GMVM96 / GCVM96

Modulating, Variable-Speed Gas Furnace / up to 96% AFUE

Standard Features

- ComfortNet™ Communicating Systems compatible
- Heavy-duty aluminzed-steel dual-diameter, tubular heat exchanger
- Stainless-steel secondary heat exchanger
- Self-calibrating modulating gas valve auto-confiures for each installation
- Durable Silicon Nitride igniter
- Quiet variable-speed induced draft blower
- Utilizes ComfortNet™ communicating, two-stage or single-stage thermostats
- Self-diagnostic control board with constant memory fault code history output to a dual 7-segment display
- Color-coded low-voltage terminals with provisions for electronic air cleaner and humidifier
- Efficient and quiet variable-speed airflow system gently ramps up or down according to heating or cooling demand
- Multiple continuous fan speed options offer quiet air circulation
- Auto-Comfort and enhanced dehumidification modes available
- All models comply with California Low NOx emissions standard

Cabinet Features

- Multi-position installation:
  GMVM96: upflow, horizontal left or right
  GCVM96: downflow, horizontal left or right
- Certified for direct vent (2-pipe) or non-direct vent (1-pipe)
- Easy to install top venting with optional side venting
- Convenient left or right connection for gas and electrical service
- Cabinet air leakage (Q_{Leak}) ≤ 2%
- Heavy-gauge steel cabinet with durable baked-enamel finish
- Fully insulated heat exchanger and blower section
- Airtight solid bottom or side-return with easy-cut tabs for effortless removal in bottom air-inlet applications

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* Complete warranty details available from your local dealer or at www.amana-hac.com. To receive the Lifetime Heat Exchanger Limited Warranty (good for as long as you own your home), 10-Year Unit Replacement Limited Warranty and 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Québec.

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Supersedes 1/13

NOMENCLATURE

G	M	V	M	96	060	3	B	N	A	A
1	2	3	4	5,6	7,8,9	10	11	12	13	14

Brand
G- Goodman

Configuration
M - Upflow/Horizontal
C - Downflow/Horizontal

Motor
V - Variable Speed/ComfortNet

Gas Valve
M - Modulating
C - Two-Stage

AFUE
97 - 97% AFUE
80 - 80% AFUE

MBTU/h
40 - 40,000
60 - 60,000
80 - 80,000
100 - 100,000
120 - 120,000

Minor Revision
A - Initial Release
B - 1st Revision

Major Revision
A - Initial Release
B - 1st Revision

NOx
N - Natural Gas
X - Low NOx

Cabinet Width
A - 14"
B - 17½"
C - 21"
D - 24½"

Maximum CFM
3 - 1200 CFM
4 - 1600 CFM
5 - 2000 CFM

Specifications

	GMVM96 0603BXB*	GMVM96 0805CXB*	GMVM96 1005DXB*	GMVM96 1155DXB*	GCVM96 0604CXB*	GCVM96 0805DXB*	GCVM96 1005DXB*
Heating Capacity							
High Fire Input[1]	60,000	80,000	100,000	115,000	60,000	80,000	100,000
High Fire Output[1]	57,600	76,800	96,000	109,250	57,600	76,800	95,000
Low-Fire Steady-State Input[1]	30,000	40,000	50,000	57,500	30,000	40,000	50,000
Low-Fire Steady-State Output[1]	28,800	38,400	48,000	54,625	28,800	38,400	47,500
AFUE[2]	96	96	96	95	96	96	95
Tons AC @ 0.5” ESP	1.5-3.0	2.0-5.0	2.0-5.0	2.0-5.0	1.5-4.0	2.0-5.0	2.0-5.0
Temperature Rise Range (°F)	20-50	35-65	35-65	35-65	20-50	20-50	25-55
Circulator Blower							
Size (D x W)	10" X 8"	11" X 10"	11" X 10"	11" X 10"	10"X 10"	11" X 10"	11" X 10"
Horespower @ 1050 RPM	3/4	1	1	1	3/4	1	1
Speed	Variable	Variable	Variable	Variable	Variable	Variable	Variable
Vent Diameter[3]	2"	3"	3"	3"	2"	3"	3"
No. of Burners	3	4	5	5	3	4	5
Disposable Filter (in^2)	731	683	853	981	731	975	1,056
Electrical Data							
Min. Circuit Ampacity (amps)[4]	6.0	14.2	14.2	14.2	6.0	14.2	14.2
Max. Overcurrent Protection[5]	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Ship Weight (lbs)	135	145	170	170	139	160	165

1 Natural Gas BTU/h

2 DOE AFUE based upon Isolated Combustion System (ICS)

3 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.

