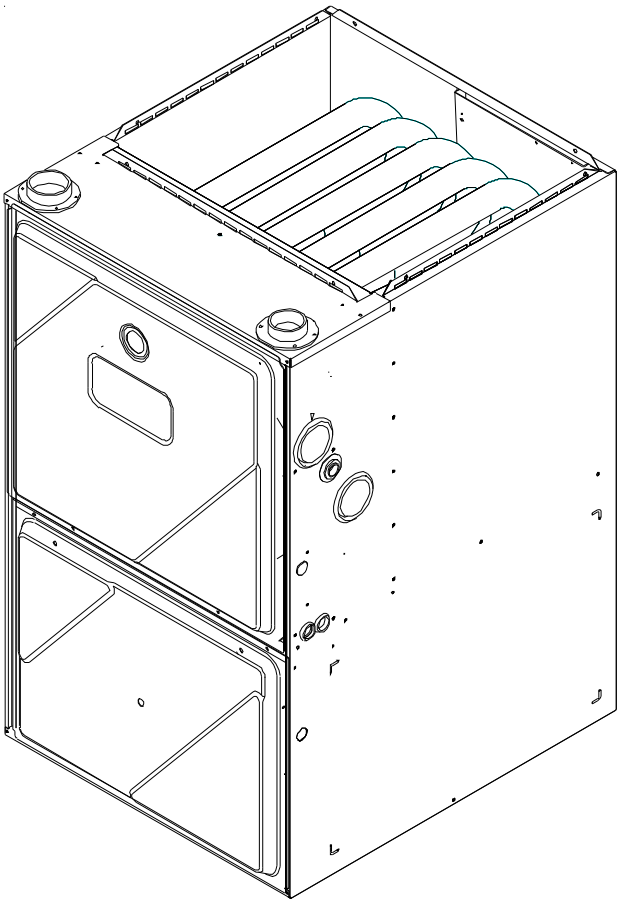
TECHNICAL INFORMATION MANUAL

GMV95
40" 95% Gas Furnace Units

Models listed on page 2.

- All safety information must be followed as provided in the Service Manual.
- Refer to the appropriate Parts Catalog for part number information.



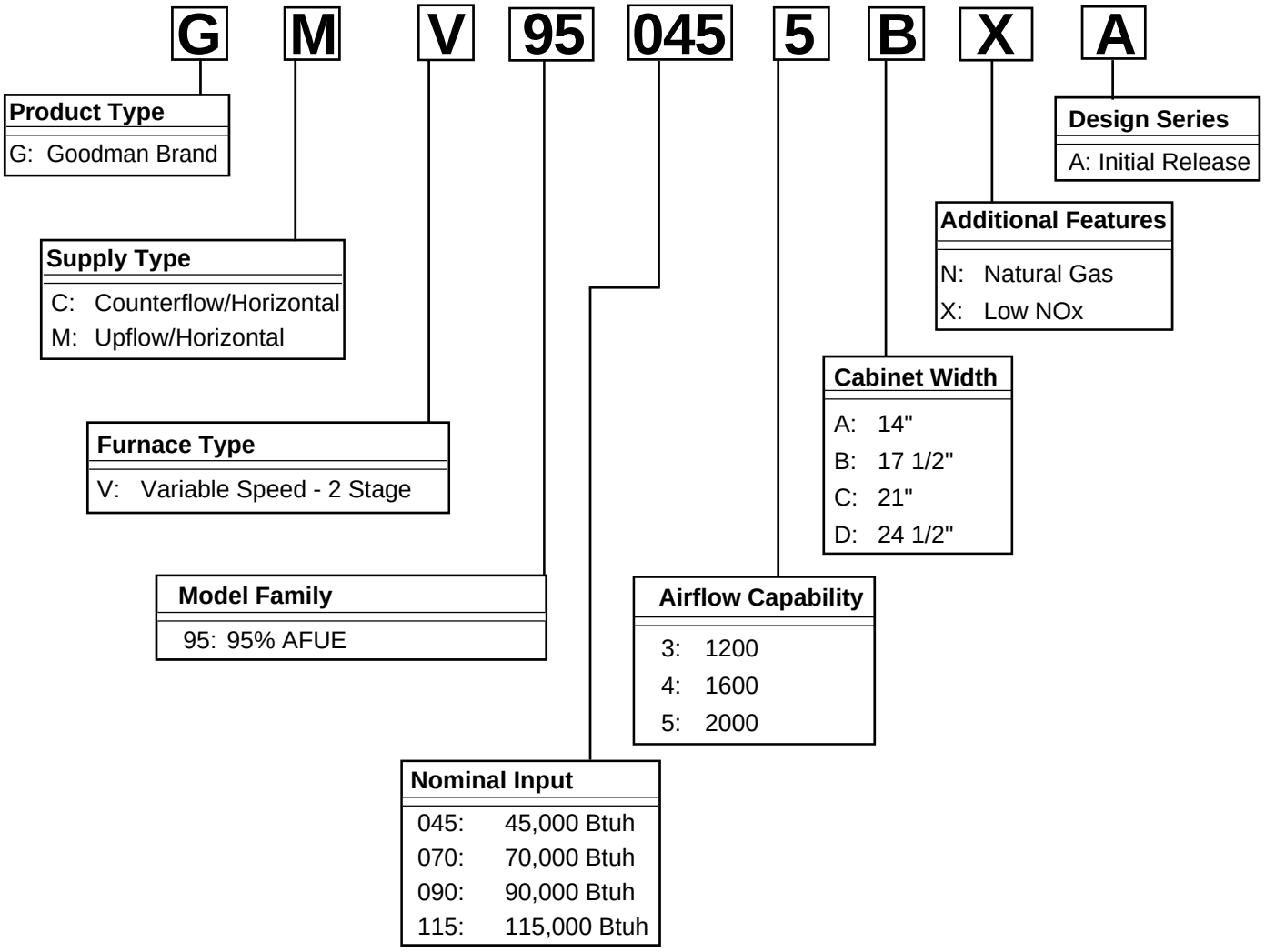
Goodman®

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

RT6612012
September 2005

PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. Please use these numbers when requesting service or parts information.



