



INSTALLATION AND MAINTENANCE INSTRUCTIONS

MGE*-12/14 Series

Electric Cooling / Gas Heating Packaged Unit

Save these instructions for future reference



This is a safety alert symbol and should never be ignored. When you see this symbol on labels or in manuals, be alert to the potential for personal injury or death.

Installation

WARNING

These units are not approved for mobile home applications. Such use could result in property damage, personal injury, or death.

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General

These instructions explain the recommended method of installation of the MagicPak All-In-One™ HVAC system model MGE* gas heating with electric cooling unit and associated electrical wiring.

These instructions, and any instructions packaged with mating components and/or accessories, should be carefully read prior to beginning installation. Note particularly any **CAUTIONS** or **WARNINGS** in these instructions and all labels on the units.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional installer (or equivalent), service agency or the gas supplier.

Manufactured By
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Intertek



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CAUTION

The installation of this appliance must conform to the requirements of the National Fire Protection Association; the National Electrical Code, ANSI/NFPA No. 70 (latest edition); and any state/provincial laws or local ordinances. Local authorities having jurisdiction should be consulted before installation is made. Such applicable regulations or requirements take precedence over the general instructions in this manual.

Check that equipment complies with all applicable building codes, laws, and regulations for its intended use prior to installation.

The MGE* series are self-contained, gas-fired heating with electric cooling models with optional epoxy-coated coils. The unit design has been certified by Intertek Testing Services for compliance with the latest edition of the American National Standard – ANSI Z21.47 for direct vent central furnaces. The MGE* models are certified to be in compliance with the latest edition of AHRI Standard 210/240. All models are design certified for heating operation when fired with natural or propane gas. Units must be equipped to use the fuel type provided in the field.

These instructions are intended as a general guide only, for use by qualified personnel and do not supersede any national or local codes in any way. Compliance with all local, state, provincial, or national codes pertaining to this type of equipment should be determined prior to installation.

Units certified for less than 2% cabinet leakage using ANSI/ASHRAE 193 (complies with IECC 2015) are identified on the rating plate.

⚠ WARNING

In the State of Massachusetts:

This product must be installed by a licensed Plumber or Gas Fitter. When flexible connectors are used, the maximum length shall not exceed 36". When lever-type gas shutoffs are used, they shall be T-handle type.

⚠ WARNING

Because the MGE unit is installed in a confined space, the return air must be ducted, sealed to the unit and terminated outside the space containing the unit. Even a small leak at the return air duct connection can cause a potentially dangerous negative pressure condition.

⚠ WARNING

For your safety, do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance. Such actions could result in property damage, personal injury, or death.

⚠ WARNING

Installation and servicing of air conditioning equipment can be hazardous due to internal refrigerant pressure and live electrical components. Only trained and qualified service personnel should install or service this equipment. Installation and service performed by unqualified persons can result in property damage, personal injury, or death.

⚠ WARNING

The unit must be installed with approved wall sleeve and louver accessories for safe operation. Improper installations could result in property damage, personal injury, or death.

Inspection

Upon receipt of equipment, carefully inspect it for possible shipping damage. If damage is found, it should be noted on the carrier's freight bill. Take special care to examine the unit inside the carton if the carton is damaged. File a claim with the transportation company. **If any damage is discovered and reported to the carrier, do not install the unit, as claim may be denied.**

Check the unit rating plate to confirm specifications are as ordered.

Limitations

The unit should be installed in accordance with all national and local safety codes. Limitations of the unit and appropriate accessories must also be observed.

The outdoor fan is designed to operate against no more than .10" w.c. static pressure.

Minimum and maximum operation conditions must be observed to assure proper system performance. Refer to Table 1 for the ambient operating limitations of the unit.

Outdoor Ambient Air Temperature °F		
Minimum DB	Maximum DB	
Cool	Cool	Heat
65	115	75

Indoor Ambient Air Temperature °F			
Minimum		Maximum	
DB/WB	DB	DB/WB	DB
Cool	Heat	Cool	Heat
62/57	50	90/72	80

DB = Dry Bulb
WB = Wet Bulb

Table 1. Ambient Temperature Limitations

Unit Dimensions (in.)

Model	A	B	C	D	E
MGE-12-091*P *MGE*-12-121*P	57-7/8	20-3/4	18-5/8	6	24-5/8
MGE-12-181*P *MGE*-12-241*P	59-7/8	22-3/4	20-5/8		26-5/8
MGE-12-301*P	63-7/8	26-3/4	24-5/8		30-5/8
MGE-14-361*P	71-7/8	34-3/4	28-5/8	10	38-5/8

