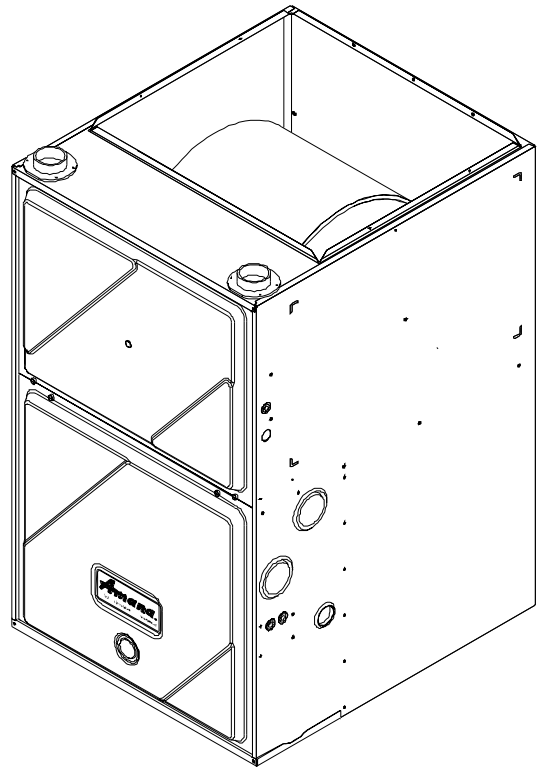
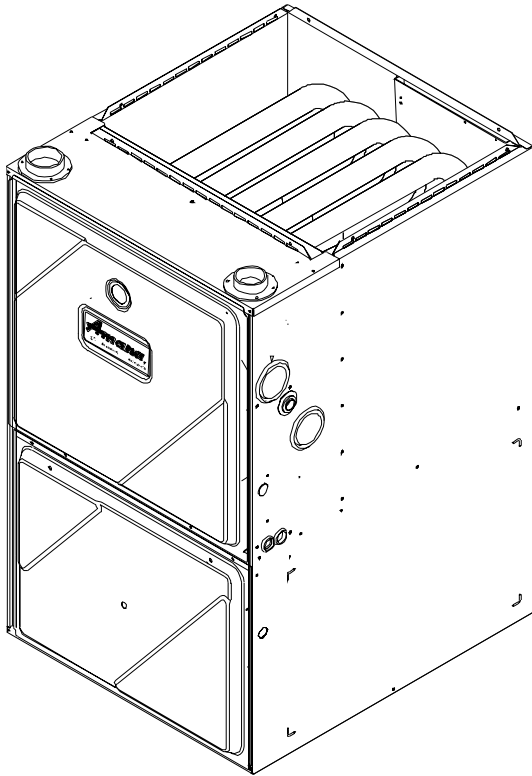


Technical Information

40" 90% Gas Furnaces

GUVA___BX___ & GCVA___BX___

- Refer to Service Manual RS6600001 Rev.2 for installation, operation, and troubleshooting information.
- All safety information must be followed as provided in the Service Manual.
- Refer to the appropriate Parts Catalog for part number information.



Heating & Air Conditioning
Amana
Comfort. Quality. Trust.

This manual replaces RT6612004 Rev. 2 October 2001.

REV. 3 - New models added to manual (standardized White-Rodgers Sini Igniter).

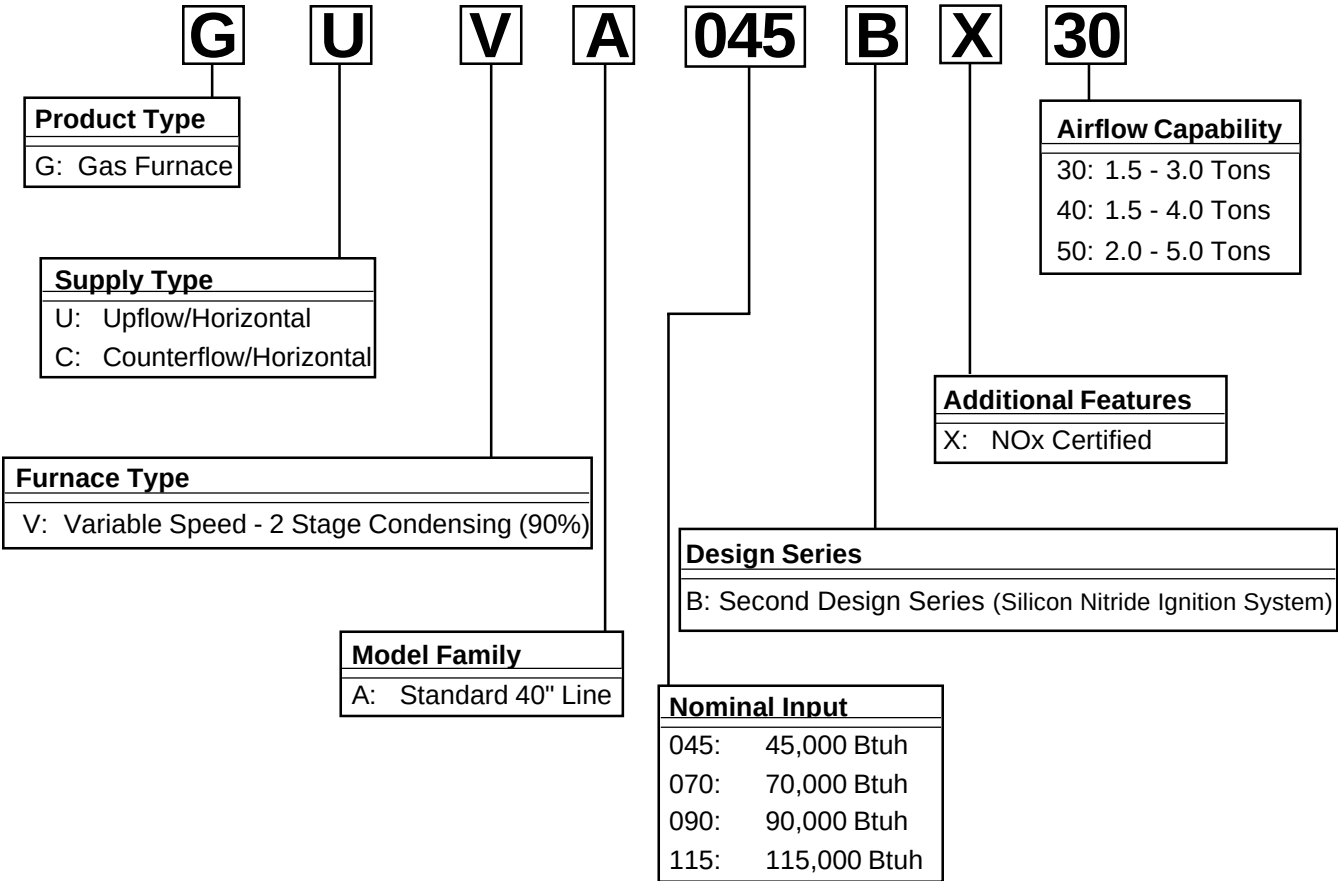
This manual is to be used by qualified HVAC technicians only. Amana does not assume any responsibility for property damage or personal injury due to improper service procedures performed by an unqualified person.

RT6612004
Revision 3
February 2002

PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. When engineering and manufacturing changes take place where interchangeability of components are affected, the manufacturing number will change.

It is very important to use the model and manufacturing numbers at all times when requesting service or parts information.



WARNING

IF REPAIRS ARE ATTEMPTED BY UNQUALIFIED PERSONS, DANGEROUS CONDITIONS (SUCH AS EXPOSURE TO ELECTRICAL SHOCK) MAY RESULT. THIS MAY CAUSE SERIOUS INJURY OR DEATH.



CAUTION

AMANA WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SERVICE OR SERVICE PROCEDURES. IF YOU PERFORM SERVICE ON YOUR OWN PRODUCT, YOU ASSUME RESPONSIBILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE WHICH MAY RESULT.

PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. When engineering and manufacturing changes take place where interchangeability of components are affected, the manufacturing number will change.

It is very important to use the model and manufacturing numbers at all times when requesting service or parts information.

<u>MODEL</u>	<u>M/N</u>
GUVA045BX30	P1234701F
GUVA070BX40	P1234703F
GUVA090BX50	P1234705F
GUVA115BX50	P1234706F

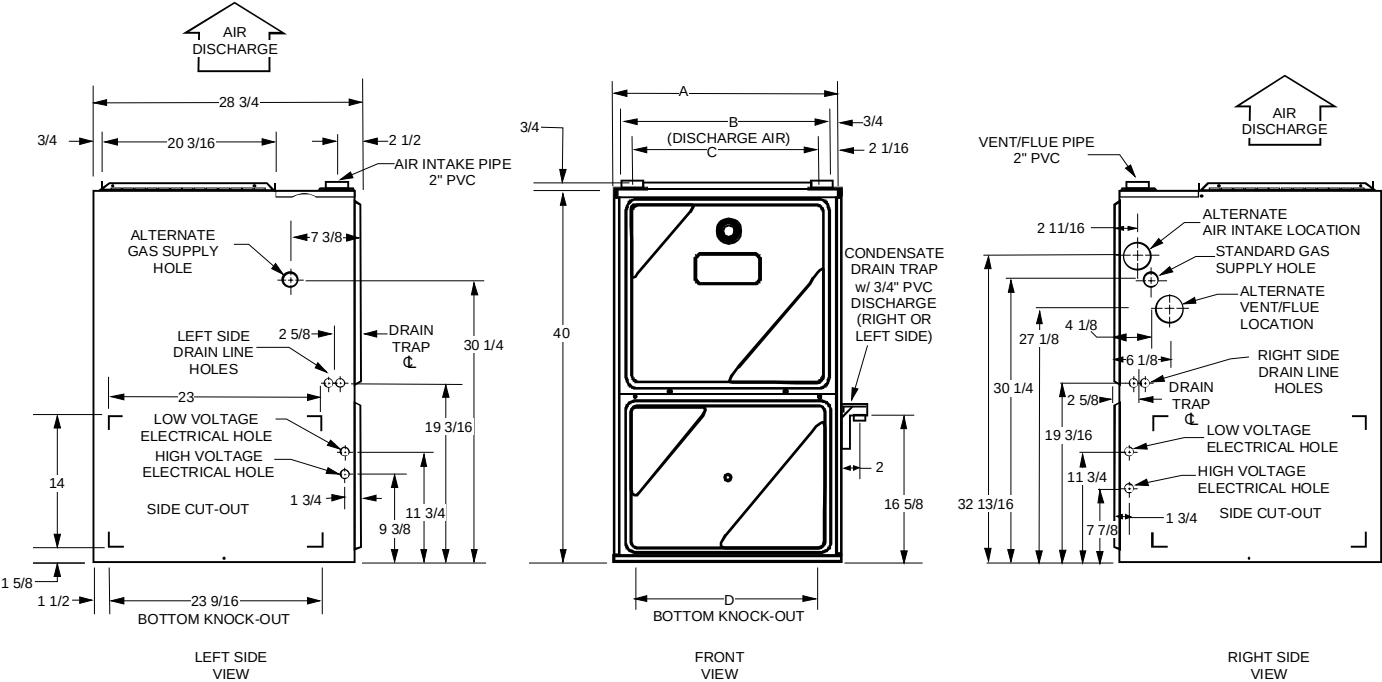
GUVA045BX30	P1239601F
GUVA070BX40	P1239603F
GUVA090BX50	P1239605F
GUVA115BX50	P1239606F