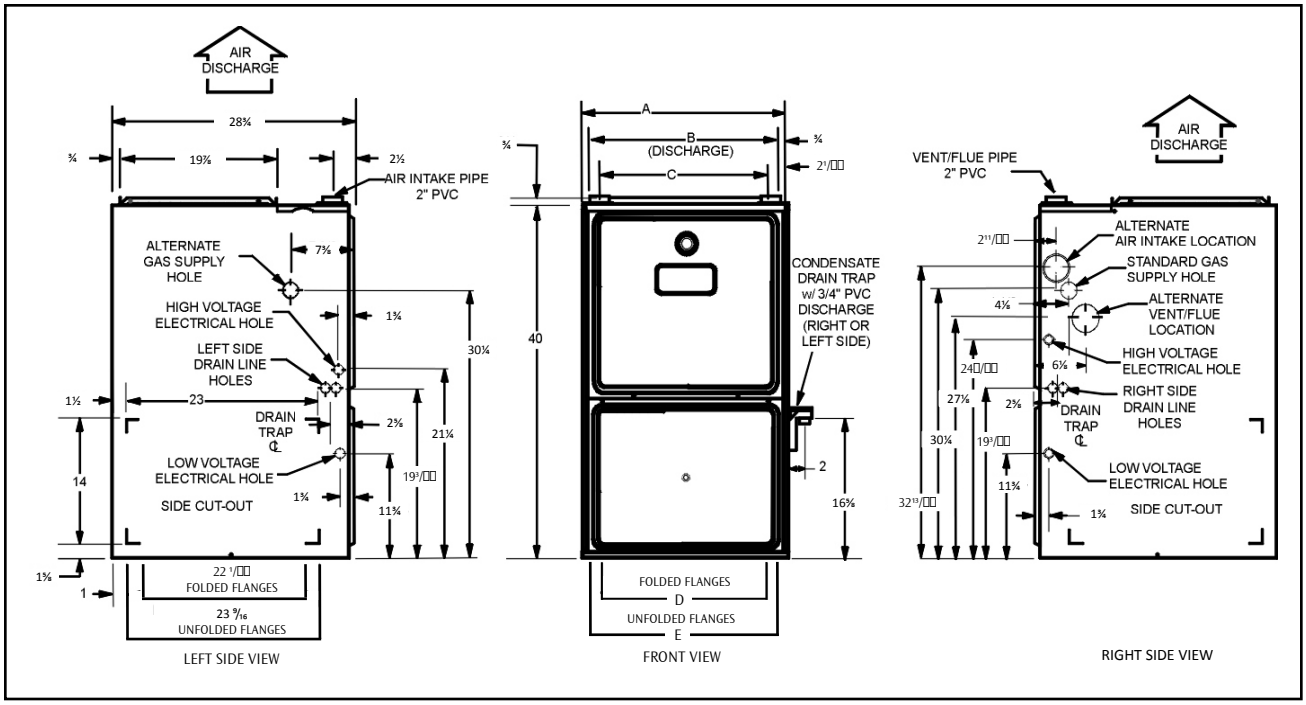
4 Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

5 Maximum Overcurrent Protection Device refers to maximum recommended fuse or circuit breaker size. May use fuses or HACR-type circuit breakers of the same size as noted.

Notes

- All furnaces are manufactured for use on 115 VAC, 60 Hz, single-phase electrical supply.
- Gas Service Connection ½” FPT
- Important: Size fuses and wires properly and make electrical connections in accordance with the National Electrical Code and/or all existing local codes.