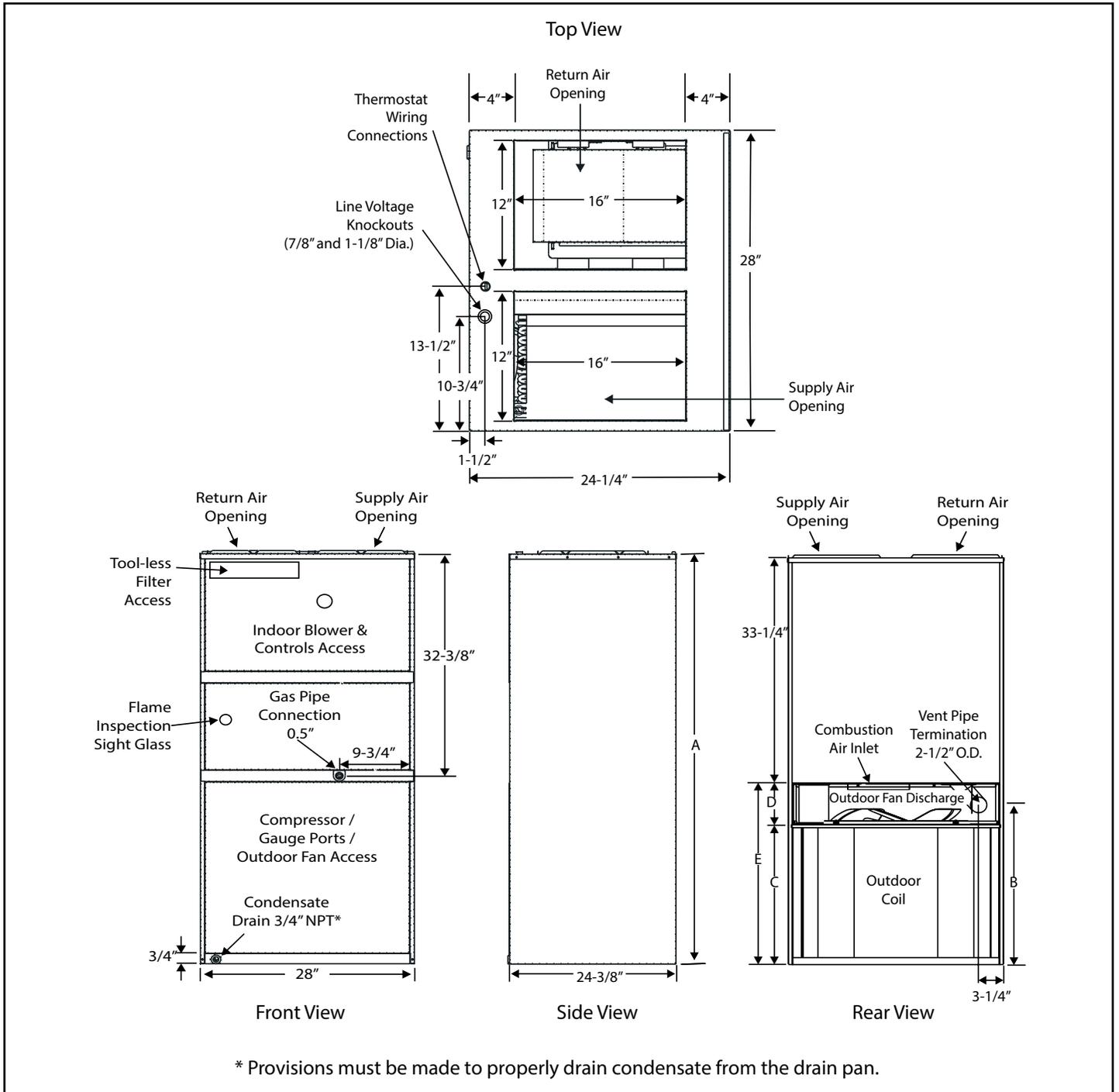


Figure 1.

Accessibility Clearances

The front of the unit must be accessible for service. A minimum clearance of 30" in front of unit is required for service.

If the unit is enclosed, a door or access panel aligned with the front of the unit is the preferred method of providing access. The door or access panel opening must be a minimum of 30" wide (centered on the unit) and be as tall as the unit.

IMPORTANT

The unit must be installed with approved wall sleeve and louver accessories for safe operation. Improper installations could result in property damage, personal injury, or death.

Supply Duct Clearances

Minimum Clearances to Combustible Materials¹

Front	Sides	Top
0"	0"	0"

¹ Accessibility clearances take precedence.

Unit Clearances

Minimum Clearances ^[1]

Front ²	Sides ³
1"	1"

¹ Accessibility clearances take precedence.

² Clearance must accommodate field-installed condensate drain line / drain trap and gas line.

³ Additional clearance required if field-installed condensate drain line / drain trap is routing alongside unit.