MODELS

GMV950453BXA	GMV950905DXA
GMV950704CXA	GMV951155DXA

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.

WARNING

THIS UNIT SHOULD NOT BE CONNECTED TO, OR USED IN CONJUNCTION WITH, ANY DEVICES THAT ARE NOT DESIGN CERTIFIED FOR USE WITH THIS UNIT OR HAVE NOT BEEN TESTED AND APPROVED BY GOODMAN. SERIOUS PROPERTY DAMAGE OR PERSONAL INJURY, REDUCED UNIT PERFORMANCE AND/OR HAZARDOUS CONDITIONS MAY RESULT FROM THE USE OF DEVICES THAT HAVE NOT BEEN APPROVED OR CERTIFIED BY GOODMAN.

CAUTION

GOODMAN 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 DESIGN

General Operation

The GMV95 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 1/8” 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)

GMV95 MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS (INCHES)						
POSITION*	**FRONT**	**SIDES**	**REAR**	**TOP**	**FLUE**	**FLOOR**
Upflow	3	0	0	1	0	C
Horizontal	3	6	0	6	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 instalaltion on non-combustible floors only. A combustible 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.

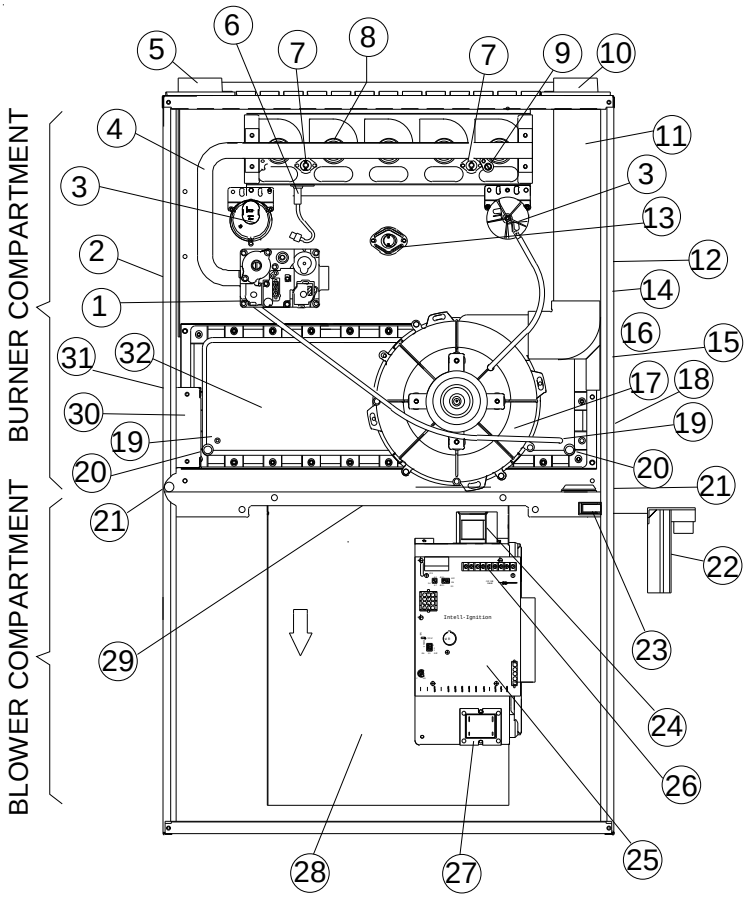
High Altitude Derate

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.

	"STANDARD" and "HIGH ALTITUDE" KITS								
	0 - 7,000 Feet (Standard Altitude)			7,001 - 9,000 Feet			9,001 - 11,000 Feet		
Furnace	Gas Orifices		ID Blwr Pressure Switch	Gas Orifices		ID Blwr Pressure Switch	Gas Orifices		ID Blwr Pressure Switch
	Natural	Propane		Natural	Propane		Natural	Propane	
GMV950453BXA GMV950704CXA	*No Change*	LPM-03* #55 Orifice	*No Change*	HANG13 #44 Orifice	HALP11 #56 Orifice	HAPS28	HANG14 #45 Orifice	HALP11 #56 Orifice	HAPS28
GMV950905DXA GMV951155DXA	*No Change*	LPM-03* #55 Orifice	*No Change*	HANG13 #44 Orifice	HALP11 #56 Orifice	HAPS29	HANG14 #45 Orifice	HALP11 #56 Orifice	HAPS29

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.

