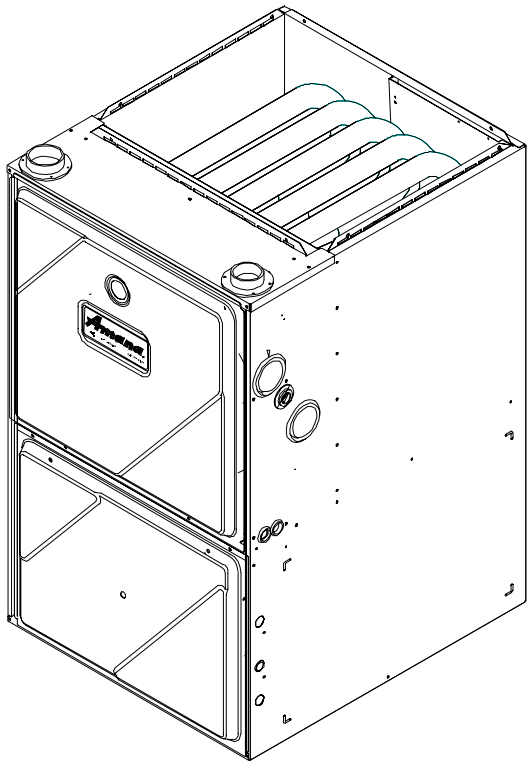
Technical Information

40" 95% Gas Furnaces
GUVA___AX__

- Refer to Service Manual RS6600001 Rev. 1 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.

Model and Manufacturing numbers listed in this manual.

MODEL	M/N
GUVA045AX30	P1228301F
GUVA070AX40	P1228303F
GUVA090AX50	P1228305F
GUVA115AX50	P1228306F
GUVA045AX30	P1232501F
GUVA070AX40	P1232503F
GUVA090AX50	P1232505F
GUVA115AX50	P1232506F



This manual replaces RT6612002 Rev. 0 April 2000.

REV. 1 - Corrections made to manual, no new models added.

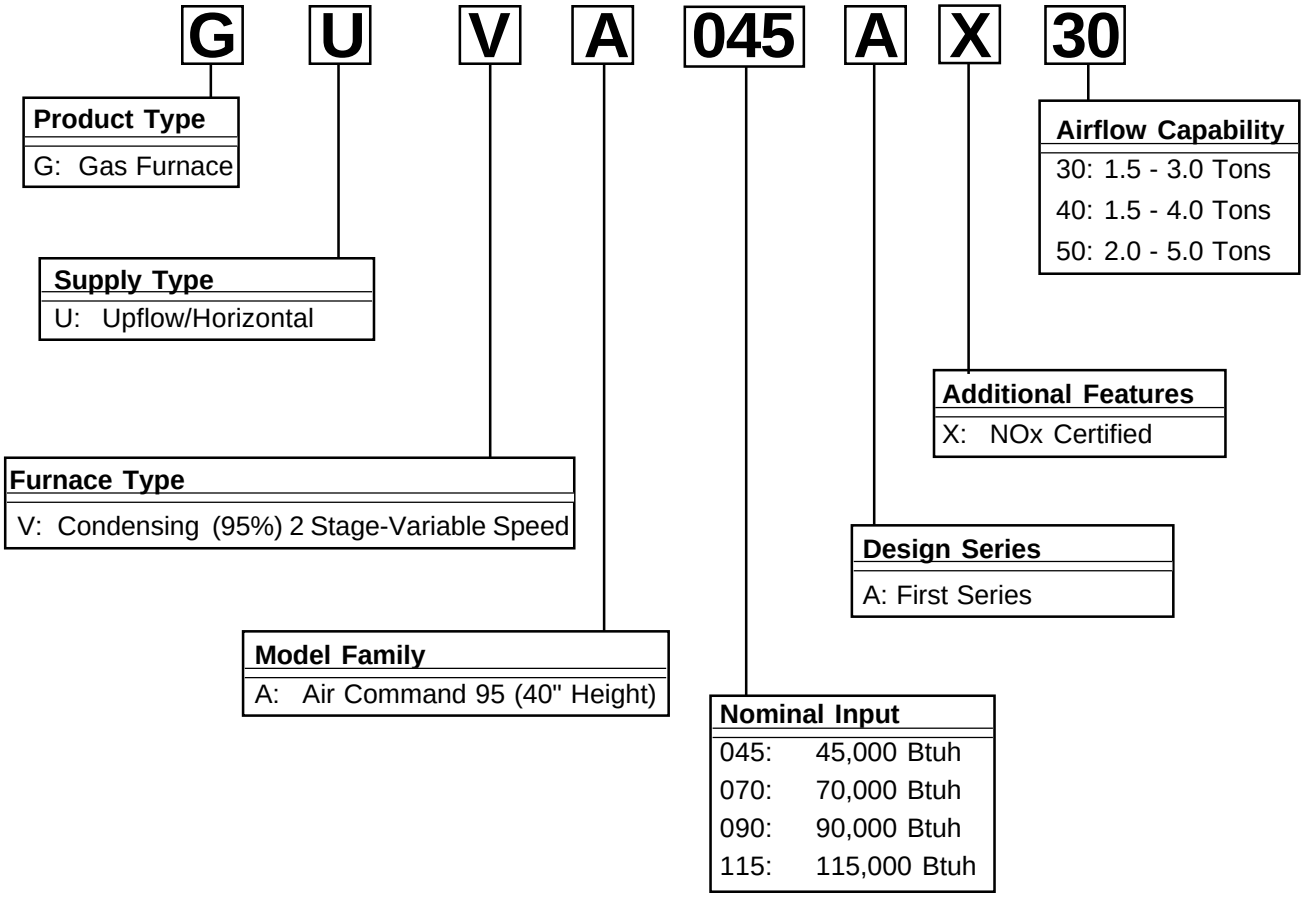
Heating & Air Conditioning
Amana®
Built Better Than It Has To Be