GUVA045BX30	P1242101F
GUVA070BX30	P1242102F
GUVA090BX50	P1242105F
GUVA115BX50	P1242106F

<u>MODEL</u>	<u>M/N</u>
GCVA070BX40	P1237403F
GCVA090BX50	P1237405F
GCVA070BX40	P1242203F
GCVA090BX50	P1242205F

PRODUCT DIMENSIONS

GUVA__BX__

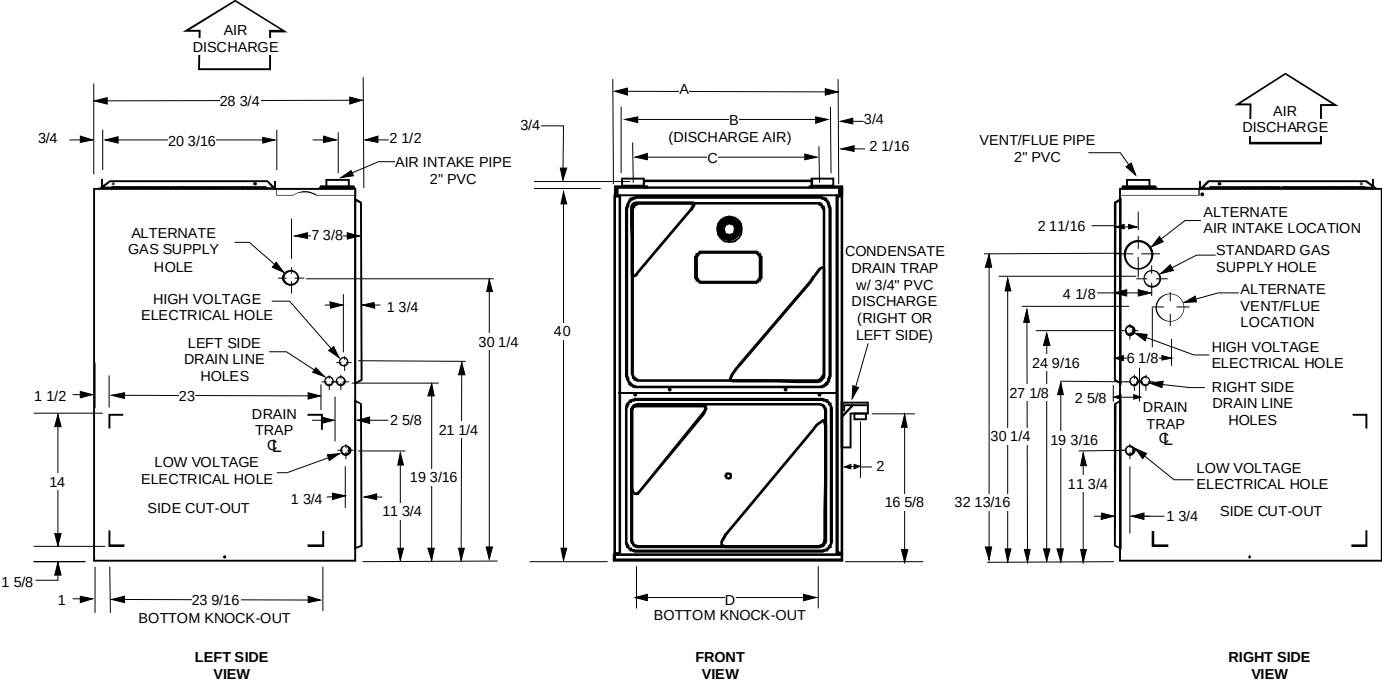


Cabinet Size	Units	A	B	C	D
Small	045__30	16-1/2	15	12-3/8	12-5/8
Medium	070__40	20-1/2	19	16-3/8	14-5/8
Large	090__50 115__50	24-1/2	23	20-3/8	18-5/8

All dimensions are in inches.

PRODUCT DIMENSIONS

GUVA__BX__

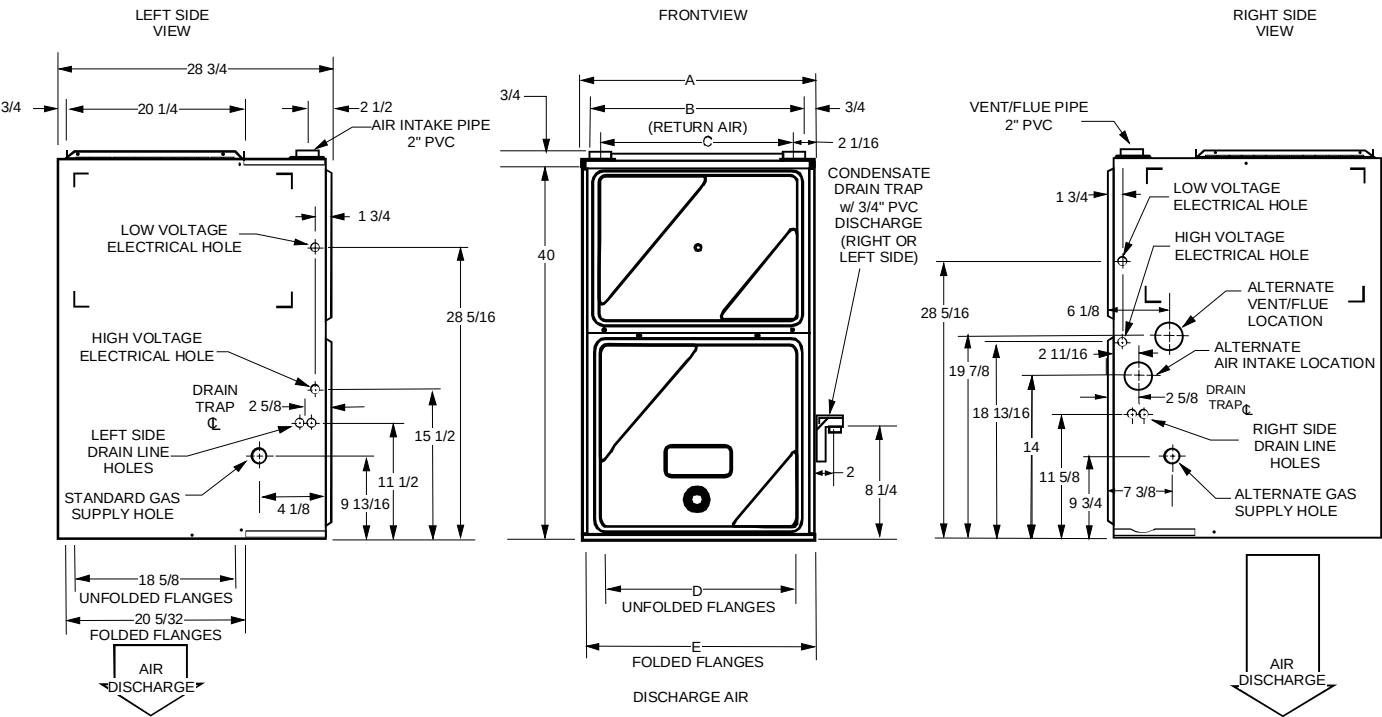


Cabinet Size	Units	A	B	C	D
Small	045__30	16-1/2	15	12-3/8	12-5/8
Medium	070__40	20-1/2	19	16-3/8	14-5/8
Large	090__50	24-1/2	23	20-3/8	18-5/8
	115__50				

All dimensions are in inches.