COMPONENT IDENTIFICATION

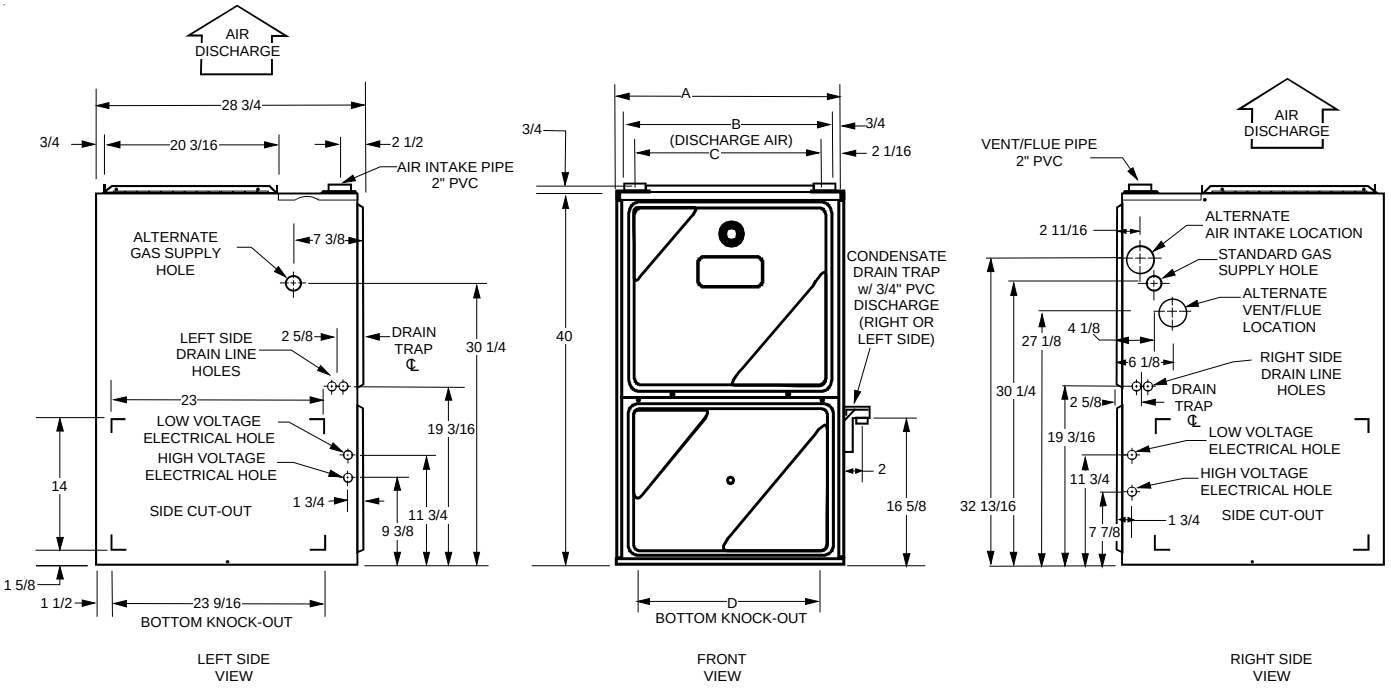


Upflow/Horizontal

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

PRODUCT DIMENSIONS

GMV95___XA



CABINET SIZE	UNITS	A	B	C	D
SMALL	0453BXA	17 1/2	15	12 3/8	12 5/8
MEDIUM	0704CXA	21	19	16 3/8	14 5/8
LARGE	0905DXA 1155DXA	24 1/2	23	20 3/8	18 5/8

All dimensions are in inches.

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
GMV950453BXA GMV950704CXA	-0.45	-0.90	-0.50	-0.95	-0.25	-0.25	-0.25	-0.25
GMV950905DXA GMV951155DXA	-0.65	-1.20	-0.70	-1.25	-0.25	-0.25	-0.25	-0.25

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			
GMV950453BXA GMV950704CXA	-0.10	-0.10	20197301	-0.30	-0.75	11177113	PURPLE	PINK	-0.10	-0.10	-0.22	-0.55	HAPS28 11177115	GREEN	YELLOW
GMV950905DXA GMV951155DXA	-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

Note: All installations above 7,000 ft. require a pressure switch change. For installations in Canada the GMV95 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
GMV950453BXA		1		
GMV950704CXA			1	
GMV950905DXA		1		
GMV951155DXA	1			

ROLLOUT LIMIT SWITCHES				
Part Number	10123517	10123518	10123533	10123537
Open Setting (°F)	210	170	200	190
Color Code(s)	White	Blue	Yellow	Gray
GMV950453BXA		1		
GMV950704CXA			2	
GMV950905DXA				2
GMV951155DXA			2	

PRODUCT DESIGN

Coil Matches:

A large array of Amana® brand coils are available for use with the new GMV95 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 95%+ furnaces match up with the existing Amana® brand coils as shown in the chart below.

Coil Matches (for Amana® brand units using R22):

CABINET WIDTH	FURNACE MODELS	AIRFLOW (tons)	CAUF UNCASED "A" COILS	CAUX UNCASED TXV "A" COILS	CACF CASED "A" COILS	CAPF CASED "A" COILS	CAPX CASED TXV "A" COILS	CHPF HORIZ. CASED "A" COIL	CHPX HORIZ. CASED TXV "A" COIL
17 1/2	GMV950453BXA	1 1/2 - 3 1 1/2 - 3	CAUF018B2* CAUF025B2* CAUF030B2* CAUF036B2* CAUF037B2* CAUF042B2* CAUF048B2*	CAUX018B2* CAUX025B2* CAUX036B2* CAUX037B2* CAUX042B2*	CACF030B2* CACF036B2* CACF042B2* CACF048B2*	CAPF018B2* CAPF025B2* CAPF030B2* CAPF039B2* CAPF036B2* CAPF037B2* CAPF042B2*	CAPX018B2* CAPX025B2* CAPX030B2* CAPX036B2* CAPX037B2* CAPX042B2*	CHPF036B2* CHPF042B2* CHPF048B2*	CHPX036B2* CHPX042B2*
21	GMV950704CXA	1 1/2 - 4	CAUF042C2* CAUF048C2* CAUF049C2* CAUF060C2* CAUF061C2*	CAUX049C2*	CACF042C2* CACF048C2* CACF060C2* CACF061C2*	CAPF036C2* CAPF042C2*	CAPX049C2*	CHPF048D2* CHPF060D2*	CHPX048D2* CHPX060D2*
24 1/2	GMV950905DXA GMV951155DXA	2 - 5	CAUF049D2* CAUF060D2* CAUF061D2*	CAUX049D2* CAUX060D2* CAUX061D2*	CACF060D2* CACF061D2*	CAPF049D2* CAPF060D2*	CAPX049D2* CAPX060D2* CAPX061D2*	CHPF048D2* CHPF060D2*	CHPX048D2* CHPX060D2*