RT6612002
Revision 1
September 2000

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 DESIGN

General Operation

This GUVA furnace is 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*	**SIDES**	**FRONT**	**REAR**	**TOP**	**BOTTOM**	**FLUE**
Upflow	0	3	0	1	C	0
Horizontal	6	3	0	6	C	0

* = All positioning is determined as installed unit is viewed from the front.
C = If placed on combustible floor, floor MUST be wood ONLY.

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.

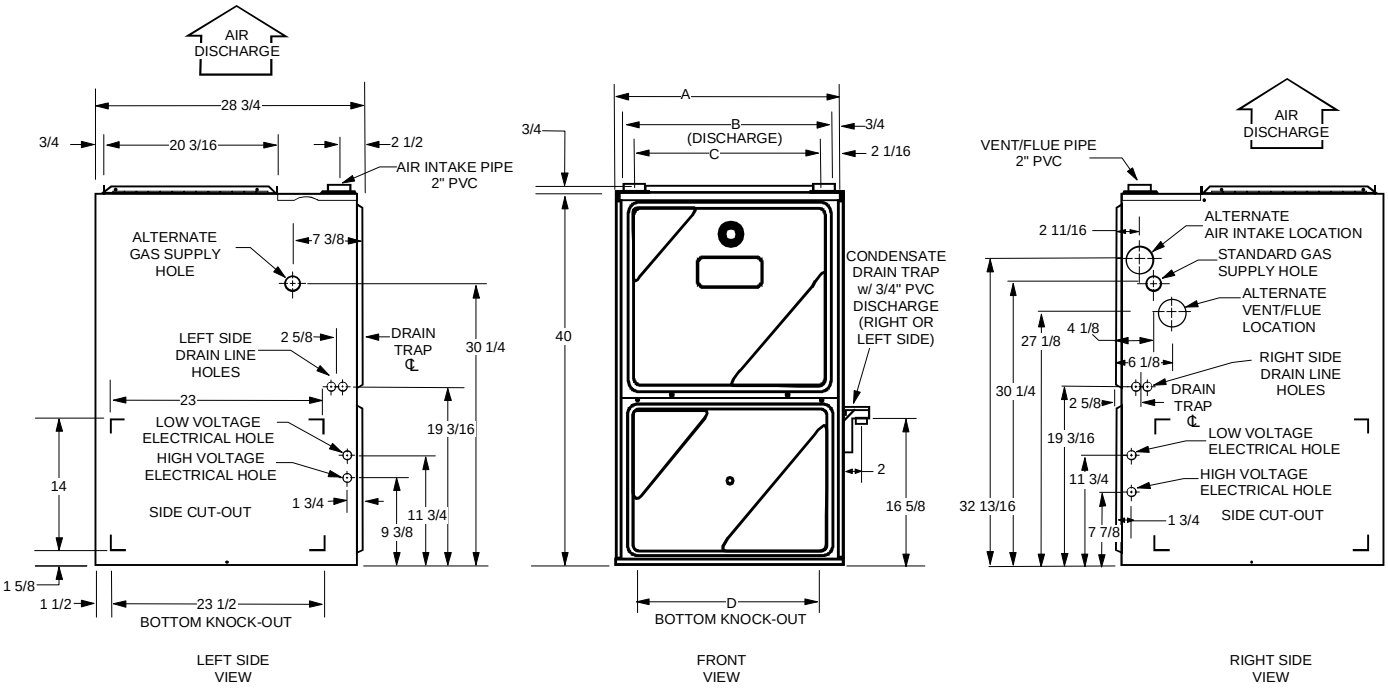
High Altitude Derate

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.**
GUVA045AX30 GUVA070AX40	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
GUVA090AX50 GUVA115AX50	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

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.

