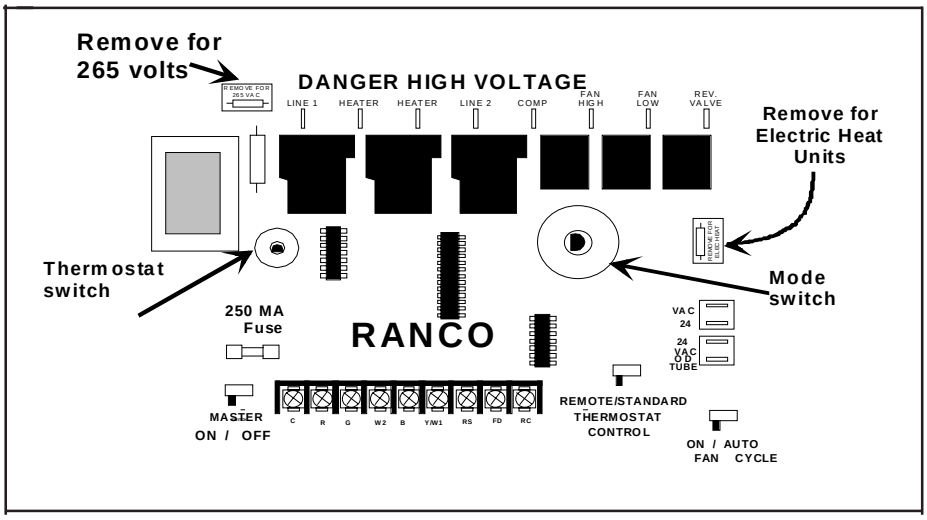
Important Note

Damage to the control board can occur from failure to disconnect power supply or failure to set the master switch (located on the control board) to OFF before removing the low voltage terminal strip cover from an installed control board. Damage to this board by not following these instructions is considered misuse and not covered under either the standard unit warranty or any extended service contract.

Preparing Service Replacement Control Board Prior to Installation

Preparation for Differing Supply Voltages

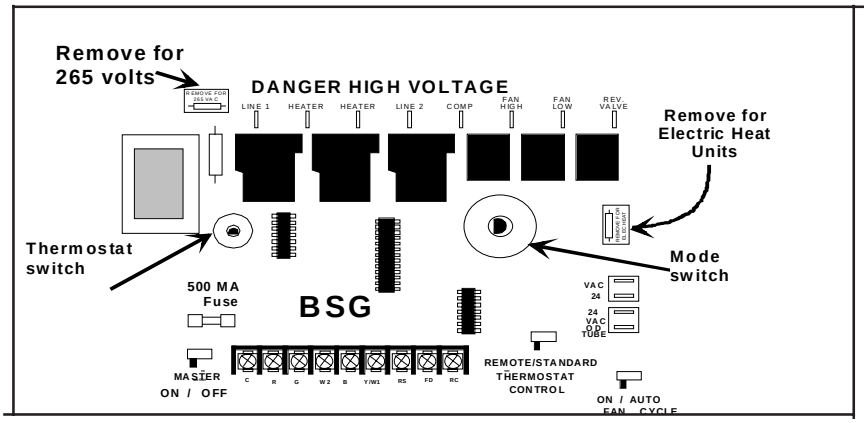
265-Volt Units - the resistor near the transformer marked "REMOVE FOR 265 VOLTS" must have the leads cut and the resistor removed from the control board.
230/208-Volt Units - No preparation is needed.



Preparation for Electric Heat Only Units or Heat Pump/Electric Heat Units

Remove the resistor marked "REMOVE FOR ELECTRIC HEAT" when installing the control board in an electric heat only unit (non-heat pump).

Fuse - Each controll board is fused. The ranco board has a 250 MA fuse and the BSG board has a 500 MA fuse. When replacing the fuse they must be replaced with **Ranco part # M0804204 and BSG part # M0804205.**



Control Board Characteristics

- **Automatic 3-minute Compressor Lockout -** After the compressor cycles off, it will not restart for three minutes. This feature is enabled in standard or remote thermostat control.
  NOTE: This delay may be defeated by shorting the "FD" and "RC" terminals together for a minimum of 5 seconds.
- **Automatic 2nd Stage Electric Heat (Heat Pump Models)-** If the room temperature falls to 2.5°F below the set point temperature, the reverse cycle heat pump is shut off and the strip heat is turned on.

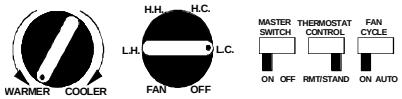
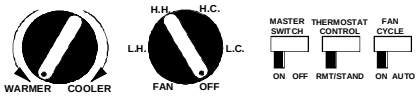
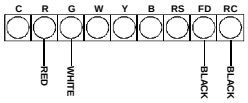
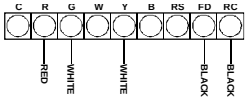
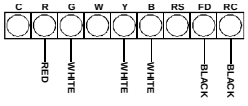
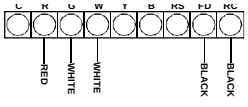
  NOTE: To override this feature for testing purposes, set the master switch and the mode switch to off, remote sensor, set the temperature switch to standard. Put the thermostat switch on the coldest setting (fully clockwise). Install a 33k ohm resistor across the RS and RC terminals on the low voltage board. This resistance will imitate a constant 75°F room temperature through the remote sencor input. Set the master switch to on and set the mode switch in either heat position. Slowly rotate the thermostat counterclockwise until the heat pump starts. The unit will continue to run in the heat pump regardless of the change in room temperature because the 33k ohm resistor causes the board to sense a constant 75°F. Be sure to remove the resistor before replacing the low voltage terminal strip cover.
- **Automatic Freeze Protection -** Whenever power is supplied to the unit and the master switch is in the ON position, automatic freeze protection is active. If the thermastatic sensor senses temperature below 40°F, the fan motor and electric strip heat (or hydronic heat, if applicable) are switched on. The heater and fan will remain on until theThermastatic sencor sense a temperature of 43°F.
- **Random Restart Delay -** To help eliminate power surges after a power outage, the unit is equipped with a two to four minute random restart delay feature. Whenever the unit is plugged in with the master switch turned on and the mode switch set in the cool or heat mode, a random restart delay will occur.
  - › This feature is enabled in standard or remote thermostat control.
  - › A random restart condition can be avoided by setting the mode switch in the fan only or off position before applying power to the unit.
  - › The use of a front desk control will not disable this feature.
- **Remote Thermostats -** Always use an approved thermostat supplied by the manufacturer. A wall thermostat that has not been approved by the manufacturer may not work correctly with this unit.
- **Remote Functions -** All functions except freeze protection and fan speed are controlled by a wall mounted thermostat (when used). The unit fan will run at low speed unless a Remote Thermostat High Fan Kit (P/N RTHFK10A) is installed.

Failure Diagnosis - Control Board Diagnostic Kit

To help field technicians in determining whether the control board is operating correctly, a Control Board Diagnostic Kit (P/N PBDK01) is available through your sales representative. This kit includes a test box and instructions that will help determine which component on the unit is malfunctioning.

⚠ WARNING

To prevent death, personal injury or property damage due to electrical shock, use extreme caution when the front cover, terminal strip and control panel cover are removed and electrical power is applied to the unit.

Test	Function Checked	Procedure	Control Settings
I	Power Up & Temperature Probe	1. Set unit controls as shown 2. Turn Master switch OFF for at least 15 seconds 3. Turn Master switch ON 4. Wait 10 seconds - Refer to POWER UP section on Page 4 for details.	
II	Low Fan with Standard Control	5. Set Mode switch to LOW COOL	
III	High Fan with Standard Control	6. Set Mode switch to High COOL	
IV	Fan Cycle Switch	7. Toggle Fan Cycle switch ON-AUTO-ON	
V	Remote Control	8. Set Mode switch to OFF 9. Set Remote/Standard switch to REMOTE	
VI	Fan with Remote Control	10. Connect Front Desk switch, black wires , to RC and FD terminals 11. Connect red wire to R terminal and white wire to G terminal 12. Press red switch for unit operation in LOW FAN	
VII	Cool with Remote Control	13. Connect white wires to G & Y terminals 14. Press and hold Front Desk switch (black switch) for five seconds, then release switch and wait five seconds - Refer to the SHORT CYCLE COMPRESSOR DELAY section for details. 15. Press red switch for unit operation in LOW COOL	
VIII	Reverse Cycle Heat with Remote Control (Heat Pump Units Only)	16. Connect white wire to G & Y & B terminals 17. Press and hold Front Desk switch (black switch) for five seconds, then release switch and wait five seconds - Refer to the SHORT CYCLE COMPRESSOR DELAY section for details. 18. Press red switch for unit operation in LOW REVERSE CYCLE HEAT	
IX	Electric Heat with Remote Control	19. Connect white wire to G & W terminal 20. Press red switch for unit operation in LOW ELECTRIC HEAT	

NOTE: The room ambient air temperature must be above 40° F for this procedure to work. Below 40° F the board will go into the freeze protection mode, preventing this procedure from operating properly.

Correct Unit Response					What To Do If Unit Response Is Not Correct
Electric Strip Heater	Compressor	Reversing Valve	Low Fan	High Fan	
					Any component turns on - Replace control.
			ON		Low fan does not come on - Check for line voltage across L1-L2 terminals and Fan Low-Line 1 terminals - Refer to steps 7 - 9 on Page 4 for disassembly instructions. If line voltage is present- Control is working properly. Check wiring, motor, capacitor. If line voltage is not present between L1-L2 terminals- Power is not being supplied to unit. Check power cord and power supply circuit. If line voltage is not present between L1-Fan Low terminals- Replace control. Note: Compressor may turn on if room temperature is greater than approximately 85° F.
				ON	High fan does not come on - Check for line voltage across Fan High and Line 1 terminals (Steps 7-11 on Page 4). If line voltage is present - Control is working properly. Check wiring, motor, capacitor. If line voltage is not present - **Replace control** **NOTE:** Compressor may turn on if room temperature is greater than approximately 85° F.
				ON | OFF | ON	Fan does not toggle off - Check that the indoor thermostat is set fully CCW. Replace control. **NOTE:** If the room temperature is greater than approximately 85°F or the compressor is running, the fan should not toggle.
					Any unit components turn on - Replace control.
			ON		Low fan does not come on - Check for line voltage across Fan Low and Line 1 terminals. If line voltage is present - Control is working properly. Check wiring, motor, capacitor. If line voltage is not present - Replace control board.
	ON		ON		Compressor does not come on - Check floodback protector resistance - Refer to the FLOODBACK AND OUTDOOR COIL THERMOSTAT section for details. Repeat Step 14 and while pressing the red switch (Step 15), check for line voltage across Comp and Line 1 terminals. If line voltage is present - Control is working properly. Check wiring, compressor, capacitor, overload. If line voltage is not present (Make sure the Remote/Standard switch is in Remote mode) - Replace control.
	ON	ON	ON		Compressor is not on - Check outdoor thermostat resistance - Refer to the FLOODBACK AND OUTDOOR COIL THERMOSTAT section for details. Repeat Step 17 and while pressing the red switch (Step 18), check for line voltage across Comp and Line 1 terminals. If line voltage is present - Control is working properly. Check wiring, compressor, capacitor, overload. If line voltage is not present (Make sure the Remote/Standard switch is in Remote mode) - Replace control. Reversing valve is not energized - Check for line voltage across REV. VALVE and Line 1 terminals while pressing red switch. If line voltage is present - Control is working properly. Check wiring, solenoid coil. If line voltage is not present - Replace control.
ON			ON		Electric heat is not on - Check for line voltage across Heater terminals while pressing the red switch. If line voltage is present - Control is working properly. Check wiring, heater thermal protectors, heater element. If line voltage is not present - Replace control.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: January 22, 1998

NO: PTAC-037-B
SUPERSEDES
PTAC-35-S

SUBJECT: PTAC Sealed System Repair - Prior to January 1, 1996 (Serial number Prefix 9512 or lower) "J" series PTAC units

Sealed systems service preformed after January 31,1999 on PTAC units, with serial number prefix prior to January 1, 1996 (9512 or lower), which do not show the following parts being replaced will be rejected and credit denied.

PTC Models	**PTH Models**
Strainer	Strainer*
Capillary Tube	Capillary Tubes (2)*
	Check Valve*

*A Capillary Tube Weldment Should Be Used, If Available

Sealed system repair/component replacement will continue to be a "C" service rate. On service performed after July 1. 1998, sealed system warranty claims not showing these parts as being replaced will be rejected.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: May 4, 1998

NO: PTAC-035-S

SUBJECT: PTAC Sealed System Repair - Prior to January 1, 1996 Production (Serial Numbers Less Than 9601000001) " J" series PTAC units

To ensure proper unit operation, every time a sealed system is repaired, the following components must be changed on all PTAC units with serial numbers prior to January 1, 1996 production (Serial Numbers less than 9601000001) :

PTC Models	**PTH Models**
Strainer	Strainer*
Capillary Tube	Capillary Tubes (2)*
Capillary Adapter	Check Valve*

*A Capillary Tube Weldment Should Be Used, If Available

Sealed system repair/component replacement will continue to be a "C" service rate. On service performed after July 1. 1998, sealed system warranty claims not showing these parts as being replaced will be rejected.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: March 25, 1998

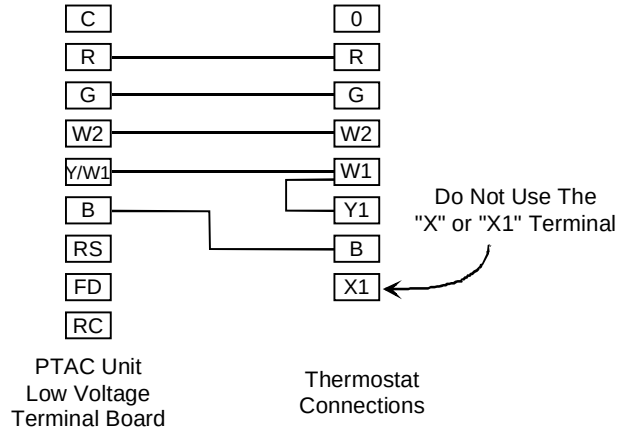
NO: PTAC-034-S

SUBJECT: D9945801 PTAC Wall Thermostat

Important Note

Damage to the control board can occur from failure to disconnect power supply or failure to set the master switch (located on the control board) to OFF before removing the low voltage terminal strip cover from an installed control board. Damage to this board by not following these instructions is considered misuse and not covered under either the standard unit warranty or any extended service contract.

To avoid damaging the unit and ensure proper operation, care must be taken when connecting this thermostat to the low voltage terminal board on the PTAC unit. Following the wiring diagram below will ensure proper installation.



⚠ CAUTION

A portion of the comment made on Figure 16 in the Installation Instructions shipped with the thermostat states "Common (X/X1) wire must be connected for proper operation." When using this thermostat with an Amana PTAC unit, do NOT use the "X/X1" terminal. Connection the "X/X1" terminal to the common "C" terminal on the PTAC unit provides a direct short to ground, causing control board failure.

Warranty will be voided for the replacement of all damaged control boards which can be attributed to improper wiring of this thermostat.

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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: January 26, 1998

NO: PTAC-033-S

SUBJECT: Control Board Characteristics

Important Note

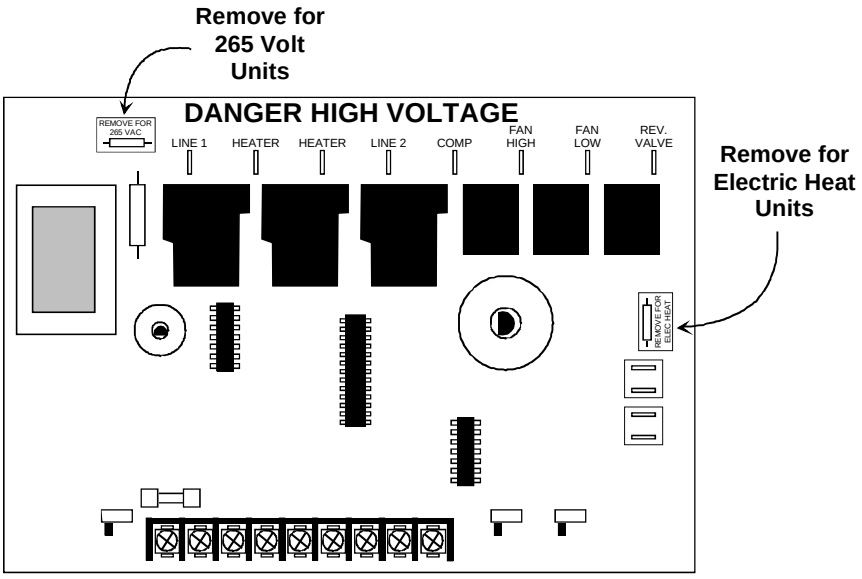
Damage to the control board can occur from failure to disconnect power supply or failure to set the master switch (located on the control board) to OFF before removing the low voltage terminal strip cover from an installed control board. Damage to this board by not following these instructions is considered misuse and not covered under either the standard unit warranty or any extended service contract.

Preparing Service Replacement Control Board Prior to Installation

Preparation for Differing Supply Voltages

265-Volt Units - the resistor near the transformer marked “REMOVE FOR 265 VOLTS” must have the leads cut and the resistor removed from the control board.

230/208-Volt Units - No preparation is needed.



Preparation for Electric Heat Only Units or Heat Pump/Electric Heat Units

Remove the resistor marked “REMOVE FOR ELECTRIC HEAT” when installing the control board in an electric heat only unit (non-heat pump).

Control Board Characteristics

- **Automatic 3-minute Compressor Lockout -** After the compressor cycles off, it will not restart for three minutes. This feature is enabled in standard or remote thermostat control.
  NOTE: This delay may be defeated by shorting the “FD” and “RC” terminals together for a minimum of 5 seconds.
- **Automatic 2nd Stage Electric Heat (Heat Pump Models)-** If the room temperature falls to 2.5°F below the set point temperature, the reverse cycle heat pump is shut off and the strip heat is turned on.

  NOTE: To override this feature for testing purposes, set the master switch to off and the mode switch to remote sensor, set the temperature control in the 12 o’clock position and install a 33K Ohm resistor across the RS and RC terminals on the low voltage board. Set the master switch to on. Slowly rotate the control knob counterclockwise until the heat pump starts. This resistance will imitate a 75°F room temperature when the unit is run in either heating position. Be sure to remove the resistor before replacing the low voltage terminal strip cover.
- **Automatic Freeze Protection -** Whenever power is supplied to the unit and the master switch is in the ON position, automatic freeze protection is active. If the unit senses room temperature below 40°F, the fan motor and electric strip heat (or hydronic heat, if applicable) are switched on. The heater and fan will remain on until the room temperature reaches 43°F.
- **Random Restart Delay -** To help eliminate power surges after a power outage, the unit is equipped with a two to four minute random restart delay feature. Whenever the unit is plugged in with the master switch turned on and the mode switch set in the cool or heat mode, a random restart delay will occur.
  - › This feature is enabled in standard or remote thermostat control.
  - › A random restart condition can be avoided by setting the mode switch in the fan only or off position before applying power to the unit.
  - › The use of a front desk control will not disable this feature.

  NOTE: This delay may be defeated by shorting the “FD” and “RC” terminals together for a minimum of 5 seconds.
- **Remote Thermostats -** Always use an approved thermostat supplied by the manufacturer. A wall thermostat that has not been approved by the manufacturer may not work correctly with this unit.
- **Remote Functions -** All functions except freeze protection and fan speed are controlled by a wall mounted thermostat (when used). The unit fan will run at low speed unless a Remote Thermostat High Fan Kit (P/N RTHFK10A) is installed.