NOTE: Consult local codes for other clearance requirements

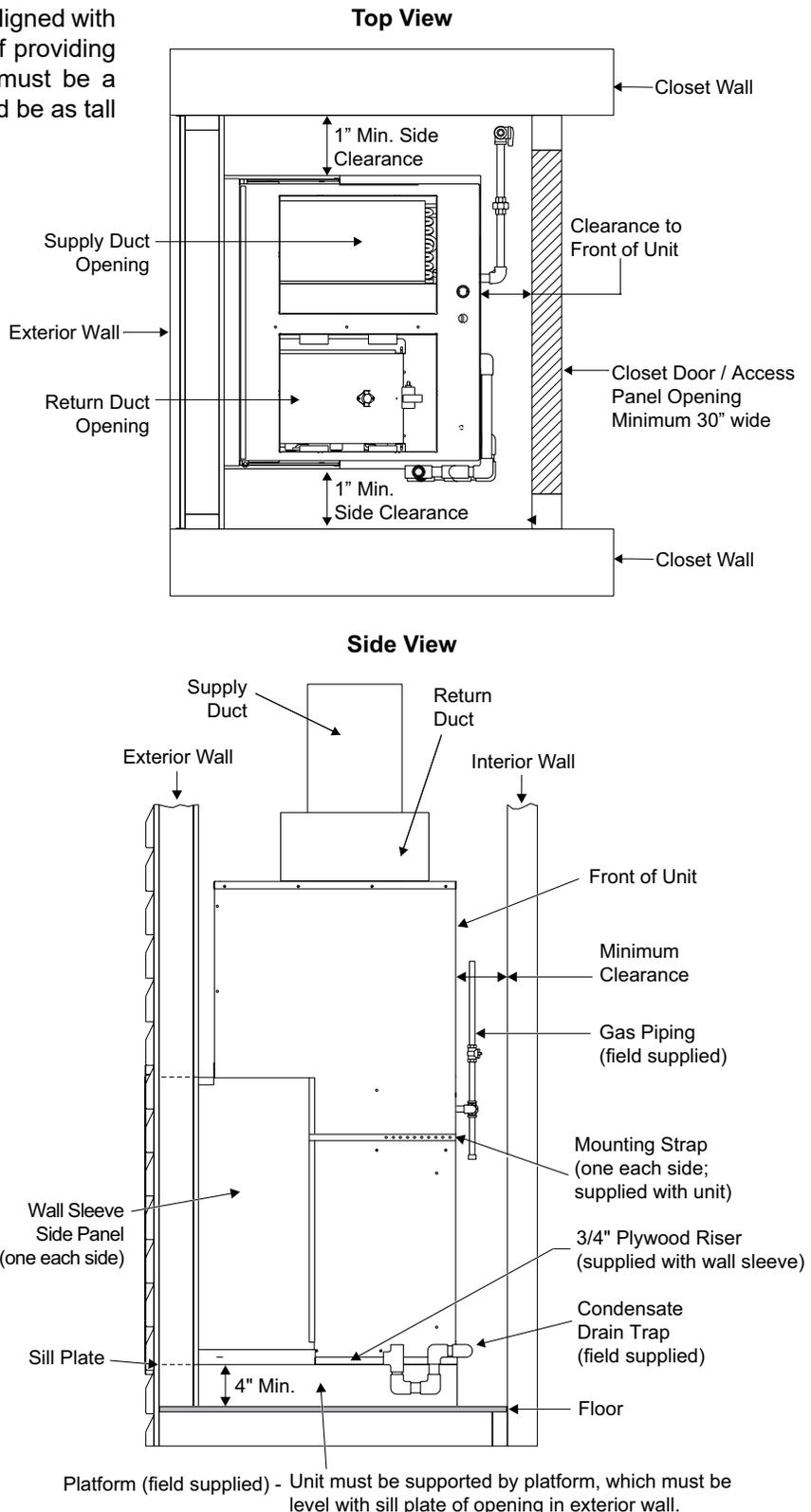


Figure 2. Minimum Clearances

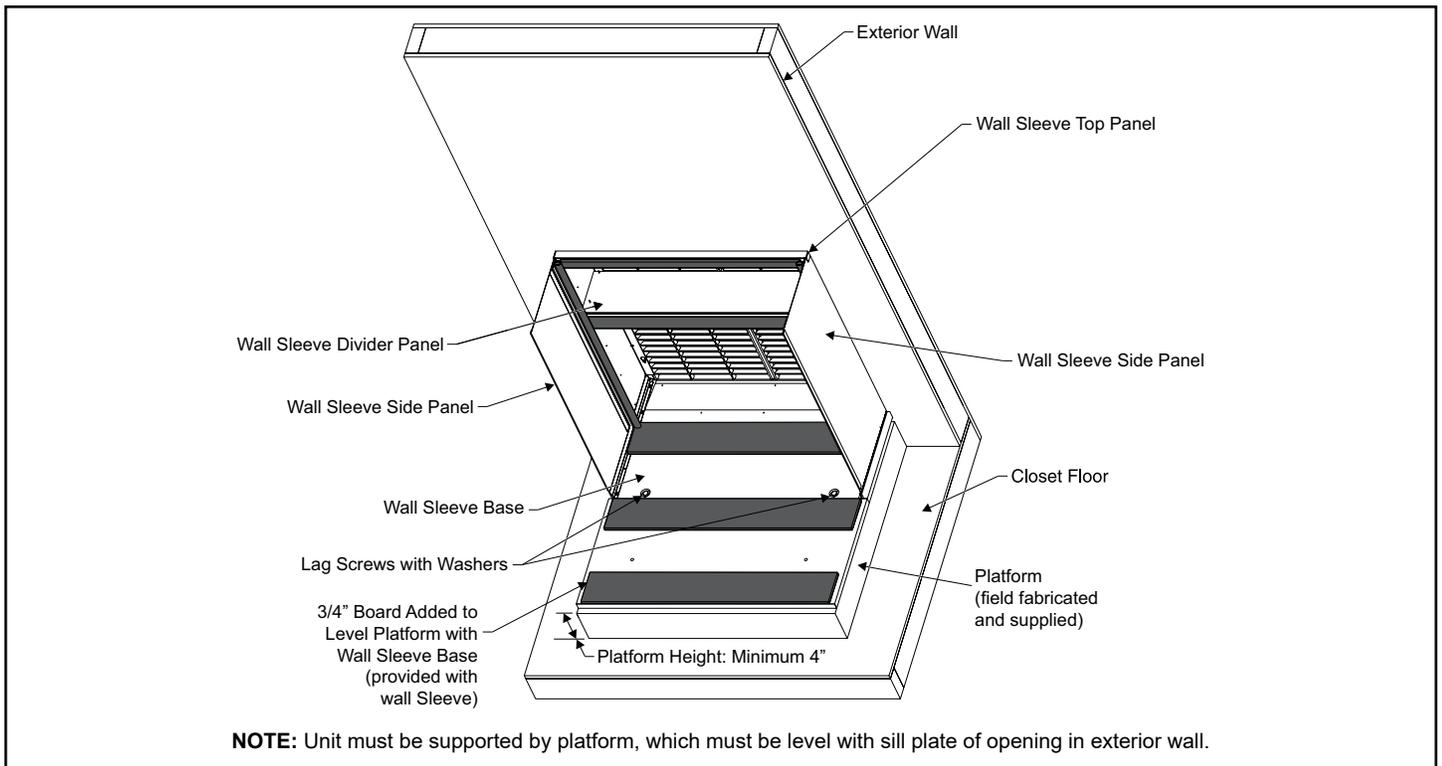


Figure 3. Wall Sleeve and Louver Kit Installation

Location

⚠ WARNING

The unit must be installed with approved wall sleeve and louver accessories for safe operation. Improper installations could result in property damage, personal injury, or death.

For information on wall sleeves and louver accessories, see the **Accessories** section.

This unit is designed to be installed in up to the wall (exterior wall) installation only. Refer to Figure 2 for additional details. **Accessibility clearances must take precedence over fire protection clearances.**

The outside of the unit may be flush with the face of the exterior wall, and it should not be obstructed with trees, landscape materials, or building structure. Unit can be installed recessed with appropriate wall sleeve accessories.

There is no minimum clearance required on locating the unit to an interior corner of a building.

If the unit is installed in a residential garage, it must be located or protected to avoid physical damage by vehicles. The unit must be installed so that no electrical components are exposed to water.

⚠ CAUTION

This unit must be installed level to allow for proper drainage of the unit base pan and indoor drain pan.

Use of Unit During Construction

Use of this unit as a construction heater or air conditioner is not recommended during any phase of construction. Very low return air temperature, harmful vapors and operation of the unit with clogged or misplaced filters will damage the unit.

Units may be used for heating or cooling of buildings or structures under construction if the following conditions are met or the warranty will be void:

- The unit must be permanently installed per these installation instructions.
- A room thermostat must control the unit. The use of fixed jumpers that will provide continuous heating is not allowed.
- Supply and return air duct must be provided and sealed to the unit.
- Return air temperature range between 60°F (16°C) and 80°F (27°C) must be maintained.
- MERV 11 or greater air filters must be installed in the system and must be regularly inspected and maintained (e.g., regular static checks and replaced at end of life) during construction.

- Air filters must be replaced upon construction completion.
- The input rate and temperature rise must be set per the unit rating plate.
- One hundred percent (100%) outdoor air must be provided for combustion air requirements during construction.
- The heat exchanger, components, duct system, air filters and evaporator coils must be thoroughly cleaned following final construction cleanup.
- The unit operating conditions (including airflow, cooling operation, ignition, input rate, temperature rise and venting) must be verified according to these installation instructions.

Wall Sleeve and Louver Installation

Refer to installation instructions included with the wall sleeve and the louver along with Figure 3 for guidance in assembling and installing the wall sleeve and louver.

CAUTION

The sleeve is not intended as the sole support for the unit. An additional support must be provided for adequate support (see Figure 3).

Installing and Securing Unit to Wall Sleeve

Before installing and securing the unit to the wall sleeve, make sure that the proper louver is installed. Due to the high temperatures of the combustion products released from the vent pipe, these units require the use of either an aluminum louver or polypropylene louver (see the **Accessories** section).

1. Make sure the gaskets attached to the sleeve are not damaged.
2. Verify divider panel is positioned properly. Refer to Table 2 for wall sleeves that allow for multiple divider panel locations.
3. Place the unit into the wall sleeve. Lift leading end of unit and walk unit onto the sleeve. Once in the wall sleeve, lower the unit into position. This prevents damage to the base pads. Assure that the unit is level and completely seated against the gaskets on the wall sleeve. The unit must be supported by a field-fabricated and supplied platform.

Model	ASLEEVE**-2	ASLEEVE**-5	Orientation of Flange
	Two Positions	Three Positions	
MGE*-12-09,12	Lower	Lower	Down
MGE*-12-18,24			
MGE*-12-30	Upper	Middle	Up
MGE*-14-36	NA	Upper	

Table 2.