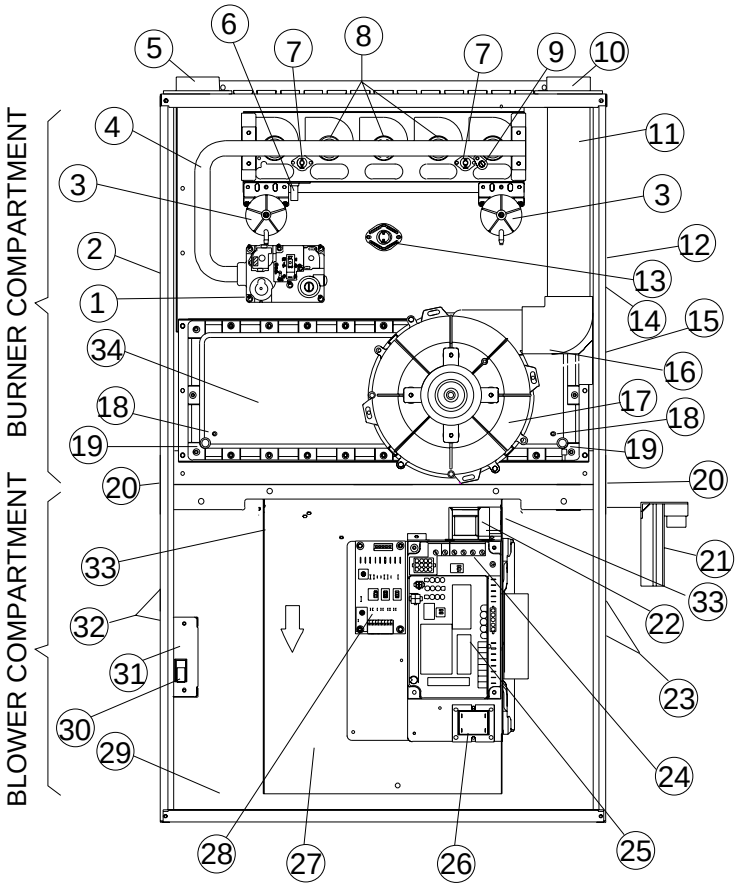
PRODUCT DIMENSIONS



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.

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 (Internal)
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 Coil Front Cover Pressure Tap
19 Coil Front Cover Drain Tap
20 Drain Line Penetrations
21 Drain Trap
22 Inductor (Not All Models)
23 Electrical Connection Inlets (Alternate)
24 24 Volt Thermostat Connections
25 Two-Stage Integrated Control Module (with diagnostic LED)
26 Transformer (40 VA)
27 ECM Variable Speed Circulator Blower
28 ECM Motor Interface Board
29 Bottom Return Filter Retainer
30 Blower Door Interlock Switch
31 Junction Box
32 Electrical Connection Inlets
33 Auxiliary Limit(s)
34 Coil Front Cover

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
GUVA045AX30 GUVA070AX40	-0.45	-0.90	-0.50	-0.95	-0.25	-0.25	-0.25	-0.25
GUVA090AX50 GUVA115AX50	-0.65	-1.20	-0.70	-1.25	-0.25	-0.25	-0.25	-0.25

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			
GUVA045AX30 GUVA070AX40	-0.10	-0.10	20197301	-0.30	-0.75	11177113	PURPLE	PINK	-0.10	-0.10	-0.22	-0.55	HAPS28 11177115	GREEN	YELLOW
GUVA090AX50 GUVA115AX50	-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 Amana 90% furnace is certified only to 4500.ft.
Note: Replacement pressure switch number is listed below high altitude kit number.
Note: Minimum negative pressure required to activate the pressure switch is -0.52" w.c.
Note: All negative pressure readings are in inches of water column (" w.c.).

T.O.D. PRIMARY LIMIT			
PART NUMBER	20162903	20162905	20162907
OPEN SETTING (°F)	160	145	155
COLOR CODE(S)	BLUE	YELLOW	ORANGE
GUVA045AX30		1	
GUVA070AX40			1
GUVA090AX50		1	
GUVA115AX50	1		

ROLLOUT LIMIT SWITCHES			
PART NUMBER	10123518	10123533	10123537
OPEN SETTING (°F)	170	200	190
COLOR CODE(S)	BLUE	YELLOW	GRAY
GUVA045AX30	1		
GUVA070AX40		2	
GUVA090AX50			2
GUVA115AX50		2	

AUXILIARY LIMIT SWITCHES				
PART NUMBER	10123533	10123535	10123536	10123537
OPEN SETTING (°F)	200	150	180	190
COLOR CODE(S)	YELLOW	RED	LT BLUE	GRAY
GUVA045AX30		2		
GUVA070AX40				2
GUVA090AX50			2	
GUVA115AX50	2			