Failure Diagnosis - Control Board Diagnostic Kit

To help field technicians in determining whether the control board is operating correctly, a Control Board Diagnostic Kit (P/N PBDK01) is available through your sales representative. This kit includes a test box and instructions that will help determine which component on the unit is malfunctioning.

HAC Technical Services
Fayetteville, TN. 37334

Amana
Raytheon Appliances

IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: October 11, 1996

NO: PTAC-032-S

SUBJECT: Hydronic Heat Kits HWK03 & HVK03

HWK03 & HVK03 hydronic heat kits shipped through October 10, 1996, used in the "A" series Package Terminal Units may contain a miswire situation that causes the hot water and steam valves to function improperly. A miswired unit will cause the valve to remain open and will allow the hot water or steam to continually circulate through the coil regardless of the mode switch or thermostat settings. Before proceeding with any rework procedure, confirm the unit operates in this improper manner. Kits shipped after October 10 with a serial number of 961000108 and prior have been corrected and can be identified by a yellow dot adjacent to the bar code label.

If the unit is miswired use the following procedure to correct the wiring at the molex connector.

HWK03 & HVK03 Wiring Correction Procedure

⚠ WARNING

DISCONNECT POWER TO THE UNIT BEFORE SERVICING.

1. Remove the three (3) sided metal front cover to the unit, and set aside.
2. Unplug the six (6) wire harness connector on the front of the chassis control box.
3. Note the red, blue, and black wires between the connector and the freeze protection thermostat located on the hydronic coil.
4. Refer to figure 1, and view the connector from the pin terminal side. On miswired units, note that the red wire is in position four (4), and the blue wire is in position six (6).
5. An AMP Contact Extraction Tool No. 458994-2 is required for this procedure. Note that the barrel of this tool is spring loaded. To remove a wire from the connector, insert the barrel over the pin terminal, and push until the spring loaded barrel is compressed. Upon compression of this barrel, the wire and pin terminal will pop loose from the back side of the connector. If a pin extractor is not available, a ball point pen cartridge works quite well. You may have to swedge the end of the pen cartridge slightly to allow it to fit over the end of the pin.
6. Using the AMP Extraction Tool, remove the red wire in position four (4) and the blue wire in position six (6). Reinsert them in the reverse positions. The red wire should be in position six (6), and the blue wire should be in position four (4). Refer to figure 2 for the correct positions of the wires within the connector.
7. Plug the connector back into the control box, and replace the front of the unit.
8. Restore power to the unit, and run test to confirm proper operation.

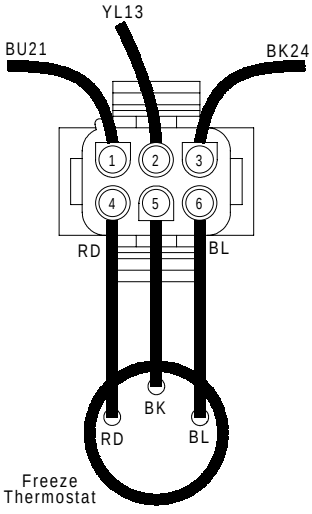


Figure 1
Improper Wiring

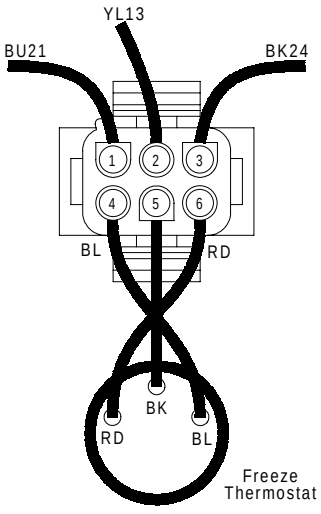


Figure 2
Proper Wiring

HYDRONIC STEAM KITS HVK03 Screw Interference

Steam hydronic heat kits, HVK03, shipped through October 10, 1996, used in the "A" series Package Terminal Units contain an assembly interference that affects connection of the field installed tubing on the exit side of the coil. The “L” shaped mounting bracket engagement holes on the bottom side of the top assembly are located just below the exit manifold on the coil. Due to the slope of the coil, this exit manifold is very close to the bottom side of the top assembly cabinet. Therefore, the tips of the #8 X 3/8” screws interfere with the connection of the field tubing and may also touch the manifold on the side opposite from the field connection. Kits shipped after October 10, 1996 with a serial number of 961000005 and prior have been corrected and can be identified by a black dot adjacent to the bar code label.

HYDRONIC STEAM KITS HVK03

WARNING

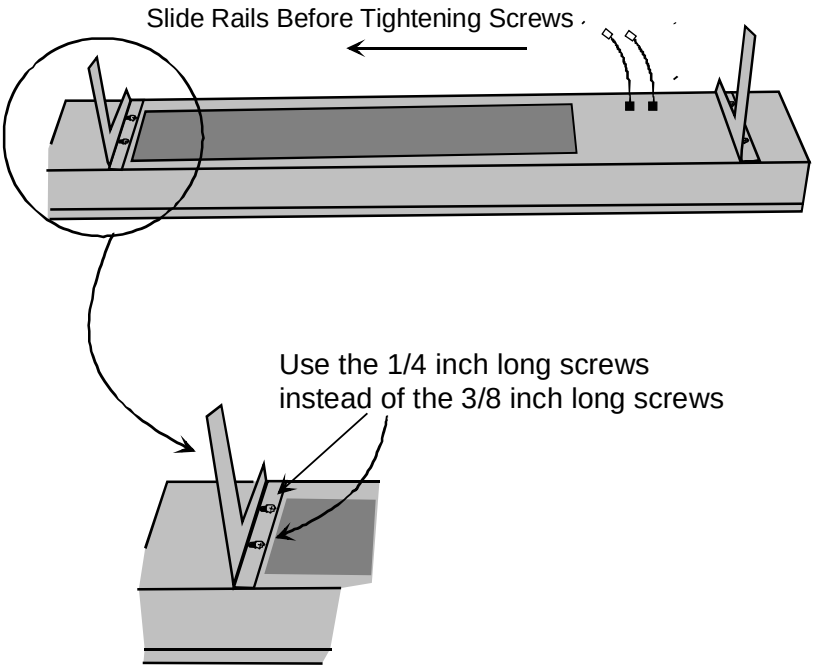
DISCONNECT POWER TO THE UNIT BEFORE SERVICING

1. Remove the three (3) sided metal front cover to the unit, and set aside.
2. On the left side (while facing the unit) of the top assembly, locate the two (2) screws connecting the “L” shaped bracket to the top assembly. Remove these two (2) #8 X 3/8” screws, and discard them.

3 a. Option 1 is to replace these two (2) screws with pop rivets. Be certain the pop rivet head is sufficiently large enough to hold properly.

b. Option 2 is to replace these two (2) screws with sheet metal screw M02189-01. This screw is a #8 X 3/8” hex washer head with a 5/16” head.

4. Replace the front of the unit, and restore power.



Filing Procedures

If a wiring or screw correction is required, on an installed kit with **serial number prefixes of 961000108 (HWK03) or 961000005 (HVK03) and prior** and **shipped from Amana Fayetteville prior to October 10, 1996,** Amana will allow a class "A" in home service rate for the first unit and $30.00 for each additional unit at the same location for correction of the wiring and/or screws of the kit. Kits shipped from Amana Fayetteville after October 10, 1996, have been corrected prior to shipping. <u>These units can be identified by the yellow dot (HWK03), or the black dot (HVK03) on the carton adjacent to the bar code label</u>.

All claims for credit under this program must be submitted to the Amana Distributor or Branch for processing Before May 1, 1997.

Distributor/Amana Branch must summarize claims on a parts return form (PRF) and submit the yellow (Distributor) copy <u>and</u> the original white (Amana) copy of the warranty tag (A0017309) to Warranty Administration at Amana, Iowa for processing.

Upon receipt of proper documentation, part credit will be issued to the distributor/branch, or authorized servicer. The labor credit will be issued to the authorized servicer. In the event the servicer is not set up on an authorized service agreement, the allowance will be issued to the distributor/branch per their labor rate, to pass on to the servicer.

HAC Technical Services
Fayetteville, TN. 37334

Amana
Raytheon Appliances

IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: October 28, 1996

NO: PTAC-31-B

SUBJECT: PTAC Cracked Basepans

Some PTAC units manufactured January 1996 through February 1996 have been found to have cracks in the basepan. If water migrates to the front section of the basepan, cracks may allow water to leak from the basepan into the room. As a precautionary measure, Amana recommends inspecting units with serial number prefixes 9601 and 9602. If a crack is discovered, it should be repaired immediately using Amana's epoxy repair kit part # 20018301**.**

Inspection Procedure Inventory/Stock Units:

1. Inventory/Stock units; cut banding securing carton and pull staple securing the upper and lower carton sections from each end of carton.
2. Lift and remove upper section of carton to expose unit.
3. From the front of the unit carefully tip the unit back using care not to damage the condenser coil or tubing.
4. Looking at the bottom of the basepan locate the support rib protruding outward from the pan, approximately 5" from the front of the pan. See illustration.
5. Carefully inspect the basepan areas indicated on the following illustration for cracks.

Inspection Procedure Installed Units:

1. If installed, disconnect power supply, remove unit from sleeve and proceed as follows.
2. From the front of the unit carefully tip the unit back using care not to damage the condenser coil or tubing.
3. Looking at the bottom of the basepan locate the support rib protruding outward from the pan, approximately 5" from the front of the pan. See illustration.
4. Carefully inspect the basepan areas indicated on the following illustration for cracks.

Repair Procedure:

1. If a crack is discovered, repair with **Epoxy Repair Kit, Amana part # 20018301**.
2. Follow warnings and instructions contained in the kit. Cracks on the control panel side may be repaired by working from the inside of the basepan. Cracks on the coil side of the basepan must be repaired from the bottom side of the basepan.

FILING PROCEDURES:

All claims for credit under this program must reference **Project 8445** and be submitted to the Amana Distributor or Branch for processing by December 31, 1997.

Inspection of Units

Amana will pay Class A labor for inspection of the first unit at a location and $10.00 for each additional unit at the same location. A warranty tag (A173-9) must be completed for each location. Send the original white (Amana) copy of the tag, the yellow and pink (Distributor) copy of the tag to the distributor. Attach a listing of serial numbers inspected.

FILING PROCEDURES:

cont/

The distributor will summarize the warranty tags on a PRF (Parts Return Form). The Distributor will attach the original white (Amana) copy of the tag and yellow (Distributor) copy of the tag to the original white (Amana) copy of the PRF and send to Warranty Administration at Amana, Iowa.

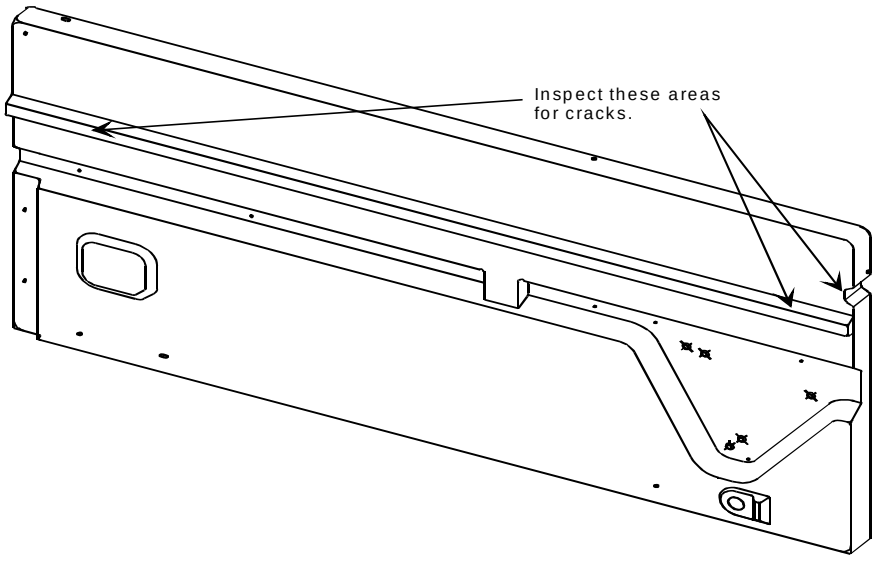
Upon receipt of proper documentation at Amana, Iowa, labor credit directly to the servicer. In the event the dealer is not set up as an authorized servicer, labor will be issued to the distributor (at the distributors rate) to pass along to the dealer.

Repair of Units

Amana will pay Class A labor for the repair of cracks found. A warranty tag (A173-9) must be completed for each repair. Send the original white (Amana) copy of the tag, the yellow and pink (Distributor) copy of the tag to the distributor.Complete a separate warranty tag (A17309) for each unit repaired. Reference project code 8445 on the warranty tag.

The distributor will summarize the warranty tags on a PRF (Parts Return Form). The Distributor will attach the original white (Amana) copy of the tag and yellow (Distributor) copy of the tag to the original white (Amana) copy of the PRF and send to Warranty Administration at Amana, Iowa.

Upon receipt of proper documentation at Amana, Iowa, labor credit directly to the servicer. In the event the dealer is not set up as an authorized servicer, labor will be issued to the distributor (at the distributors rate) to pass along to the dealer.



Basepan (Bottom View)

HAC Technical Services
Fayetteville, TN. 37334

Amana
Raytheon Appliances

IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: April 11, 1996

NO: PTAC-30-B

SUBJECT: PTAC Thermistor Clip

Amana has found under some conditions the thermistor clip on the new "A" series PTAC can crack, possibly causing the thermistor to move out of position and therefore not sense the return air temperature properly. To correct this condition Amana has released a **Thermistor Clamp Kit, part number 11195501** to replace the factory installed clip if required. This kit is only available as a 10 pack and therefore contains the components necessary to replace the clip on 10 units. The illustrations below show the factory installed thermistor clip (figure1) and the replacement thermistor clamp (figure 2).

PTAC's manufactured 9404 and later will have this clamp installed in production. Units manufactured 9403 and prior and shipped after March 15, 1996 will either have the new clamp kit installed or a single clamp kit will be provided in the box with the PTAC chassis for replacement when the unit is installed.

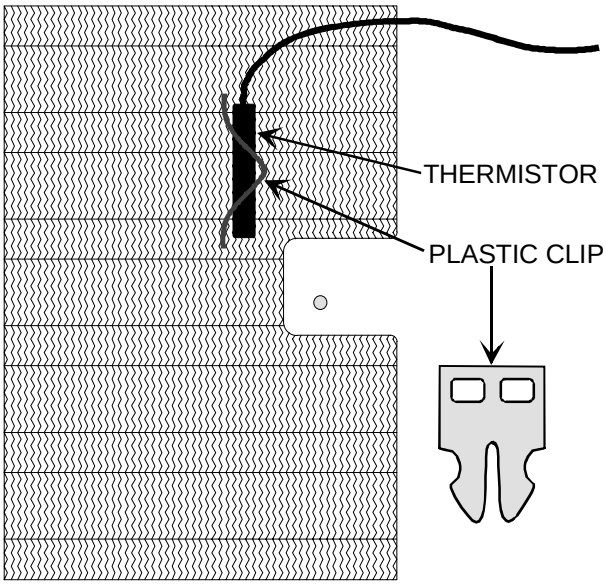


Figure 1
Factory Installed Thermistor Clip

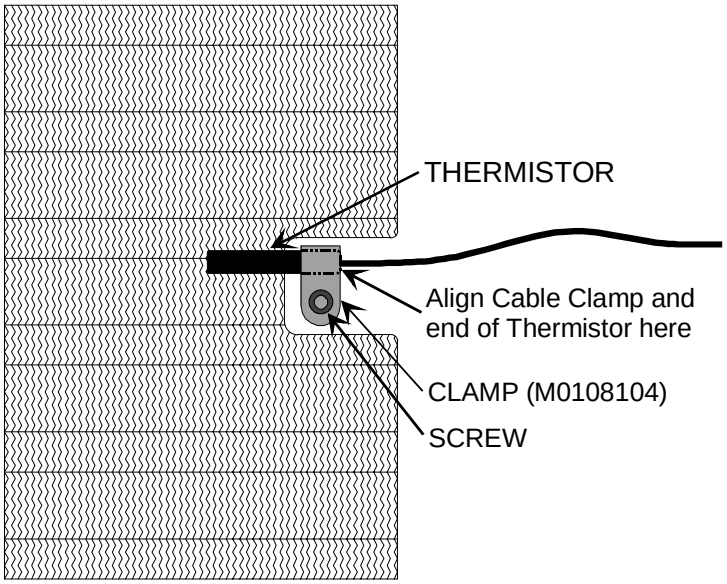


Figure 2
Replacement Thermistor Clamp

HAC Technical Services
Fayetteville, TN. 37334

Amana
Raytheon Appliances

IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: April 9, 1996

NO: PTAC-29-B

SUBJECT: "J" Series PTAC Door Bezel Failures

Amana has received a few reports of the door bezel assembly coming loose in the field. An analysis of these failures revealed in some cases the "ears" which lock the bezel in place are coming loose. After studying the failures, Amana recommends the following procedure to secure the bezel assembly in place.

Material Required: Amana Part# M0275181 double-backed tape, (3M # 4046 Scotchmount 1/16" thick x 1" wide).

Procedure:

1 Remove the bezel assembly from the PTAC front.

2 Cut a 2 to 2.5 inch length of tape from the roll.

3 Split the 1 inch tape lengthwise into two (2) 1/2 inch wide strips of tape.

4 Install one piece of tape on each side of the bezel.

5 Remove the backing from each of the strips.

6 Reinstall the bezel assembly by gently pressing the bezel assembly into the front frame.

Publications
Amana, Iowa 52204

319/622-5511
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IMPORTANT PARTS-SERVICE COMMUNICATION

TO: All Service and Parts Managers

DATE: October 15, 1993

NO: PTAC-25

SUBJECT: PTH Reversing Valves Substitution (3-Way to 4-Way)

Ranco's 3-way reversing valve is no longer available and is being replaced with Ranco's 4-way reversing valve design. The 4-way valves which feature fewer internal parts, provide for a simpler and more efficient valve design.

A 4-way reversing valve kit will be provided as a service replacement for the 3-way reversing valve since the solenoid coil of these assemblies are not interchangeable. In some cases the tubing may need to be modified for proper fit, but in most applications the new valves are a direct replacement.

Production units with the serial number 9308227959 and later will be manufactured with the new 4-way reversing valve assembly. The exceptions are units with serial numbers 9308228079 to 9308228178 (PTH12350J) and 9309199373 to 9309199506 (PTH15350I) which were produced with the 3-way reversing valve assembly.

To order the proper kit for the unit being serviced, it is necessary to know the coil voltage of the unit. The solenoid coils are color coded for easy identification. (See below.)

Reversing Valve Kits may be ordered as follows:

PART No.	DESCRIPTION
R0156885	24 Volt Reversing Valve Kit (Red) - All Remote Units
R0156886	208/240 Volt Reversing Valve Kit (Green)
R0156887	277 Volt Reversing Valve Kit (Blue)

The kits consist of the below listed components:

KIT	REVERSING VALVE	SOLENOID COIL	COIL COVER	LOCKNUT	COIL HARNESS
R0156885	10702101	10702201 (Red)	10702301	10702401	10685003
R0156886	10702101	10702202 (Green)	10702301	10702401	10685003
R0156887	10702101	10702203 ((Blue)	10702301	10702401	10685003

NOTE: When replacing just the solenoid coil, be sure the proper solenoid coil is used according to the unit voltage.