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

CABINET WIDTH	FURNACE MODELS	AIRFLOW (tons)	CAUF UNCASED "A" COILS	CAUX UNCASED TXV "A" COILS	CAPF CASED "A" COILS	CAPX CASED TXV "A" COILS	CHPF HORIZ. CASED "A" COIL	CHPX HORIZ. CASED TXV "A" COIL
17 1/2	GMV950453BXA	1 1/2 - 3	CAUF030B4* CAUF036B4*	CAUX030B4* CAUX036B4* CAUX042B4*	CAPF030B4* CAPF036B4*	CAPX030B4* CAPX036B4*	CHPF036B4*	CHPX036B4*
21	GMV950704CXA	1 1/2 - 4	CAUF042C4* CAUF048C4* CAUF057D4*	CAUX042C4* CAUX048C4* CAUX057D4* CAUX060D4*	CAPF042C4*	CAPX042C4* CAPX048C4*		
24 1/2	GMV950905DXA GMV951155DXA	2 - 5		CAUX057D4* CAUX060D4*	CAPF057D4* CAPF060D4*	CAPX057D4* CAPX060D4*	CHPF048D4* CHPF060D4*	CHPX048D4* CHPX060D4*

PRODUCT DESIGN

Thermostats:

The following Amana® brand thermostats are suggested for use with GMV95 Furnace Models:

THERMOSTATS						
Thermostat	**Man/Auto**	**Programmable**	**Cool**	**Heat**	**Batt. Powered**	**Batt. Bkup**
1213406*	Man. Or Auto	Yes	2	3	No	No
1213407	Man. Changeover	Yes	2	2	Yes	Yes
1213411	Man. Changeover	No	2	2	Yes	No

*1213406 is the recommended model for the GMV95 furnaces when used with a heat pump in a fossil fuel application. It is NOT for use with the GMV95 as a sole heating source. 1213406 therm ostats are 24V powered with battery backup.

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

Upflow Filters

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		
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)
17-1/2	14 x 25 x 1	350
21	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.

		UPFLOW COOLING AIRFLOW REQUIREMENT (CFM)						
		600	**800**	**1000**	**1200**	**1400**	**1600**	**2000**
Input Airflow	0453__XA	376*	384	480	576	---	---	---
	0704__XA	---	---	564*	564*	672	768	
	0905__XA	---	---	---	752*	752*	768	960
	1155__XA	---	---	---	940*	940*	940*	960

*Minimum filter area dictated by heating airflow requirement.

Disposable Minimum Filter Area (in^2)

[*Based on a 300 ft/min filter face velocity]*

		UPFLOW COOLING AIRFLOW REQUIREMENT (CFM)						
		600	**800**	**1000**	**1200**	**1400**	**1600**	**2000**
Input Airflow	0453__XA	376*	384	480	576	---	---	---
	0704__XA	---	---	627*	627*	672	768	---
	0905__XA	---	---	---	836*	836*	836*	960
	1155__XA	---	---	---	940*	940*	940*	960

*Minimum filter area dictated by heating airflow requirement.

Permanent Minimum Filter Area (in^2)

[Based on 600 ft/min filter face velocity]

FURNACE SPECIFICATIONS

MODEL	GMV950453BXA	GMV950704CXA	GMV950905DXA	GMV951155DXA
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%	95.7%	95.8%
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")	10 x 7	10 x 10	11 x 10	11 x 10
Blower Horsepower	1/2	3/4	1	1
Blower Speeds Max CFM @ 0.5 E.S.P.	Refer to airflow charts on pages 10-13.			
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 *	150 secs.	150 secs.	150 secs.	150 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	3	3
Combustion Air Connector Diameter (inches)	2	2	3	3
Shipping Weight (lbs.)	133	157	172	184

* Off Heating - This fan delay timing is adjustable (90, 120, 150 or 180 seconds), 150 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

GMV95 Heating Speed Charts

GMV950453BXA (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" - .5" w.c. ESP	High Stage CFM at .1" - .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

GMV950704CXA (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" - .5" w.c. ESP	High Stage CFM at .1" - .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

GMV950905DXA (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" - .5" w.c. ESP	High Stage CFM at .1" - .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

GMV951155DXA (Rise Range: 30 - 60°F)				
Heating Speed Tap	Adjust Tap	Low Stage CFM at .1" - .5" w.c. ESP	High Stage CFM at .1" - .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. 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

GMV95 High (Single) Stage Cooling Speed Charts

GMV950453BXA			GMV950704CXA			GMV950905DXA			GMV951155DXA		
Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP
A	Minus(-)	540	A	Minus(-)	540	A	Minus(-)	720	A	Minus(-)	720
	Normal	600		Normal	600		Normal	800		Normal	800
	Plus (+)	660		Plus (+)	660		Plus (+)	880		Plus (+)	880
B	Minus(-)	720	B	Minus(-)	720	B	Minus(-)	990	B	Minus(-)	990
	Normal	800		Normal	800		Normal	1100		Normal	1100
	Plus (+)	880		Plus (+)	880		Plus (+)	1210		Plus (+)	1210
C	Minus(-)	900	C	Minus(-)	990	C	Minus(-)	1260	C	Minus(-)	1260
	Normal	1000		Normal	1100		Normal	1400		Normal	1400
	Plus (+)	1100		Plus (+)	1210		Plus (+)	1540		Plus (+)	1540
D	Minus(-)	1080	D	Minus(-)	1286	D	Minus(-)	1620	D	Minus(-)	1620
	Normal	1200		Normal	1429		Normal	1800		Normal	1800
	Plus (+)	1320		Plus (+)	1572		Plus (+)	1980		Plus (+)	1980