PRODUCT DESIGN

Coil Matches:

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

Btuh Input	Cabinet Width	Air Flow (tons)	CAA_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
45,000	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
70,000	20 1/2"	2 1/2 - 4	CCA30FDC CCA36FDC CCA42FDC CCA48FCC	CCA48FSC	CHA42TCC	CHA42TSC	CCF24FDC CCF36FDC CCF42FCC CCF48FCC	CHF36TCC CHF42TCC
90,000	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
115,000	24 1/2"	3 - 5						

Thermostats:

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

Thermostats (Two-Stage Applications)								
Thermostat	Man/Auto	Programmable	Cool	Heat	Batt. Powered	Batt. Bkup*	Shape	Color
1217701	Man. Changeover	No	2	2	No	No	Rectangular	Beige
1213407	Man. Changeover	Yes	1	2	No	Yes	Rectangular	White

*1213407 is 24V powered with battery backup.

Thermostats (Dual Fuel Applications)								
Thermostat	Man/Auto	Programmable	Cool	Heat	Batt. Powered	Batt. Bkup*	Shape	Color
1213406	Man. Or Auto	Yes	2	3	No	Yes	Rectangular	White

*1213406 is 24V powered with battery backup.

Note: The above thermostat 1213406 is the recommended model for the GUVA furnace when used with a heat pump in a fossil fuel application. It is not for use with the GUVA as a sole heating source.

FURNACE SPECIFICATIONS

MODEL	GUVA045AX30	GUVA070AX40	GUVA090AX50	GUVA115AX50
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 Max CFM @ 0.5 E.S.P.	Refer to airflow charts on pages 9-14.			
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 **	0 or 5 secs.	0 or 5 secs.	0 or 5 secs.	0 or 5 secs.
Off Cooling ***	0 or 45 secs.	0 or 45 secs.	0 or 45 secs.	0 or 45 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.*

*** On Cooling - This fan delay timing can be set at either 0 or 5 seconds. Refer to Circulator Blower Timing and Speeds Selection section in the Service Instructions for details.*

**** Off Cooling - This fan delay timing can be set at either 0 or 45 seconds. Refer to Circulator Blower Timing and Speeds Selection section in the Service Instructions for details.*

1. These furnaces are manufactured for natural gas operation. Optional kits are available for conversion to propane gas operation.
2. For elevations above 2000 feet the rating should be reduced by 4% for each 1000 feet 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 manufacturers 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

GUVA045AX30 (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

GUVA070AX40 (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

GUVA090AX50 (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

GUVA115AX50 (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". Installer should adjust blower speed as needed.
3. INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. The above chart is for U.S. furnaces installed at 0-2000 feet. At higher altitudes, a properly derated unit will have approximately the same temperature rise at a particular CFM, while the ESP at that CFM will be lower.
6. Propane gas installations will have a High Stage rise approximately 4°F lower than shown in above tables.

BLOWER PERFORMANCE SPECIFICATIONS

High (Single) Stage Cooling Speed Charts

Single Stage Cooling: “Y” From T-Stat to “Y” on Two-Stage Integrated Control Module

Two-Stage Cooling: “Y2” From T-Stat to “Y/Y2” on Circulator Blower Interface Board

GUVA045AX30		
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

GUVA070AX40		
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

GUVA090AX50		
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

GUVA115AX50		
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 cooling speed set at "D". Installer should adjust blower speed as needed.
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.

BLOWER PERFORMANCE SPECIFICATIONS

Low Stage Cooling Speed Charts

"Y1" From T-Stat to "Y1" on Circulator Blower Interface Board

GUVA045AX30		
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

GUVA070AX40		
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

GUVA090AX50		
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

GUVA115AX50		
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

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with cooling speed set at "D". Installer should adjust blower speed as needed.
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-Based Continuous Fan Chart

"G" From T-Stat to "G" on Two-Stage Integrated Control Module

GUVA045AX30		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	495
	Normal	550
	Plus (+)	605
B	Minus (-)	540
	Normal	600
	Plus (+)	660
C	Minus (-)	585
	Normal	650
	Plus (+)	715
D	Minus (-)	630
	Normal	700
	Plus (+)	770

GUVA070AX40		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	756
	Normal	840
	Plus (+)	924
B	Minus (-)	828
	Normal	920
	Plus (+)	1012
C	Minus (-)	900
	Normal	1000
	Plus (+)	1100
D	Minus (-)	972
	Normal	1080
	Plus (+)	1188

GUVA090AX50		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	1013
	Normal	1125
	Plus (+)	1238
B	Minus (-)	1076
	Normal	1195
	Plus (+)	1315
C	Minus (-)	1139
	Normal	1265
	Plus (+)	1392
D	Minus (-)	1202
	Normal	1335
	Plus (+)	1469

GUVA115AX50		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	1170
	Normal	1300
	Plus (+)	1430
B	Minus (-)	1180
	Normal	1311
	Plus (+)	1442
C	Minus (-)	1191
	Normal	1323
	Plus (+)	1455
D	Minus (-)	1202
	Normal	1335
	Plus (+)	1469

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with cooling speed set at "D". Installer should adjust blower speed as needed.
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.