PRODUCT DIMENSIONS

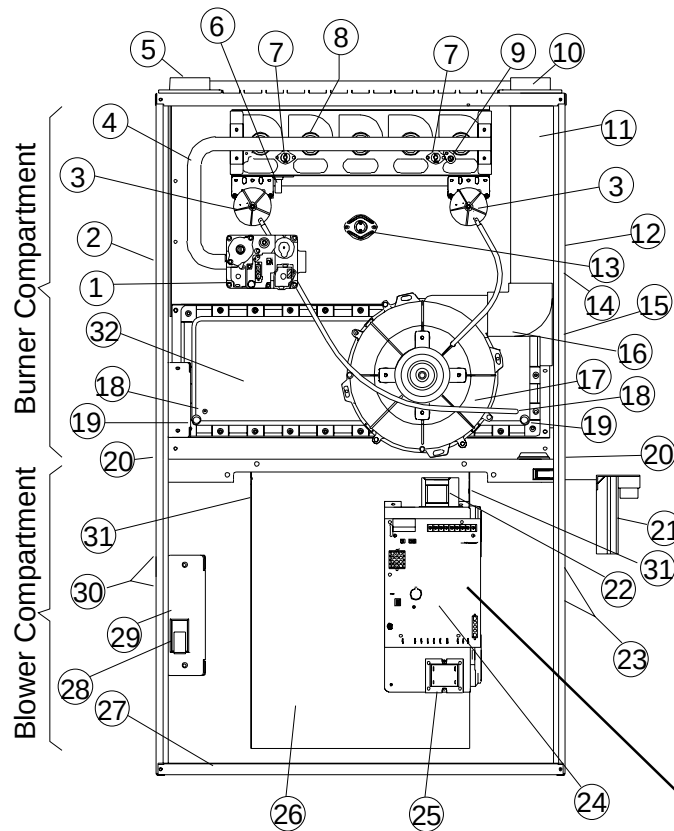
GCVA__BX__



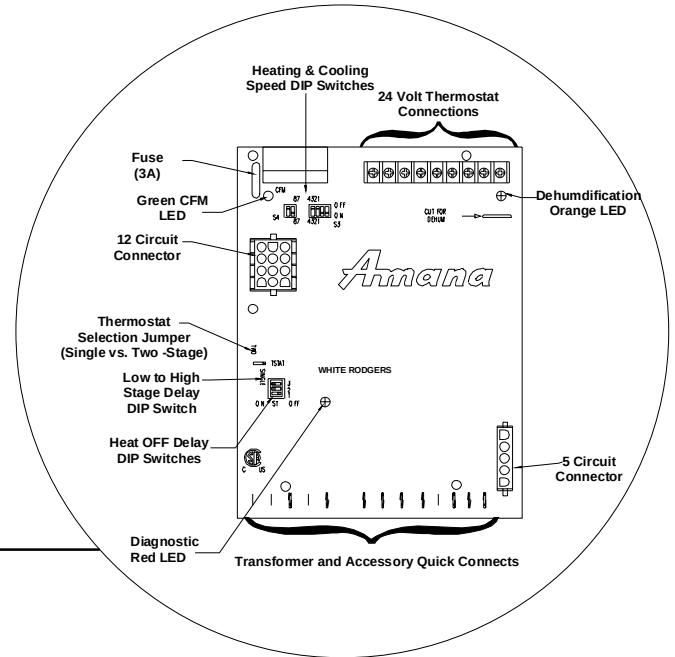
Cabinet Size	Units	A	B	C	D
Medium	070__40	20-1/2	19	16-3/8	14-5/8
Large	090__50	24-1/2	23	20-3/8	18-5/8

All dimensions are in inches.

COMPONENT IDENTIFICATION



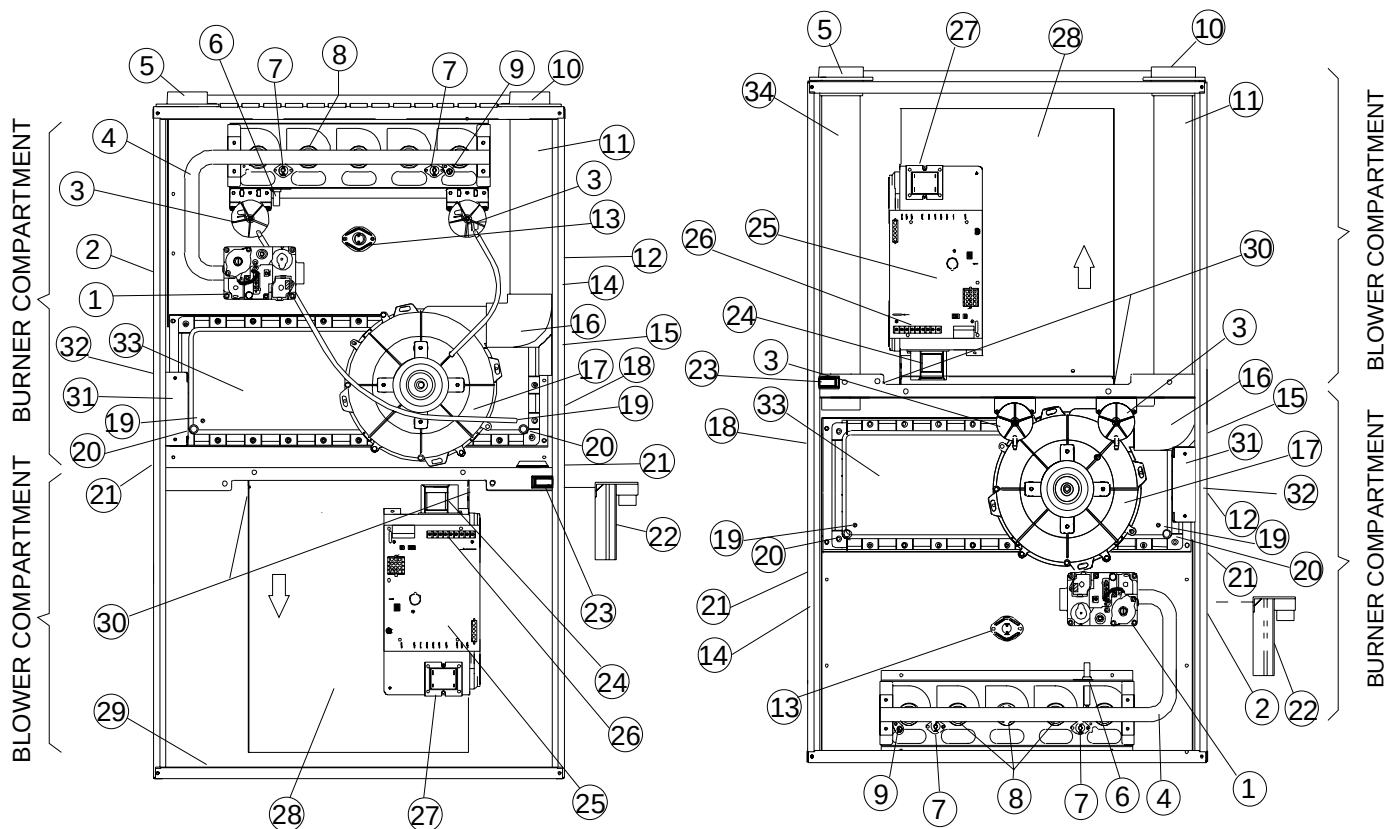
Integrated Control Module



Upflow/Horizontal

- | | |
|--------------------------------------|--|
| 1 Two-Stage Gas Valve | 17 Two-Speed Induced Draft Blower |
| 2 Gas Line Entrance (Alternate) | 18 Coil Front Cover Pressure Tap |
| 3 Pressure Switch(es) | 19 Coil Front Cover Drain Tap |
| 4 Gas Manifold | 20 Drain Line Penetrations |
| 5 Combustion Air Intake Connection | 21 Drain Trap |
| 6 Hot Surface Igniter | 22 Inductor (Not All Models) |
| 7 Rollout Limit | 23 Electrical Connection Inlets (Alternate) |
| 8 Burners | 24 Two-Stage Integrated Control Module
(with fuse and diagnostic LED) |
| 9 Flame Sensor | 25 Transformer (40 VA) |
| 10 Flue Pipe Connection | 26 ECM Variable Speed Circulator Blower |
| 11 Flue Pipe (Internal) | 27 Bottom Return Filter Retainer |
| 12 Combustion Air Intake (Alternate) | 28 Blower Door Interlock Switch |
| 13 Primary Limit | 29 Junction Box |
| 14 Gas Line Entrance | 30 Electrical Connection Inlets |
| 15 Flue Pipe Connection (Alternate) | 31 Auxiliary Limit(s) |
| 16 Rubber Elbow | 32 Coil Front Cover |

COMPONENT IDENTIFICATION



Upflow /Horizontal (GUVA Models)

Counterflow /Horizontal (GCVA Models)

- | | |
|---|--|
| 1 Two-Stage Gas Valve | 19 Coil Front Cover Pressure Tap |
| 2 Gas Line Entrance (Alternate) | 20 Coil Front Cover Drain Port |
| 3 Pressure Switch(es) | 21 Drain Line Penetrations |
| 4 Gas Manifold | 22 Drain Trap |
| 5 Combustion Air Intake Connection | 23 Blower Door Interlock Switch |
| 6 Hot Surface Igniter | 24 Inductor (Not All Models) |
| 7 Rollout Limit | 25 Two-Stage Integrated Control Module
(with fuse and diagnostic LED) |
| 8 Burners | 26 24 Volt Thermostat Connections |
| 9 Flame Sensor | 27 Transformer (40 VA) |
| 10 Flue Pipe Connection | 28 ECM Variable Speed Circulator Blower |
| 11 Flue Pipe | 29 Bottom Return Filter Retainer |
| 12 Combustion Air Intake (Alternate) | 30 Auxiliary Limits |
| 13 Primary Limit | 31 Junction Box |
| 14 Gas Line Entrance | 32 Electrical Connection Inlets |
| 15 Flue Pipe Connection (Alternate) | 33 Coil Front Cover |
| 16 Rubber Elbow | 34 Combustion Air Inlet Pipe (GCVA Only) |
| 17 Two-Speed Induced Draft Blower | |
| 18 Electrical Connection Inlets (Alternate) | |

GUVA__BX__ (Manufacturing Numbers P1239601-06F and P1242101-06F)

GCVA__BX__ (Manufacturing Numbers P1237403-05F and P1242203-05F)

PRODUCT DESIGN

General Operation

The GUVa and GCVA furnaces are equipped with an electronic ignition device to light the burners and an induced draft blower to exhaust combustion products.

An interlock switch prevents furnace operation if the blower door is not in place. Keep the blower access doors in place except for inspection and maintenance.

This furnace is also equipped with a self-diagnosing electronic control module. In the event a furnace component is not operating properly, the control module LED will flash on and off in a factory-programmed sequence, depending on the problem encountered. This light can be viewed through the observation window in the blower access door. Refer to the *Troubleshooting Chart* for further explanation of the LED codes and *Abnormal Operation - Integrated Ignition Control* section in the Service Instructions for an explanation of the possible problem.

The rated heating capacity of the furnace should be greater than or equal to the total heat loss of the area to be heated. The total heat loss should be calculated by an approved method or in accordance with "ASHRAE Guide" or "Manual J-Load Calculations" published by the Air Conditioning Contractors of America.

*Obtain from: American National Standards Institute 1430 Broadway New York, NY 10018

Location Considerations

- The furnace should be as centralized as is practical with respect to the air distribution system.
- Do not install the furnace directly on carpeting, tile, or combustible material other than wood flooring.
- When suspending the furnace from rafters or joists, use 3/8" threaded rod and 2" x 2" x 3/8" angle as shown in the Installation and Service Instructions. The length of the rod will depend on the application and clearance necessary.
- When installed in a residential garage, the furnace must be positioned so the burners and ignition source are located not less than 18 inches (457 mm) above the floor and protected from physical damage by vehicles.

Notes:

1. Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2" or 3" in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2" or 3" diameter PVC.
2. Line voltage wiring can enter through the right or left side of the furnace. Low voltage wiring can enter through the right or left side of furnace.