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service and Parts Managers

DATE: October 18, 1991
SUPERSEDES
NO: PTAC-23A PTAC-23

SUBJECT: Cracked Elbow and Tubing PTC12XXXE (R) and PTAC12XXG (R) Condenser Inlet

At certain low frequency vibrations during shipment of the subject models, the condenser inlet elbow or condenser inlet tube may split or crack. The elbow is located between the compressor discharge tube and the condenser (see diagram on page 2). The condenser inlet tube (hairpin) may crack at the brazed joint where the elbow is connected to the condenser.

If the elbow is cracked, replace both the elbow (Part Number D9818912) and the compressor discharge tube, using a new redesigned discharge tube (Part Number 10455401).

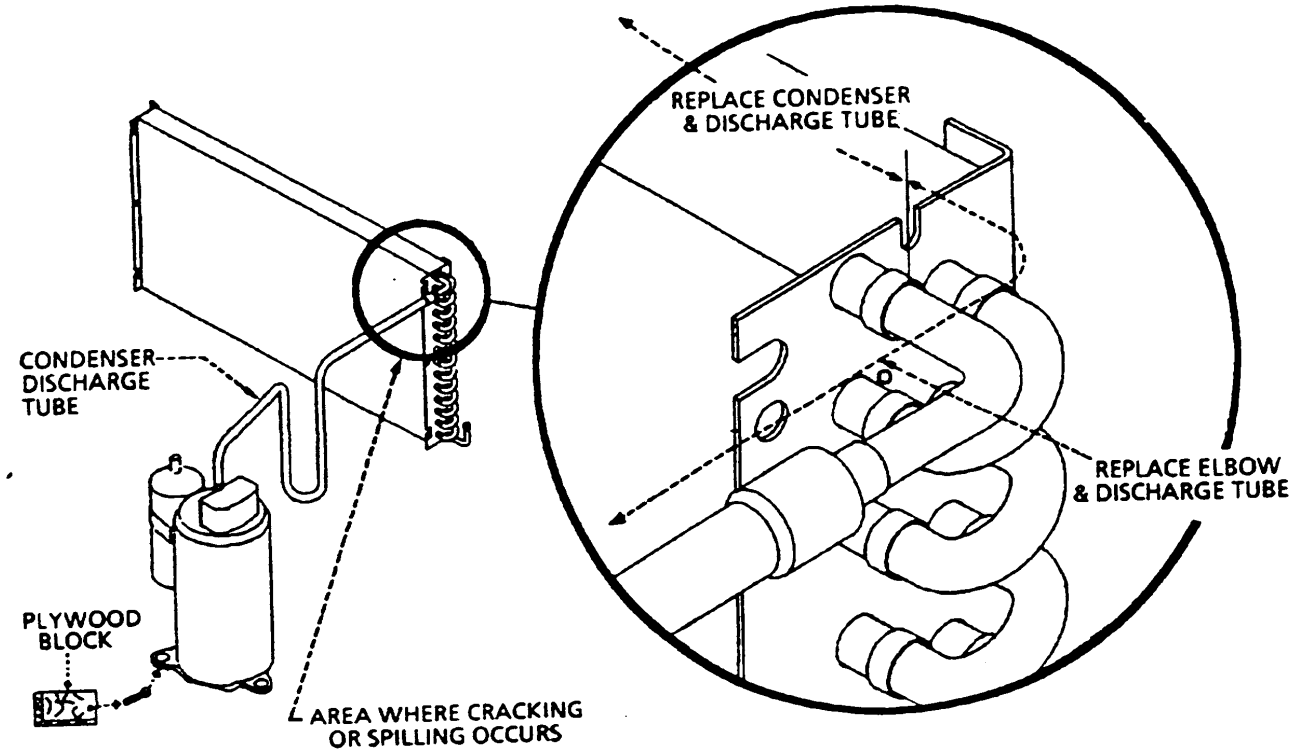
If the condenser inlet tube is cracked, replace the condenser using Part Number 10120202 for standard units, or Part Number D9871912 on Seacoast protected units. Also replace the compressor discharge tube, using the new discharge tube Part Number 10455401 -

The new compressor discharge tube eliminates the potential of future failure. New products beginning with serial number 91 10069164 will include the new discharge tube. Beginning with October 9, all shipments from factory inventory of units manufactured prior to serial number 9110069164 include special wood blocks under the compressors to prevent vibration and potential failure during shipment This wood block must be removed when the unit is installed

The system repair as described herein is covered under the Sealed System Warranty (parts and labor for Serial Numbers 8904-9010. parts, labor, and travel for Serial Numbers after 9011).

PLEASE NOTE: When experiencing cracked or split tubing on any refrigeration system, always replace the tubing affected.

Do not try to braze the crack or split. The tubing is weakened and though the original crack or split may be sealed, the tubing could fail elsewhere.


REPLACE CONDENSER
& DISCHARGE TUBE
CONDENSER
DISCHARGE
TUBE
REPLACE ELBOW
& DISCHARGE TUBE
PLYWOOD
BLOCK
AREA WHERE CRACKING
OR SPILLING OCCURS

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

SAFETY NOTICE

TO: All Service and Parts Managers

DATE: May 3, 1990

SUPERCEDES

NO: PTAC-22A PTAC22

SUBJECT: Failure to Heat - PTAC "E" Chassis Heatpump

In certain circumstances the “E” chassis PTAC will not provide heat when either “HIGH HEAT™ or “LO HEAT” is pushed on the selector switch. The indoor blower will operate. the compressor and outdoor fan will not start, and the electric strip heater will not be energized. This will occur when the outdoor ambient temperature is above 26~F. and the room temperature is below 36"F.

The outdoor thermostat will keep the unit in the heat pump mode (not allowing the electric strip heater to work), and the floodback protector will open (not allowing the compressor or the outdoor fan to operate) -

To correct this problem on the standard/seacoast unit remove wire VT1O from the “T6” terminal on the selector switch and connect to the “C” terminal on the OD FAN/COMP capacitor. Be sure wire BK1 1 r~ mains connected to the “T6” terminal on the selector switch.

To correct this problem on the remote unit remove wire VT1O from the “2” terminal on the reversing r~ lay and connect to the “C” terminal on the OD FAN/COMP capacitor. Be sure wire BK1 1 remains connected to the “2” terminal on the reversing relay.

By doing this the floodback protector will be defeated in the heating modes, allowing the compressor and outdoor fan to operate when the outdoor thermostat is in the heat pump mode. The floodback protector will continue to protect the inside coil from freezing in the cooling modes.

IMPORTANT WARRANTY LABOR RATE INFORMATION

1. When a single unit requires the above repair, a class “A” labor rate will be paid.

2. When there are two through five units on an installation requiring the above repair, a class “A” labor rate will be paid on one unit and 75% of a class “A” labor rate will be paid for the remaining units (25% travel deduction).

3. On installation where more than five units require the above repair, Amana Technical Service must be contacted to negotiate the labor rate.

4. All claims should be made using the Amana Parts Return Tag (Al 73-8) with the statement “Project 8414” in section #6 “Complaint” area of the form.

Amana V.I.P SERVICE

Product knowledge and good service insure customer satisfaction.

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: October 31, 1989

NO: PTAC-21

SUBJECT: PTAC E CHASSIS WATER LEAKAGE

It has been observed that in wet conditions (high humidity or rainfall) water may leak from the unit either outdoors from the rear of the wall sleeve OR around the bottom flange on the unit to the room's inside wall.

If either one of these water leaks are being experienced check the following:

1. On PTH units the pan drain valve, or on PTC units the drain plug, may have been damaged or mis aligned during chassis installation due to a stud in the bottom right front of the Amana wall sleeve.

   On PTH units make sure the drain valve plunger is properly seated.

   NOTE: In normal heat pump operation, condensate water will drain out the rear of the wall sleeve, unless a drain kit or a condensate removal pump kit has been installed.

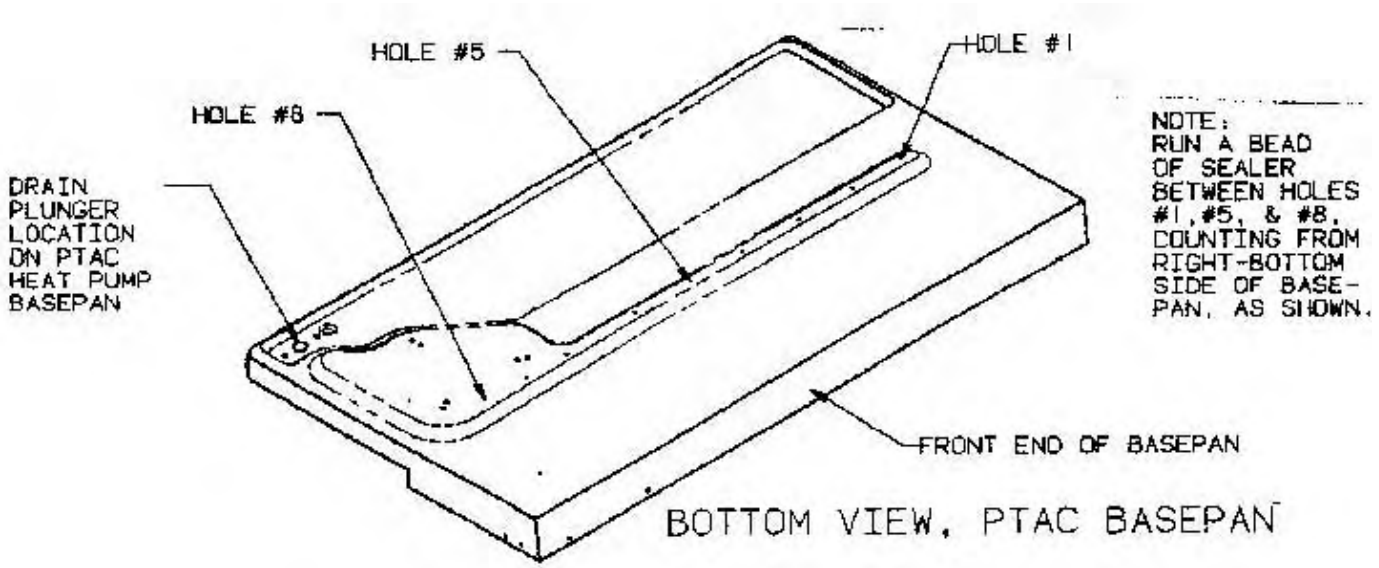
   On PTC units replace any damaged drain plugs.

CAUTION WHEN INSTALLING ANY "E" CHASSIS PTAC UNIT IN AN AMANA WALL SLEEVE, CARE MUST BE TAKEN TO PREVENT DAMAGE TOTHESE COMPONENTS.

   WARRANTY NOTE; $15.00 per unit plus one travel charge daily may be claimed for installation of drain plugs (in PTC units) or adjustment of the drain valve (in PTH units).

2. On PTAC units with serial numbers 8906100182 through 8909037186 three unused holes in the basepan under the bottom flange may, in rare circumstances, cause water to leak intothe room.

   To correct this situation, after removing the chassis from the wall sleeve, remove the bottom flange from the basepan. Dry the basepan and the flange thoroughly. Apply a bead of RTV sealer the length of the bottom rail run on the underside of the basepan. Be sure the three unused'holes (# 1, 5, and 8 from left of the base pan) in the basepan have enough sealer to ensure a water tight seal. Replace the bottom flange and reinstall the chassis.



WARRANTY NOTE: An "A' labor rate may be claimed for removing and sealing of the bottom flange.

WARRANTY NOTE: An "A' labor rate may be claimed where both the drain valve/plug needs adjusting/replacing and the bottom flange needs to be sealed.

All claims must be made using Amana Parts Tag (A173-8), summarized on Amana Parts Return Form (A290-2) andreferencing Service Letter PTAC-21.

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service and Parts Managers

DATE: September 20, 1989
PAGE: I of 3
NO: PTAC-20

SUBJECT: WALL SLEEVES - GE, CARRIER, MCQUAY

When installing an Amana PTAC "E" chassis in a General Electric, Carrier, or McQuay wall sleeve the installer may experience the following difficulties.

GENERAL ELECTRIC

DIFFICULTIES:

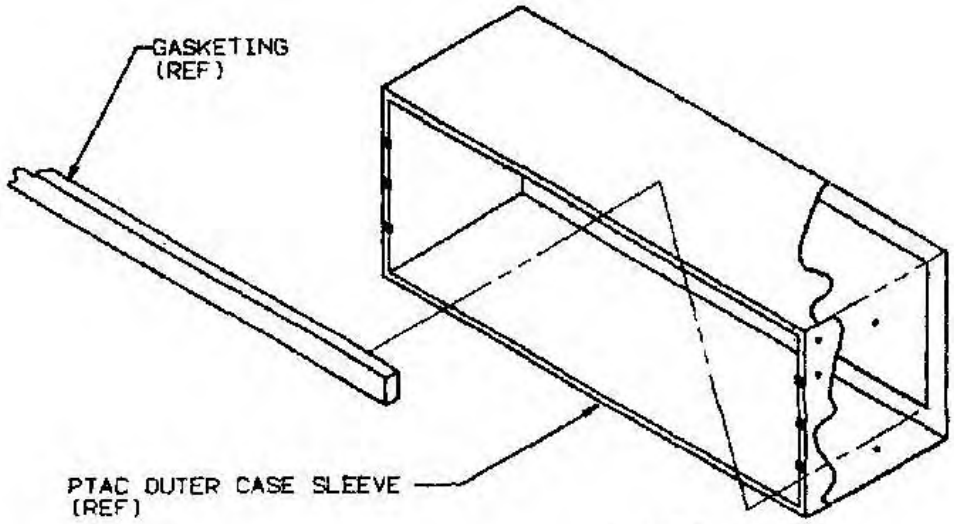
1. When the chassis is installed in the wall sleeve, there is about a 1/4" gap between the chassis flange and the wall sleeve.

2. The wall sleeve's left bottom rail interferes with the compressor and condensate pump sumps, tilting the chassis out toward the room, causing air infiltration along the top flange seal.

3. The mounting holes on the sides of the chassis do not align with the mounting holes on the wall sleeve.

INSTALLATION SUGGESTIONS:

1. Remove the gasket material (3/8" hard rubber) from the rear of the wall sleeve. This gasket may be located along the bottom of the rear flange on the wall sleeve.



NOTE: REMOVE GASKETING LOCATED ACROSS INSIDE BOTTOM FLANGE OF OUTER CASE SLEEVE

FIGURE 1

Product knowledge and good service insure customer satisfaction.

2. Install the PTAC chassis.

3. Lift chassis high enough to align the side flange mounting holes and secure with the provided mounting screws.

4. If air is infiltratin9 around the chassis top flange, drill 1/8" mounting holes in the to flange opposite the mounting holes already located in the wall sleeve and secure with mounting screws.

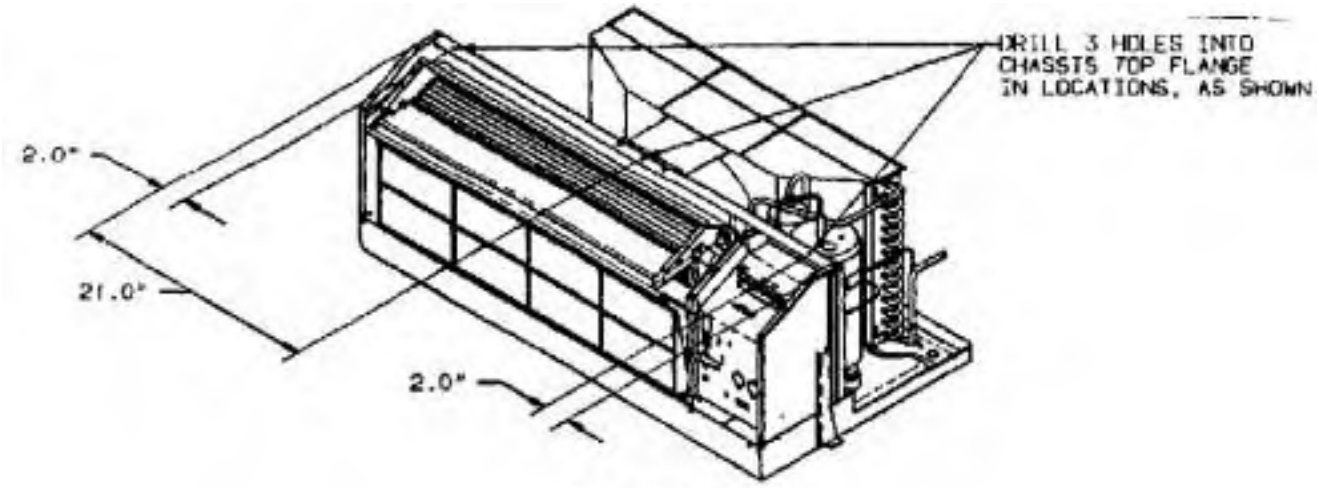


FIGURE 2

MCQUAY

FIGURE 2

DIFFICULTIES:

1. The mounting holes on the sides of the chassis flange do not align with the mountin holes on the wall sleeve.

INSTALLATION SUGGESTIONS:

1. After installing the chassis in the sleeve drill a 1/8" hole in the wall sleeve through the chassis flange opposite the wall sleeve mounting holes and then secure with the provided mounting screws.

CARRIER

DIFFICULTIES:

1. The mounting holes on the sides of the chassis flange do not align with the mounting holes on the wall sleeve. The chassis tends to fall out of the sleeve into the room.

INSTALLATION SUGGESTIONS:

1. Install wall sleeve adaptors inside the carrier wall sleeve next to both sides (see drawing three). The Amana PTAC chassis will then fit into the sleeve properly.

   This wall sleeve adaptor is to be locally manufactured according to figure four.

NOTE: The Amana grilles cannot be used with the Carrier wall sleeve. The Carrier grille can be used if the second from the right bank of louvers (as seen from the room) is sealed off.