GMV95 Low Stage Cooling Speed Charts

GMV950453BXA			GMV950704CXA			GMV950905DXA			GMV951155DXA		
Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP
A	Minus(-)	380*	A	Minus(-)	378*	A	Minus(-)	513*	A	Minus(-)	514*
	Normal	390		Normal	390		Normal	520		Normal	520
	Plus (+)	429		Plus (+)	429		Plus (+)	572		Plus (+)	572
B	Minus(-)	468	B	Minus(-)	468	B	Minus(-)	644	B	Minus(-)	644
	Normal	520		Normal	520		Normal	715		Normal	715
	Plus (+)	572		Plus (+)	572		Plus (+)	787		Plus (+)	787
C	Minus(-)	585	C	Minus(-)	644	C	Minus(-)	819	C	Minus(-)	819
	Normal	650		Normal	715		Normal	910		Normal	910
	Plus (+)	715		Plus (+)	787		Plus (+)	1001		Plus (+)	1001
D	Minus(-)	702	D	Minus(-)	836	D	Minus(-)	1053	D	Minus(-)	1053
	Normal	780		Normal	929		Normal	1170		Normal	1170
	Plus (+)	858		Plus (+)	1022		Plus (+)	1287		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 aiflow 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

GMV95 Continuous Fan Speed Chart

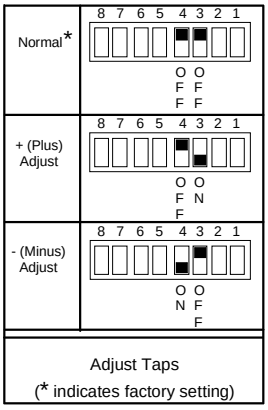
GMV950453BXA			GMV950704CXA		
Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP
A	Minus(-)	380*	A	Minus(-)	380*
	Normal	380*		Normal	380*
	Plus (+)	380*		Plus (+)	380*
B	Minus(-)	403	B	Minus(-)	403
	Normal	448		Normal	448
	Plus (+)	493		Plus (+)	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

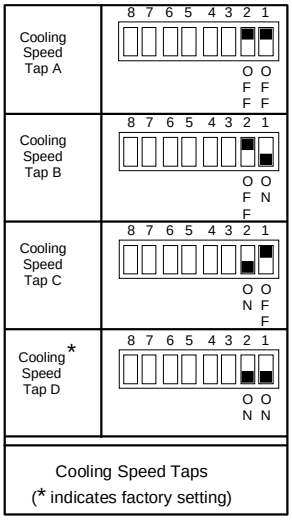
GMV950905DXA			GMV951155DXA		
Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1" - .8" w.c. ESP
A	Minus(-)	513*	A	Minus(-)	514*
	Normal	513*		Normal	514*
	Plus (+)	513*		Plus (+)	514*
B	Minus(-)	554	B	Minus(-)	554
	Normal	616		Normal	616
	Plus (+)	678		Plus (+)	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

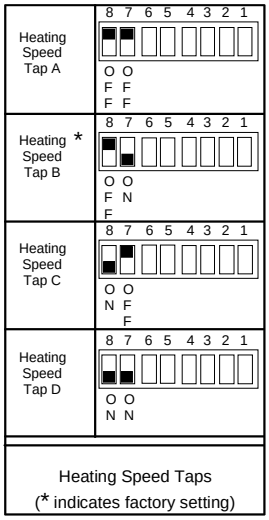
1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, 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

GMV95
Circulator Blower Speed Adjustment Switches







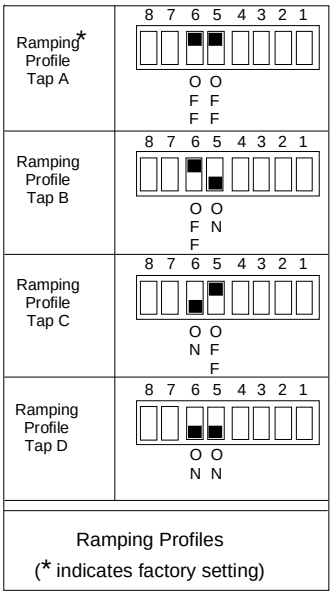
Note: There is a green LED adjacent to the integrated control module fuse which is used to verify airflow volume. The green CFM LED blinks once for each 100 CFM of airflow.

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.

GMV95
Ramping Profile



Note: The multi-speed circulator blower also offers several custom ON/OFF ramping profiles. These profiles may be used to enhance cooling performance and increase comfort level. The ramping profiles are selected using DIP switches 5 and 6.

Verify profile selection by counting the green CFM LED blinks and timing each step of the ramping profile.