BLOWER PERFORMANCE SPECIFICATIONS

Cooling-Based Continuous Fan Chart (Option A)

"G" From T-Stat to "G" on"Circulator Blower Interface Board

GUVA045AX30		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	405
	Normal	450
	Plus (+)	495
B	Minus (-)	540
	Normal	600
	Plus (+)	660
C	Minus (-)	675
	Normal	750
	Plus (+)	825
D	Minus (-)	810
	Normal	900
	Plus (+)	990

GUVA070AX40		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	405
	Normal	450
	Plus (+)	495
B	Minus (-)	540
	Normal	600
	Plus (+)	660
C	Minus (-)	743
	Normal	825
	Plus (+)	908
D	Minus (-)	965
	Normal	1072
	Plus (+)	1179

GUVA090AX50		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	540
	Normal	600
	Plus (+)	660
B	Minus (-)	743
	Normal	825
	Plus (+)	908
C	Minus (-)	945
	Normal	1050
	Plus (+)	1155
D	Minus (-)	1215
	Normal	1350
	Plus (+)	1485

GUVA115AX50		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	540
	Normal	600
	Plus (+)	660
B	Minus (-)	743
	Normal	825
	Plus (+)	908
C	Minus (-)	945
	Normal	1050
	Plus (+)	1155
D	Minus (-)	1215
	Normal	1350
	Plus (+)	1485

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with cooling speed set at "D". Installer should adjust blower speed as needed.
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.

BLOWER PERFORMANCE SPECIFICATIONS

Cooling-Based Continuous Fan Chart (Option B)

"G" From T-Stat to "Y1" on Circulator Blower Interface Board

[**Note:** Only applicable for installations with single-stage cooling only, or no cooling.]

[**Note:** EAC terminals on the Two-Stage Integrated Control Module will not energize with this method.]

GUVA045AX30		
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

GUVA070AX40		
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

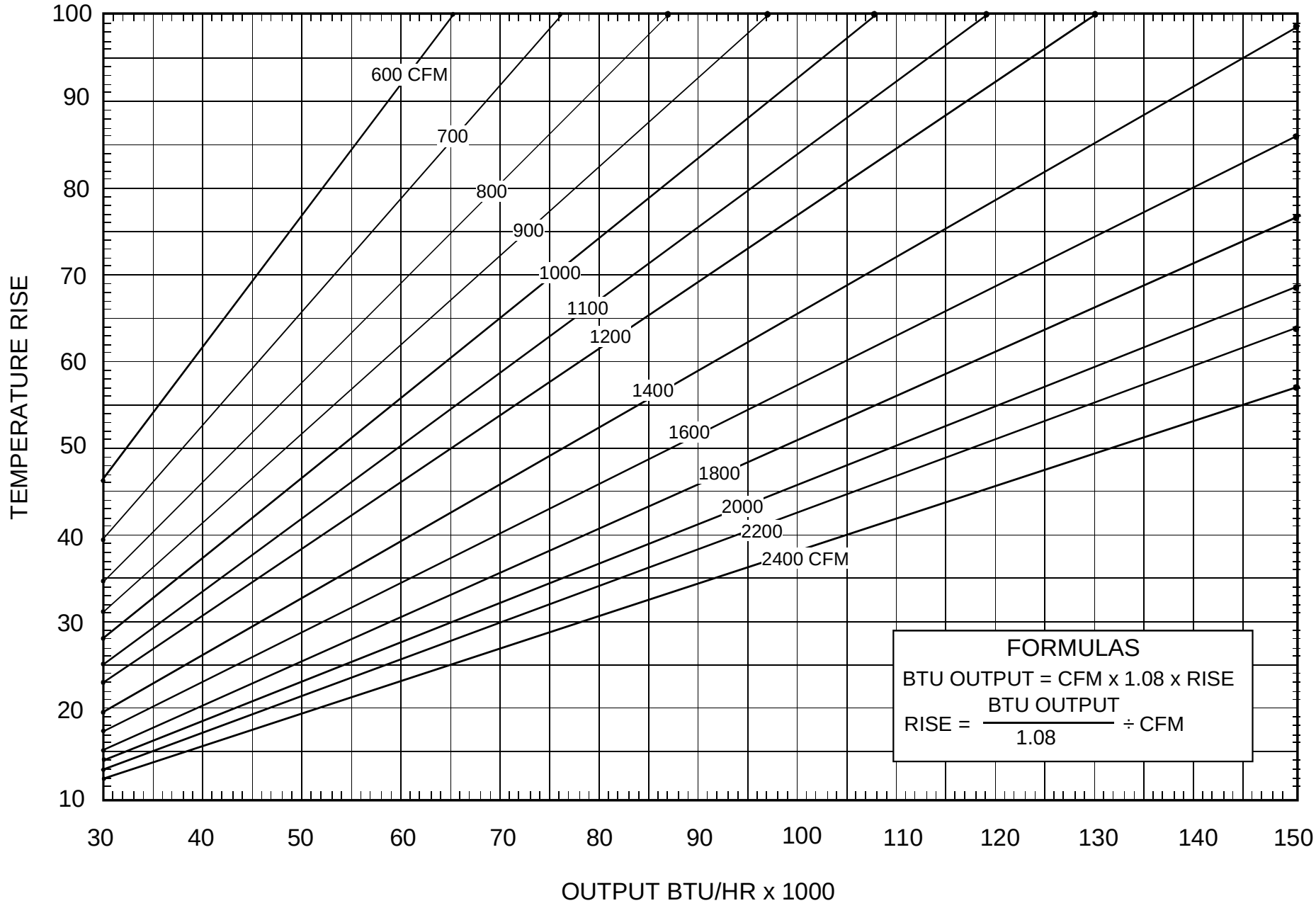
GUVA090AX50		
Cooling Speed Tap	**Adjust Tap**	**CFM at .1" to .8" w.c. ESP**
A	Minus (-)	513*
	Normal	520
	Plus (+)	572
B	Minus (-)	644
	Normal	715
	Plus (+)	787
C	Minus (-)	819
	Normal	910
	Plus (+)	1001
D	Minus (-)	1053
	Normal	1170
	Plus (+)	1287