GMVM96 DIMENSIONS



MODEL	W	D	H
GMVM960603BXB*	17½”	28¾"	40¾"
GMVM960805CXB*	21"	28¾"	40¾"
GMVM961005DXB*	24½”	28¾"	40¾"
GMVM961155DXB*	24½”	28¾"	40¾"

A	B	C	D	E
17½”	16"	13⅛"	12⅛"	13⅝"
21"	19½”	16⅛"	16"	17½”
24½”	23"	20⅝"	19⅜"	20⅞"
24½”	23"	20⅝"	19⅜"	20⅞"

NOTES:

- 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.
- 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.
- Conversion kits for high-altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- Installer must supply following gas line fittings, according to which entrance is used:
  Left—Two 90º elbows, one close nipple, straight pipe
  Right—Straight pipe to reach gas valve
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

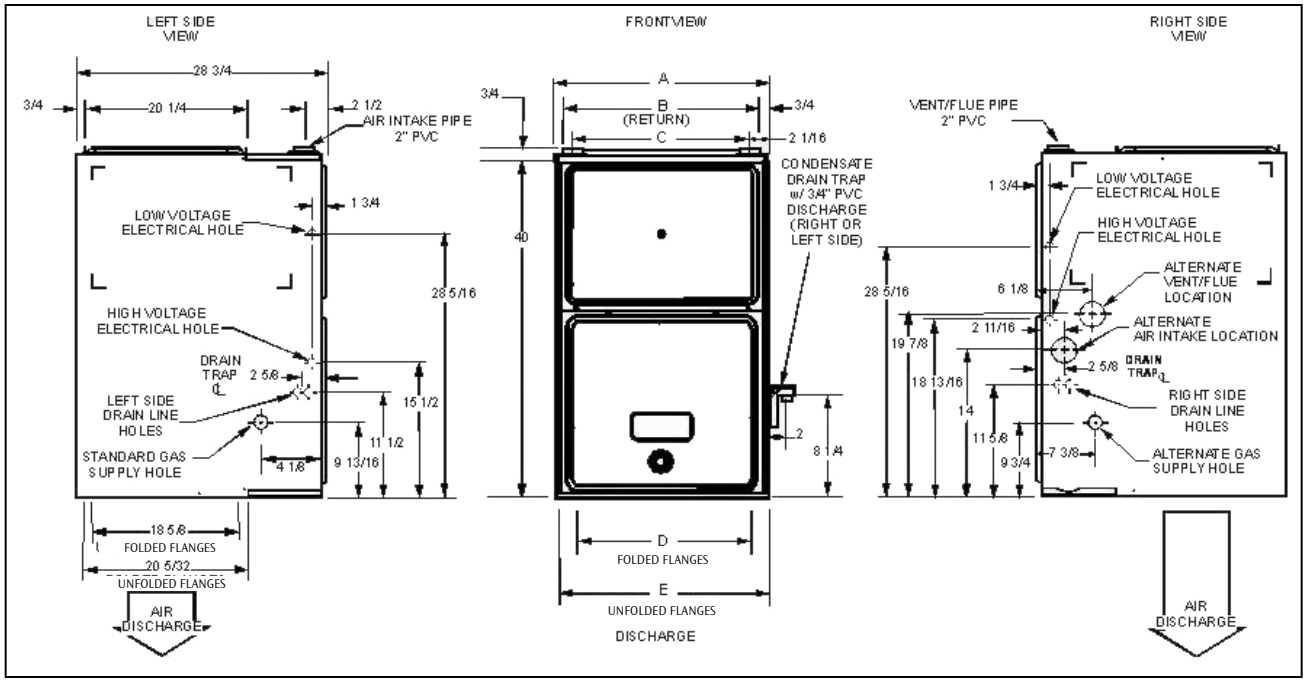
POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Upflow	0”	0”	3”	C	0”	1”
Horizontal	6”	0”	3”	C	0”	6”

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

NOTES

- For servicing or cleaning, a 24” front clearance is required.
- Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed above.
- In all cases, accessibility clearance must take precedence over clearances from the enclosure where accessibility clearances are greater.