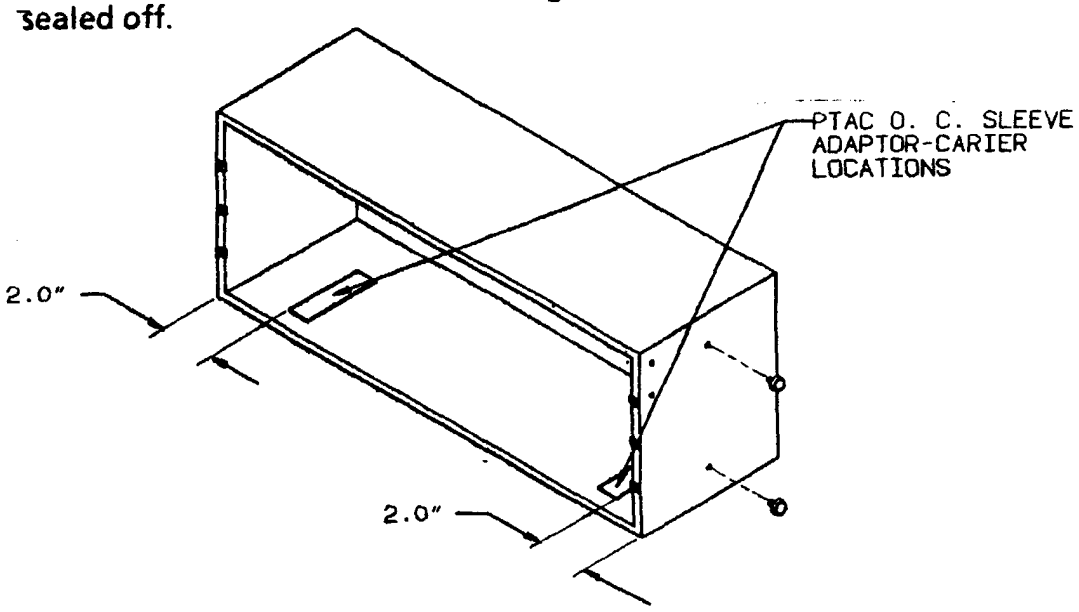


FIGURE 3

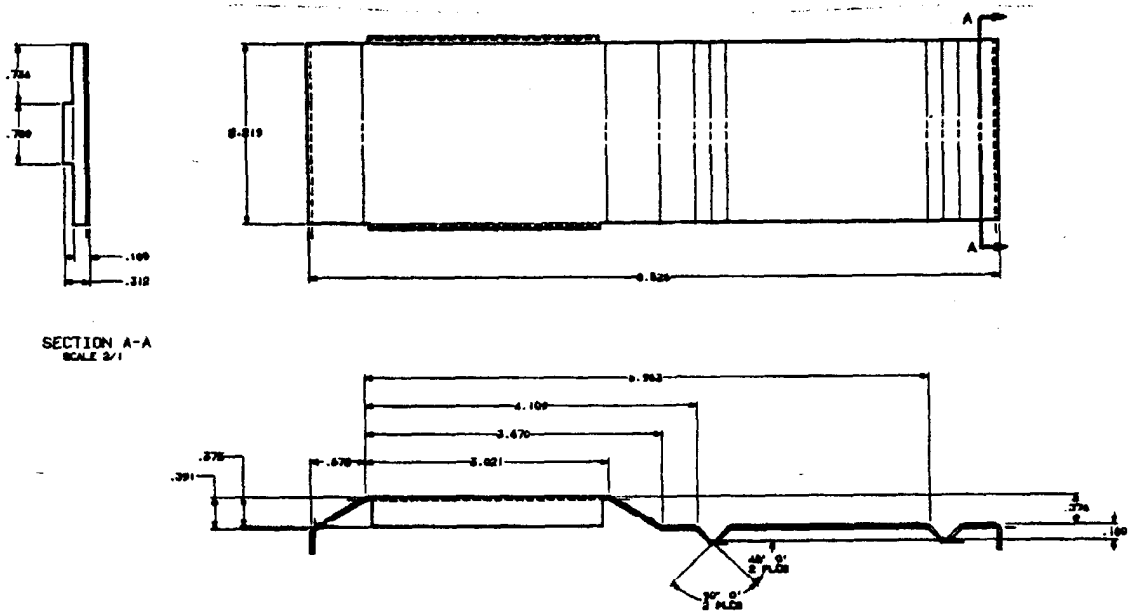


FIGURE 4

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: May 26, 1989

NO: PTAC-18

SUBJECT: PTAC "E" Chassis Power Cords (230/208 Volt)

It has been reported, in certain installations, the wall power receptacle is located more than 58 inches from the bottom right corner of the chassis. To be able to supply power cords that will allow connection to these outlets the following power cords have been released. These cords have a usable length of 72 inches.

C6132704	250 Volt	15 Amp
C6132604	250 Volt	20 Amp
C6120704	250 Volt	30 Amp

Because of UL requirements, precautions must be taken to insure no more than 72 inches extend beyond the chassis assembly.

These power cords may be ordered through the Amana Parts Sales Department.

Since these power cords are for installations beyond unit specifications, the total cost for the installation of these cords, including labor, will be paid by the customer. Warranty claims for these cords will not be honored by Amana.

A 72 inch power cord will not be issued for 265 volt units. These units must be connected either to a receptacle in the subbase or by a hard wire kit, so a longer cord will not be needed.

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service and Parts Managers

DATE: December 18, 1989
PAGE: 1 of 2
NO: PTAC- 17A (Supercedes PTAC- 17)

SUBJECT: PTAC Warranty - 2nd - 5th Year Service Rate Reductions

A clear understanding of the warranty provisions on all PTAC units manufactured since January 1, 1986 is required to give our customers proper service while allowing' the servicer to receive all labor and travel charges entitled.

To clear any misunderstanding, the PTAC warranty provisions are:

1. "First year Amana will repaar or replace, free of charge, any part which proves to be defective due to workmanship or materials." (Amana PTAC Warranty)

   Explanation:

   1. For the First Year of Installation, all parts free of charge.

   2. For the First Year of Installation, labor, and travel paid according to the labor payment schedule and service rates negotiated on the Authorized Service Agreement.

2. "Second Year Amana will provide a free replacement part, including labor, for any electrical part which proves defective due to workmanship or material." (Amana PTAC Warranty)

   Explanation:

   1. During the Second Year from the time of Installation all electrical components (motors, switches, relays, etc.) supplied free of charge. The customer is responsible for any freight charges incurred.

   2. During the Second Year from the time of Installation, labor involving replacement of electrical components is covered according to labor payment schedule and service rates negotiated on the Authorized Service agreement. For an explanation of the limited warranty see "Notice" below.

3. Second thru Fifth Years Amana will replace, including labor, any sealed system part (evaporator, condenser, compressor, capillary lines, reversing valve, and or interconnecting tubing) which proves to be defective due to workmanship or materials.' (Amana PTAC Warranty)

Explanation:

1. For the Second thru Fifth year of Installation Amana will provide any sealed system part free of charge. The customer will be responsible for any freight or handling charges incurred.

2. For the Second thru Fifth year of Installation, labor involving the replacement of sealed system components is covered according to labor payment schedule and negotiated service rates shown on Authorized Service Agreement. For an explanation of the limited warranty see 'Notice' below.

NOTICE: Under the limited warranty, the owner is responsible for servicer's travel charge, parts freight and cartage, if required. Amana will reduce the appl,cable service rate by 25 percent of the servicer's in home Class A service rate, under the limited warranty provision. This amount covers the removal of travel from the service rate during the 2 - 5 years of limited warranty coverage. Such charges are the customers responsibility and should be charged accordingly.

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service and Parts Managers

DATE: May 25, 1989
PAGE: I of 2
NO: PTAC-16

SUBJECT: PTAC "E" Model Indoor Room Thermostat Operation

It has been reported that the indoor room thermostat is unable to control the room temperature when the unit is in the heat mode. This results with the room becoming too warm, with long, or continuous, heating cycles.

Be sure to check the following before replacing any thermostat.

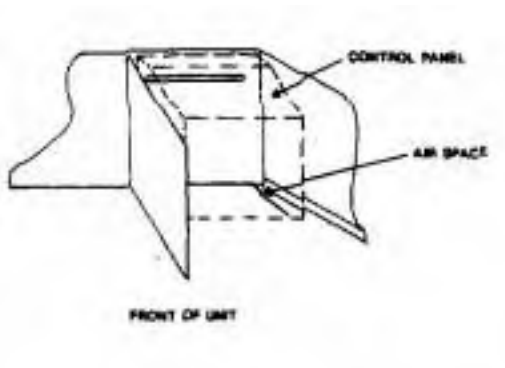
1. Wall sleeve and chassis is properly installed - no outdoor air infiltration.

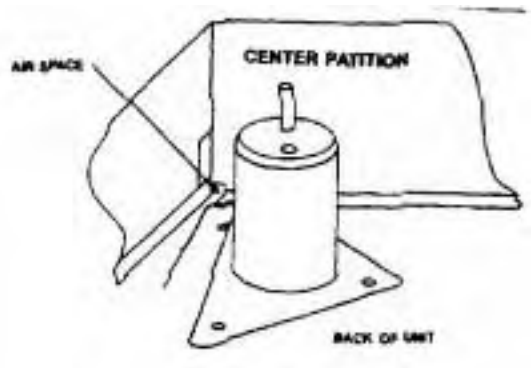
2. Temperature Limiter on the thermostat is removed.

3. Air vent is closed.

4. On early production models, with date codes prior to 8812, possible air infiltration may occur in the following areas.

    1. Center partition, right bottom corner, under the control panel. If so noted, pull the chassis from the wall sleeve and, from the compressor compartment side, press permagum into the opening to seal the air leak.

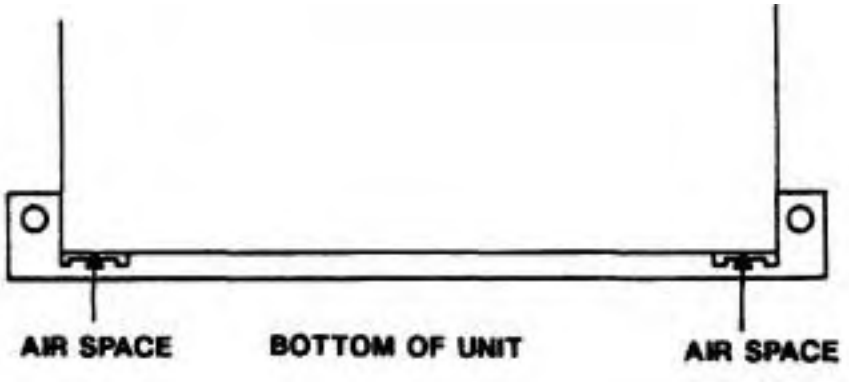




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2. Bottom flange on the chassis, approximately three inches from both sides. Press permagum into the openings to provide a proper air seal.



Following these procedures will insure proper operation of the indoor room thermostat.

DO NOT adjust the calibration screw on the thermostat. The thermstat may control the room air temperature while in the heat mode, but will not allow the unit to operate correctly when in the cooling mode.

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AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Distributor Service Managers

DATE: March 29, 1989

NO: PTAC-15

SUBJECT: 265 V. Circuit Breakers for PTAC Units

Underwriters' Laboratories (UL) has recently ruled that 265 V. circuit breakers can no longer be used as physical disconnects for Amana PTAC units. The National Electrical Code (NEC) has stated that 265 Volt circuit breakers of 20 Amp or 30 Amp do not qualify as overcurrent protection devices.

Amana has discontinued the following circuit breakers:

KIT NUMBER	AMPERAGE	VOLTAGE
CBK415B1	15	265
CBK420B1	20	265
CBK430B1	30	265

This change is for new installations only. An installation prior to this notice need not be reworked.

NEC Requirements (265 V. PTAC)

1) HARD WIRE. All 265 Volt PTAC units must be hard wired. This can be accomplished by (1) using the power cord supplied with the chassis connected to the receptacle enclosed in a subbase or (2) by using a hard wire kit.

2) PHYSICAL DISCONNECT. 'All 265 Volt PTAC units require a physical disconnect of the supply voltage to be within visible sight on the unit. This physical disconnect may be incorporated as part of the subbase.

3) OVERCURRENT PROTECTION. All 265 Volt PTAC units also require an overcurrent protection, which may be incorporated as part of the subbase or as a part of the chassis control panel.

The attached table summarizes the ways in which Amana can supply hard wiring enclosures, physical disconnects, and overcurrent protection for 265 V. PTAC units. Though the table lists kits which can be obtained only through the Sales Department, all components for these kits are available through the Customer Service Department, Parts Sales.

265 PTAC "E" SERIES

		Hard Wiring Options		Physical Diconnect	Overcurrent Protection
Electric Heat (kW)	MOCP(1)	Subbase P/N	Direct Wire Subbase P/N	Power Switch P/N (2)	Fuse Holder P/N (3)
0, 1.5, 2.5					
3.0	15A	PTS420B1	PTPWHWK2	PSH04A	PHK415A
3.5, 4.0	20A	PTSB420B1	BTPWHWK2	PSH04A	FHK420A
5.0	30A	PTSB430B1	PTPWHWK2	PSH04A	FHK430A

1) Maximum overcurrent protection allowed per NEC, sometimes referred to as "amps" of unit.

2) The power switch may be installed in either the PTSB4--B1 subbase or the PTPWHWK2 direct wire subbase.

3) The fuse holder kit may be installed in either the PTSB4-B1 subbase or in the chassis itself. Cartridge style fuses are required, but not included in the kit.

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AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: Distributor Service Managers

DATE: January 31, 1989

NO: PTAC-14

SUBJECT: Indoor Thermostat Kits (P/N R0161071)

During the replacing of an Indoor Thermostat on a PTAC units, which has had a thermostat relocation kit installed, the styrofoam bulb cover and model plastic mounting studs may be damaged or destroyed.

To aid in ordering the replacement parts needed the "Indoor Thermostat Replacement Kit" (P/N R0161071) has been made. This kit consists of the Indoor Thermostat (P/N C6132801) and the Thermostat Bulb Relocation Kit (P/N R0156615).

This kit must be order by its part number only - the Indoor Thermostat (P/N C6132801) will NOT be subbed to this kit.

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

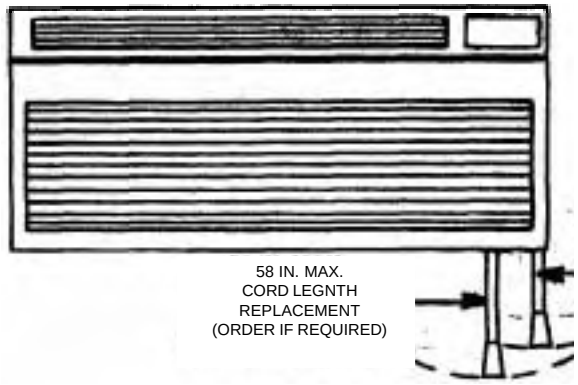
DATE: June 9, 1989
PAGE: 1 of 2
NO: PTAC-13A (Supersedes PTAC-13)

SUBJECT: PTAC Power Cords- 230/208 volt "E" Chassis

On early production "E" Model PTAC units, the power cord supplied on the unit will work for any application where a subbase is used or the electrical power outlet is located not more than 48" from the right bottom corner of the unit (see illustration).

When the electrical power outlet is located, as per the Amana installation specification of a maximum of 58" from the right bottom corner of the unit (see illustration) the following listed applicable power cords must be ordered for replacements.

PART NUMBER	UNIT VOLTAGE	POWER CORD RATING VOLTS	AMPERAGES
C6132703	230/208V.	(250 V.)	15A
C6132603	2301208V.	(250 V.)	20A
C6120703	230/208V.	(250 V.)	30A



The electrical power outlet can not be located more than 58 inches, as per Amana specifications, from the right bottom corner of the PTAC unit.

If replacment of the power cord is necessary, the following steps must be taken to obtain the proper power cords and labor allowance.

1) Notify Amana Technical Services of the following:
   A. Location of installation
   B. Number of Units
   C. When power cords are needed
   D. Who will do the power cord replacement rework

2) Amana Technical Services will then:
   A. Order the needed power cords (shipped free of charge)
   B. Negotiate and authorize a labor rate for the rework
   C. Provide follow up and support for the rework

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3) Upon rework completion the following must be done:
   A. Complete one (1) "PRT" (Parts Return Tag) and one (1) "PRF" (Parts Return Form) for the rework.
   B. A complete serial number list of all units reworked must be attached to the "Parts Tag."
   C. All replaced cords must be returned to Amana (attention: Technical Service).

Upon receipt of the above at Amana, labor payment will be made.

NOTE: Please inform your sales department of this cord situation and request that they determine the location of the electrical power outlet on each particular installation so if the 58' cord is required, cords can be ordered approximately 4 - 6 weeks prior to installation of the units.

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: April 19, 1989

NO: PTAC-12

SUBJECT: Blower Wheel "Ticking" on the PTAC "E" Model

It has come to our attention there my be a "ticking" noise upon initial installation and start up of the "E" model PTAC units. A single "ticking" sound will occur on about every rotation of the blower wheel during indoor fan operation.

The cause of this noise is the bearing shaft plate not being riveted tight enough to the end plate of the blower wheel. When this condition exists you my or my not notice a movement of the shaft plate during examination of the blower wheel outside of the blower assembly.

Since corrective action has been taken by the vendor, this should be noticed only on units built during or before September, 1988. All service stock has been inspected and found to be free of this problem.

If it is determined the blower wheel is causing this noise, remove and replace the wheel. There is no field repair of this component.

All claims should be made using Amana Parts Return Tag (A173-8) and summarized on Amana Parts Return Form (A290-2).

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: August 29, 1988

NO: PTAC-11

SUBJECT: Hydrocarbon Breakdown and Damage of Plastic PTAC Parts

A chemical attack on the polycarbonate material used in the manufacturing of the plastic grilles and escutcheons on the PTAC by hydrocarbons can cause the molecular breakdown of this plastic.

This results in splintering and breaking when the part is stressed. This stress can be either by physical or thermal tension.

The hydrocarbons causing this problem includes oils, grease, gasoline, kerosine, mayonaise, butter, etc.

While some hydrocarbons break down the molecular structure of the polycarbonate more rapidly than others, it is essential to clean the plastic by wiping with a soft, absorbant cloth or paper towel and then washing with a mild detergent as soon as possible. Even with the harshest hydrocarbons, if cleansed within fifteen minutes of the contamination, molecular damage will be avoided.

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

⚠ SAFETY NOTICE

TO: All Service Managers

DATE: January 22, 1988

NO: PTAC-10

SUBJECT: Safety Notice

This letter is to announce the new ⚠ Safety Notice Service Letter.

All letters of this type will be printed on yellow paper.

ALL SAFETY NOTICE LETTERS ARE TO BE READ IMMEDIATELY AND APPROPRIATE ACTION TAKEN AS REQUIRED.

RECOGNIZE SAFETY SYMBOLS, WORDS, AND LABELS

DANGER - Immediate hazards which WILL result in severe personal injury or death.

⚠ DANGER

WARNING - Hazards or unsafe practices which COULD result in injury or death.

⚠ WARNING

CAUTION - Hazards or unsafe practices which COULD result in minor personal injury or product or property damage.

⚠ CAUTION

SAFETY NOTICE LETTERS ARE NOT TO BE REPRODUCED. The yellow paper with black lettering is important in recognizing this as safety material. Additional quantities may be ordered from the Customer Service Publications Department, Amana, Iowa.

Amana V.I.P. SERVICE

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AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

"IMPORTANT SAFETY WARNING"

TO: All Service Managers

DATE: May 12, 1987

NO: PTAC-9

SUBJECT: POSSIBLE SHOCK HAZARD ON PTRCA1 AND PTRCB1 SERIES REMOTE CONTROL SUBBASES.

There is a possible severe shock hazard in models:

PTRC320A1	PTRC420A1	PTRC320B1	PTRC420B1
PTRC330A1	PTRC430A1	PTRC330B1	PTRC430B1

This shock hazard can occur with the above listed models of subbases when used in conjunction with 1986 and 1987 PTAC product utilizing off-cycle capacitance trickle heat. The hazard is present when the power cord is disconnected from the subbase receptacle without first disconnecting the crankcase heater connection. One pin of the power cord will be live.

To avoid exposure to line voltage, the crankcase heater connection must be disconnected before disconnecting the power cord.

When reconnecting the unit to the remote control subbase, first reconnect the power cord and then reconnect the crankcase heater connector.

A service update kit must be installed on all subbase models listed. The part number for the kit is R0156617. Attached is a copy of the detailed Instruction Sheet for your reference.

A parts return tag must be filled out for each unit modified.

Contact your local distributor for details on parts and labor reimbursement.

Attachment - R0158628

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: May 12, 1987

NO: PTAC-8

SUBJECT: "SHORT-CYCLING"

If short cycling in a unit is suspected of causing a high frequency of compressor overload and compressor failures, the following items should be checked or verified to eliminate the condition.

1. Is line voltage within tolerances at all periods of the day?
2. Is the unit's discharge air path obstructed by drapery or furniture causing recirculation?
3. Is the unit mounted in a wall sleeve without gasketing or fastening screws? This can cause drafts that can influence the thermostat sensing bulb.
4. Is the unit mounted directly under a drafty window?
5. Is the fresh air vent door open?
6. Is the unit properly sized for the application?

By checking and correcting the above items, short-cycling on the indoor thermostat should be eliminated.

If conditions exist where drafty installations cannot be corrected or fresh air vent doors cannot be closed, an Amana part number R0156615 thermostat bulb relocation kit may be installed. This kit involves relocating the indoor thermostat sensing bulb. The sensing bulb is relocated on the inside of the right hand side panel. A styrofoam enclosure allows the sensing bulb to only sense room air temperature through holes that you drill in the side panel prior to installation. Instructions, a template and styrofoam enclosure with the necessary mounting hardware is included in each kit.