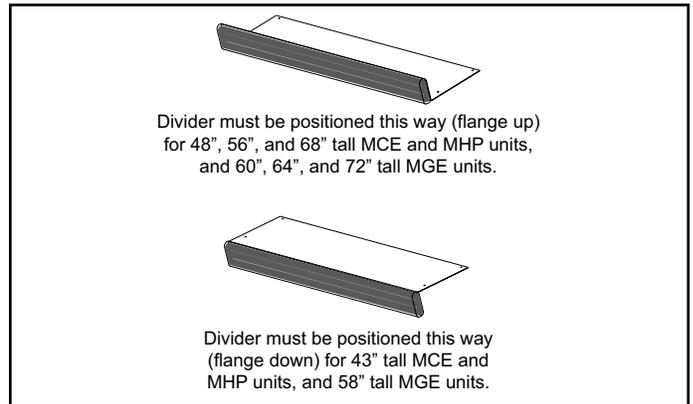


Figure 4. Positioning Divider Panel

4. Use the two installation brackets to secure the unit to the wall sleeve (see Figure 7). The units are shipped with the brackets placed loose on the unit top panel, beneath packaging. Hook each bracket into the front edge of the wall sleeve side panel. Position the bracket so it can be bent around the front corner of the unit. Remove one of the two screws in that position on the unit. Line up one of the holes in the installation bracket with the screw hole and attach the bracket to the unit with that screw. Make sure to fasten tight enough that the seal is maintained. Trim off excess bracket if applicable.
5. Inspect the fit up of the unit to the wall sleeve. Verify that the gaskets of the wall sleeve make a complete seal to the unit paying particular attention to top and bottom corners of unit to sleeve seal. Caulk if needed.

Venting

The venting system is an integral part of the appliance. The venting system must not be modified in any manner other than what is specified in these instructions.

This appliance should be installed in a location such that the vent outlet is located in the following manner:

1. Distances to windows that open, building openings, or public walkways should be consistent with the National Fuel Gas Code Z223.1.
2. For U.S. installations, the vent system shall terminate a minimum horizontal clearance of 4' from electric meters, regulators, and relief equipment.

3. Flue products from properly adjusted and maintained units, should not cause degradation to building materials.

The unit contains a combustion air inducer. The inducer draws the combustion products out of the heat exchanger together with dilution air and forces the mixture from the unit to the outside. No special provisions are required for supplying air for combustion, nor is a chimney required as this is a direct vent appliance.

The vent outlet must be extended (see Vent Pipe Installation).

The venting system is designed for proper operation under most weather conditions and for wind speeds up to 40 miles per hour. The venting system should be unobstructed for a minimum of 2 feet.

Existing Venting Systems

When an existing furnace is removed and replaced, the MGE* unit venting system may no longer be sized to properly vent the attached appliances. An improperly sized venting system can result in spillage of flue products into the living space, the formation of condensate, leakage, etc. Refer to the **CAUTION** box in the next column for proper test procedure.

Locating Vent Pipe & Extension

Determining the length of the vent pipe extension is dependent upon which wall sleeve accessory is installed at the job site for each particular installation.

⚠ CAUTION

For proper operation, the vent length must be correct for the installation. The unit may not operate correctly with inadequate vent length.

1. Access vent pipe at the side of the unit that will face the outdoors.
2. The vent pipe and vent pipe extension is located to the right of the outdoor fan (see Figure 5).

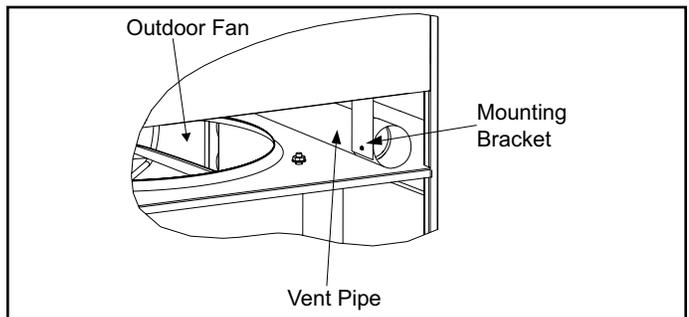


Figure 5. Locating Vent Pipe and Extension

3. Remove the 5/16" screw used to mount the vent pipe assembly to the mounting bracket. Keep this screw.

⚠ CAUTION

Carbon Monoxide Poisoning Hazard

Failure to follow the steps outlined below for each appliance connected to the venting system being placed into operation could result in carbon monoxide poisoning or death.

The following steps shall be followed for each appliance connected to the venting system being placed into operation, while all other appliances connected to the common venting system are not in operation:

1. Seal any unused openings in the common venting system.
2. Visually inspect the venting system for proper size and horizontal pitch, as required in the National Fuel Gas Code, ANSI Z223.1/NFPA 54 (latest edition) and these instructions. Determine that there is no blockage or restriction, leakage, corrosion, or other deficiencies which could cause an unsafe condition.
3. As far as practical, close all building doors and windows between the space in which the appliance(s) connected to the venting system are located and other spaces in the building.
4. Close fireplace dampers.
5. Turn on clothes dryers and any appliance not connected to the venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they are operating at maximum speed. Do not operate a summer exhaust fan.
6. Follow the lighting instructions. Place the unit being inspected in operation. Adjust the thermostat so appliance is operating continuously.
7. Test for spillage from draft hood equipped appliances at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle.
8. If improper venting is observed during any of the above tests, the venting system must be corrected in accordance with the National Fuel Gas Code, ANSI Z223.1/NFPA 54 (latest edition).
9. After it has been determined that each appliance remaining connected to the venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers, and any other gas-fired burning appliance to their previous conditions of use.

4. Five holes have been drilled into the vent extension (see Figure 6). Four of those holes are provided so that the vent can be extended the necessary length required for the installation. The wall sleeve that is

installed determines which of these clearance holes should be used. Using Table 3 and Figure 6, determine which clearance hole should be used to position the vent extension properly. Slide the vent extension outward and line up the correct clearance hole on the vent extension with the hole in the vent pipe and the hole in the mounting bracket.

5. Re-install the 5/16" screw that was removed in Step 3. Thread the screw first through the clearance hole in the mounting bracket, the proper clearance hole in the vent extension, and into the engagement hole in the vent pipe. The length of the vent pipe extension that extends out of the cabinet should be as shown in Table 3.

Wall Sleeve Used	Hole #	Approximate Length the Vent Pipe Extends from the Cabinet
ASLEEVE6-1, 2, 5	4	5.5 in.
ASLEEVE8-1, 2, 5	3	7.5 in.
ASLEEVE10-1, 2, 5	2	9.5 in.
ASLEEVE12-1, 2, 5	1	11.5 in.

Table 3. Determining Hole Setting

6. Position the vent pipe at the center of the metal wire grille when using polypropylene louvers. The vent pipe should have a slight downward slope to allow any moisture to drain away from the unit as well as being centered on the metal wire grille.