GUVA115AX50		
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

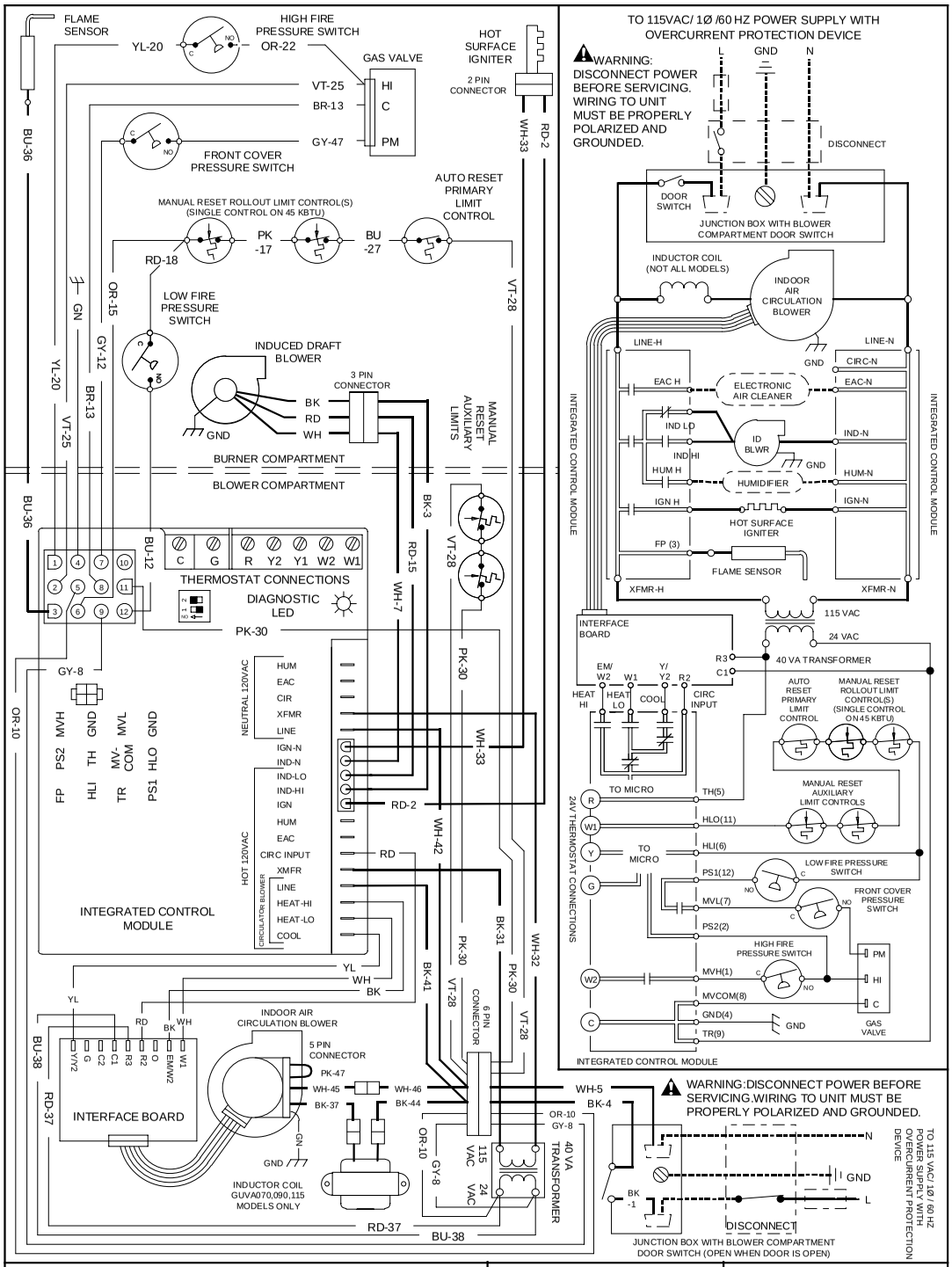
1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with cooling speed set at "D". Installer should adjust blower speed as needed.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory 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