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: April 29, 1987

NO: A-537
PTAC-7

SUBJECT: "FLAKING EVAPORATOR COILS" (ALUMINUM HYDROXIDE - WHITE DUST)

If environmental conditions exist where evaporator coils in PTAC/RAC Products produce aluminum hydroxide, (white dust) the following procedure will provide an effective means of resolving this problem.

1. Remove the front cover and evaporator deflector panel (PTAC).

2. Make sure the evaporator coil is clean and dry. If the unit has recently been operating in the cooling mode, turn on the resistance heat if available and allow the coil to dry. Blow off any excess dust with compressed air.

3. Cover the front of the coil with a cloth or filter material. Turn on the unit so that only the fan runs. This will blow the dust back out of the system. Turn the unit off and remove the cloth.

4. Using Amana Part Number R0156612 Silicone Resin Coating kit, spray the fins angling the can first to the left and then to the right so that both sides of the fins are coated.

5. Turn the unit on "fan only" to clear the system of solvents and propellants.

6. Turn the resistance heat on (if available) to burn off any excess silicone residue.

7. Reassemble the deflector panel and front cover. Run the unit long enough in the fan only or resistance heat mode to dry the coil thoroughly.

NOTE: There will be a slight odor present during the drying process.

CAUTION: Follow all ventilation and caution procedures outlined on the Silicone Resin Spray can.

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: September 3, 1986

NO: PTAC-6

SUBJECT: SOFT AND HARD START ASSEMBLIES

On 1986 PTAC Units utilizing off=cycle capacitance tricke-heat, start assist kits cannot be used. The result will be a damaged start assist capacitor and/or the device such as a soft-start assembly will not function. If it is found necessary to install such a device, the off-cycle trickle heat must be disconnected and a conventional crankcase heater must be installed.

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: August 28, 1986

NO: PTAC-5

SUBJECT: CONDITIONS THAT WILL CONTRIBUTE TO COMPRESSOR, COMPRESSOR OVERLOAD AND HEATER FAILURES ON PTC/PTH PRODUCT

It has been found that failure to check and correct the following listed conditions have contributed to failures on compressors, compressor overloads and heaters. These areas should be checked at the time of installation or service.

1. Low or High Voltage Conditions - This should be checked during normal and peak load/usage conditions. In addition, electrical load distribution in a complex should be balanced.

2. Room Layout - The curtains, tables, beds etc., should be checked to make sure that they do not obstruct the discharge air into the room. Such obstructions will cause re-circulation resulting in short-cyling of the indoor thermostat. If this condition exists, the refrigerant system will have inadequate time for pressure equalization.

3. Fresh-Air Vent Doors - The vent door on PTAC Models has been designed to meet some local code requirements for 60 cfm of fresh air. It has been found, under certain wind conditions, that this outdoor air can influence the room thermostat; when the indoor blower is off. This "influence" will result in a compressor short cycling condition. If this condition exists, the following is recommended:

    A. Either secure the vent door in a closed position and disconnect the actuator cable.

    B. Set the fan cycle switch in the ON Position so that the fan is on whenever the unit is on.

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: December 12, 1985

NO: PTAC-3

SUBJECT: PTAC EXPANSION VALVE ASSEMBLIES

It has been discovered that the D69746-2 Expansion Valve Assemblies will cause physical interference problems with the compressor terminal covers on all 12,000 Btuh 900 Series or PTH units. The D69746-2 assembly is also used on certain 15,000 Btuh units. In this application, no interference exists and the -2 assembly can be used.

Effective immediately, the D69746-2 assembly is no longer available and will sub to D69746-6. The D69746-6 assembly will reflect tubing routing changes to allow the assembly to be universally used as before.

As mentioned above, any D69746-2 assemblies you have in stock can be used for the 15,00 Btuh units identified in the installation instructions packaged with the assembly.

If the -2 assemblies were purchased for the intent of using them on the 12,000 Btuh units, you have the option of returning them to the factory for credit and then reorder the necessary quantity of the new D69746-6 assembly.

In emergency, the -2 assembly can be used on the 12,000 Btuh units with the understanding that any future compressor analysis requiring access of the compressor terminals will require careful bending of the assembly to allow access. Attached you will find a copy of the REV. 2 Installation instructions which accompany the assemblies. Please make note of the revisions referencing the new -6 assembly.

A34674-1 REV. 2 INSTALLATION INSTRUCTIONS FOR SERVICE REPLACEMENT EXPANSION VALVE ASSEMBLIES D69746-1, D69746-3, D69746-4, D69746-5 AND D69746-6

IMPORTANT: Before proceeding refer to the attached Service Replacement Expansion Valve Assembly List to determine that you have the correct assembly for the unit you are about to repair.

PROCEDURE

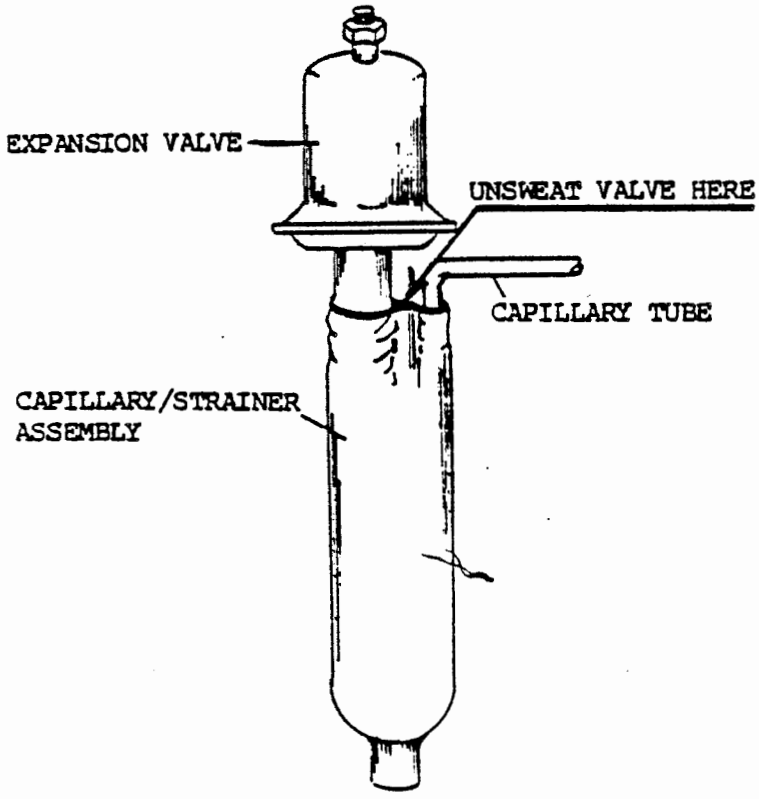
WARNING: SHUT OFF ELECTRICAL POWER SUPPLY TO UNIT.

1. Remove unit from wall sleeve.
2. Remove rear Top Cover Panel.
3. Purge refrigerant charge slowly from the system at process tubes.
4. Unsweat connection at capillary/strainer location as shown in Illustration "A".

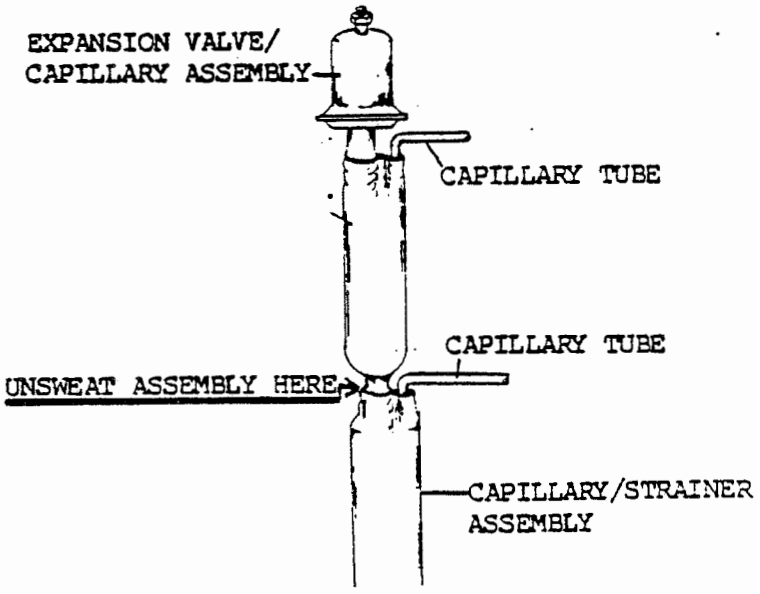
NOTE: To prevent possible restricting or plugging with brazing material extreme care must be used not to disturb the existing capillary tube to strainer connection. If capillary is unsweat and/or raises up, remove it from the strainer opening, clean and reinsert and rebraze it in place at the same time as replacement valve/capillary assembly is installed and brazed.

EARLY PRODUCTION UNITS

ILLUSTRATION "A"



LATE PRODUCTION UNITS



5. Position the replacement valve assembly in the unit and mark the location where the tube to the indoor coil must be cut. Using a tube cutter roll cut the tube and prepare the tube for brazing.

6. Place the replacement valve assembly in the existing capillary/strainer assembly and install swedged tube on unit tube prepared in step #5.

7. Check allignment of all tubes to avoid rubbing against compressor, cabinet side (or) top panels. Failure to do so could result in noisy operation and eventual leaks.

8. Prepare new process tubes (if required) and then braze all joints.

9. Evacuate, leak check and charge the system with the correct refrigerant charge as stated on data plate of unit.

10. Install cabinet top panel(s).

11. Install unit in wall sleeve and restore electrical power to the unit.

12. Check operation and performance of the unit in both the heating and cooling mode.

SERVICE REPLACEMENT EXPANSION VALVE ASSEMBLY APPLICATION LIST

ASSEMBLY NUMBER	MODEL USED ON
D69746-1	All 9,000 BTUH Models except those Manufacturing Numbers listed under assembly D69746-4.
D69746-6	All 12,000 BTUH Models. Also 15,000 BTUH Models with the following Manufacturing Numbers: P69003-5R, -6R, -17R, -43R, -44R, -45R P68495-21R through 24R P68922-9R through -12R P69271-9R through -12R, -24R, -30R P69628-9R P69632-11R through -15R P68413-12R, -13R
D69746-3	All 15,000 BTUH Models except those listed under assemblies D69746-2 and -5.
D69746-4	9,000 BTUH Models with the following Mfg. Numbers: P69003-30R through -35R P69632-1R through -5R, -16R through -19R P69628-7R, -10R
D69746-5	15,000 BTUH Models with the following Mfg. Numbers: P69003-36R, -37R, -38R P69632-24R through -27R P69628-12R

MODEL IDENTIFICATION

TYPICAL MODEL NUMBER - 9 12 3 H E 3.5 A

- Series Designation
- 12,000 BTUH Cooling
- 208/230 Volt
  "4" = 265 Volt
- Reverse Cycle Heat Pump
- Electric Resistance Heat
- 3.5 KW Electric Heat
- Design Level

TYPICAL MODEL NUMBER - PT HA 090 1 G F

- Package Terminal
- Heat Pump
- 9,000 BTUH Cooling
- 208/230 Volt
  "2" = 265 Volt
  "3" = 50 HZ
- Size Of Electric Heat
- Design Level

TYPICAL MODEL NUMBER - PT H 12 - 3 3.5 B

- Package Terminal
- Heat Pump
- 12,000 BTUH Cooling
- 208/230 Volt
  "4" = 265 Volt
  "5" = 50 HZ
- 3.5 KW Electric Heat
- Design Level

Amana V.I.P SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: All Service Managers

DATE: October 11, 1985

NO: PTAC-2A

SUBJECT: EXPANSION VALVE ASSEMBLIES FOR PTAC HEAT PUMP UNITS

Attached are sample installation/application instructions for 900 Series/PTH expansion valve assemblies.

The new assemblies, part numbers D69746-1 through -5 will replace the obsolete or current part numbers C61210-4 through -14 expansion valves. On page (3) three of the attached is an application list to aid you in ordering the appropriate replacement.

As soon as the new expansion valve assemblies are available, the C61210-4 through -14 will no longer be available. Once the new assembly is installed, if service or replacement of any of the components in the new assembly becomes necessary, parts will be made available as piece items.

A34674-1 INSTALLATION INSTRUCTIONS FOR SERVICE REPLACEMENT EXPANSION VALVE ASSEMBLIES D69746-1, D69746-2, D69746-3, D69746-4 AND D69746-5

IMPORTANT: Before proceeding refer to the attached Service Replacement Expansion Valve Assembly List to determine that you have the correct assembly for the unit you are about to repair.

PROCEDURE

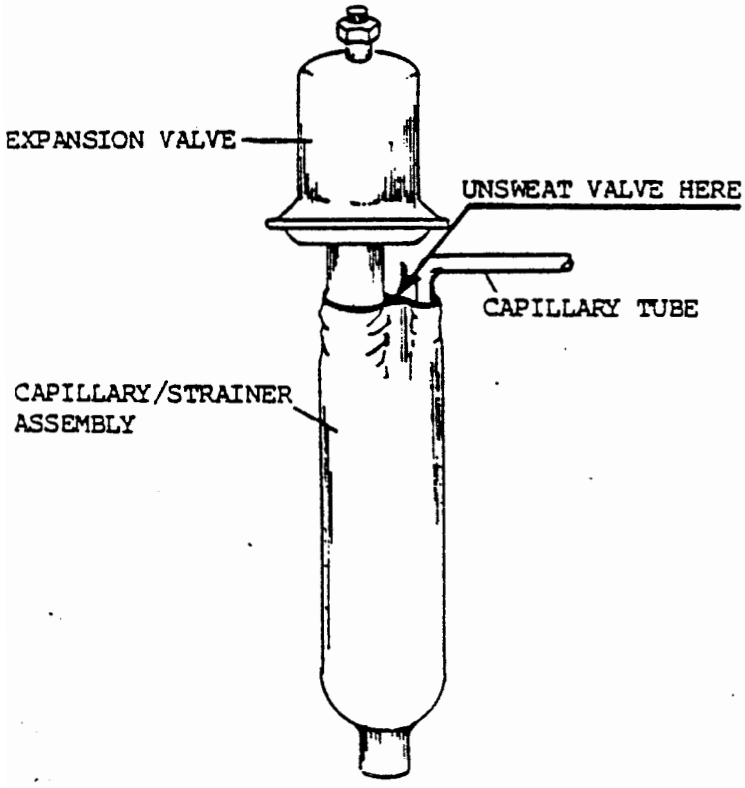
WARNING: SHUT OFF ELECTRICAL POWER SUPPLY TO UNIT.

1. Remove unit from wall sleeve.
2. Remove rear Top Cover Panel.
3. Purge refrigerant charge slowly from the system at process tubes.
4. Unsweat connection at capillary/strainer location as shown in Illustration "A".

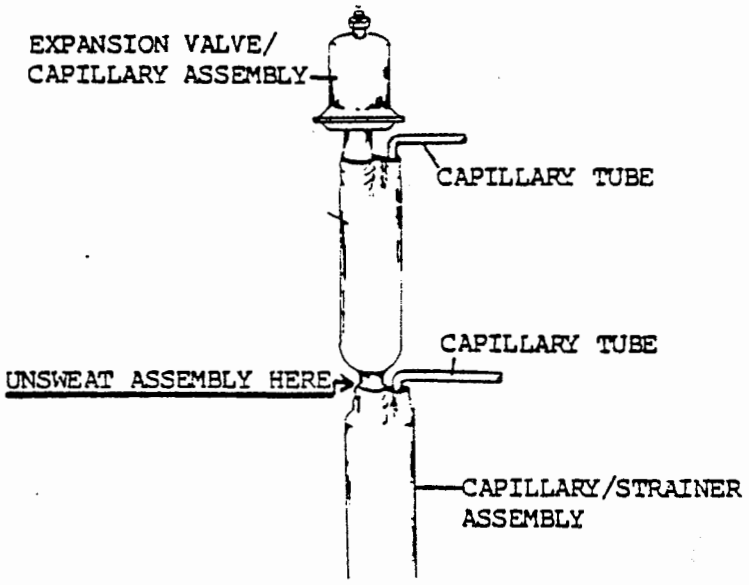
NOTE: To prevent possible restricting or plugging with brazing material extreme care must be used not to disturb the existing capillary tube to strainer connection. If capillary is unsweat and/or raises up, remove it from the strainer opening, clean and reinsert and rebraze it in place at the same time as replacement valve/capillary assembly is installed and brazed.

EARLY PRODUCTION UNITS

ILLUSTRATION "A"



LATE PRODUCTION UNITS



5. Position the replacement valve assembly in the unit and mark the location where the tube to the indoor coil must be cut. Using a tube cutter roll cut the tube and prepare the tube for brazing.

6. Place the replacement valve assembly in the existing capillary/strainer assembly and install swedged tube on unit tube prepared in step #5.

7. Check allignment of all tubes to avoid rubbing against compressor, cabinet side (or) top panels. Failure to do so could result in noisy operation and eventual leaks.

8. Prepare new process tubes (if required) and then braze all joints.

9. Evacuate, leak check and charge the system with the correct refrigerant charge as stated on data plate of unit.

10. Install cabinet top panel(s).

11. Install unit in wall sleeve and restore electrical power to the unit.

12. Check operation and performance of the unit in both the heating and cooling mode.

SERVICE REPLACEMENT EXPANSION VALVE ASSEMBLY APPLICATION LIST

ASSEMBLY NUMBER	MODEL USED ON
D69746-1	All 9,000 BTUH Models except those Manufacturing Numbers listed under assembly D69746-4.
D69746-2	All 12,000 BTUH Models. Also 15,000 BTUH Models with the following Manufacturing Numbers: P69003-5R, -6R, -17R, -43R, -44R, -45R P68495-21R through 24R P68922-9R through -12R P69271-9R through -12R, -24R, -30R P69628-9R P69632-11R through -15R P68413-12R, -13R
D69746-3	All 15,000 BTUH Models except those listed under assemblies D69746-2 and -5.
D69746-4	9,000 BTUH Models with the following Mfg. Numbers: P69003-30R through -35R P69632-1R through -5R, -16R through -19R P69628-7R, -10R
D69746-5	15,000 BTUH Models with the following Mfg. Numbers: P69003-36R, -37R, -38R P69632-24R through -27R P69628-12R

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MODEL IDENTIFICATION

TYPICAL MODEL NUMBER - 9 12 3 H E 3.5 A

- Series Designation
- 12,000 BTUH Cooling
- 208/230 Volt
  "4" = 265 Volt
- Reverse Cycle Heat Pump
- Electric Resistance Heat
- 3.5 KW Electric Heat
- Design Level

TYPICAL MODEL NUMBER - PT HA 090 1 G F

- Package Terminal
- Heat Pump
- 9,000 BTUH Cooling
- 208/230 Volt
  "2" = 265 Volt
  "3" = 50 HZ
- Size Of Electric Heat
- Design Level

TYPICAL MODEL NUMBER - PT H 12 - 3 3.5 B

- Package Terminal
- Heat Pump
- 12,000 BTUH Cooling
- 208/230 Volt
  "4" = 265 Volt
  "5" = 50 HZ
- 3.5 KW Electric Heat
- Design Level

Amana V.I.P. SERVICE

AMANA REFRIGERATION, INC. • AMANA, IOWA 52204

SERVICE LETTER

TO: ALL SERVICE MANAGERS

DATE: July 26, 1985

NO: PTAC-1
(Supercedes CAG-313)

SUBJECT: ALL 900 SERIES PTAC HEAT PUMP UNITS:

A. CHANGE OVER CONTROL PROPER OPERATION.
B. COMPRESSOR REPLACEMENT.
C. EXPANSION VALVE REPLACEMENT.

A. CHANGE OVER CONTROL PROPER OPERATION:

The change over control is designed to terminate operation of the reverse cycle heat pump mode, and change over to the resistant heat mode of operation. This occurs at an outdoor ambient temperature of approximately 44°F and/or outdoor coil temperature of approximately 25° ± 2°F. The unit will remain in the resistant heat mode of operation until the outdoor ambient temperature of approximately 48°F is reached, at which time the unit will again switch to the heat pump mode of operation.