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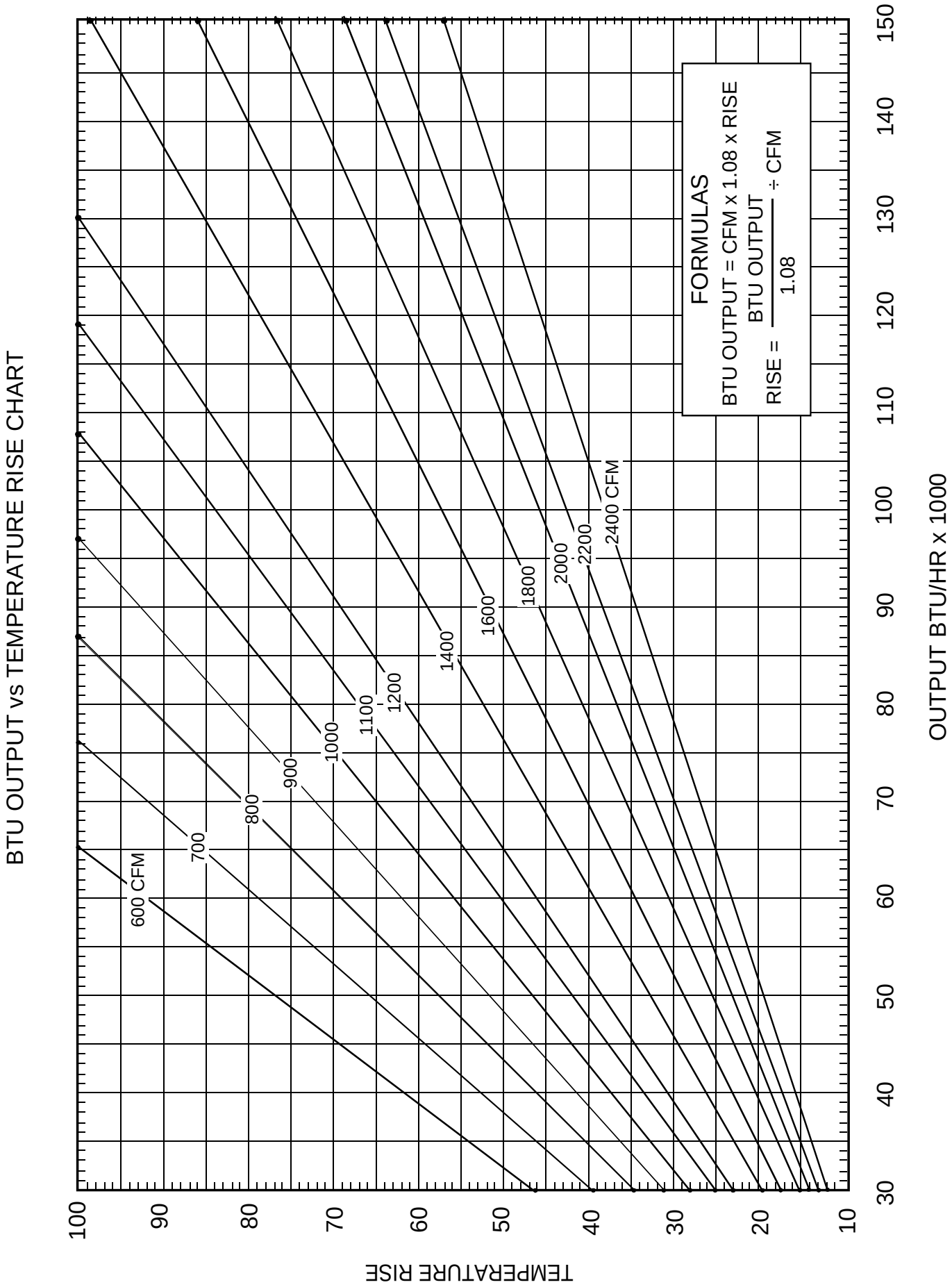
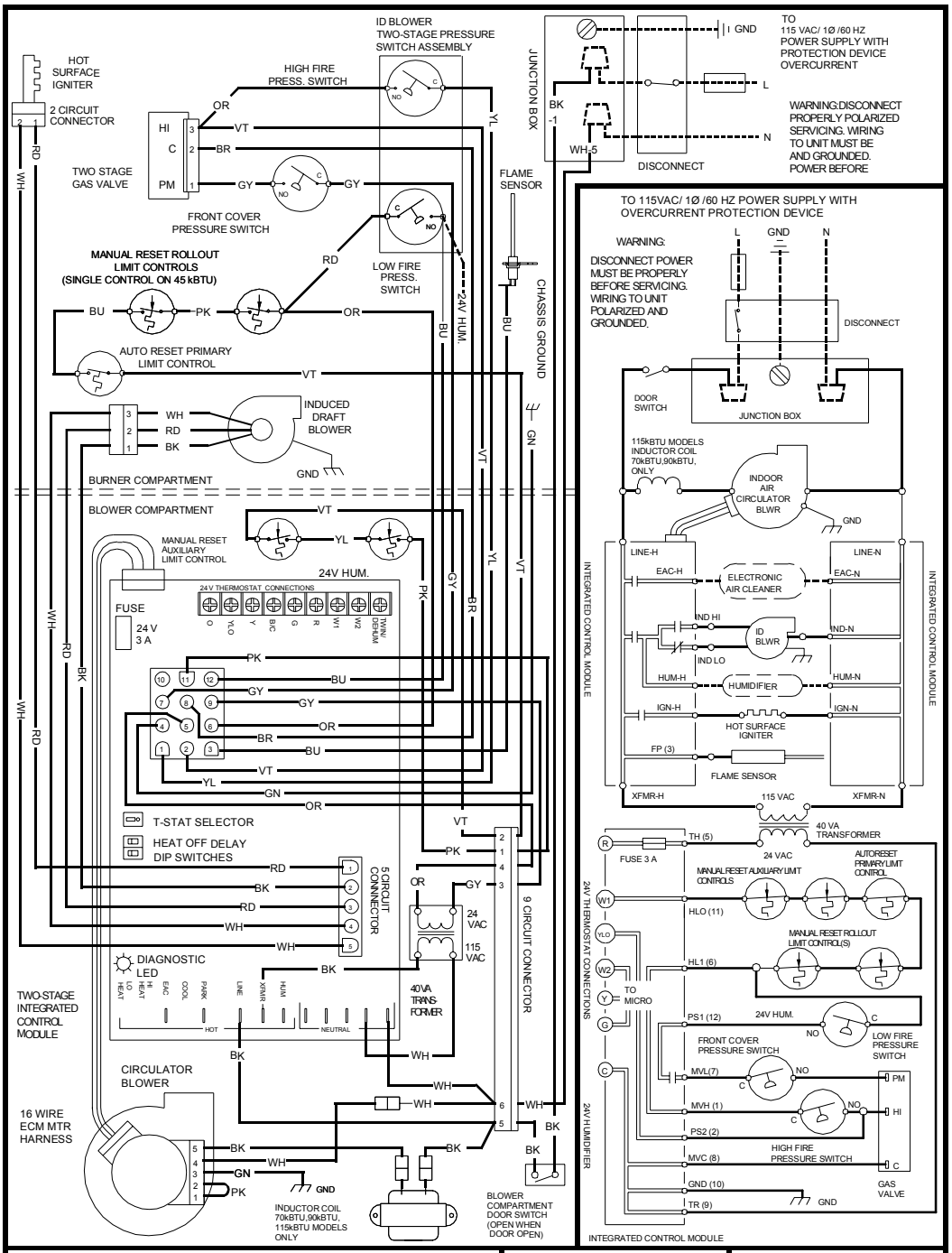
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