BTU OUTPUT vs TEMPERATURE RISE CHART



WIRING DIAGRAMS



0 STEADY ON = REPLACE CONTROL

1 1 FLASH = SYSTEM LOCKOUT (RETRIES/RECYCLES EXCEEDED)

2 2 FLASHES = PRESSURE SWITCH STUCK CLOSED

3 3 FLASHES = PRESSURE SWITCH STUCK OPEN

4 4 FLASHES = THERMAL PROTECTIVE DEVICE OPEN

C CONTINUOUS FLASHES = UNANTICIPATED FLAME PRESENT

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

20276101 REV.00

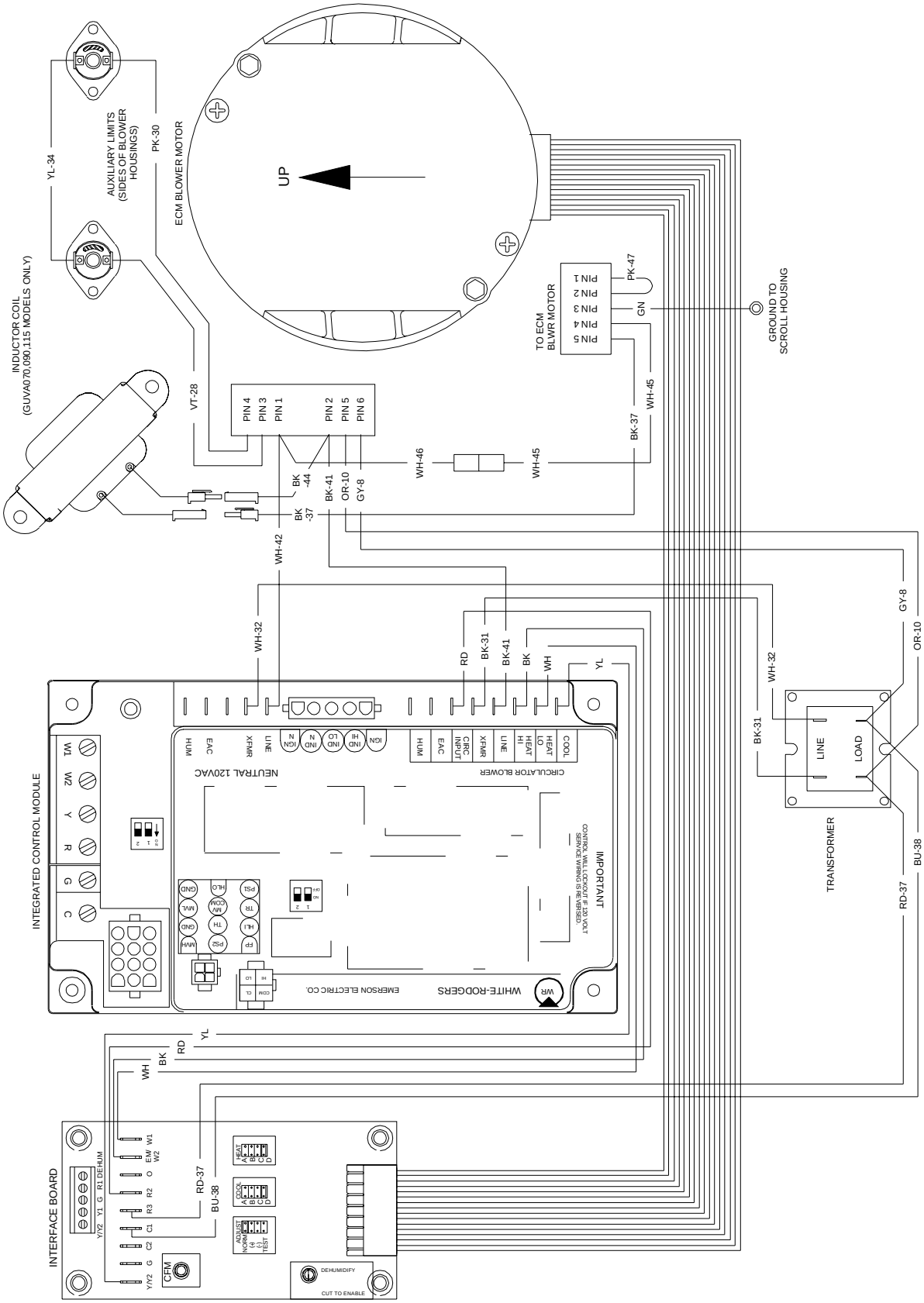
NOTES:
1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105°C.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