If the unit fails to change the mode of operation as required, frosted or iced coils could result, along with short cycling of the compressor.

CHECK THE FOLLOWING:

1. Check if bulb well is soldered properly to the outdoor coil return bends.

2. Be sure sufficient thermal mastic has been used in the bulb well to assure good thermal transfer. It is necessary that the bulb well be filled with R1650-13 thermal mastic so that upon insertion of the sensor bulb, the mastic will ooze from the bulb well opening.

3. The change over control bulb must be inserted in the bulb well to its limit and the bulb well crimped at the opening to prevent the sensor bulb from backing out of the well.

4. Be sure that the insulating material completely surrounds the exterior of the bulb well so that ambient air does not affect the well.

5. Should the unit still not operate properly after checking items 1 through 4, install a new C61684-3 change over control using same techniques as outlined in steps 1 through 4.

B. COMPRESSOR REPLACEMENT:

Should compressor failure occur on a 900 Series heat pump unit, check to see if the compressor has a crankcase heater. If not, one should be installed on the replacement compressor.

(CONTINUED)

B. COMPRESSOR REPLACEMENT (CONTINUED)

Use crankcase heater service assembly part numbers R1573-69 for 208/230 volt units, or R1573-68 for 265 volt units. Also, if a check valve is not installed in the system, one must be installed. See below for check valve installation details.

This will improve system operation and reliability.

C. EXPANSION VALVE REPLACEMENT AND CHECK VALVE PLACEMENT:

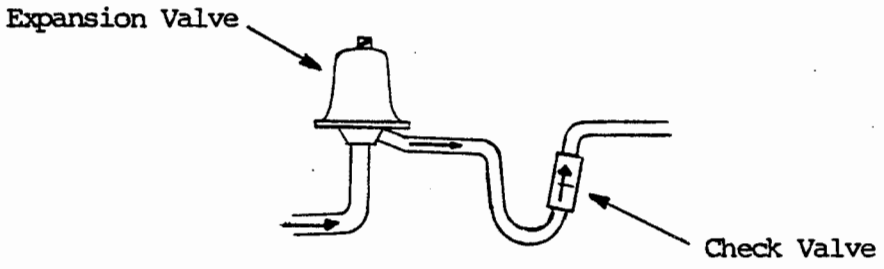
Should an expansion valve require replacement, a part number B13551-1 check valve is to be installed.

Install the check valve in the refrigerant line between the expansion valve outlet and the indoor coil. In most instances, the check valve can be installed in the line adjacent to the expansion valve outlet.

It is preferable that the check valve be installed in a slightly off vertical position with the arrow pointing up.

Be sure the arrow on the check valve is pointing away from the expansion valve for the proper refrigerant flow direction. This allows the check valve to open when refrigerant flows out the expansion valve through the check valve and into the indoor coil when the unit is operating in the cooling mode.

CHECK VALVE PLACEMENT/POSITION



NOTE: Arrow must point up and be directed to the indoor coil. Also, position approximately 10° off vertical.

ALUMINUM COIL CLEANING APPROVED CLEANERS' LIST

TECHNICAL PUBLICATION
TP-109B
August 2016

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

⚠ WARNING

HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



ALUMINUM INDOOR COIL CLEANING (QUALIFIED SERVICER ONLY)

For units equipped with an aluminum tube evaporator coil, the safest way to clean the coil is to simply flush the coil with water. This cleaning practice remains as the recommended cleaning method for both copper tube an aluminum tube residential evaporator coils.

It has been determined that many coil cleaners and drain pan tablets contain corrosive chemicals that can be harmful to aluminum tube and fin evaporator coils. Even a one-time application of these corrosive chemicals can cause premature aluminum evaporator coil failure. Any cleaners that contain corrosive chemicals including, but not limited to, chlorine and hydroxides, should not be used.

An alternate cleaning method is to use one of the products listed below to clean the coils. The cleaners listed are the only agents deemed safe and approved for use to clean round tube aluminum coils. TP-109* is also available on the web site in Partner Link > Service Toolkit.

NOTE: Ensure coils are rinsed well after use of any chemical cleaners.

Approved Coil Cleaners

Manufacturer	Trade Name	Product #
Atlantic Chemical, ACE	Evap-Klean Plus	FEK-32
Atlantic Chemical, ACE	Eco-Kleen	EKC-1
Atlantic Chemical, ACE	Eco-Kleen	EKC-32
Atlantic Chemical, ACE	Eco-Power	EKP-1
Atlantic Chemical, ACE	Foaming Coil Cleaner	FCA
Diversitech	Eco-Coil	ECO-COIL
Nu-Calgon	Evap-Green	4191-08 (41910)
Quest Vapco	Greenscapes	2720
Rectorseal	Foam-A-Coil	82632
Rectorseal	Clean-N-Safe	83780
Simple Green	Extreme Simple Green	13412, 13406, 13405

Approved Pan Tabs

Manufacturer	Trade Name	Product #
Nu-Calgon	PurCool Tablets	61053 or PC200
RectorSeal	Nu Line	97690

This publication provides a list of the only approved cleaners recommended to clean evaporator coils.
Any cleaner not contained in the above chart should not be used.
Contact Technical Services for variations or applications outside those outlined in this document.

LONG LINE SET
APPLICATION R-410A

TECHNICAL PUBLICATION
TP-108B

This guideline is meant to provide installation instructions based on most common long line set applications. Installation variables may affect the system operation.

Contact Technical Services for variations or applications outside those outlined in this document.

INDEX

SECTION 1. General Requirements for All Long Line Set Applications 2
SECTION 2. Outdoor Unit and Indoor Unit are at the Same Elevation 4
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SECTION 4. Outdoor Unit is Below the Indoor Unit 5
SECTION 5. Calculations - Tubing Equivalent Length, Tube Size and Refrigerant 6

Attention Installing Personnel

As a professional installer, you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

⚠ WARNING

ONLY PERSONNEL THAT HAVE BEEN TRAINED TO INSTALL, ADJUST, SERVICE OR REPAIR (HEREINAFTER, "SERVICE") THE EQUIPMENT SPECIFIED IN THIS MANUAL SHOULD SERVICE THE EQUIPMENT. THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU SERVICE THIS UNIT, YOU ASSUME RESPONSIBILITY FOR ANY INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. IN ADDITION, IN JURISDICTIONS THAT REQUIRE ONE OR MORE LICENSES TO SERVICE THE EQUIPMENT SPECIFIED IN THIS MANUAL, ONLY LICENSED PERSONNEL SHOULD SERVICE THE EQUIPMENT. IMPROPER INSTALLATION, ADJUSTMENT, SERVICING OR REPAIR OF THE EQUIPMENT SPECIFIED IN THIS MANUAL, OR ATTEMPTING TO INSTALL, ADJUST, SERVICE OR REPAIR THE EQUIPMENT SPECIFIED IN THIS MANUAL WITHOUT PROPER TRAINING MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

NOTES:

- Units must be installed in accordance with Regulations of the National Fire Protection Association and applicable local codes. Where local regulations are at a variance with instructions, installer should adhere to local codes.
- Before connecting tubing, read the outdoor unit installation manual. Pay particular attention to all safety precautions.

DESCRIPTION

This long line set application guideline applies to all AHRI listed R-410A air conditioner and heat pump split system matches of nominal capacity 90,000 and 120,000 Btuh. This guideline will cover installation requirements and additional accessories needed for split system installations where the line set exceeds 80 feet in actual length. The long line sets can have three different configurations (1) Outdoor unit and Indoor unit are at the same level, (2) Outdoor unit is above the Indoor unit coil, (3) Outdoor unit is below the Indoor unit.

SECTION 1. GENERAL REQUIREMENTS FOR ALL LONG LINE SET APPLICATIONS

1. Equivalent length must be used to determine acceptability of any long line set application. See Section 5 for equivalent length calculations.

2. **Commercial split systems long line set applications must use 5/8" liquid line.**
Limiting the liquid line size to 5/8" is critical since an increased refrigerant charge level from having a larger liquid line could possibly shorten a compressor's life-span.

3. Most refrigerant tubing kits are supplied with 3/8" thick insulation on the suction line. For long line installations over 80 feet, if the line set passes through a high ambient temperature zone, 1/2" thick suction line insulation is required to reduce loss of capacity. The liquid line must be insulated if more than 50 feet of liquid line will pass through an area that might reach temperatures of 30°F or higher than outdoor ambient. Never attach a liquid line to any uninsulated portion of the suction line.

4. Use of a thermostatic expansion valve (TXV) is required in all long line set applications. Unit must be charged to 7 to 9 ºF subcooling at the indoor unit.

5. Maximum equivalent length of line set is:
   - 250 feet for single stage units with scroll compressors.
   - 200 feet for two stage units with scroll compressors

6. Maximum linear length of line set is:
   - 200 feet for single stage units with scroll compressors.
   - 150 feet for two stage units with scroll compressors

7. **Low voltage wiring.** Verify low voltage wire gauge is adequate for the length used due to increased line set application.

8. **Vibration and Noise:** In long line applications, refrigerant tubing is highly prone to transmit noise and vibration to the adjoining structure. Use adequate vibration-isolating hardware when mounting line set to structural members. See Figures 1-1, 1-2 and 1-3 for example of proper mounting.

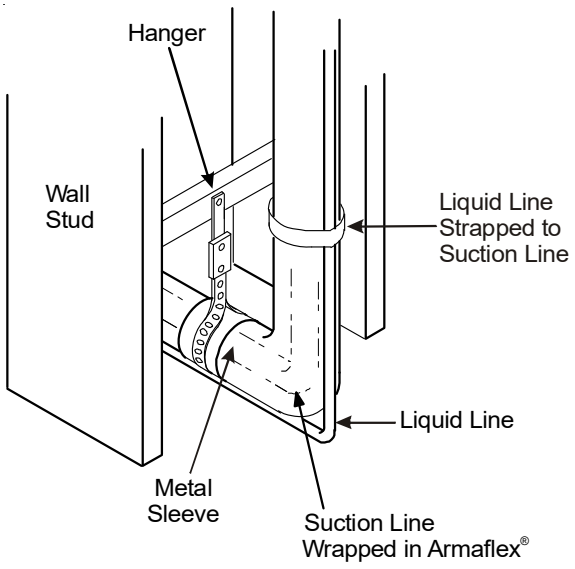


Figure 1-1.
Installation of Refrigeration Piping From Vertical to Horizontal

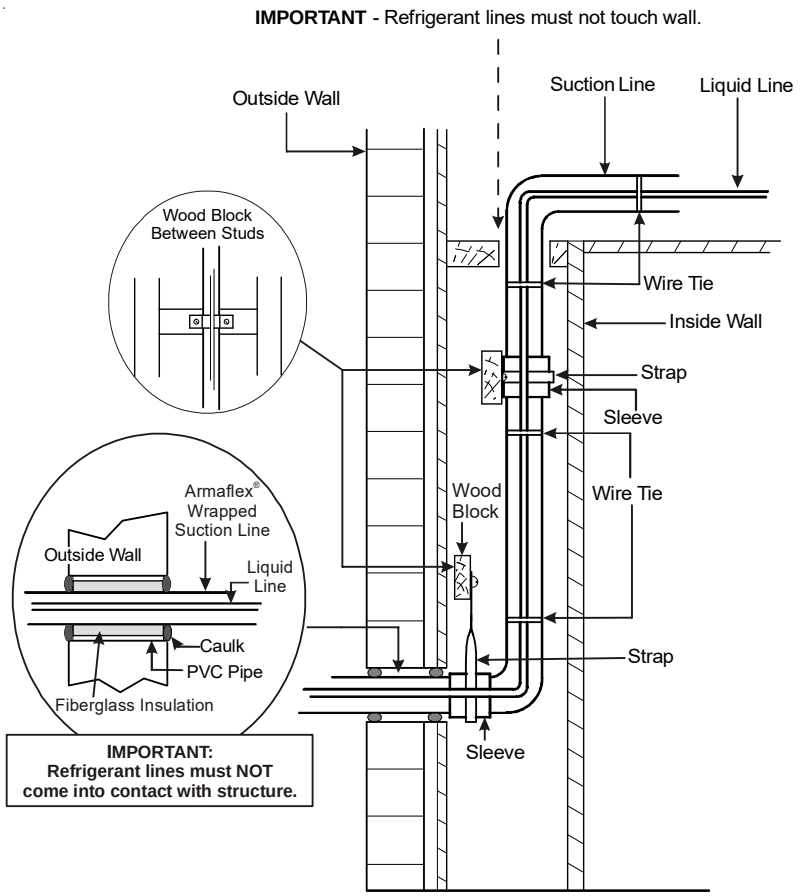


Figure 1-2. Installation of Refrigerant Piping (Vertical)

New construction shown

NOTE: If line set is installed on the exterior of an outside wall, similar installation practices are to be used.

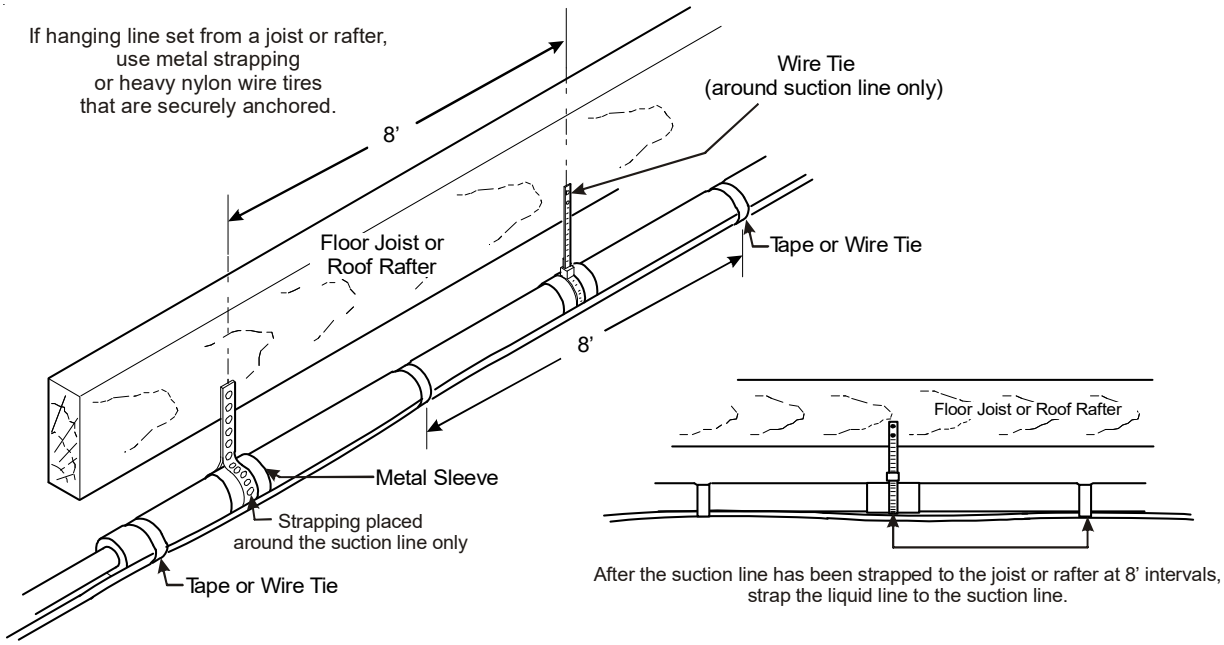


Figure 1-3. Installation of Refrigerant Piping (Horizontal)

9. **Final Charge Adjustment.** All units must have refrigerant charge verified by proper adjustment of subcooling at the indoor unit after initial charge adjustment per Section 5. Proper adjustment means pressure and temperature of the liquid line at the indoor unit must be measured to calculate subcooling at the indoor unit. If subcooling at the indoor unit is less than 5°F, then additional refrigerant must be added until this subcooling level is achieved. If subcooling at the indoor unit is more than 7°F, then refrigerant must be removed until this subcooling level is achieved.

SECTION 2. OUTDOOR UNIT AND INDOOR UNIT ARE AT THE SAME ELEVATION

Accessory	Air Conditioner (AC)	Heat Pump (HP)
Crankcase Heater *(40 watts minimum)*	Yes	Yes
TXV (Indoor)	Yes	Yes
Liquid Line Solenoid at Outdoor (Kit # LSK03*)	No	No
Inverted Refrigerant Trap at Indoor	No	No
Oil Trap at Indoor	No	No

1. In a completely horizontal installation with a long line set where the indoor unit is at the same altitude as (or slightly below) the outdoor unit, the line set should be sloped continuously towards the indoor unit. This helps reduce refrigerant migration to the outdoor unit during a system's off-cycle.
2. The maximum elevation (vertical) difference for this section to be applicable is 10 feet separation between outdoor unit and indoor unit. If outdoor unit is more than 10 feet above indoor unit use Section 3. If outdoor unit is more than 10 feet below indoor unit use Section 4.
3. Inverted suction loop is not required at either unit.
4. An accumulator is not required for air conditioners (accumulators are factory installed on heat pumps).
5. An oil trap at the indoor unit is not required.

SECTION 3. OUTDOOR UNIT IS ABOVE THE INDOOR UNIT

Accessory	Air Conditioner (AC)	Heat Pump (HP)
Crankcase Heater *(40 watts minimum)*	Yes	Yes
TXV (Indoor)	Yes	Yes
Liquid Line Solenoid at Outdoor (Kit # LSK03*)	No	No
Inverted Refrigerant Trap at Indoor	No	No
Oil Trap at Indoor	Yes**	Yes**

**An oil trap at the indoor unit is required if the elevation difference exceeds 80'. The trap can be constructed of standard refrigerant fitting (See Figure 3-1.)

1. Suction line must be sloped continuously towards the indoor unit.
2. The maximum elevation (vertical) difference between the outdoor unit and indoor unit is:
   a. not restricted in this configuration for single stage air conditioning units (must adhere to maximum equivalent length).
   b. 80 feet for single stage heat pump units.
   c. 25 feet for two stage units.
3. Inverted suction loop is not required at either unit.
4. An accumulator is not required for air conditioners (accumulators are factory installed on heat pumps).

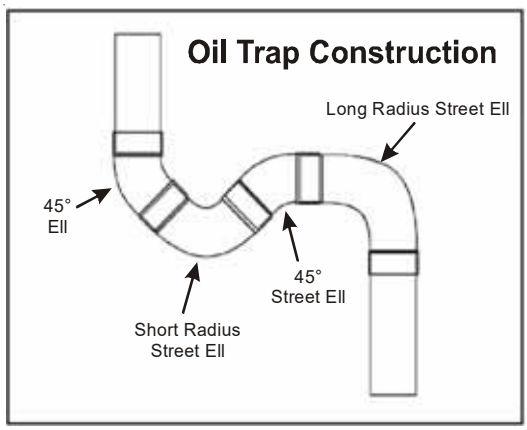


Figure 3-1. Oil Trap

SECTION 4. OUTDOOR UNIT IS BELOW THE INDOOR UNIT

Accessory	Air Conditioner (AC)	Heat Pump (HP)
Crankcase Heater *(40 watts minimum)*	Yes	Yes
TXV (Indoor)	Yes	Yes
Liquid Line Solenoid at Outdoor (Kit # LSK03*)	Yes	No
Inverted Refrigerant Trap at Indoor	Yes	Yes
Oil Trap at Indoor	No	No

1. The maximum elevation (vertical) difference between the outdoor unit and the indoor unit is 80 feet.
2. Suction line must be installed in a manner to prevent liquid migration to the outdoor unit from the indoor unit (see following note 3).
3. An inverted suction line trap must be installed on the suction line just before the inlet to the indoor unit (see Figure 4-1). The top of the inverted loop must be slightly above the top of the indoor unit coil and can be created simply by brazing two 90° long radius elbows together if a bending tool is unavailable. Properly support and secure the inverted loop to the nearest point on the indoor unit or adjacent structure.
4. An accumulator is required to be added (external to the outdoor unit, within 2 linear feet of the outdoor unit) for air conditioning installations. Use Goodman part number B1226212. Adapter fittings at the accumulator connection may be required. Do NOT install an accumulator in the suction line set in heat pump applications.