3. Conversion kits for propane gas and high altitude natural and propane gas operation are available. See High Altitude Derate chart for details.
4. Installer must supply the following gas line fittings, depending on which entrance is used:

Left -- Two 90° Elbows, one close nipple, straight pipe

Right -- Straight pipe to reach gas valve.

Accessibility Clearances (Minimum)

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS (INCHES)						
POSITION*	FRONT	SIDES	REAR	TOP	FLUE	FLOOR
Upflow	1	0	0	1	0	C
Counterflow	1	0	0	1	0	NC
Horizontal	Alcove	6	0	4	0	C

* = All positioning is determined as installed unit is viewed from the front.

C = If placed on combustible floor, floor MUST be wood ONLY.

NC = For installation on non-combustible floors only. A combustible floor subbase must be used for installations on combustible flooring.

36" at front is required for servicing or cleaning.

Note: In all cases accessibility clearance shall take precedence over clearances from the enclosure where accessibility clearances are greater. All dimensions are given in inches.

High Altitude Derate

When this furnace is installed at high altitude, the appropriate High Altitude orifice kit must be installed. This is required due to the natural reduction in the density of both the gas fuel and combustion air as altitude increases. The kit will provide the proper design certified input rate within the specified altitude range.

PROPANE AND HIGH ALTITUDE KITS					
MODEL NUMBER	0 to 7,000 ft.	7,001 to 9,000 ft.	9,001 to 11,000 ft.	7,001 to 11,000 ft.	7,001 to 11,000 ft.
GUVA045BX30 GUVA070BX40	LPTK09 Propane Conversion Kit (#55 Orifices)	HANG13 High Altitude Natural Gas Kit (#44 Orifices)	HANG14 High Altitude Natural Gas Kit (#45 Orifices)	HALP11 High Altitude Propane Gas Kit (#56 Orifices)	HAPS28 High Altitude Pressure Switch Kit
GUVA090BX50 GUVA115BX50	LPTK09 Propane Conversion Kit (#55 Orifices)	HANG13 High Altitude Natural Gas Kit (#44 Orifices)	HANG14 High Altitude Natural Gas Kit (#45 Orifices)	HALP11 High Altitude Propane Gas Kit (#56 Orifices)	HAPS29 High Altitude Pressure Switch Kit
GCVA070BX40 GCVA090BX50	LPTK09 Propane Conversion Kit (#55 Orifices)	HANG13 High Altitude Natural Gas Kit (#44 Orifices)	HANG14 High Altitude Natural Gas Kit (#45 Orifices)	HALP11 High Altitude Propane Gas Kit (#56 Orifices)	HAPS31 High Altitude Pressure Switch Kit

High altitude kits are purchased according to the installation altitude and usage of either natural or propane gas. Refer to the chart above for a tabular listing of appropriate altitude ranges and corresponding manufacturer's high altitude Natural Gas and Propane Gas kits. For a tabular listing of appropriate altitude ranges and corresponding manufacturer's High Altitude Pressure Switch kits, refer to either the *Pressure Switch Trip Points & Usage Chart* in this manual or the *Accessory Charts* in Service Instructions.

PRODUCT DESIGN

PRESSURE SWITCH TRIP POINTS AND USAGE CHART								
MODEL	NEGATIVE PRESSURE ID BLOWER WITH FLUE NOT FIRING TYPICAL SEA LEVEL DATA		NEGATIVE PRESSURE ID BLOWER WITH FLUE FIRING TYPICAL SEA LEVEL DATA		NEGATIVE PRESSURE COIL COVER WITH FLUE NOT FIRING TYPICAL SEA LEVEL DATA		NEGATIVE PRESSURE COIL COVER WITH FLUE FIRING TYPICAL SEA LEVEL DATA	
	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE
GUVA045BX30 GUVA070BX40	-0.45	-0.90	-0.50	-0.95	-0.25	-0.25	-0.25	-0.25
GUVA090BX50 GUVA115BX50	-0.65	-1.20	-0.70	-1.25	-0.25	-0.25	-0.25	-0.25
GCVA070BX40	-0.35	-0.35	-0.70	-0.75	-0.52	-0.52	-0.52	-0.52
GCVA090BX50	-0.35	-0.70	-0.40	-0.75	-0.52	-0.52	-0.52	-0.52

Note: The typical sea level negative pressure data represents the minimum pressures expected. Shorter length of flue pipe or single pipe systems compared to dual pipe systems should show higher (greater negative) pressures.

PRESSURE SWITCH TRIP POINTS AND USAGE CHART															
MODEL	0 to 7,000 ft.								7,001 ft. to 11,000 ft.						
	TRIP POINT COIL COVER PRESSURE SWITCH		COIL COVER PRESSURE SWITCH PART #	TRIP POINT ID BLOWER PRESSURE SWITCH		ID BLOWER PRESSURE SWITCH PART #	PS1 LABEL COLOR	PS2 LABEL COLOR	TRIP POINT COIL COVER PRESSURE SWITCH		TRIP POINT ID BLOWER PRESSURE SWITCH		HIGH ALTITUDE KIT	PS1 LABEL COLOR	PS2 LABEL COLOR
	LOW FIRE	HIGH FIRE		LOW FIRE	HIGH FIRE				LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE			
GUVA045BX30 GUVA070BX40	-0.10	-0.10	20197301	-0.30	-0.75	11177113	PURPLE	PINK	-0.10	-0.10	-0.22	-0.55	HAPS28 11177115	GEEEN	YELLOW
GUVA090BX50 GUVA115BX50	-0.10	-0.10	20197301	-0.50	-1.10	11177114	WHITE	GRAY	-0.10	-0.10	-0.38	-0.82	HAPS29 11177116	ORANGE	LT BLUE
GCVA070BX40	-0.37	-0.37	20197306	-0.20	-0.55	11177118	GREEN	PURPLE	-0.37	-0.37	-0.15	-0.30	HAPS31 11177120	YELLOW	RED
GCVA090BX50	-0.37	-0.37	20197306	-0.20	-0.55	11177118	GREEN	PURPLE	-0.37	-0.37	-0.15	-0.30	HAPS31 11177120	YELLOW	RED

Note: All installations above 7,000 ft. require a pressure switch change. For installations in Canada the GUVA & GCVA furnaces are certified only to 4500 ft.

Note: Replacement pressure switch number is listed below high altitude kit number.

Note: All negative pressure readings are in inches of water column (" w.c.).

T.O.D. PRIMARY LIMIT				
PART NUMBER	20162903	20162905	20162907	20162908
OPEN SETTING (°F)	160	145	155	170
COLOR CODE(S)	BLUE	YELLOW	ORANGE	GREEN
GUVA045BX30		1		
GUVA070BX40			1	
GUVA090BX50		1		
GUVA115BX50	1			
GCVA070BX40	1			
GCVA090BX50				1

ROLLOUT LIMIT SWITCHES				
PART NUMBER	10123517	10123518	10123533	10123537
OPEN SETTING (°F)	210	170	200	190
COLOR CODE(S)	White	BLUE	YELLOW	GRAY
GUVA045BX30		1		
GUVA070BX40			2	
GUVA090BX50				2
GUVA115BX50			2	
GCVA070BX40	2		2	
GCVA090BX50	2			2

AUXILIARY LIMIT SWITCHES					
PART NUMBER	10123518	10123533	10123535	10123536	10123537
OPEN SETTING (°F)	170	200	150	180	190
COLOR CODE(S)	BLUE	YELLOW	RED	LT BLUE	GRAY
GUVA045BX30			2		
GUVA070BX40					2
GUVA090BX50				2	
GUVA115BX50		2			
GCVA070AX40	2				
GCVA090AX50				2	

PRODUCT DESIGN

Coil Matches (for Amana Split-Systems using R-22):

A large array of Amana coils are available for use with the new GCVA furnaces, in either counterflow or horizontal applications & with GUVA furnaces, in either upflow or horizontal applications. These coils are available in both cased and uncased models, with or without a TXV expansion device. These new 92%+ and 95%+ furnaces match up with the existing Amana coils as shown in the chart below.

Btuh Input	Cabinet Width	Air Flow (tons)	CCA_F*C Cased A-Coils	CCA_FSC Uncased A-Coils	CHA_TCC Cased TXV A-Coils	CHA_TSC Uncased TXV A-Coils	CCF_F*C Horiz. A-Coils	CHF_TCC Horiz. A-Coils
GUVA045BX30	16 1/2"	1 1/2 - 3	CCA18FCC CCA24FCC CCA30FCC CCA36FCC CCA42FCC	CCA18FSC CCA24FSC CCA30FSC CCA36FSC CCA42FSC	CHA18TCC CHA24TCC CHA30TCC CHA36TCC	CHA18TSC CHA24TSC CHA30TSC CHA36TSC	CCF24FCC CCF30FCC CCF36FCC	CHF18TCC CHF24TCC CHF30TCC
GUVA070BX40 GCVA070BX40	20 1/2"	2 1/2 - 4	CCA30FDC CCA36FDC CCA42FDC CCA48FCC	CCA48FSC	CHA42TCC	CHA42TSC	CCF24FDC CCF36FDC CCF42FCC CCF48FCC	CHF36TCC CHF42TCC
GUVA090BX50 GCVA090BX50	24 1/2"	3 - 5	CCA36FKC CCA48FDC CCA54FCC CCA57FCC CCA60FCC	CCA54FSC CCA57FSC CCA60FSC	CHA48TCC CHA54TCC CHA57TCC CHA60TCC	CHA48TSC CHA54TSC CHA57TSC CHA60TSC	CCF48FDC CCF60FCC CCF61FCC	CHF48TCC CHF60TCC
GUVA115BX50	24 1/2"	3 - 5						

Coil Matches (for the Amana RSD units using R-410A):

Btuh Input	Cabinet Width	Air Flow (tons)	CA_FCA Cased A-Coils	CF_FCA Horizontal A-Coils
GUVA045BX30	16-1/2"	1 1/2 - 3	CA36FCA	CF30FCA
GUVA070BX40 GCVA070BX40	20-1/2"	2 1/2 - 4	CA42FCA	CF36FCA
GUVA090BX50 GCVA090BX50	24-1/2"	3 - 5	CA48FCA CA57FCA	CF48FCA CF60FCA
GUVA115BX50	24-1/2"	3 - 5		

Thermostats:

The following Amana Thermostats are suggested for use with GUVA & GCVA Furnace Models:

Thermostats								
Thermostat	Man/Auto	Programmable	Cool	Heat	Batt. Powered	Batt. Bkup*	Shape	Color
1213411	Man. Changeover	No	1	2	No	No	Rectangular	White
1213407	Man. Changeover	Yes	2	2	No	No	Rectangular	White
1213406*	Man. Or Auto	Yes	2	3	No	Yes	Rectangular	White

*1213406 is the recommended model for the GUVA & GCVA furnaces when used with a heat pump in a fossil fuel application. It is NOT for use with either the GUVA or GCVA as a sole heating source. 1213406 thermostats are 24V powered with battery backup.