GCVM96 DIMENSIONS



MODEL	W	D	H
GCVM960604CXB*	21"	28¾"	40¾"
GCVM960805DXB*	24½"	28¾"	40¾"
GCVM961005DXB*	24½"	28¾"	40¾"

A	B	C	D	E
21"	19½"	16⅛"	18"	19½"
24½"	23"	20⅝"	21½"	23"
24½"	23"	20⅝"	21½"	23"

NOTES:

- 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.
- 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.
- Conversion kits for high-altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- Installer must supply following gas line fittings, according to which entrance is used:
  Left—Two 90º elbows, one close nipple, straight pipe
  Right—Straight pipe to reach gas valve
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Downflow	0"	0"	3"	NC	0"	1"
Horizontal	6"	0"	3"	C	0"	6"

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

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

NOTES

- For servicing or cleaning, a 24" front clearance is required.
- Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed above.
- In all cases, accessibility clearance must take precedence over clearances from the enclosure where accessibility clearances are greater.

GMVM96 Airflow Data

GMVM960603BXB*
Cooling Speed
(@ .1" - .8" w.c. ESP)

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	567	A	Minus(-)	351
	Normal	630		Normal	390
	Plus (+)	693		Plus (+)	429
B	Minus(-)	720	B	Minus(-)	495
	Normal	800		Normal	550
	Plus (+)	880		Plus (+)	605
C	Minus(-)	900	C	Minus(-)	612
	Normal	1000		Normal	680
	Plus (+)	1100		Plus (+)	748
D	Minus(-)	1089	D	Minus(-)	720
	Normal	1210		Normal	800
	Plus (+)	1331		Plus (+)	880

GVMV960805CXB*
Cooling Speed
(@ .1" - .8" w.c. ESP)

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	747	A	Minus(-)	486
	Normal	830		Normal	540
	Plus (+)	913		Plus (+)	594
B	Minus(-)	981	B	Minus(-)	675
	Normal	1090		Normal	750
	Plus (+)	1199		Plus (+)	825
C	Minus(-)	1314	C	Minus(-)	882
	Normal	1460		Normal	980
	Plus (+)	1606		Plus (+)	1078
D	Minus(-)	1620	D	Minus(-)	1089
	Normal	1800		Normal	1210
	Plus (+)	1980		Plus (+)	1331

GMVM961005DXB*
Cooling Speed
(@ .1" - .8" w.c. ESP)

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	711	A	Minus(-)	459
	Normal	790		Normal	510
	Plus (+)	869		Plus (+)	561
B	Minus(-)	990	B	Minus(-)	639
	Normal	1100		Normal	710
	Plus (+)	1210		Plus (+)	781
C	Minus(-)	1269	C	Minus(-)	819
	Normal	1410		Normal	910
	Plus (+)	1551		Plus (+)	1001
D	Minus(-)	1647	D	Minus(-)	1044
	Normal	1830		Normal	1160
	Plus (+)	2013		Plus (+)	1276

GMVM961155DXB*
Cooling Speed
(@ .1" - .8" w.c. ESP)

High Stage			Low Stage		
Tap	Adjust	CFM*	Tap	Adjust	CFM*
A	Minus(-)	711	A	Minus(-)	459
	Normal	790		Normal	510
	Plus (+)	869		Plus (+)	561
B	Minus(-)	990	B	Minus(-)	639
	Normal	1100		Normal	710
	Plus (+)	1210		Plus (+)	781
C	Minus(-)	1269	C	Minus(-)	819
	Normal	1410		Normal	910
	Plus (+)	1551		Plus (+)	1001
D	Minus(-)	1647	D	Minus(-)	1044
	Normal	1830		Normal	1160
	Plus (+)	2013		Plus (+)	1276

Notes:

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GMVM96 Airflow Data

GMVM960603BXB*
Heating Speed
(@ .1" - .5" w.c. ESP; Rise Range: 20 - 50°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	855	62
Normal	950	56
Plus (+)	1,045	51
Minus(-)	945	56
Normal	1,050	51
Plus (+)	1,155	46
Minus(-)	1,053	50
Normal	1,170	45
Plus (+)	1,287	41
Minus(-)	1,143	46
Normal	1,270	42
Plus (+)	1,397	38

GMVM960805CXB*
Heating Speed
(@ .1" - .5" w.c. ESP, Rise Range: 35 - 65°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,440	49
Normal	1,600	44
Plus (+)	1,760	40
Minus(-)	1,521	47
Normal	1,690	42
Plus (+)	1,859	38
Minus(-)	1,620	44
Normal	1,800	39
Plus (+)	1,980	36
Minus(-)	1,701	42
Normal	1,890	37
Plus (+)	2,079	34

GMVM961005DXB*
Heating Speed
(@ .1" - .5" w.c. ESP; Rise Range: 35 - 65°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,629	54
Normal	1,810	49
Plus (+)	1,991	44
Minus(-)	1,665	53
Normal	1,850	48
Plus (+)	2,035	43
Minus(-)	1,701	52
Normal	1,890	47
Plus (+)	2,079	43
Minus(-)	1,746	51
Normal	1,940	46
Plus (+)	2,134	41

GMVM961155DXB*
Heating Speed
(@ .1" - .5" w.c. ESP; Rise Range: 35 - 65°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,629	62
Normal	1,810	56
Plus (+)	1,991	51
Minus(-)	1,665	60
Normal	1,850	54
Plus (+)	2,035	49
Minus(-)	1,701	59
Normal	1,890	53
Plus (+)	2,079	48
Minus(-)	1,746	58
Normal	1,940	52
Plus (+)	2,134	47

Notes

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.
- High-fire CFM shown. CFM will vary proportionally with the gas valve BTU/H input.

GCVM96 Airflow Data

GCVM960604CXB*
Cooling Speed
(@ .1" - .8" w.c. ESP)

High- or Single Stage			Low Stage		
Cooling Speed Tap	Adjust Tap	CFM *	Cooling Speed Tap	Adjust Tap	CFM *
A	Minus(-)	594	A	Minus(-)	333
	Normal	660		Normal	370
	Plus (+)	726		Plus (+)	407
B	Minus(-)	774	B	Minus(-)	486
	Normal	860		Normal	540
	Plus (+)	946		Plus (+)	594
C	Minus(-)	1035	C	Minus(-)	711
	Normal	1150		Normal	790
	Plus (+)	1265		Plus (+)	869
D	Minus(-)	1323	D	Minus(-)	882
	Normal	1470		Normal	980
	Plus (+)	1617		Plus (+)	1078

GCVM960805DXB*
Cooling Speed
(@ .1" - .8" w.c. ESP)

High- or Single Stage			Low Stage		
Cooling Speed Tap	Adjust Tap	CFM *	Cooling Speed Tap	Adjust Tap	CFM *
A	Minus(-)	810	A	Minus(-)	477
	Normal	900		Normal	530
	Plus (+)	990		Plus (+)	583
B	Minus(-)	990	B	Minus(-)	657
	Normal	1100		Normal	730
	Plus (+)	1210		Plus (+)	803
C	Minus(-)	1287	C	Minus(-)	837
	Normal	1430		Normal	930
	Plus (+)	1573		Plus (+)	1023
D	Minus(-)	1692	D	Minus(-)	1098
	Normal	1880		Normal	1220
	Plus (+)	2068		Plus (+)	1342

Notes

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GCVM961005DXB*
Cooling Speed
(@ .1" - .8" w.c. ESP)

High- or Single Stage			Low Stage		
Cooling Speed Tap	Adjust Tap	CFM *	Cooling Speed Tap	Adjust Tap	CFM *
A	Minus(-)	702	A	Minus(-)	450
	Normal	780		Normal	500
	Plus (+)	858		Plus (+)	550
B	Minus(-)	963	B	Minus(-)	666
	Normal	1070		Normal	740
	Plus (+)	1177		Plus (+)	814
C	Minus(-)	1242	C	Minus(-)	828
	Normal	1380		Normal	920
	Plus (+)	1518		Plus (+)	1012
D	Minus(-)	1602	D	Minus(-)	1044
	Normal	1780		Normal	1160
	Plus (+)	1958		Plus (+)	1276