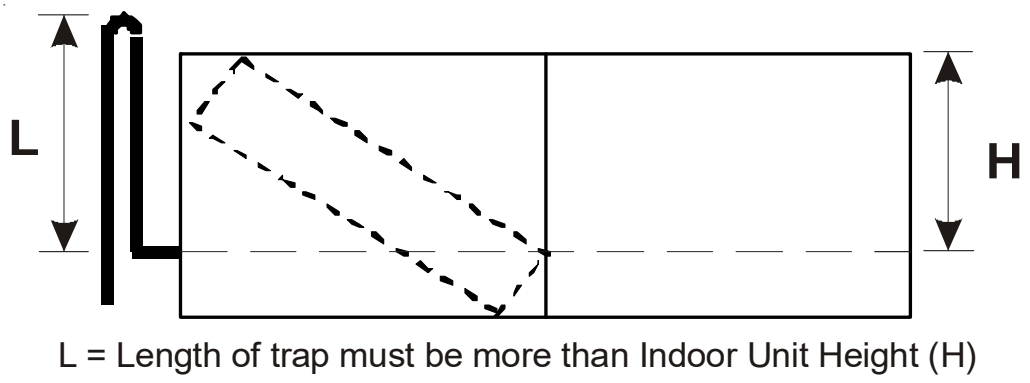


Figure 4-1. Indoor Unit with Inverted Suction

SECTION 5. CALCULATIONS - TUBING EQUIVALENT LENGTH, TUBE SIZE AND REFRIGERANT

1. In long line applications the "equivalent line length" is the sum of the straight length portions of the suction line plus losses (in equivalent length) from 45 and 90 degree bends. Add the total straight (lineal) length of tubing to the equivalent length of elbows and bends to get total equivalent length.

$$\text{Equivalent length} = \text{Length}_{\text{Horizontal}} + \text{Length}_{\text{Vertical}} + \text{Losses from bends (see Table 5-1)}$$

2. Table 5-1 lists the equivalent length gained from adding bends to the suction line. Properly size the suction line to minimize capacity loss.

Type of Elbow Fitting	Inside Diameter (inches)		
	1 1/8	1 3/8	1 5/8
90° short radius	2.6	3.3	4.0
90° long radius	1.7	2.3	2.6
45°	1.3	1.7	2.1

Table 5-1. Losses from suction line elbows (equivalent length, ft.)

EXAMPLE: 1-1/8" suction line using 1-1/8" elbows

150 feet of straight tubing + (four short radius elbows x 2.6) + (2 long radius elbows x 2.3) =
150 + 10.4 + 4.6 = 165 equivalent feet

3. Table 5-2 lists multiplier values to recalculate system cooling capacity as a function of a system's equivalent line length (as calculated from the suction line) and the selected suction tube size.

NOTE: Select the proper suction tube size based on equivalent length of the suction line (see Tables 5-1 and 5-2) and recalculated system capacity.

		Capacity Multiplier for Equivalent Length (ft)									
Unit (Nom. BTU/hr)	Suction Dia (in)	25	50	75	100	125	150	175	200	225	250
90000	7/8	0.98	0.96	0.94	0.91	0.90	0.88	0.86	0.84	0.82	0.81
	1-1/8	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91
	1-3/8	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.95	0.95
120000	1-1/8	0.99	0.97	0.94	0.92	0.91	0.89	0.87	0.85	0.84	0.82
	1-3/8	1.00	0.98	0.97	0.96	0.94	0.93	0.92	0.90	0.89	0.88
	1-5/8	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91

Table 5-2. Capacity Multipliers

[1] Equivalent length is to be used for capacity multiplier reduction.

4. **Refrigerant Quantity Adjustment.** Commercial units are shipped with a holding charge of R410A from the factory. Charge the unit per the installation instructions.

5151 San Felipe, Suite 500, Houston, TX 77056
Visit our website at www.daikincomfort.com or www.goodmanmfg.com

LONG LINE SET APPLICATION R-410A

TECHNICAL PUBLICATION
TP-107M
Goodman Manufacturing Company, L.P.

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- Only allow qualified, experienced technicians to install or service this unit.
- Units must be installed in accordance with Regulations of the National Fire Protection Association and applicable local codes. Where local regulations are at a variance with instructions, installer should adhere to local codes.
- Before connecting tubing, read the outdoor unit installation manual. Pay particular attention to all safety precautions.

ATTENTION INSTALLING PERSONNEL

- As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.
- Prior to actual installation, thoroughly familiarize yourself with these guidelines.
- Pay special attention to all safety warnings posted on the equipment. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.
- Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.
- Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety pratices...follow them.
- The precautions listed in this Technical Publication are intended as supplemental to existing Installation and Operation (IO) Manual practices. However, if there is a direct conflict between existing IO practices and the content of this manual, the precautions listed here take precedence.

This long line set application guideline applies to all AHRI listed R-410A air conditioner and heat pump split system matches of nominal capacity 18,000 to 60,000 Btuh. This guideline will cover installation requirements and additional accessories needed for split system installations where the line set exceeds 80 feet (24.4 m) in actual length. The long line sets can have three different configurations (1) Outdoor unit and Indoor unit are at the same level, (2) Outdoor unit is above the Indoor unit coil, (3) Outdoor unit is below the Indoor unit.

This guideline is meant to provide installation instructions based on most common long line set applications. Installation variables may affect the system operation.

Contact Technical Services
for variations or applications outside those outlined in this document.

SECTION 1. GENERAL REQUIREMENTS FOR ALL LONG LINE SET APPLICATIONS

1. Equivalent length must be used to determine acceptability of any long line set application. See Section 5 for equivalent length calculations.
2. **For any residential split system installed with a long line set, 3/8" liquid line size must be used.** Limiting the liquid line size to 3/8" is critical since an increased refrigerant charge level from having a larger liquid line could possibly shorten a compressor's life-span.
    a. Exceptions for air conditioning (cooling only) applications, 1/4" liquid line may be used in:
        i. 1.5 ton applications for up to 100 equivalent feet (30.5 equivalent meters) with maximum 40' (12.2 m) vertical lift
        ii. 2.0 ton applications for up to 75 equivalent feet (22.9 equivalent meters) with maximum 20' (6.1 m) vertical lift
    b. Exceptions for air conditioning (cooling only) applications, 5/16" liquid line may be used in:
        i. 1.5 ton applications for up to 250 equivalent feet (76.2 equivalent meters) with maximum 60' (18.3 m) vertical lift
        ii. 2.0 ton applications for up to 200 equivalent feet (61.0 equivalent meters) with maximum 40' (12.2 m) vertical lift
        iii. 2.5 ton applications for up to 175 equivalent feet (53.3 equivalent meters) with maximum 30' (9.1 m) vertical lift
3. Most refrigerant tubing kits are supplied with 3/8" (9.5 mm) thick insulation on the suction line. For long line installations over 80 feet (24.4 m) , if the line set passes through a high ambient temperature zone, 1/2" (12.7 mm) thick suction line insulation is required to reduce loss of capacity. The liquid line must be insulated if more than 50 feet (15.2 m) of liquid line will pass through an area that might reach temperatures of 30°F or higher than outdoor ambient. Never attach a liquid line to any uninsulated portion of the suction line.
4. A crankcase heater must be installed on *any* compressor (if crankcase heater is not already factory installed).
5. Hard start assist kit is required.
6. Use of a thermostatic expansion valve (TXV) is required in all long line set applications. Unit must be charged to 7 to 9 ºF subcooling at the indoor unit.
7. Maximum equivalent length of line set is:
    a. 250 feet (76.2 m) for single stage units with scroll or reciprocating compressors.
    b. 150 feet (45.7 m) for single stage units with rotary compressors.
    c. 150 feet (45.7 m) for two stage units.
8. Maximum linear length of line set is:
    a. 200 feet (61.0 m) for single stage units with scroll or reciprocating compressors.
    b. 150 feet (45.7 m) for single stage units with rotary compressors.
    c. 150 feet (45.7 m) for two stage units.
9. **Low voltage wiring.** Verify low voltage wire gauge is adequate for the length used due to increased line set application.
10. **Vibration and Noise:** In long line applications, refrigerant tubing is highly prone to transmit noise and vibration to the adjoining structure. Use adequate vibration-isolating hardware when mounting line set to structural members. See Figures 1-1, 1-2 and 1-3 for example of proper mounting.

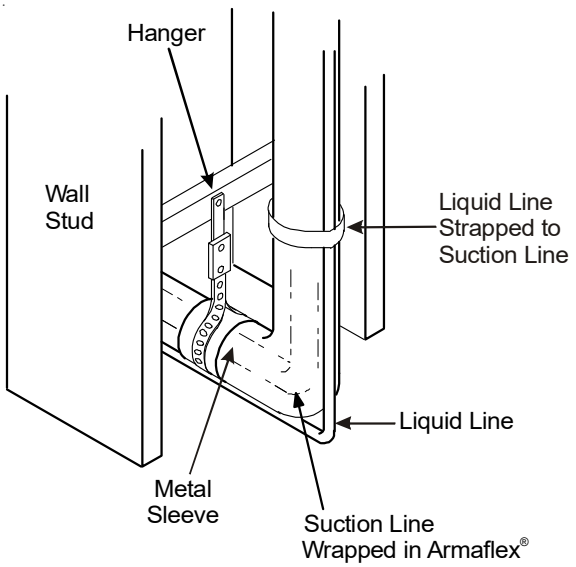


Figure 1-1.
Installation of Refrigeration Piping From Vertical to Horizontal

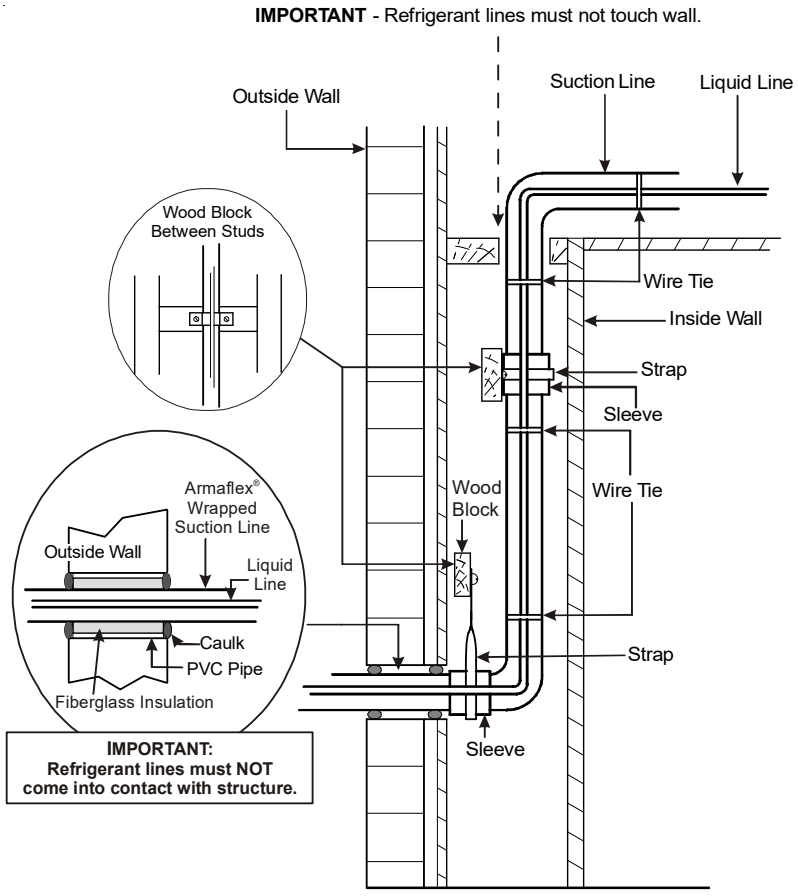


Figure 1-2. Installation of Refrigerant Piping (Vertical)

New construction shown

NOTE: If line set is installed on the exterior of an outside wall, similar installation practices are to be used.

Figure 1-3. Installation of Refrigerant Piping (Horizontal)

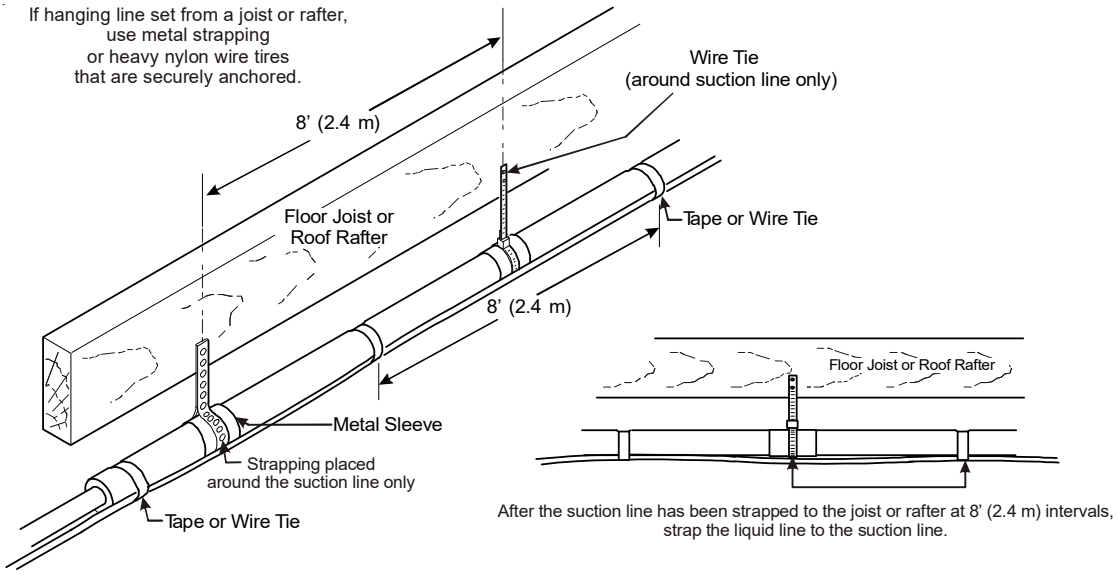


Figure 1-3. Installation of Refrigerant Piping (Horizontal)

11. **Heat Pump Application Only.** Liquid line solenoid must be installed less than 2 feet (61cm) from the outdoor unit following the solenoid supplier information for installation.

12. **Heat Pump Application Only.** Heating piston change (in the outdoor unit) is not required.

13. **Final Charge Adjustment.** All units must have refrigerant charge verified by proper adjustment of subcooling at the indoor unit after initial charge adjustment per Section 5. Proper adjustment means pressure and temperature of the liquid line at the indoor unit must be measured to calculate subcooling at the indoor unit. If subcooling at the indoor unit is less than 7°F, then additional refrigerant must be added until this subcooling level is achieved. If subcooling at the indoor unit is more than 9°F, then refrigerant must be removed until this subcooling level is achieved.

SECTION 2. OUTDOOR UNIT AND INDOOR UNIT ARE AT THE SAME ELEVATION

Accessory	Air Conditioner (AC)	Heat Pump (HP)
Crankcase Heater *(40 watts minimum)*	Yes	Yes
Hard Start Assist	Yes *(See manual for each product)*	Yes *(See manual for each product)*
TXV (Indoor)	Yes	Yes
Liquid Line Solenoid at Outdoor (Kit # LSK02*)	No	Yes *See Note 6
Inverted Refrigerant Trap at Indoor	No	No
Oil Trap at Indoor	No	No

1. In a completely horizontal installation with a long line set where the indoor unit is at the same altitude as (or slightly below) the outdoor unit, the line set should be sloped continuously towards the indoor unit. This helps reduce refrigerant migration to the outdoor unit during a system's off-cycle.

2. The maximum elevation (vertical) difference for this section to be applicable is 10 feet (3.0 m) separation between outdoor unit and indoor unit. If outdoor unit is more than 10 feet (3.0 m) above indoor unit use Section 3. If outdoor unit is more than 10 feet (3.0 m) below indoor unit use Section 4.

3. Inverted suction loop is not required at either unit.

4. An accumulator is not required for air conditioners (accumulators are factory installed on heat pumps).
5. An oil trap at the indoor unit is not required.
6. Liquid Line Solenoid not required if non-bleed TXV is used on the outdoor unit.

SECTION 3. OUTDOOR UNIT IS ABOVE THE INDOOR UNIT

Accessory	Air Conditioner (AC)	Heat Pump (HP)
Crankcase Heater *(40 watts minimum)*	Yes	Yes
Hard Start Assist	Yes *(See manual for each product)*	Yes *(See manual for each product)*
TXV (Indoor)	Yes	Yes
Liquid Line Solenoid at Outdoor (Kit # LSK02*)	No	Yes *See Note 5
Inverted Refrigerant Trap at Indoor	No	No
Oil Trap at Indoor	Yes**	Yes**

**An oil trap at the indoor unit is required if the elevation difference exceeds 80' (24.4 m). The trap can be constructed of standard refrigerant fitting (See Figure 3-1.)

1. Suction line must be sloped continuously towards the indoor unit.
2. The maximum elevation (vertical) difference between the outdoor unit and indoor unit is:
   a. not restricted in this configuration for single stage air conditioning units (must adhere to maximum equivalent length).
   b. 80 feet (24.4m) for single stage heat pump units. Exception: 200ft (61 m) vertical separation allowed for 14 SEER Long Line Set models and 16 SEER single stage HP models.
   c. 25 feet (7.6 m) for two stage units.
3. Inverted suction loop is not required at either unit.
4. An accumulator is not required for air conditioners (accumulators are factory installed on heat pumps).
5. Liquid Line Solenoid not required if non-bleed TXV is used on the outdoor unit.