PRODUCT DESIGN

Filters:

Filters are required with this furnace and must be provided by the installer. The filters used must comply with UL900 or CAN/ULCS111 standards. Installing this furnace without filters will void the unit warranty.

This furnace has provisions for the installation of return air filters at the side and/or bottom return. The furnace will accommodate the following filter sizes depending on cabinet size:

Side Return(s)		
Cabinet Width (in.)	Nominal Filter Size (in.)	Approx. Flow Area (in ²)
All	16 x 25 x 1	400

Bottom Return		
Cabinet Width (in.)	Nominal Filter Size (in.)	Approx. Flow Area (in ²)
16-1/2	14 x 25 x 1	350
20-1/2	16 x 25 x 1	400
24-1/2	20 x 25 x 1	500

Refer to Minimum Filter Area tables to determine filter area requirement. **NOTE:** Filters can also be installed elsewhere in the duct system such as a central return.

		Cooling Airflow Requirement					
		800	1000	1200	1400	1600	2000
GUVA BX Model (Input Airflow)	070__35	564*	564*	564*	762	---	---
	090__40	---	752*	752*	752*	768	---
	090__50	---	---	752*	752*	768	960
	115__50	---	---	940*	940*	940*	960

		Cooling Airflow Requirement					
		800	1000	1200	1400	1600	2000
GUVA BX Model (Input Airflow)	070__35	282*	282*	282*	336	---	---
	090__40	---	376*	376*	376*	384	---
	090__50	---	---	376*	376*	384	480
	115__50	---	---	470*	470*	470*	480

		Cooling Airflow Requirement (CFM)						
		600	800	1000	1200	1400	1600	2000
GCVA__BX__ Model (Input__Airflow)	070__40	---	---	641*	641*	672	768	---
	090__50	---	---	---	854*	854*	854*	960

		Cooling Airflow Requirement (CFM)						
		600	800	1000	1200	1400	1600	2000
GCVA__BX__ Model (Input_Airflow)	070__40	---	---	320*	320*	336	384	---
	090__50	---	---	---	427*	427*	427*	480

*Minimum filter area dictated by heating airflow requirement.

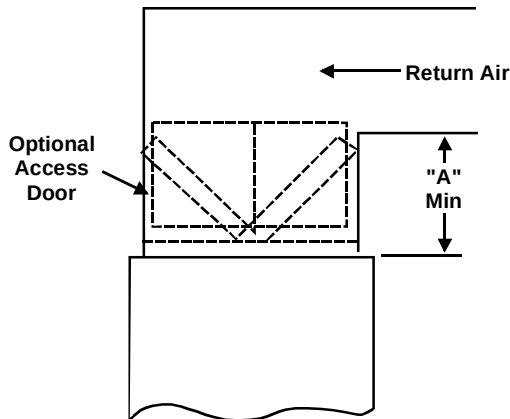
*Minimum filter area dictated by heating airflow requirement.

Disposable Minimum Filter Area (in²)
[Based on a 300 ft/min filter face velocity]

Permanent Minimum Filter Area (in²)
[Based on 600 ft/min filter face velocity]

Counterflow Filters

This furnace has provisions for the installation of return air filters at the counterflow top return. The furnace will accommodate the following filter sizes depending on cabinet size:



Counterflow Top Return				
Cabinet Width	Filter Area (in ²)	Qty	Filter Size (in)	Dimension "A" (in)
16 1/2	600	2	15 X 20 X 1	14.2
20 1/2				13.0
24 1/2				11.3
16 1/2	800	2	20 X 20 X 1	19.7
20 1/2				18.8
24 1/2				17.7
16 1/2	1000	2	25 X 20 X 1	25.0
20 1/2				24.3
24 1/2				23.4

Refer to Minimum Filter Area tables to determine filter area requirement. **NOTE:** Filters can also be installed elsewhere in the duct system such as a central return.

FURNACE SPECIFICATIONS

MODEL	GUVA045BX30	GUVA070BX40	GUVA090BX50	GUVA115BX50
Btuh Input (US) High Fire	46,000	69,000	92,000	115,000
Output (US) High Fire	44,300	66,900	88,800	111,100
Btuh Input (US) Low Fire	32,000	48,000	64,000	80,000
Output (US) Low Fire	30,800	46,400	61,700	77,400
A.F.U.E.	96%	95.5%	95.6%	95.7%
Rated External Static (" w.c.)	.10 - .50	.10 - .50	.10 - .50	.10 - .50
Temperature Rise (°F)	30 - 60	30 - 60	30 - 60	35 - 65
High Stage Pressure Switch Trip Point (" w.c.)	-0.75	-0.75	-1.10	-1.10
Low Stage Pressure Switch Trip Point (" w.c.)	-0.30	-0.30	-0.50	-0.50
Front Cover Pressure Switch Trip Point (" w.c.)	-0.10	-0.10	-0.10	-0.10
Blower Wheel (D" x W")	11 x 7	11 x 9	11 x 10	11 x 10
Blower Horsepower	1/2	3/4	1	1
Blower Speeds	Refer to airflow charts on pages 15-22.			
Max CFM @ 0.5 E.S.P.				
Power Supply	115-60-1	115-60-1	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	10.4	12.8	14.6	14.6
Maximum Overcurrent Device	15	15	15	15
Transformer (VA)	40	40	40	40
Heat Anticipator (Amps)	0.7	0.7	0.7	0.7
Primary Limit Setting (°F)	145	155	145	160
Auxiliary Limit Setting (°F)	150	190	180	200
Rollout Limit Setting (°F)	170	200	190	200
Fan Delay On Heating	30 secs.	30 secs.	30 secs.	30 secs.
Off Heating *	90 secs.	90 secs.	90 secs.	90 secs.
Fan Delay On Cooling	5 secs.	5 secs.	5 secs.	5 secs.
Off Cooling	45 secs.	45 secs.	45 secs.	45 secs.
Fan Delay On - Fan Only	5 secs.	5 secs.	5 secs.	5 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 / 11	7 / 11	7 / 11	7 / 11
Manifold Pressure (Natural/Propane) High Stage (" w.c.)	3.5 / 10	3.5 / 10	3.5 / 10	3.5 / 10
Manifold Pressure (Natural/Propane) Low Stage ("w.c.)	1.9 / 6.0	1.9 / 6.0	1.9 / 6.0	1.9 / 6.0
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55	#43 / #55	#43 / #55
Number of Burners	2	3	4	5
Vent Connector Diameter (inches)	2	2	2	2
Combustion Air Connector Diameter (inches)	2	2	2	2
Shipping Weight (lbs.)	133	157	172	184

* Off Heating - This fan delay timing is adjustable (60, 90, 120 or 180 seconds), 90 seconds as shipped.

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.
2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. above sea level. The furnace must not be derated, orifice changes should only be made if necessary for altitude.
3. The total heat loss from the structure as expressed in TOTAL BTU/HR must be calculated by the manufactures method in accordance with the "A.S.H.R.A.E. GUIDE" or "MANUAL J-LOAD CALCULATIONS" published by the AIR CONDITIONING CONTRACTORS OF AMERICA. The total heat loss calculated should be equal to or less than the heating capacity. Output based on D.O.E. test procedures, steady state efficiency times output.
4. Minimum Circuit Ampacity calculated as: $(1.25 \times \text{Circulator Blower Amps}) + \text{I.D. Blower Amps}$.

FURNACE SPECIFICATIONS

MODEL	GCVA070BX40	GCVA090BX50
Btuh Input (US) High Fire	69,000	92,000
Output (US) High Fire	65,300	86,500
Btuh Input (US) Low Fire	48,000	64,000
Output (US) Low Fire	45,000	60,100
A.F.U.E.	93.3%	92.7%
Rated External Static (" w.c.)	.10 - .50	.10 - .50
Temperature Rise (°F)	30 - 60	30 - 60
High Stage Pressure Switch Trip Point (" w.c.)	-0.55	-0.55
Low Stage Pressure Switch Trip Point (" w.c.)	-0.20	-0.20
Front Cover Pressure Switch Trip Point (" w.c.)	-0.37	-0.37
Blower Wheel (D" x W")	11 x 9	11 x 10
Blower Horsepower	3/4	1
Blower Speeds	Refer to airflow charts on pages 15-22.	
Max CFM @ 0.5 E.S.P.		
Power Supply	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	12.8	14.6
Maximum Overcurrent Device	15	15
Transformer (VA)	40	40
Heat Anticipator (Amps)	0.7	0.7
Primary Limit Setting (°F)	160	170
Auxiliary Limit Setting (°F)	170	180
Rollout Limit Setting (°F)	210	210
Fan Delay On Heating	30 secs.	30 secs.
Off Heating *	90 secs.	90 secs.
Fan Delay On Cooling	5 secs.	5 secs.
Off Cooling	45 secs.	45 secs.
Fan Delay On - Fan Only	5 secs.	5 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 / 11	7 / 11
Manifold Pressure (Natural/Propane) High Stage (" w.c.)	3.5 / 10	3.5 / 10
Manifold Pressure (Natural/Propane) Low Stage ("w.c.)	1.9 / 6.0	1.9 / 6.0
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55
Number of Burners	3	4
Vent Connector Diameter (inches)	2	2
Combustion Air Connector Diameter (inches)	2	2
Shipping Weight (lbs.)	157	172

* Off Heating - This fan delay timing is adjustable (60, 90, 120 or 180 seconds), 90 seconds as shipped.