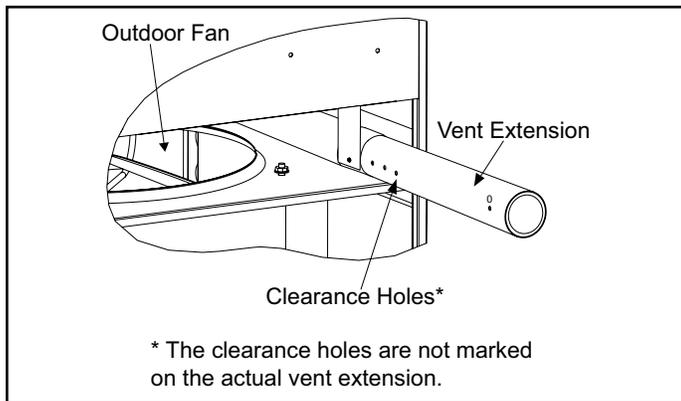


Figure 6. Positioning Vent Pipe Extension

Ductwork

Ductwork should be designed and sized according to the methods in Manual Q of the Air Conditioning Contractors of America (ACCA).

Check unit supply and return air openings for debris before making ductwork connections.

It is recommended that supply and return duct connections at the unit be made with flexible joints. If flexible ducts are used, a 6" sheet metal starter collar is required.

The supply and return air duct systems should be fabricated per the designed CFM and static requirements of the job (see Table 4). **Ductwork should not be sized to match the dimensions of the duct connections on the unit.** The return duct should be sealed to the unit casing and terminate outside the space containing the unit.

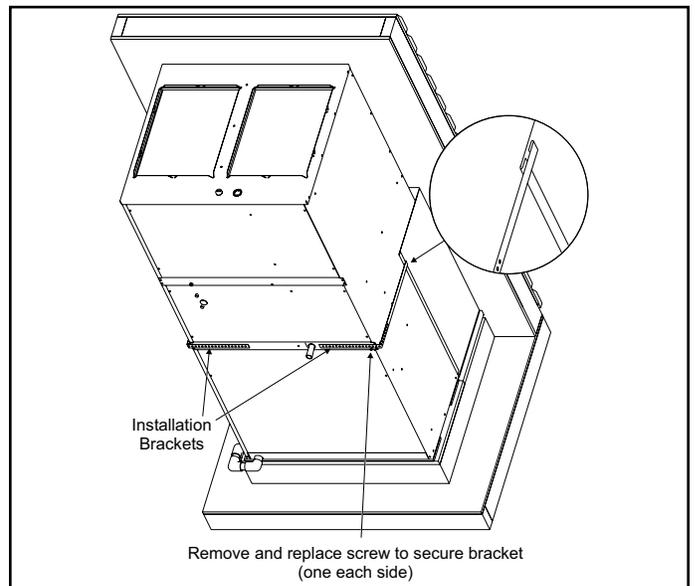


Figure 7. Securing Unit

	Model	Gas Heating		Indoor Blower Speed	0.1 "w.c.				0.2 "w.c.				0.3 "w.c.				0.4 "w.c.				0.5 "w.c.					
		Rise Range (F°)	Mid Rise (F°)		SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise		
0.75 Ton	15MGE*-12-091*P	15 - 45	30	TAP 1 (FAN)	430	46	0.06	---	370	50	0.07	---	320	53	0.07	---	265	57	0.08	---	200	62	0.08	---		
				TAP 2 (COOL)	375	39	0.05	---	315	42	0.06	---	N/A	N/A	N/A	---	N/A	N/A	N/A	---	N/A	N/A	N/A	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	349	48	0.06	---	302	51	0.07	---	253	54	0.07	---		
				TAP 4 (HEAT)*	365	35	0.05	31	300	39	0.05	37	240	42	0.06	47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	460	83	0.11	24	415	88	0.12	27	370	98	0.13	30		
	24MGE*-12-091*P	25 - 55	40	TAP 1 (FAN)	430	46	0.06	---	370	50	0.07	---	320	53	0.07	---	265	57	0.08	---	200	62	0.08	---		
				TAP 2 (COOL)	375	39	0.05	---	315	42	0.06	---	N/A	N/A	N/A	---	N/A	N/A	N/A	---	N/A	N/A	N/A	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	349	48	0.06	---	302	51	0.07	---	253	54	0.07	---		
				TAP 4 (HEAT)*	445	48	0.06	40	390	53	0.07	46	340	56	0.08	53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	530	102	0.14	34	480	108	0.14	37	440	114	0.15	41		
1 Ton	15MGE*-12-121*P	15 - 45	30	TAP 1 (FAN)	415	39	0.05	---	350	43	0.06	---	285	47	0.06	---	240	51	0.07	---	165	54	0.07	---		
				TAP 2 (COOL)	425	46	0.06	---	370	49	0.07	---	315	53	0.07	---	N/A	N/A	N/A	---	N/A	N/A	N/A	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	421	84	0.11	---	379	88	0.12	---	337	91	0.12	---		
				TAP 4 (HEAT)*	370	36	0.05	30	315	39	0.05	35	260	42	0.06	43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	470	80	0.11	24	415	85	0.11	27	370	89	0.12	30		
	24MGE*-12-121*P	25 - 55	40	TAP 1 (FAN)	415	39	0.05	---	350	43	0.06	---	285	47	0.06	---	240	51	0.07	---	165	54	0.07	---		
				TAP 2 (COOL)	425	46	0.06	---	370	49	0.07	---	315	53	0.07	---	N/A	N/A	N/A	---	N/A	N/A	N/A	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	421	84	0.11	---	379	88	0.12	---	337	91	0.12	---		
				TAP 4 (HEAT)*	450	50	0.07	40	405	53	0.07	44	355	57	0.08	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	525	101	0.14	34	485	105	0.14	37	450	110	0.15	40		
36MGE*-12-121*P	30 - 60	45	TAP 1 (FAN)	415	39	0.05	---	350	43	0.06	---	285	47	0.06	---	240	51	0.07	---	165	54	0.07	---			
			TAP 2 (COOL)	425	46	0.06	---	370	49	0.07	---	315	53	0.07	---	N/A	N/A	N/A	---	N/A	N/A	N/A	---			
			TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	421	84	0.11	---	379	88	0.12	---	337	91	0.12	---			
			TAP 4 (HEAT)*	590	87	0.12	45	555	91	0.12	48	515	96	0.13	52	475	100	0.134	56	N/A	N/A	N/A	N/A			
			TAP 5 (HEAT)	N/A	N/A	N/A	N/A	680	138	0.19	39	650	143	0.19	41	615	148	0.198	44	585	153	0.21	46			
1.5 Ton	15MGE*-12-181*P	15-45	30	TAP 1 (FAN)	470	54	0.07	---	400	59	0.08	---	345	63	0.08	---	290	67	0.09	---	235	70	0.09	---		
				TAP 2 (COOL)	670	118	0.16	---	625	123	0.16	---	565	131	0.18	---	525	136	0.18	---	N/A	N/A	N/A	N/A		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	690	189	0.25	---	650	193	0.26	---	620	197	0.26	---	590	201	0.27	---		
				TAP 4 (HEAT)*	370	39	0.05	30	305	43	0.06	37	250	46	0.06	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	460	92	0.12	24	415	96	0.13	27	370	101	0.14	30		

N/A: Do not operate unit using this blower speed at this external static pressure.