Notes

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GCVM96 Airflow Data

GCVM960604CXB*
Heating Speed
(@ .1" - .5" w.c. ESP; Rise Range: 20 - 50°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,098	48
Normal	1,220	44
Plus (+)	1,342	40
Minus(-)	1,206	44
Normal	1,340	40
Plus (+)	1,474	36
Minus(-)	1,314	40
Normal	1,460	36
Plus (+)	1,606	33
Minus(-)	1,431	37
Normal	1,590	33
Plus (+)	1,749	30

GCVM960805DXB*
Heating Speed
(@ .1" - .5" w.c. ESP; Rise Range: 20 - 50°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,440	49
Normal	1,600	44
Plus (+)	1,760	40
Minus(-)	1,539	46
Normal	1,710	41
Plus (+)	1,881	38
Minus(-)	1,620	44
Normal	1,800	39
Plus (+)	1,980	36
Minus(-)	1,719	41
Normal	1,910	37
Plus (+)	2,101	34

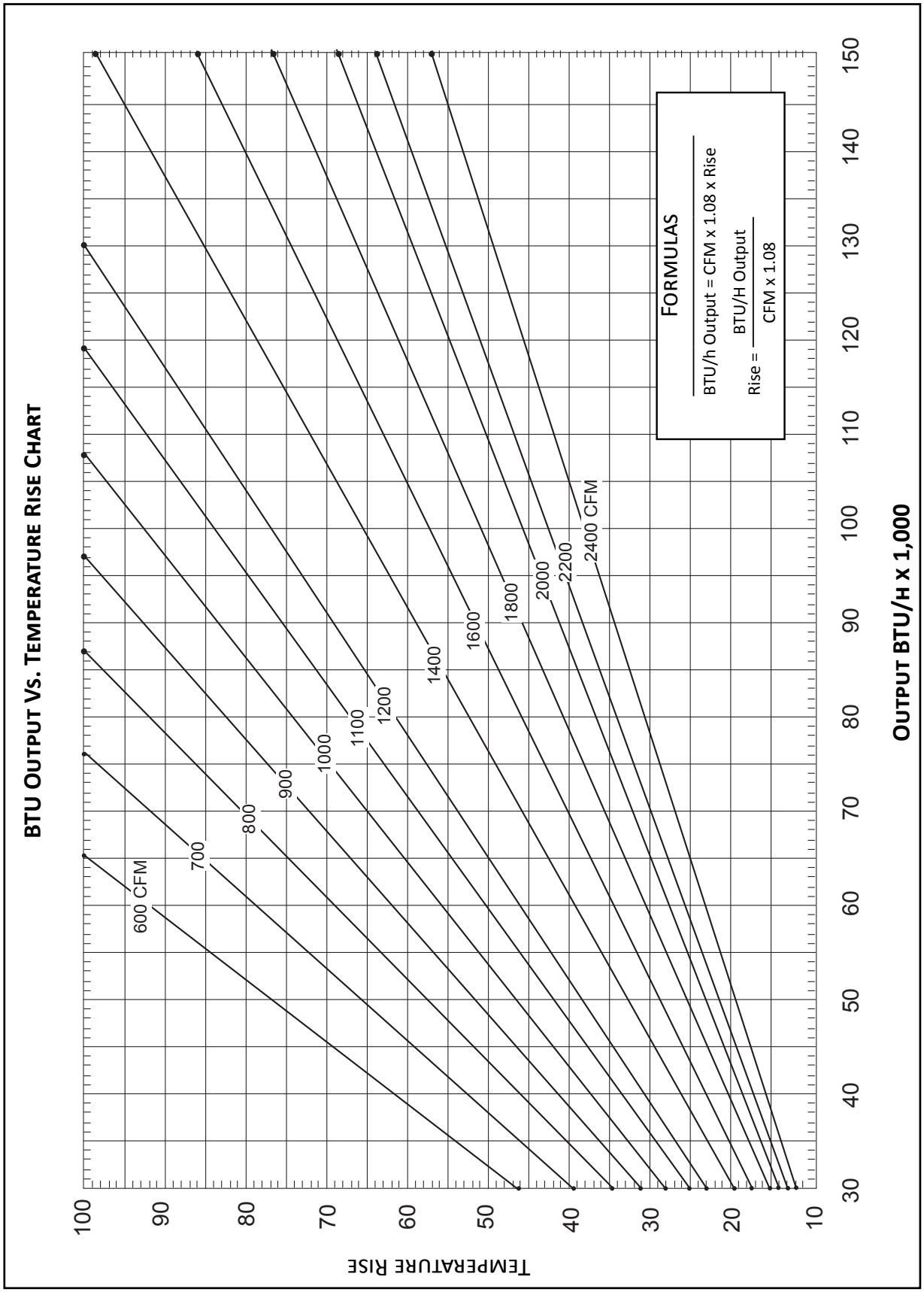
GCVM961005DXB*
Heating Speed
(@ .1" - .5" w.c. ESP; Rise Range: 25 - 55°F)