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.
2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. above sea level. The furnace must not be derated, orifice changes should only be made if necessary for altitude.
3. The total heat loss from the structure as expressed in TOTAL BTU/HR must be calculated by the manufactures method in accordance with the "A.S.H.R.A.E. GUIDE" or "MANUAL J-LOAD CALCULATIONS" published by the AIR CONDITIONING CONTRACTORS OF AMERICA. The total heat loss calculated should be equal to or less than the heating capacity. Output based on D.O.E. test procedures, steady state efficiency times output.
4. Minimum Circuit Ampacity calculated as: (1.25 x Circulator Blower Amps) + I.D. Blower Amps.

BLOWER PERFORMANCE SPECIFICATIONS

Heating Speed Charts

GUVA045BX30 (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" to .5" w.c. ESP	High Stage CFM at .1" to .5" w.c. ESP	Rise (°F)
A	Minus (-)	495	713	57
	Normal	550	792	51
	Plus (+)	605	871	46
B	Minus (-)	540	778	52
	Normal	600	864	47
	Plus (+)	660	950	43
C	Minus (-)	585	842	48
	Normal	650	936	43
	Plus (+)	715	1030	39
D	Minus (-)	630	907	45
	Normal	700	1008	40
	Plus (+)	770	1109	36

GUVA070BX40 (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" to .5" w.c. ESP	High Stage CFM at .1" to .5" w.c. ESP	Rise (°F)
A	Minus (-)	756	1089	56
	Normal	840	1210	50
	Plus (+)	924	1331	46
B	Minus (-)	828	1192	51
	Normal	920	1325	46
	Plus (+)	1012	1457	42
C	Minus (-)	900	1296	47
	Normal	1000	1440	42
	Plus (+)	1100	1584	38
D	Minus (-)	972	1400	43
	Normal	1080	1555	39
	Plus (+)	1188	1711	35

GUVA090BX50 (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" to .5" w.c. ESP	High Stage CFM at .1" to .5" w.c. ESP	Rise (°F)
A	Minus (-)	1013	1458	56
	Normal	1125	1620	50
	Plus (+)	1238	1782	45
B	Minus (-)	1076	1549	52
	Normal	1195	1721	47
	Plus (+)	1315	1893	43
C	Minus (-)	1139	1639	49
	Normal	1265	1822	44
	Plus (+)	1392	2004	40
D	Minus (-)	1202	1730	47
	Normal	1335	1922	42
	Plus (+)	1469	2115	38

GUVA115BX50 (Rise Range: 35 - 65°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" to .5" w.c. ESP	High Stage CFM at .1" to .5" w.c. ESP	Rise (°F)
A	Minus (-)	1107	1594	63
	Normal	1230	1771	57
	Plus (+)	1353	1948	52
B	Minus (-)	1139	1639	62
	Normal	1265	1822	56
	Plus (+)	1392	2004	50
C	Minus (-)	1170	1685	60
	Normal	1300	1872	54
	Plus (+)	1430	2059	49
D	Minus (-)	1202	1730	58
	Normal	1335	1922	53
	Plus (+)	1469	2115	48

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper airflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

BLOWER PERFORMANCE SPECIFICATIONS

High (Single) Stage Cooling Speed Charts

GUVA045BX30		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	540
	Normal	600
	Plus (+)	660
B	Minus (-)	720
	Normal	800
	Plus (+)	880
C	Minus (-)	900
	Normal	1000
	Plus (+)	1100
D	Minus (-)	1080
	Normal	1200
	Plus (+)	1320

GUVA070BX40		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	540
	Normal	600
	Plus (+)	660
B	Minus (-)	720
	Normal	800
	Plus (+)	880
C	Minus (-)	990
	Normal	1100
	Plus (+)	1210
D	Minus (-)	1286
	Normal	1429
	Plus (+)	1572

GUVA090BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	720
	Normal	800
	Plus (+)	880
B	Minus (-)	990
	Normal	1100
	Plus (+)	1210
C	Minus (-)	1260
	Normal	1400
	Plus (+)	1540
D	Minus (-)	1620
	Normal	1800
	Plus (+)	1980

GUVA115BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	720
	Normal	800
	Plus (+)	880
B	Minus (-)	990
	Normal	1100
	Plus (+)	1210
C	Minus (-)	1260
	Normal	1400
	Plus (+)	1540
D	Minus (-)	1620
	Normal	1800
	Plus (+)	1980

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper airflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

BLOWER PERFORMANCE SPECIFICATIONS

Low Stage Cooling Speed Charts

GUVA045BX30		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	380*
	Normal	390
	Plus (+)	429
B	Minus (-)	468
	Normal	520
	Plus (+)	572
C	Minus (-)	585
	Normal	650
	Plus (+)	715
D	Minus (-)	702
	Normal	780
	Plus (+)	858

GUVA070BX40		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	378*
	Normal	390
	Plus (+)	429
B	Minus (-)	468
	Normal	520
	Plus (+)	572
C	Minus (-)	644
	Normal	715
	Plus (+)	787
D	Minus (-)	836
	Normal	929
	Plus (+)	1022

GUVA090BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	513*
	Normal	520
	Plus (+)	572
B	Minus (-)	644
	Normal	715
	Plus (+)	787
C	Minus (-)	819
	Normal	910
	Plus (+)	1001
D	Minus (-)	1053
	Normal	1170
	Plus (+)	1287

GUVA115BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	514*
	Normal	520
	Plus (+)	572
B	Minus (-)	644
	Normal	715
	Plus (+)	787
C	Minus (-)	819
	Normal	910
	Plus (+)	1001
D	Minus (-)	1053
	Normal	1170
	Plus (+)	1287

- Units are shipped without filter(s). CFM in chart is without filter(s).
- All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper airflow for the cooling system.
- For most cooling applications, about 400 CFM per ton is desirable.
- The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
- Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
- * Motor CFM minimum.

BLOWER PERFORMANCE SPECIFICATIONS

Continuous Fan Speed Chart

GUVA045BX30			GUVA070BX40		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	380*	A	Minus (-)	380*
	Normal	380*		Normal	380*
	Plus (+)	380*		Plus (+)	380*
B	Minus (-)	403	B	Minus (-)	403
	Normal	448		Normal	448
	Plus (+)	493		Plus (+)	493
C	Minus (-)	504	C	Minus (-)	554
	Normal	560		Normal	616
	Plus (+)	616		Plus (+)	678
D	Minus (-)	505	D	Minus (-)	720
	Normal	672		Normal	800
	Plus (+)	739		Plus (+)	880

GUVA090BX50			GUVA115BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	513*	A	Minus (-)	514*
	Normal	513*		Normal	514*
	Plus (+)	513*		Plus (+)	514*
B	Minus (-)	554	B	Minus (-)	554
	Normal	616		Normal	616
	Plus (+)	678		Plus (+)	678
C	Minus (-)	706	C	Minus (-)	706
	Normal	784		Normal	784
	Plus (+)	862		Plus (+)	862
D	Minus (-)	907	D	Minus (-)	907
	Normal	1008		Normal	1008
	Plus (+)	1109		Plus (+)	1109

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper airflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

BLOWER PERFORMANCE SPECIFICATIONS

Heating Speed Charts

GCVA070BX40 (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" to .5" w.c. ESP	High Stage CFM at .1" to .5" w.c. ESP	Rise (°F)
A	Minus (-)	747	1076	56
	Normal	830	1195	50
	Plus (+)	913	1315	46
B	Minus (-)	824	1186	51
	Normal	915	1318	46
	Plus (+)	1007	1449	42
C	Minus (-)	900	1296	47
	Normal	1000	1440	42
	Plus (+)	1100	1584	38
D	Minus (-)	978	1408	43
	Normal	1085	1562	39
	Plus (+)	1194	1719	35

GCVA090BX50 (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" to .5" w.c. ESP	High Stage CFM at .1" to .5" w.c. ESP	Rise (°F)
A	Minus (-)	999	1439	56
	Normal	1110	1598	50
	Plus (+)	1221	1758	46
B	Minus (-)	1067	1536	52
	Normal	1185	1706	47
	Plus (+)	1303	1876	43
C	Minus (-)	1134	1633	49
	Normal	1260	1814	44
	Plus (+)	1386	1996	40
D	Minus (-)	1202	1730	46
	Normal	1335	1922	42
	Plus (+)	1469	2115	38

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper airflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

BLOWER PERFORMANCE SPECIFICATIONS

High (Single) Stage Cooling Speed Charts

GCVA070BX40			GCVA090BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	540	A	Minus (-)	720
	Normal	600		Normal	800
	Plus (+)	660		Plus (+)	880
B	Minus (-)	720	B	Minus (-)	990
	Normal	800		Normal	1100
	Plus (+)	880		Plus (+)	1210
C	Minus (-)	990	C	Minus (-)	1260
	Normal	1100		Normal	1400
	Plus (+)	1210		Plus (+)	1540
D	Minus (-)	1286	D	Minus (-)	1620
	Normal	1429		Normal	1800
	Plus (+)	1572		Plus (+)	1980

Low Stage Cooling Speed Charts

GCVA070BX40			GCVA090BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	378*	A	Minus (-)	513*
	Normal	390		Normal	520
	Plus (+)	429		Plus (+)	572
B	Minus (-)	468	B	Minus (-)	644
	Normal	520		Normal	715
	Plus (+)	572		Plus (+)	787
C	Minus (-)	644	C	Minus (-)	819
	Normal	715		Normal	910
	Plus (+)	787		Plus (+)	1001
D	Minus (-)	836	D	Minus (-)	1053
	Normal	929		Normal	1170
	Plus (+)	1022		Plus (+)	1287

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper airflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

BLOWER PERFORMANCE SPECIFICATIONS

Continuous Fan Speed Chart

GCVA070BX40			GCVA090BX50		
Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" to .8" w.c. ESP
A	Minus (-)	380*	A	Minus (-)	513*
	Normal	380*		Normal	513*
	Plus (+)	380*		Plus (+)	513*
B	Minus (-)	403	B	Minus (-)	554
	Normal	448		Normal	616
	Plus (+)	493		Plus (+)	678
C	Minus (-)	554	C	Minus (-)	706
	Normal	616		Normal	784
	Plus (+)	678		Plus (+)	862
D	Minus (-)	720	D	Minus (-)	907
	Normal	800		Normal	1008
	Plus (+)	880		Plus (+)	1109

GUVA/GCVA***BX**

Circulator Blower Speed Adjustment Switches

Normal* 		
+ (Plus) Adjust 		
- (Minus) Adjust 		
Adjust Taps (* indicates factory setting)		
Cooling Speed Taps (* indicates factory setting)		Heating Speed Taps (* indicates factory setting)

Note: There is a green LED adjacent to the integrated control module fuse which is used to verify airflow volume. The green CFM LED blinks once for each 100 CFM of airflow.