† As shipped speed for Cooling operation. Blower speed must be field adjusted to speed Tap 2 for lower duct static applications.

* As shipped speed for Heating operation. Blower speed must be field adjusted to speed Tap 5 for higher duct static applications.

As shipped speed for Low Stage Cooling operation (low duct static).

Table 4. Blower Performance (208V or 230V)

	Model	Gas Heating		Indoor Blower Speed	0.1 "w.c.				0.2 "w.c.				0.3 "w.c.				0.4 "w.c.				0.5 "w.c.			
		Rise Range (F°)	Mid Rise (F°)		SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise
1.5 Ton	24MGE*-12-181*P	25-55	40	TAP 1 (FAN)	470	54	0.07	---	400	59	0.08	---	345	63	0.08	---	290	67	0.09	---	235	70	0.09	---
				TAP 2 (COOL)	670	118	0.16	---	625	123	0.16	---	565	131	0.18	---	525	136	0.18	---	N/A	N/A	N/A	N/A
				TAP 3 (COOL)†	N/A	N/A	N/A	---	690	189	0.25	---	650	193	0.26	---	620	197	0.26	---	590	201	0.27	---
				TAP 4 (HEAT)*	450	52	0.07	40	385	57	0.08	46	330	61	0.08	54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	540	116	0.16	33	490	121	0.16	37	450	127	0.17	40
	36MGE*-12-181*P	30-60	45	TAP 1 (FAN)	470	54	0.07	---	400	59	0.08	---	345	63	0.08	---	290	67	0.09	---	235	70	0.09	---
				TAP 2 (COOL)	670	118	0.16	---	625	123	0.16	---	565	131	0.18	---	525	136	0.18	---	N/A	N/A	N/A	N/A
				TAP 3 (COOL)†	N/A	N/A	N/A	---	690	189	0.25	---	650	193	0.26	---	620	197	0.26	---	590	201	0.27	---
				TAP 4 (HEAT)*	590	86	0.12	45	555	90	0.12	48	515	95	0.13	52	475	99	0.13	56	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	715	129	0.17	38	680	135	0.18	39	650	140	0.19	41	615	146	0.20	44	585	151	0.20	46
	48MGE*-12-181*P	35-65	50	TAP 1 (FAN)	470	54	0.07	---	400	59	0.08	---	345	63	0.08	---	290	67	0.09	---	235	70	0.09	---
				TAP 2 (COOL)	670	118	0.16	---	625	123	0.16	---	565	131	0.18	---	525	136	0.18	---	N/A	N/A	N/A	N/A
				TAP 3 (COOL)†	N/A	N/A	N/A	---	690	189	0.25	---	650	193	0.26	---	620	197	0.26	---	590	201	0.27	---
				TAP 4 (HEAT)*	695	141	0.19	51	655	147	0.20	54	620	153	0.21	58	580	161	0.22	62	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	830	214	0.29	43	795	221	0.30	45	760	228	0.31	47	730	236	0.32	49	690	242	0.32	52
60MGE*-12-181*P	40-70	55	TAP 1 (FAN)	470	54	0.07	---	400	59	0.08	---	345	63	0.08	---	290	67	0.09	---	235	70	0.09	---	
			TAP 2 (COOL)	670	118	0.16	---	625	123	0.16	---	565	131	0.18	---	525	136	0.18	---	N/A	N/A	N/A	N/A	
			TAP 3 (COOL)†	N/A	N/A	N/A	---	690	189	0.25	---	650	193	0.26	---	620	197	0.26	---	590	201	0.27	---	
			TAP 4 (HEAT)*	800	182	0.24	56	770	187	0.25	58	740	191	0.26	60	710	198	0.27	63	675	204	0.27	66	
			TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	850	263	0.35	53	825	270	0.36	54	805	276	0.37	56	
2 Ton	15MGE*-12-241*P	15-45	30	TAP 1 (FAN)	450	49	0.07	---	400	52	0.07	---	345	56	0.08	---	285	59	0.08	---	235	65	0.09	---
				TAP 2 (COOL)	815	206	0.28	---	780	210	0.28	---	750	215	0.29	---	720	219	0.29	---	690	224	0.30	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	783	275	0.37	---	755	279	0.37	---	724	280	0.38	---
				TAP 4 (HEAT)*	370	36	0.05	30	320	38	0.05	35	250	42	0.06	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	465	82	0.110	24	420	85	0.11	26	370	90	0.12	30
	24MGE*-12-241*P	25-55	40	TAP 1 (FAN)	450	49	0.07	---	400	52	0.07	---	345	56	0.08	---	285	59	0.08	---	235	65	0.09	---
				TAP 2 (COOL)	815	206	0.28	---	780	210	0.28	---	750	215	0.29	---	720	219	0.29	---	690	224	0.30	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	783	275	0.37	---	755	279	0.37	---	724	280	0.38	---
				TAP 4 (HEAT)*	450	49	0.07	40	400	52	0.07	45	345	56	0.08	52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	530	99	0.13	34	490	103	0.14	37	450	107	0.14	40

N/A: Do not operate unit using this blower speed at this external static pressure.

† As shipped speed for Cooling operation. Blower speed must be field adjusted to speed Tap 2 for lower duct static applications.

* As shipped speed for Heating operation. Blower speed must be field adjusted to speed Tap 5 for higher duct static applications.

As shipped speed for Low Stage Cooling operation (low duct static).

Table 4. Blower Performance (208V or 230V)