Adjust Tap	CFM *	Rise (°F)
Minus(-)	1,557	56
Normal	1,730	51
Plus (+)	1,903	46
Minus(-)	1,593	55
Normal	1,770	49
Plus (+)	1,947	45
Minus(-)	1,656	53
Normal	1,840	48
Plus (+)	2,024	43
Minus(-)	1,683	52
Normal	1,870	47
Plus (+)	2,057	43

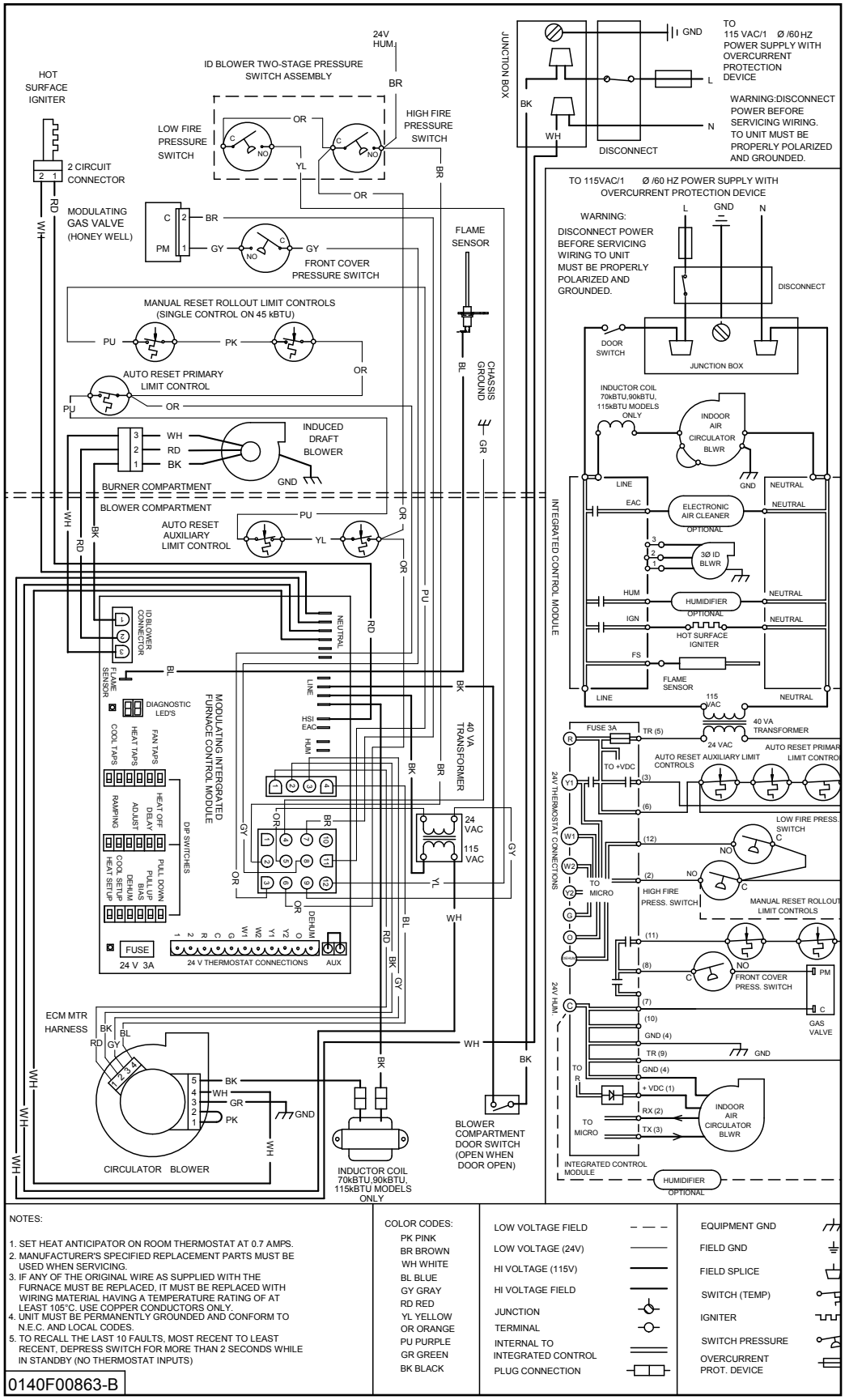
Notes

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.
- High-fire CFM shown. CFM will vary proportionally with the gas valve BTU/H input.

Temperature Rise Range Chart



WIRING DIAGRAM



NOTES:

1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105°C. USE COPPER CONDUCTORS ONLY.
4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.
5. TO RECALL THE LAST 10 FAULTS, MOST RECENT TO LEAST RECENT, DEPRESS SWITCH FOR MORE THAN 2 SECONDS WHILE IN STANDBY (NO THERMOSTAT INPUTS)

0140F00863-B

COLOR CODES:
- PK PINK
- BR BROWN
- WH WHITE
- BL BLUE
- GY GRAY
- RD RED
- YL YELLOW
- OR ORANGE
- PU PURPLE
- GR GREEN
- BK BLACK

LOW VOLTAGE FIELD
LOW VOLTAGE (24V)
HI VOLTAGE (115V)
HI VOLTAGE FIELD
JUNCTION
TERMINAL
INTERNAL TO INTEGRATED CONTROL
PLUG CONNECTION
EQUIPMENT GND
FIELD GND
FIELD SPLICE
SWITCH (TEMP)
IGNITER