PERFORMANCE



WIRING DIAGRAMS

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



- 0 STEADY ON = NORMAL OPERATION
- 1 1 FLASH = SYSTEM LOCKOUT (RETRIES/RECYCLES EXCEEDED)
- 2 2 FLASHES = LOW FIRE PRESSURE SWITCH STUCK CLOSED
- 3 3 FLASHES = LOW FIRE PRESSURE SWITCH STUCK OPEN
- 4 4 FLASHES = THERMAL PROTECTIVE DEVICE OPEN
- 5 5 FLASHES = FLAME SENSED WITH GAS VALVE DE-ENERGIZED
- 7 7 FLASHES = LOW FLAME SENSE SIGNAL
- 8 8 FLASHES = CHECK IGNITER OR IMPROPER GROUNDING
- 9 9 FLASHES = HIGH FIRE PRESSURE SWITCH STUCK OPEN
- C CONTINUOUS FLASHES = 115 VOLT AC POWER REVERSED

LOW VOLTAGE (24V)
LOW VOLTAGE FIELD
HI VOLTAGE (115V)
HI VOLTAGE FIELD
JUNCTION
TERMINAL
INTERNAL TO INTEGRATED CONTROL
PLUG CONNECTION

EQUIPMENT GND
FIELD GND
FIELD SPLICE
SWITCH (TEMP.)
IGNITER
SWITCH (PRESS.)
OVERCURRENT PROT. DEVICE

COLOR CODES:

YL YELLOW	PK PINK
OR ORANGE	BR BROWN
VT VIOLET	WH WHITE
GN GREEN	BU BLUE
BK BLACK	GY GRAY
	RD RED

NOTES:

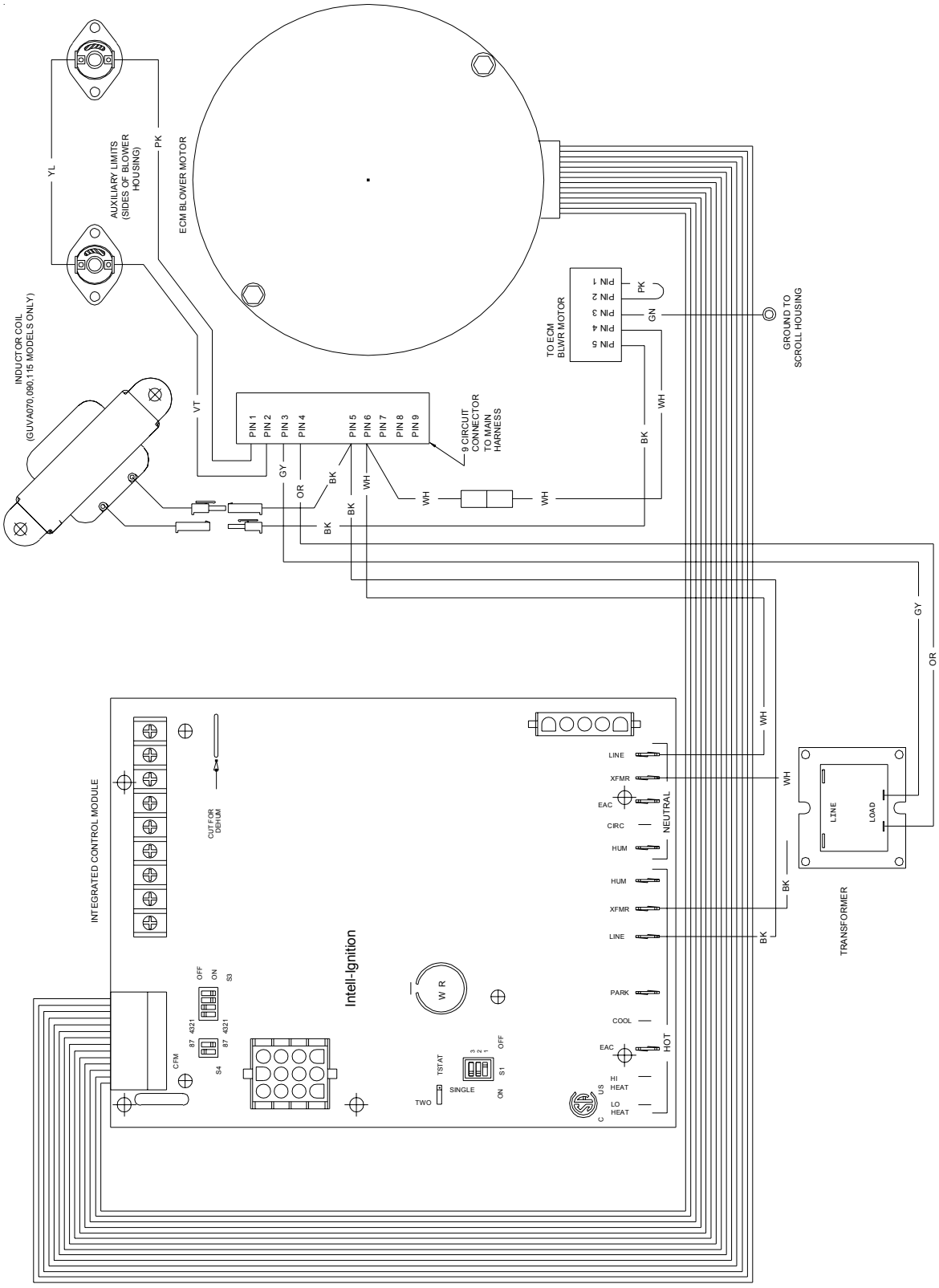
1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105°C. USE COPPER CONDUCTORS ONLY.
4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.