	Model	Gas Heating		Indoor Blower Speed	0.1 "w.c.				0.2 "w.c.				0.3 "w.c.				0.4 "w.c.				0.5 "w.c.			
		Rise Range (F°)	Mid Rise (F°)		SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise
2 Ton	36MGE*-12-241*P	30-60	45	TAP 1 (FAN)	450	49	0.07	---	400	52	0.07	---	345	56	0.08	---	285	59	0.08	---	235	65	0.09	---
				TAP 2 (COOL)	815	206	0.28	---	780	210	0.28	---	750	215	0.29	---	720	219	0.29	---	690	224	0.30	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	783	275	0.37	---	755	279	0.37	---	724	280	0.38	---
				TAP 4 (HEAT)*	600	89	0.12	45	560	93	0.12	48	520	96	0.13	52	485	100	0.13	56	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	700	148	0.20	38	665	153	0.21	40	635	157	0.21	42	600	162	0.22	45
	48MGE*-12-241*P	35-65	50	TAP 1 (FAN)	450	49	0.07	---	400	52	0.07	---	345	56	0.08	---	285	59	0.08	---	235	65	0.09	---
				TAP 2 (COOL)	815	206	0.28	---	780	210	0.28	---	750	215	0.29	---	720	219	0.29	---	690	224	0.30	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	783	275	0.37	---	755	279	0.37	---	724	280	0.38	---
				TAP 4 (HEAT)*	720	145	0.19	50	675	151	0.20	53	635	157	0.21	56	595	164	0.22	60	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	820	223	0.30	44	780	232	0.31	46	745	238	0.32	48	710	246	0.33	50
	60MGE*-12-241*P	40-70	55	TAP 1 (FAN)	450	49	0.07	---	400	52	0.07	---	345	56	0.08	---	285	59	0.08	---	235	65	0.09	---
				TAP 2 (COOL)	815	206	0.28	---	780	210	0.28	---	750	215	0.29	---	720	219	0.29	---	690	224	0.30	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	783	275	0.37	---	755	279	0.37	---	724	280	0.38	---
				TAP 4 (HEAT)*	810	182	0.24	55	775	186	0.25	58	745	191	0.26	60	710	195	0.26	63	680	200	0.27	66
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	860	258	0.35	52	830	265	0.36	54	800	270	0.36	56
2.5 Ton	24MGE*-12-301*P	25-55	40	TAP 1 (FAN)	490	55	0.07	---	465	65	0.09	---	435	72	0.10	---	415	81	0.11	---	390	89	0.12	---
				TAP 2 (COOL)	930	239	0.32	---	900	243	0.33	---	885	250	0.34	---	835	256	0.34	---	805	262	0.35	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	900	321	0.43	---	875	326	0.44	---	850	331	0.44	---
				TAP 4 (HEAT)*	450	47	0.06	40	400	49	0.07	45	350	53	0.07	51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	530	93	0.12	34	490	98	0.13	37	450	103	0.14	40
	36MGE*-12-301*P	30-60	45	TAP 1 (FAN)	490	55	0.07	---	465	65	0.09	---	435	72	0.10	---	415	81	0.11	---	390	89	0.12	---
				TAP 2 (COOL)	930	239	0.32	---	900	243	0.33	---	885	250	0.34	---	835	256	0.34	---	805	262	0.35	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	900	321	0.43	---	875	326	0.44	---	850	331	0.44	---
				TAP 4 (HEAT)*	600	80	0.11	45	560	84	0.11	48	515	89	0.12	52	475	93	0.12	56	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	705	136	0.18	38	670	141	0.19	40	635	146	0.20	42	600	151	0.20	45
	48MGE*-12-301*P	35-65	50	TAP 1 (FAN)	490	55	0.07	---	465	65	0.09	---	435	72	0.10	---	415	81	0.11	---	390	89	0.12	---
				TAP 2 (COOL)	930	239	0.32	---	900	243	0.33	---	885	250	0.34	---	835	256	0.34	---	805	262	0.35	---
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	900	321	0.43	---	875	326	0.44	---	850	331	0.44	---
				TAP 4 (HEAT)*	715	140	0.19	50	670	146	0.20	53	630	152	0.20	57	590	159	0.21	61	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	815	218	0.30	44	775	227	0.30	46	740	233	0.31	48	705	241	0.32	51

N/A: Do not operate unit using this blower speed at this external static pressure.

† As shipped speed for Cooling operation. Blower speed must be field adjusted to speed Tap 2 for lower duct static applications.

* As shipped speed for Heating operation. Blower speed must be field adjusted to speed Tap 5 for higher duct static applications.

As shipped speed for Low Stage Cooling operation (low duct static).

Table 4. Blower Performance (208V or 230V)

	Model	Gas Heating		Indoor Blower Speed	0.1 "w.c.				0.2 "w.c.				0.3 "w.c.				0.4 "w.c.				0.5 "w.c.					
		Rise Range (F°)	Mid Rise (F°)		SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise	SCFM	Watts	HP	Temp Rise		
2.5 Ton	60MGE*-12-301*P	40-70	55	TAP 1 (FAN)	490	55	0.07	---	465	65	0.09	---	435	72	0.10	---	415	81	0.11	---	390	89	0.12	---		
				TAP 2 (COOL)	930	239	0.32	---	900	243	0.33	---	885	250	0.34	---	835	256	0.34	---	805	262	0.35	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	900	321	0.43	---	875	326	0.44	---	850	331	0.44	---		
				TAP 4 (HEAT)*	810	163	0.22	55	775	169	0.23	58	740	173	0.23	60	710	179	0.24	63	680	185	0.25	66		
				TAP 5 (HEAT)	935	233	0.31	48	900	240	0.32	50	870	245	0.33	52	835	254	0.34	53	810	257	0.34	55		
3 Ton	24MGE*-14-361*P	25-55	40	TAP 1 (COOL)#	704	126	0.17	---	664	131	0.18	---	626	136	0.18	---	592	141	0.19	---	553	147	0.20	---		
				TAP 2 (COOL)	1020	307	0.41	---	980	313	0.42	---	900	314	0.42	---	850	300	0.40	---	800	290	0.39	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	920	325	0.44	---	870	310	0.42	---	820	296	0.40	---		
				TAP 4 (HEAT)*	450	48	0.06	40	385	52	0.07	46	325	55	0.07	55	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	550	107	0.14	33	500	112	0.15	36	450	117	0.16	40		
	36MGE*-14-361*P	30-60	45	TAP 1 (COOL)#	704	126	0.17	---	664	131	0.18	---	626	136	0.18	---	592	141	0.19	---	553	147	0.20	---		
				TAP 2 (COOL)	1020	307	0.41	---	980	313	0.42	---	900	314	0.42	---	850	300	0.40	---	800	290	0.39	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	920	325	0.44	---	870	310	0.42	---	820	296	0.40	---		
				TAP 4 (HEAT)*	615	82	0.11	44	580	86	0.12	46	540	91	0.12	50	500	96	0.13	54	460	102	0.14	58		
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	710	129	0.17	38	685	135	0.18	39	650	140	0.19	41	615	145	0.19	44		
	48MGE*-14-361*P	35-65	50	TAP 1 (COOL)#	704	126	0.17	---	664	131	0.18	---	626	136	0.18	---	592	141	0.19	---	553	147	0.20	---		
				TAP 2 (COOL)	1020	307	0.41	---	980	313	0.42	---	900	314	0.42	---	850	300	0.40	---	800	290	0.39	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	920	325	0.44	---	870	310	0.42	---	820	296	0.40	---		
				TAP 4 (HEAT)*	715	135	0.18	50	675	142	0.19	53	640	148	0.20	56	600	155	0.21	60	560	162	0.22	64		
				TAP 5 (HEAT)	N/A	N/A	N/A	N/A	820	212	0.28	44	785	219	0.29	46	745	227	0.30	48	715	234	0.31	50		
	60MGE*-14-361*P	40-70	55	TAP 1 (COOL)#	704	126	0.17	---	664	131	0.18	---	626	136	0.18	---	592	141	0.19	---	553	147	0.20	---		
				TAP 2 (COOL)	1020	307	0.41	---	980	313	0.42	---	900	314	0.42	---	850	300	0.40	---	800	290	0.39	---		
				TAP 3 (COOL)†	N/A	N/A	N/A	---	N/A	N/A	N/A	---	920	325	0.44	---	870	310	0.42	---	820	296	0.40	---		
				TAP 4 (HEAT)*	825	175	0.23	54	790	179	0.24	57	755	185	0.25	59	720	191	0.26	62	690	197	0.26	65		
				TAP 5 (HEAT)	935	240	0.32	48	905	246	0.33	49	870	254	0.34	51	845	260	0.35	53	815	266	0.36	55		

N/A: Do not operate unit using this blower speed at this external static pressure.