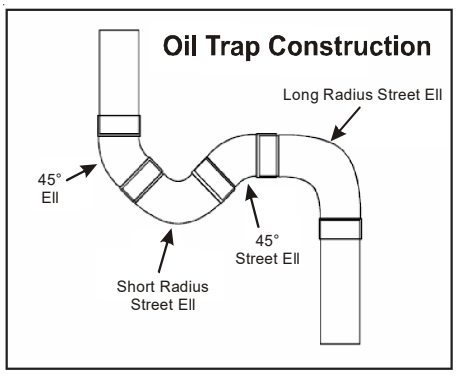
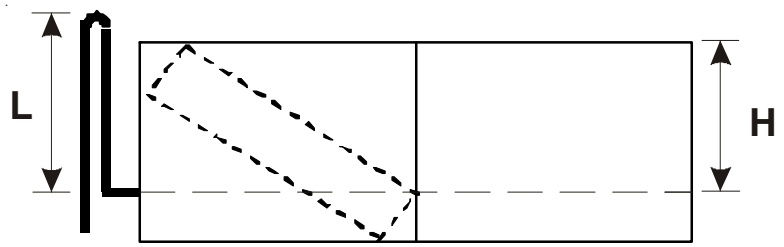


Figure 3-1. Oil Trap

SECTION 4. OUTDOOR UNIT IS BELOW THE INDOOR UNIT

Accessory	Air Conditioner (AC)	Heat Pump (HP)
Crankcase Heater *(40 watts minimum)*	Yes	Yes
Hard Start Assist	Yes *(See manual for each product)*	Yes *(See manual for each product)*
TXV (Indoor)	Yes	Yes
Liquid Line Solenoid at Outdoor (Kit # LSK02*)	Yes	Yes *See Note 5
Inverted Refrigerant Trap at Indoor	Yes	Yes
Oil Trap at Indoor	No	No

1. The maximum elevation (vertical) difference between the outdoor unit and the indoor unit is 80 feet (24.4 m).
2. Suction line must be installed in a manner to prevent liquid migration to the outdoor unit from the indoor unit (see following note 3).
3. An inverted suction line trap must be installed on the suction line just before the inlet to the indoor unit (see Figure 4-1). The top of the inverted loop must be slightly above the top of the indoor unit coil and can be created simply by brazing two 90° long radius elbows together if a bending tool is unavailable. Properly support and secure the inverted loop to the nearest point on the indoor unit or adjacent structure.
4. Line sets over 79 feet require an accumulator to be added (external to the outdoor unit, within 2 linear feet (61 linear centimeters) of the outdoor unit) for air conditioning installations. See Table 4-1 for accumulator selection. Adapter fittings at the accumulator connection may be required. Do NOT install an accumulator in the suction line set in heat pump applications.
5. Liquid Line Solenoid not required if non-bleed TXV is used on the outdoor unit.



L = Length of trap must be more than Indoor Unit Height (H)

Figure 4-1. Indoor Unit with Inverted Suction

Total System Refrigerant Charge			Goodman Accumulator			
			Preferred		Minimum	
oz.	lb.	kg.	Part Number	Connection	Part Number	Connection
112	7	3.2	0151R00004P	3/4"	0151R00004P	3/4"
144	9	4.1	B1226206	3/4"	0151R00004P	3/4"
176	11	5.0	B1226207	7/8"	B1226206	3/4"
208	13	5.9	0151L00008	7/8"	B1226206	3/4"
240	15	6.8	0151L00009	7/8"	B1226207	7/8"
288	18	8.2	0151L00001	1 1/8"	0151L00008	7/8"
352	22	10.0	0151L00010	7/8"	0151L00001	1 1/8"
480	30	13.6	0151L00010	7/8"	0151L00010	7/8"

Table 4-1. Accumulator Size

SECTION 5. CALCULATIONS - TUBING EQUIVALENT LENGTH, TUBE SIZE AND REFRIGERANT

1. In long line applications the “equivalent line length” is the sum of the straight length portions of the suction line plus losses (in equivalent length) from 45 and 90 degree bends. Add the total straight (lineal) length of tubing to the equivalent length of elbows and bends to get total equivalent length.

   Equivalent length = $Length_{Horizontal}$ + $Length_{Vertical}$ + Losses from bends (see Table 5-1)

2. Table 5-1 lists the equivalent length gained from adding bends to the suction line. Properly size the suction line to minimize capacity loss.

Type of Elbow Fitting	Inside Diameter (in)		
	3/4	7/8	1 1/8
90° short radius	1.7	2	2.3
90° long radius	1.5	1.7	1.6
45°	0.7	0.8	1

Table 5-1. Losses from suction line elbows (equivalent length, ft.)

Type of Elbow Fitting	Inside Diameter (in)		
	3/4	7/8	1 1/8
90° short radius	0.5	0.6	0.7
90° long radius	0.5	0.5	0.5
45°	0.2	0.2	0.3

Table 5-2. Losses from suction line elbows (equivalent length, m)

Table 5-1. Losses from suction line elbows (equivalent length, ft.)

EXAMPLE: 3/4” suction line using 3/4” elbows

150 feet of straight tubing + (four short radius elbows x1.7) + (2 long radius elbows x1.5) =
150 + 3.4 + 3 = 156.4 equivalent feet

3. Table 5-2 lists multiplier values to recalculate system cooling capacity as a function of a system’s equivalent line length (as calculated from the suction line) and the selected suction tube size.

   NOTE: Select the proper suction tube size based on equivalent length of the suction line (see Tables 5-1 and 5-2) and recalculated system capacity.

Unit (Btu)	Suction Dia. (in)	Capacity Multiplier for Given Length (ft)[1]									
		25	50	75	100	125	150	175	200	225	250
18000	1/2	0.99	0.97	0.96	0.94	0.94	0.93	0.93	0.92	0.91	0.89
	5/8	1.00	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.97	0.97
	3/4	**1.00**	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99
24000	5/8	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.95	0.95
	3/4	**1.00**	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.97	0.97
	7/8 [2]	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99
30000	5/8	0.99	0.99	0.98	0.97	0.96	0.96	0.96	0.94	0.93	0.92
	3/4	**1.00**	1.00	0.99	0.99	0.99	0.98	0.88	0.98	0.98	0.97
	7/8	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99
36000	5/8	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.88
	3/4	1.00	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96
	7/8 [3]	**1.00**	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.98	0.98
42000	3/4	1.00	0.99	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.94
	7/8	1.00	1.00	0.99	0.99	0.99	0.99	0.98	0.98	0.98	0.97
	1 1/8	**1.00**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
48000	3/4	0.99	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.93
	7/8	1.00	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.97	0.97
	1 1/8 [4]	**1.00**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99
60000	3/4	0.99	0.98	0.97	0.96	0.94	0.93	0.93	0.91	0.90	0.89
	7/8	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.94	0.95	0.95
	1 1/8 [4]	**1.00**	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99

Table 5-3. Capacity Multipliers (feet)

[1] Equivalent length is to be used for capacity multiplier reduction.
[2] 7/8" suction line is not approved for 2-ton two stage heat pump applications.
[3] 7/8" suction line is not approved for 3-ton two stage heat pump applications over 80 feet.
[4] 1-1/8 suction line is not approved for 4-ton and 5-ton two stage heat pump applications over 80 feet.

Unit (Btu)	Suction Dia. (in)	Capacity Multiplier for Given Length (m)[1]									
		7.6	15.2	22.9	30.5	38.1	45.7	53.3	61.0	68.6	76.2
18000	1/2	0.99	0.97	0.96	0.94	0.94	0.93	0.93	0.92	0.91	0.89
	5/8	1.00	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.97	0.97
	3/4	**1.00**	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99
24000	5/8	0.99	0.99	0.98	0.98	0.97	0.97	0.97	0.96	0.95	0.95
	3/4	**1.00**	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.97	0.97
	7/8 [2]	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99
30000	5/8	0.99	0.99	0.98	0.97	0.96	0.96	0.96	0.94	0.93	0.92
	3/4	**1.00**	1.00	0.99	0.99	0.99	0.98	0.88	0.98	0.98	0.97
	7/8	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99
36000	5/8	0.99	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.88
	3/4	1.00	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96
	7/8 [3]	**1.00**	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.98	0.98
42000	3/4	1.00	0.99	0.99	0.98	0.97	0.97	0.96	0.96	0.95	0.94
	7/8	1.00	1.00	0.99	0.99	0.99	0.99	0.98	0.98	0.98	0.97
	1 1/8	**1.00**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
48000	3/4	0.99	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.93
	7/8	1.00	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.97	0.97
	1 1/8 [4]	**1.00**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99
60000	3/4	0.99	0.98	0.97	0.96	0.94	0.93	0.93	0.91	0.90	0.89
	7/8	1.00	0.99	0.98	0.98	0.97	0.97	0.96	0.94	0.95	0.95
	1 1/8 [4]	**1.00**	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99

Table 5-4. Capacity Multipliers (meters)

4. **Refrigerant Quantity Adjustment.** All residential R-410A outdoor units are factory charged for 15 feet (4.6 m) of line set.

To calculate the initial amount of extra refrigerant (in ounces):

a. Subtract 15 feet (4.6 m) from the total linear (not equivalent) length of actual line set
b. Multiply that value by 0.6 (oz. per foot) or 17.0 (g per meter) of R-410A refrigerant
c. This will be the initial amount of R-410A refrigerant that must be added prior to final charge adjustment.

All systems must have final charge adjustment performed as required in Section 1. In most residential applications a minimal amount of additional refrigerant will be needed to account for the volume in the suction line. For some applications using 1 1/8" suction line and/or over 150 feet of lineal length (45.7 m), approximately 3 pounds (1.4 kg) of additional refrigerant may be needed to account for the suction line. For a more precise calculation of refrigerant needs use Table 5-3. The additional refrigerant for given line lengths can be found in Table 5-4.

R_A (oz.) = (L_A - 15) ft. x 0.6 oz./ft.
R_A (g) = (L_A - 4.6) m. x 55.8 g/m.

Where:

R_A = Initial additional refrigerant needed
L_A = Actual lineal line set length

Line set sizes	Additional Refrigerant (oz. per lineal foot)	Additional Refrigerant (g. per lineal meter)
3/8" liquid only	0.60	55.8
3/8" liquid and 5/8" suction	0.63	58.6
3/8" liquid and 3/4" suction	0.67	62.3
3/8" liquid and 7/8" suction	0.74	68.8
3/8" liquid and 1 1/8" suction	0.78	72.5

Table 5-5 Additional Refrigerant Per Unit Length.

	Additional lineal line length over 15 feet						
	25	50	75	100	125	150	175
	Initial refrigerant addition (oz.)						
3/8" liquid line only	15	30	45	60	75	90	105
3/8" liquid line & 5/8" suction line	16	32	47	63	79	95	110
3/8" liquid line & 3/4" suction line	17	34	50	67	84	101	117
3/8" liquid line & 7/8" suction line	18	35	53	70	88	105	123
3/8" liquid line & 1-1/8" suction line	20	39	59	78	98	117	137

Table 5-6 Initial Refrigerant for Given Line Length (feet)

	Additional lineal length over 4.6 meters						
	7.6	15.2	22.9	30.5	38.1	45.7	53.3
	Initial refrigerant addition (kg)						
3/8" liquid line only	0.4	0.9	1.3	1.7	2.1	2.6	3
3/8" liquid line & 5/8" suction line	0.5	0.9	1.3	1.8	2.2	2.7	3.1
3/8" liquid line & 3/4" suction line	0.5	1	1.4	1.9	2.4	2.9	3.3
3/8" liquid line & 7/8" suction line	0.5	1	1.5	2	2.5	3	3.5
3/8" liquid line & 1-1/8" suction line	0.6	1.1	1.7	2.2	2.8	3.3	3.9

Table 5-7 Initial Refrigerant for Given Line Length (meters)

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NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE

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All of our systems are designed and manufactured with the same high quality standards regardless of size or efficiency. We have designed these units to significantly reduce the most frequent causes of product failure. They are simple to service and forgiving to operate. We use quality materials and components. Finally, every unit is run tested before it leaves the factory.

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FAX (931) 438-2273

TECHNICAL
PUBLICATION
TP-106

LONG LINE SET APPLICATION R22

- Only allow qualified, experienced technicians to install or service this unit.
- Units must be installed in accordance with Regulations of the National Fire Protection Association and applicable local codes. Where local regulations are at a variance with instructions, installer should adhere to local codes
- Before connecting tubing, read the outdoor unit installation manual. Pay particular attention to all safety precautions.

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.
Prior to actual installation, thoroughly familiarize yourself with these guidelines. Pay special attention to all safety warnings posted on the equiment. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.
Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.
Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.
The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

This long line set application guideline applies to all ARI listed R22 air conditioner and heat pump split system matches of nominal capacity 18,000 to 60,000 Btuh. This guideline will cover installation requirements and additional accessories needed for split system installations where the line set exceeds 80 feet in actual length.

Accessories For Lines Greater Than 80 Feet:

1. **Crankcase Heater**- a long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a crankcase heater will help minimize this risk. A crankcase heater is recommended for any long line application (50 watt minimum).
2. **For** all line set applications over 80 feet a TXV is recommended. The subcooling should be 6º ± 2º.
3. **Hard Start Assist**- increased charge level in long line applications can require extra work from the compressor at start-up. A hard start assist device may be required to overcome this.
4. **Liquid Line Solenoid** - a long line set application can critically increase the charge level needed for a system. As a result, the system is very prone to refrigerant migration during its off-cycle and a liquid line solenoid will help minimize this. A liquid line solenoid is recommended for any long line application on straight cooling units.

Tube Sizing:

1. In long line applications, the "equivalent line length" is the sum of the straight length portions of the suction line plus losses (in equivalent length) from 45 and 90 degree bends. **Select the proper suction tube size based on equivalent length of the suction line (see Tables 2 & 3 below) and recalculated system capacity.**

   TABLE 1.

Equivalent length = Length $_{horizontal}$ + Length $_{vertical}$ + Losses from bends (see Table 3)

   Example using ¾" elbow:

   150 feet of straight tubing + (four short radius elbows x 1.7) + (2 long radius elbows x 1.5) = 150 + 3.4 +3 = 156.4 equivalent feet.

2. **For any residential split system installed with a long line set, 3/8" liquid line size must be used.** Limiting the liquid line size to 3/8" is critical since an increased refrigerant charge level from having a larger liquid line could possibly shorten a compressor's lifespan.

3. **Single Stage Condensing Unit:** The maximum length of tubing must not exceed 150 feet.
   - **80 feet** is the maximum recommended vertical difference between the condenser and evaporator when the evaporator is above the condenser. Equivalent length is not to exceed 150 feet.
   - The vertical difference between the condenser and evaporator when the evaporator is below the condenser can approach 150 feet, as long as the equivalent length does not exceed 150 feet.
   - The distance between the condenser and evaporator in a completely horizontal installation in which the indoor and outdoor unit do not differ more than 10 feet in vertical distance from each other can approach 150 feet, as long as the equivalent length does not exceed 150 feet.

Most refrigerant tubing kits are supplied with 3/8"-thick insulation on the vapor line. For long line installations over 80 feet, especially if the line set passes through a high ambient temperature, ½"-thick suction line insulation is recommended to reduce loss of capacity. The liquid line should be insulated if passing through an area of 120°F or greater. Do not attach the liquid line to any non-insulated portion of the suction line.

4. **Two-Stage Condensing Unit:** The maximum length of tubing must not exceed 80 feet where the indoor coil is located above the outdoor unit.

   NOTE: When the outdoor unit is located above the indoor coil, the maximum vertical rise must not exceed 25 feet. If the maximum vertical rise exceeds 25 feet, premature compressor failure will occur due to inadequate oil return.

5. **Vibration and Noise:** In long line applications, refrigerant tubing is highly prone to transmit noise and vibration to the structure it is fastened to. Use adequate vibration-isolating hardware when mounting line set to adjacent structure.

Table 2 below lists multiplier values to recalculate system-cooling capacity as a function of a system's equivalent line length (as calculated from the suction line) and the selected suction tube size. Table 3 lists the equivalent length gained from adding bends to the suction line. **Properly size the suction line to minimize capacity loss.**

TABLE 2. CAPACITY MULTIPLIERS AS A FUNCTION OF SUCTION LINE SIZE & EQUIVALENT LENGTH

Nominal capacity Btuh	Vapor line diameter (in.)	EQUIVALENT LINE LENGTH (FT)				
		50	**75**	**100**	**125**	**150**
18,000	**3/4**	.99	.97	.96	.95	.95
24,000	**3/4**	1	.99	.99	.98	.97
30,000	**3/4**	.98	.97	.96	.95	.94
36,000	**3/4**	.93	.90	.86	.83	.79
	7/8	.98	.96	.94	.92	.90
42,000	**3/4**	.93	.90	.87	.83	.80
	7/8	.97	.96	.94	.93	.92
	1-1/8	1	1	.99	.99	.98
48,000	**3/4**	.90	.86	.82	.78	N/R
	7/8	.96	.94	.93	.91	.89
	1-1/8	1	1	.99	.99	.98
60,000	**7/8**	.93	.91	.89	.86	.84
	1-1/8	.99	.98	.98	.97	.97

NOTE: For a condenser with a liquid valve tube connection less than 3/8" diameter, use 3/8" liquid line tubing for a line set greater than 25 feet.

TABLE 3. LOSSES FROM SUCTION LINE ELBOWS

(EQUIVALENT LENGTH, FT)

Type of elbow fitting	I.D. (in.)		
	3/4	7/8	1-1/8
90° short radius	1.7	2	2.3
90° long radius	1.5	1.7	1.6
45°	0.7	0.8	1

Installation Requirements

1. In a completely horizontal installation with a long line set where the evaporator is at the same altitude as (or slightly below) the condenser, the line set should be sloped towards the evaporator. This helps reduce refrigerant migration to the condenser during a system's off-cycle.
2. For a system installation where the evaporator is above the condenser, an inverted vapor line trap should be installed on the suction line just before the inlet to the evaporator (see Fig 1). The top of the inverted loop must be slightly above the top of the evaporator coil and can be created simply by brazing two 90° long radius elbows together, if a bending tool is unavailable. Properly support and secure the inverted loop to the nearest point on the indoor unit or adjacent structure.

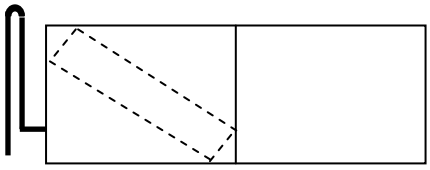


Fig 1. Evaporator unit with inverted vapor loop

3. **An oil trap is required at the evaporator only if the condenser is above the evaporator.** Preformed oil traps are available at most HVAC supply houses, or oil traps may be created by brazing tubing elbows together (see diagram below). Remember to add the equivalent

length from oil traps to the equivalent length calculation of the suction line. For example, if you construct an oil trap using two 45° elbows, one short and one long 90° elbow in a ¾" diameter suction line, the additional equivalent length would be 0.7+ 0.7+1.7+1.5, which equals 4.6 feet (refer to Table 3).

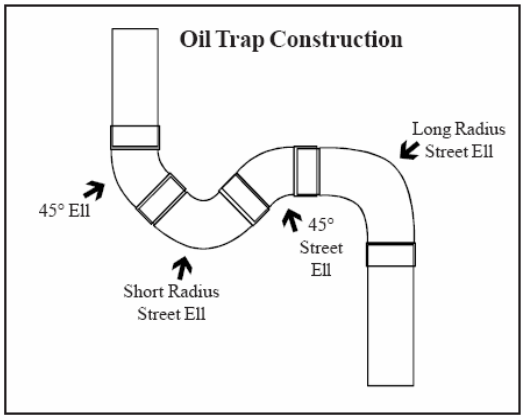


Fig 2. Oil Trap

4. **Low voltage wiring.** Verify low voltage wiring size is adequate for the length used since it will be increased in a long line application.

Initial System Charging

R22 condensers are factory charged for 15 feet of line set. To calculate the amount of extra refrigerant (in ounces) needed for a line set over 15 feet, multiply the additional length of line set by 0.6 ounces. Note for the formula below, the linear feet of line set is the actual length of liquid line (or suction line, since both should be equal) used, not the equivalent length calculated for the suction line.

Use subcooling as the primary method for final system charging of long line set system application~~. A minimum of 10º subcooling is required to ensure a good seal is present at the indoor TXV.~~ ____.

Extra refrigerant needed = (Linear feet of line set – 15 ft) x **X** oz/ft.
Where **X** = **0.6** for 3/8" liquid tubing."

Remember, 3/8" liquid tubing is required for all long line set applications.

Heat pumps should be checked in both heating and cooling mode for proper charge level. This guideline is meant to provide installation instructions based on most common long line set applications. Installation variables may affect system operation.

NO ADDITIONAL COMPRESSOR OIL IS NEEDED FOR LONG LINE SET APPLICATIONS ON RESIDENTIAL SPLIT SYSTEMS.