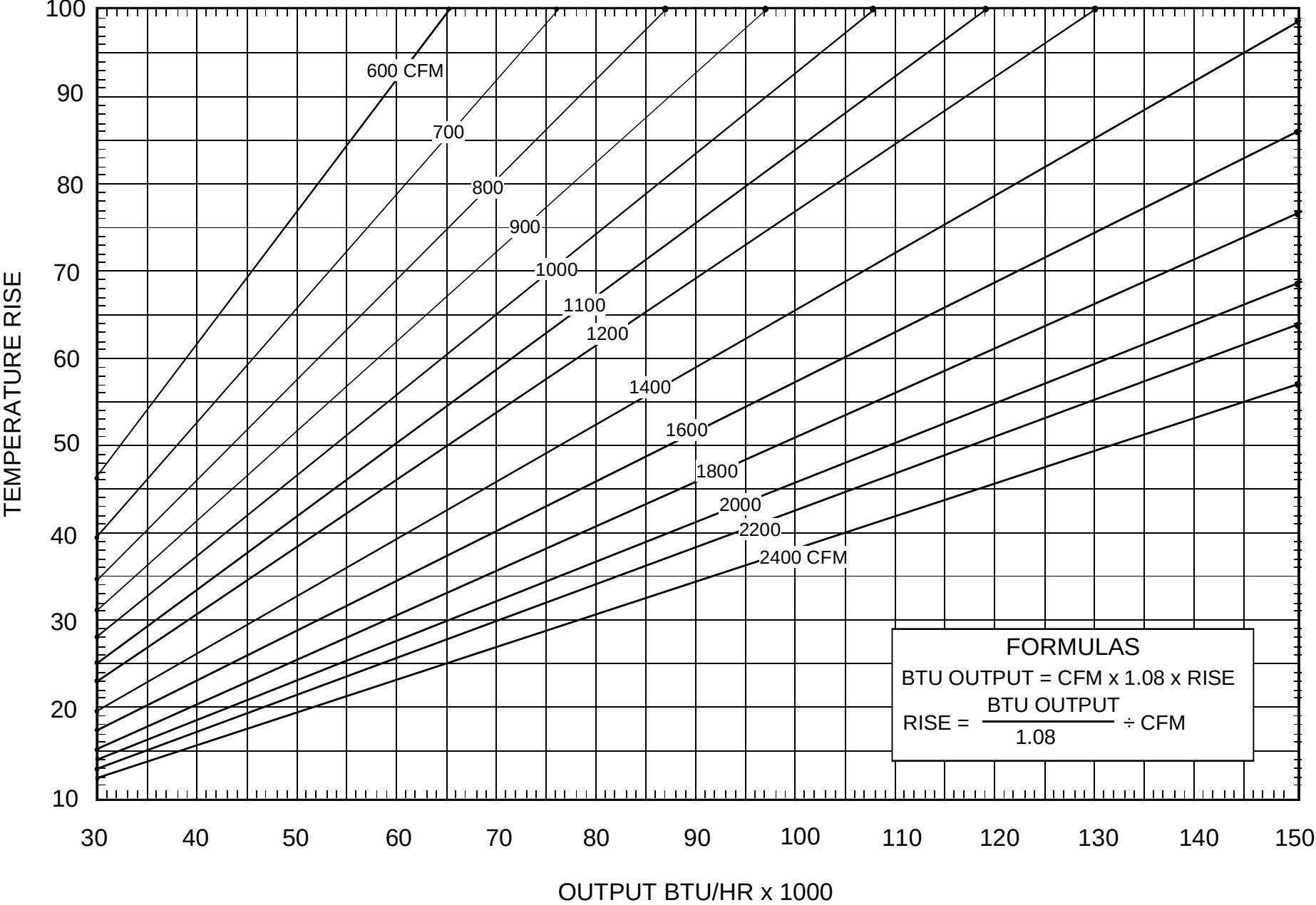
Example: 10 blinks = 1,000 CFM

Note: Continuous fan speed will be 56% of high stage cooling speed.

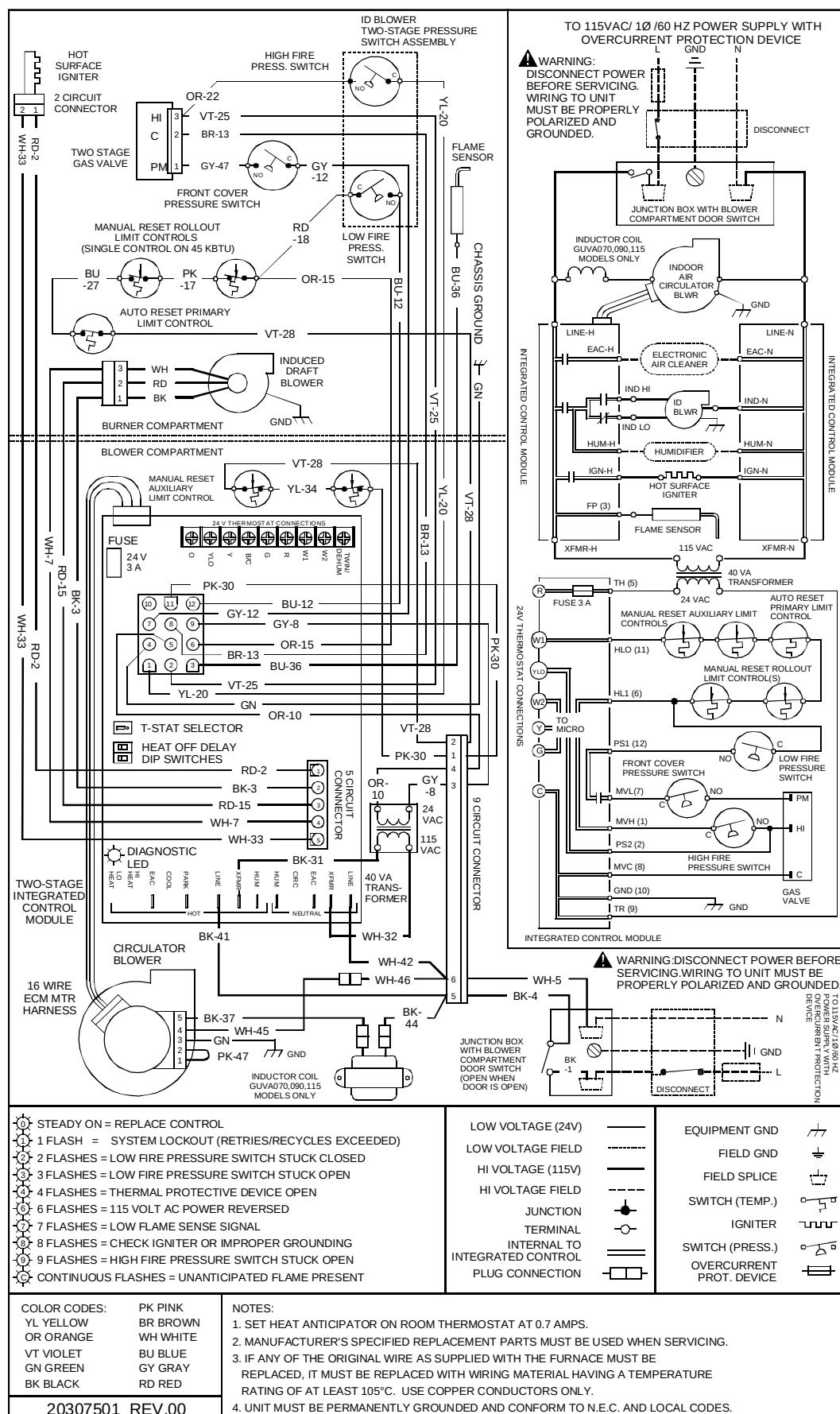
Example: 1,000 CFM of cooling speed will be reduced to 560 CFM when fan selector switch is set to on, and no call for cooling.

- Units are shipped without filter(s). CFM in chart is without filter(s).
- All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper airflow for the cooling system.
- For most cooling applications, about 400 CFM per ton is desirable.
- The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
- Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
- * Motor CFM minimum.