SWITCH PRESSURE
OVERCURRENT PROT. DEVICE

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.

WARNING

Wiring is subject to change. Always refer to the wiring diagram or the unit for the most up-to-date wiring.

Accessories

Model	Description	GMVM96 0603BXB*	GMVM96 0805CXB*	GMVM96 1005DXB*	GMVM96 1155DXB*	GCVM96 0604CXB*	GCVM96 0805DXB*	GCVM96 1005DXB*
LPKM0D060UF	LP Conversion Kits	√						
LPKM0D080UF			√					
LPKM0D100UF				√				
LPKM0D115UF					√			
LPKM0D060CF						√		
LPKM0D080CF							√	
LPKM0D100CF								√
EFR01	External Filter Rack	√	√	√	√	√	√	√
DCVK-20	Horizontal/Vertical Concentric Vent Kit (2”)	√	√	√	---	√	---	---
DCVK-30	Horizontal/Vertical Concentric Vent Kit (3”)	√	√	√	√	√	√	√
CFB21	Downflow Floor Base	---	---	---	---	√	---	---
CFB24	Downflow Floor Base	---	---	---	---	---	√	√
0170K00000S	Flush-mount vent kit	√	√	√	√	√	√	√

Notes

√ Indicates available for this model

- For installation in Canada, gas furnaces are certified only to 4,500’.

Thermostats

CTK04 ComfortNet-compatible Control

CTK02 ComfortNet-compatible Control

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