22314701 REV.00

Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

SCHEMATICS

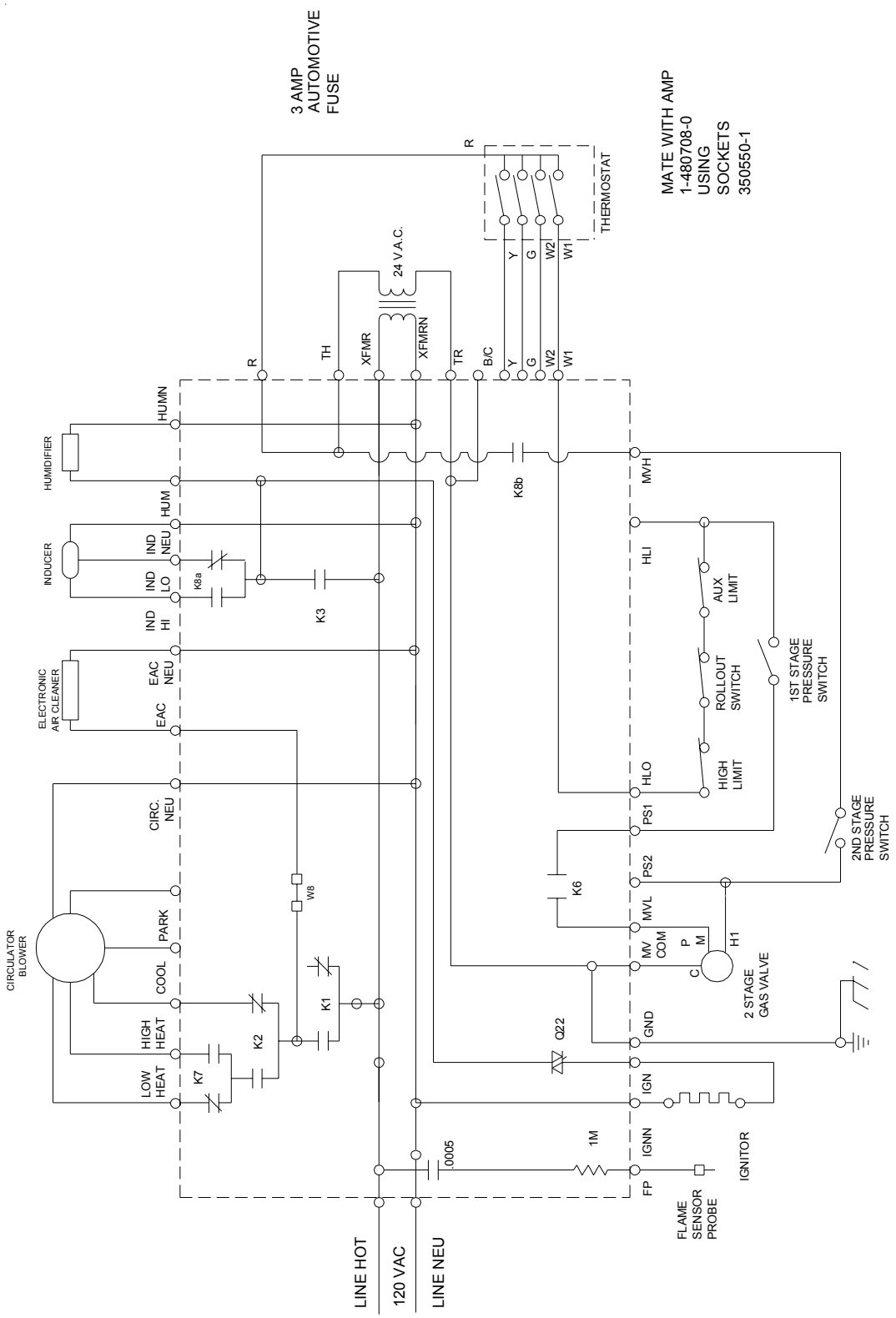
WARNING **TO AVOID POSSIBLE ELECTRICAL SHOCK, PERSONAL INJURY, OR DEATH, DISCONNECT THE POWER BEFORE SERVICING.**



BLOWER ASSEMBLY SCHEMATIC
GMV95_____XA 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.

SCHEMATICS

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



TYPICAL SCHEMATIC
GMV95___XA MODEL FURNACES
WR 50V61-289 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.