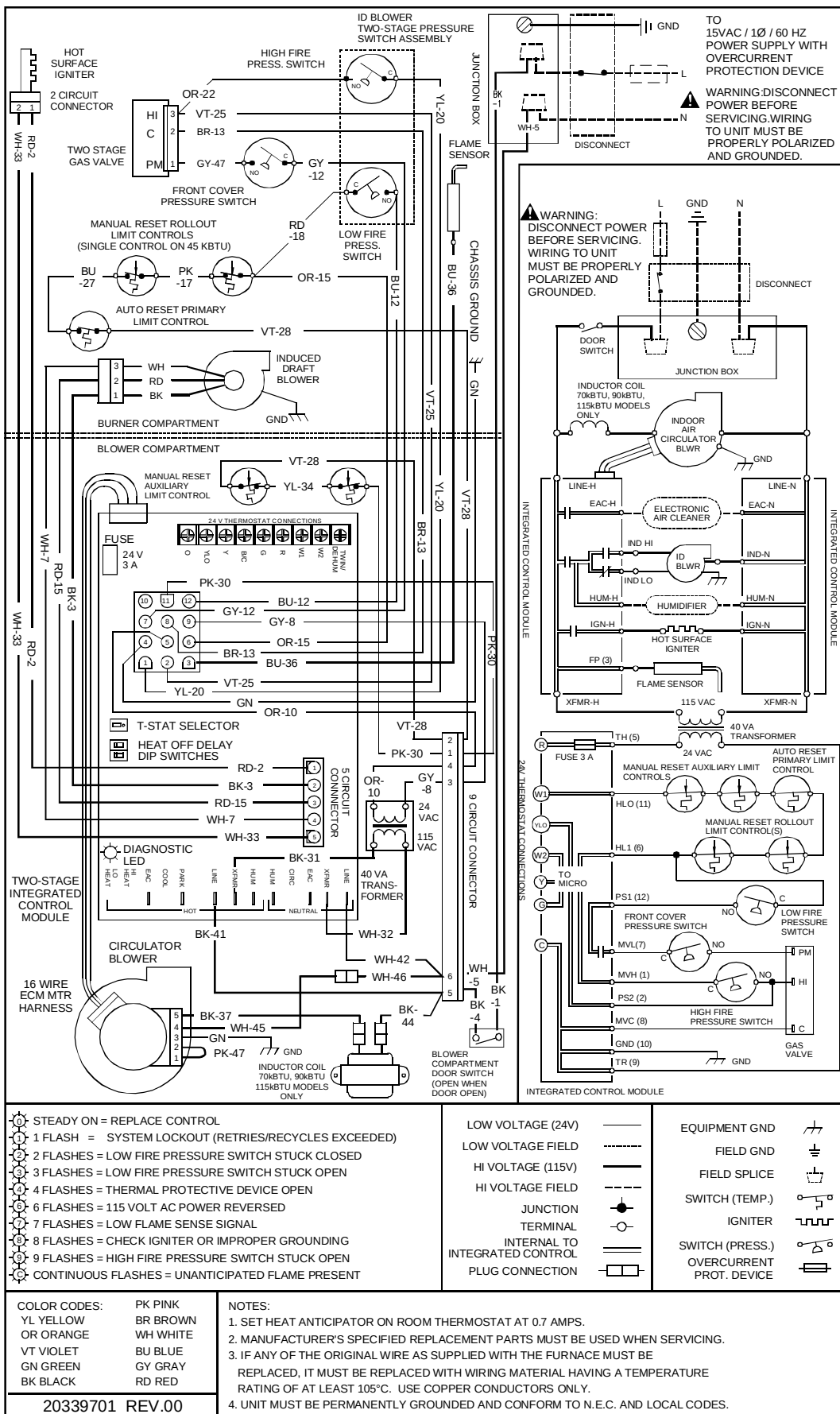
BTU OUTPUT vs TEMPERATURE RISE CHART



WIRING DIAGRAMS



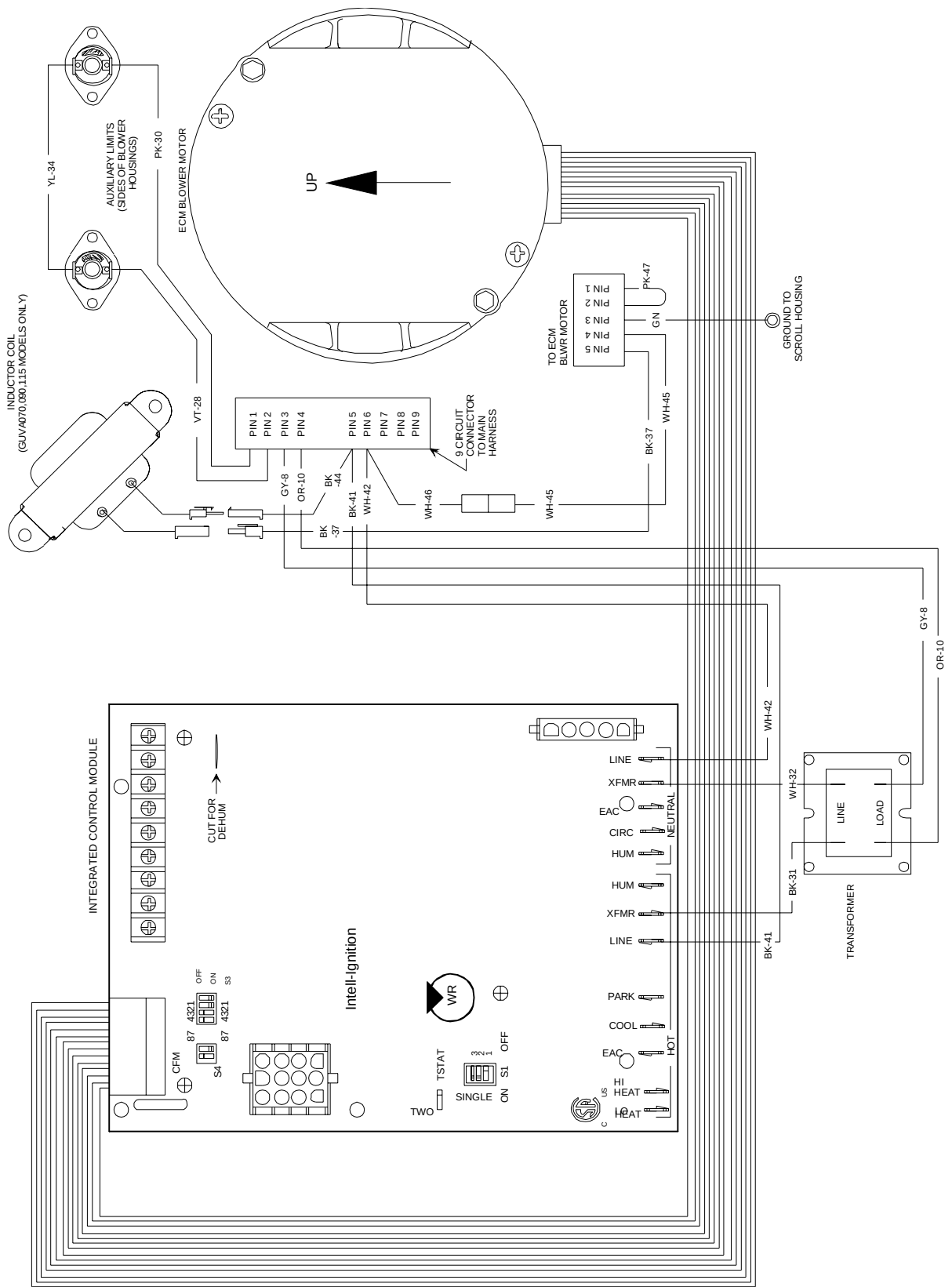
WIRING DIAGRAMS



! WARNING

GUVA__BX__ (Manufacturing Numbers P1239601-06F and P1242101-06f)
GCVA__BX__ (Manufacturing Numbers P1237403-05F and P1242203-05F)

SCHEMATICS

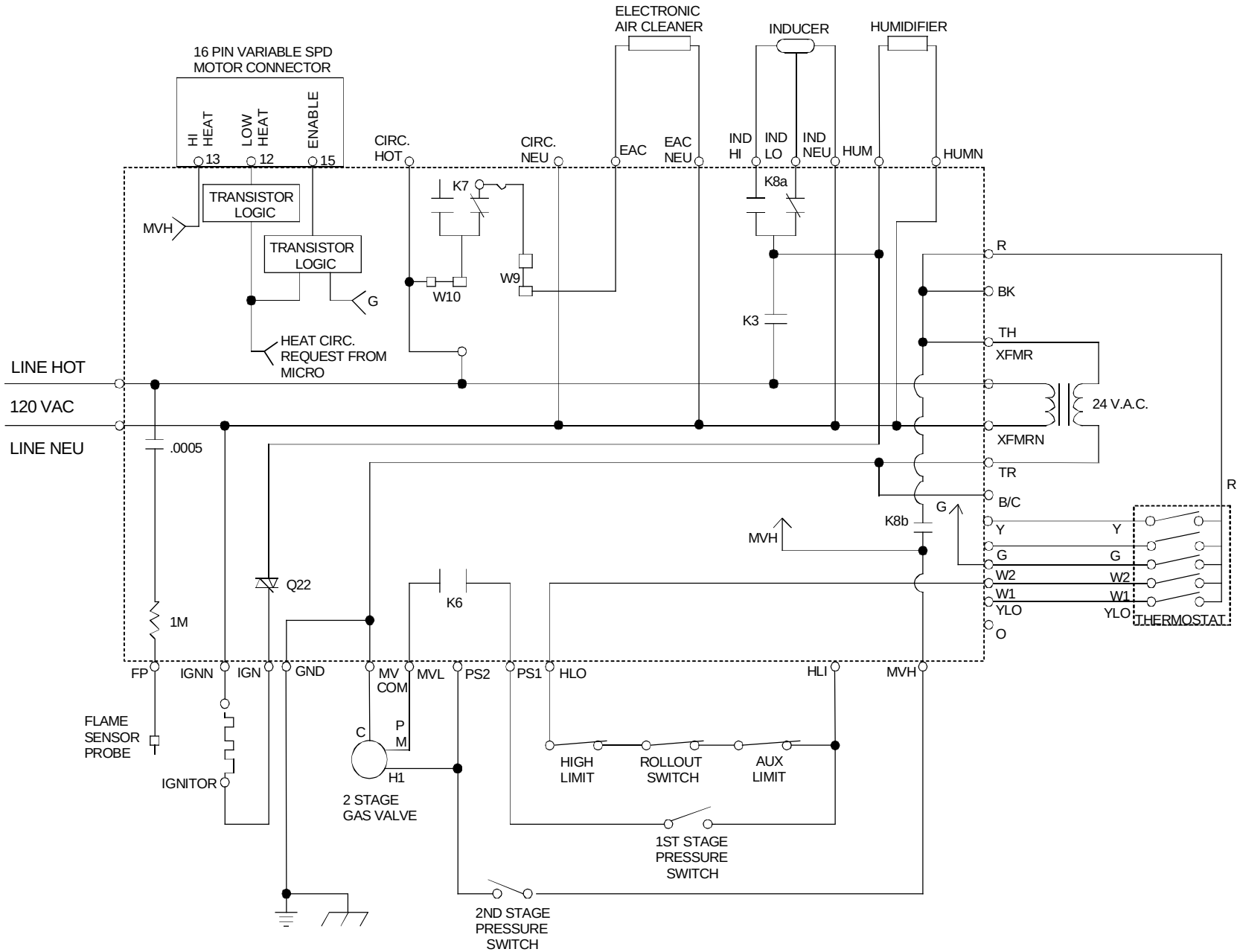


BLOWER ASSEMBLY SCHEMATIC
GUA/GVCA__BX__ MODEL FURNACES
 This schematic is for reference only. Not all wiring is as shown above,
 refer to the appropriate wiring diagram for the unit being serviced.

**TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY,
 OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**

WARNING

SCHEMATICS



TYPICAL SCHEMATIC

GUA/GCVA BX MODEL FURNACES

WR 50V61-288 INTEGRATED IGNITION CONTROL

This schematic is for reference only. Not all wiring is as shown above, refer to the appropriate wiring diagram for the unit being serviced.



WARNING

TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.