WARNING

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

GUVA___AX__

SCHEMATICS



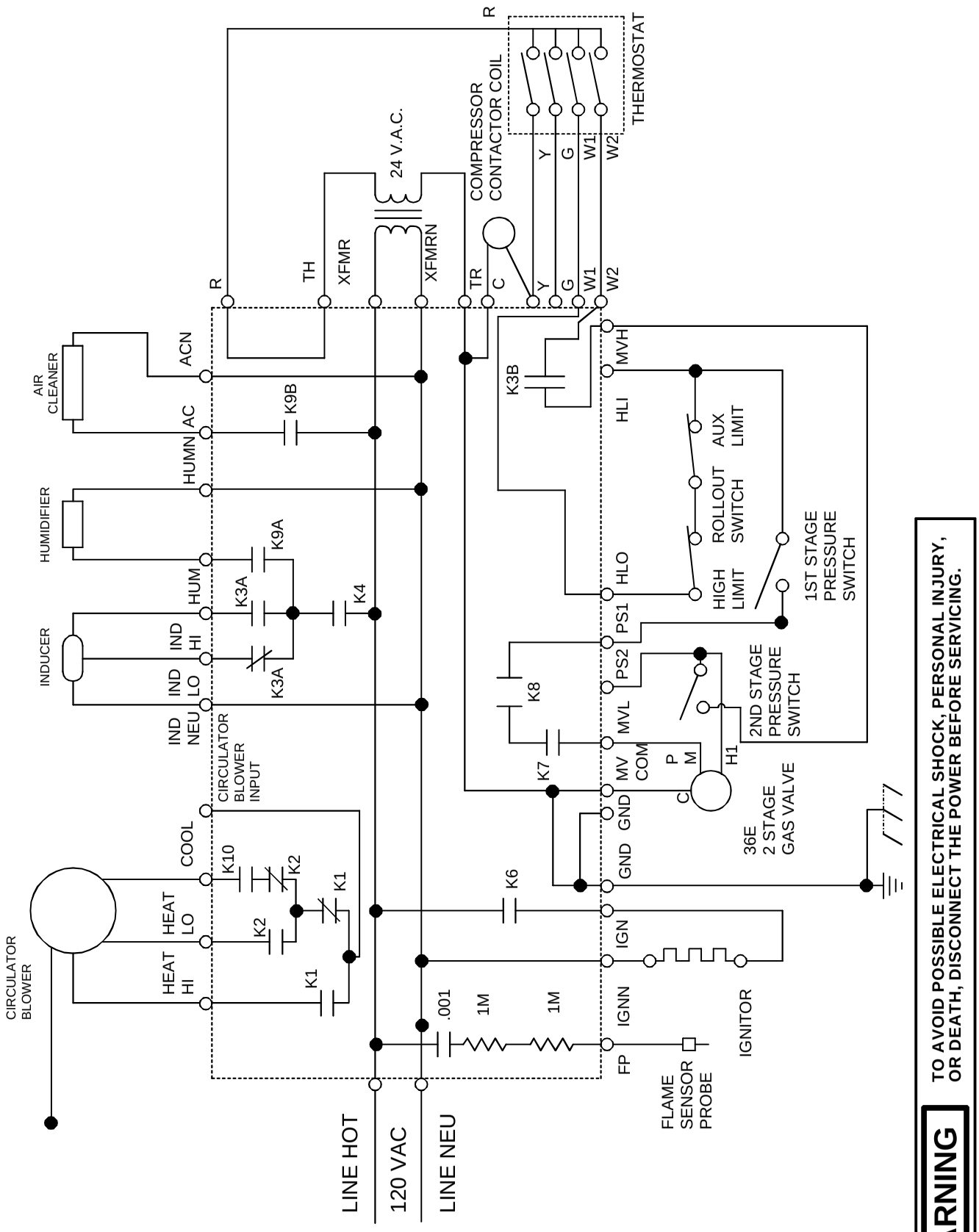
BLOWER ASSEMBLY SCHEMATIC
GUVA___AX__ MODEL FURNACES

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

WARNING

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

SCHEMATICS



TYPICAL SCHEMATIC
GUVA___AX__ MODEL FURNACES
WR50A51-235 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.