† As shipped speed for Cooling operation. Blower speed must be field adjusted to speed Tap 2 for lower duct static applications.

* As shipped speed for Heating operation. Blower speed must be field adjusted to speed Tap 5 for higher duct static applications.

As shipped speed for Low Stage Cooling operation (low duct static).

Table 4. Blower Performance (208V or 230V)

Filter

All return air must be filtered. A washable filter is furnished with the unit, located in the return air opening.

If a filter is installed at a separate central return location, then the factory furnished filter must be removed from the unit.

If an installation is made in which it is more desirable to mount the filter exterior to the unit, in the return duct work or elsewhere, the washable filter can be used or replaced with a disposable filter. If a disposable filter is used in lieu of a washable filter, use the information provided in Table 5 when sizing the disposable filter.

Model Number	Filter Area (in ²)
15MGE*-12-09*	175
24MGE*-12-09* 15MGE*-12-12* 24MGE*-12-12*	210
36MGE*-12-12*	285
15MGE*-12-18* 24MGE*-12-18* 36MGE*-12-18* 48MGE*-12-18*	325
60MGE*-12-18* *MGE*-12-24*	385
MGE-12-30*	435
MGE-14-36*	480

Table 5. Minimum Required Surface Area for Disposable Filters

When proper duct design is applied, field-provided filters up to MERV 6 can typically be installed in the unit's factory filter location in lieu of a washable filter. If a higher resistance filter is field installed in the unit, the added resistance must be included in the external static pressure and must not exceed 0.5 in. w.c., including ductwork.

Condensate Drain

Provisions must be made to properly drain condensate from the drain pan.

Condensate drain connection: 3/4" NPT to 3/4" PVC fitting (schedule 40 minimum). Drain must be trapped as shown in Figure 8. The drain line should pitch gradually downward at least 1" per 10' of horizontal run to open drain. Field fabricated platform should be 4" minimum to allow for proper trapping and drainage.

CAUTION

Use thread sealant on the threaded fittings. Install threaded fittings by hand only. **Do not over torque the fittings.**

If local codes require the use of metal condensate lines, do not thread metal fittings into the unit drain pans. Thread a PVC fitting into the unit drain pans and make the field connection to the PVC fitting.

NOTE: *These units are designed with a redundant drain system to handle condensate without the need for a secondary or emergency drain pan. Should the indoor coil condensate drain system fail, all water is contained within the unit and the flow is directed into the unit base pan. From there it will drain into the condensate riser.*

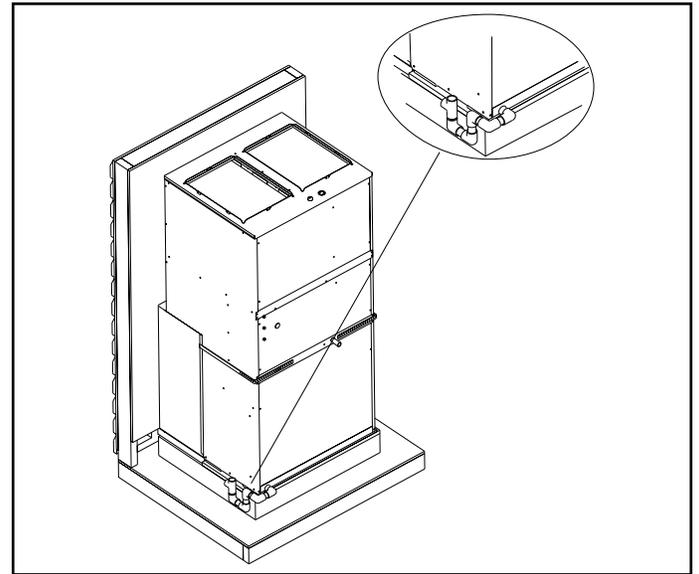


Figure 8. Condensate Drain Installation

Electrical Connections

All wiring must be done in accordance with the National Electrical Code (NEC), ANSI/NFPA No. 70 (latest edition); or local codes, where they prevail. Any alteration of internal wiring will void certification and warranty.

Units are factory wired for a 230 volt power supply. If power supply is 208 volts, it will be necessary to change a wire connection on unit transformer from 240 volt terminal to 208 volt terminal as shown on the wiring diagram.

Use wiring with a temperature limitation of 75°C minimum. Run the 208 or 230 volt, single phase, 60 hertz electric power supply through a fused disconnect switch and connect to the unit as shown in the unit's wiring diagram.

The unit must be electrically grounded in accordance with local codes or, in the absence of local codes, with the National Electrical Code ANSI/NFPA No. 70 (latest edition).

The power supply to the unit must be NEC Class 1 and must comply with all applicable codes. A fused disconnect switch should be field provided for the unit, and must be separate from all other circuits. If any of the wire supplied with the unit must be replaced, replacement wire must be of the type shown on the wiring diagram.

Electrical wiring must be sized to minimum circuit ampacity (MCA) marked on the unit. **Use copper conductors only.** Each unit must be wired with a separate branch circuit and be properly fused.

Gas Supply and Piping

Refer to unit rating plate to make sure the furnace is equipped to utilize the type of fuel that is being provided (natural or propane).

WARNING

Any conversion of a natural gas unit to propane gas must be done by qualified personnel using a conversion kit available from the manufacturer, following the instructions in the conversion kit. If done improperly, over-firing of the burners and improper burner operation can result. This can create carbon monoxide which could cause asphyxiation.

Gas supply piping should be installed in accordance with local codes and the regulations of the utility. Piping must be of adequate size to prevent undue pressure drop. Consult the local utility or gas supplier for complete details on special requirements for sizing gas piping.

If local codes allow the use of a flexible gas appliance connector, always use a new approved connector. Do not use a connector which has previously serviced another gas appliance.

Pipe connections must be tight, and a non-hardening pipe compound resistant to liquefied petroleum gases must be used.

Connect the gas pipe to the gas pipe connection providing a ground joint union as close to the gas pipe connection as is possible to facilitate removal of controls and manifold. Provide a drip leg on the outside of the furnace. A manual shutoff valve shall be installed in the gas line, outside the unit, 5' above the floor, or in accordance with any local codes.

The furnace must be isolated from the gas supply piping system by closing the individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressure equal to or less than 1/2 psig (3.5 kPa) or 14" W.C. If the piping system is to be tested at pressures in excess of 1/2 psig (3.5 kPa), the furnace and its appliance main gas valve must be disconnected from the gas supply piping system.

After gas piping is complete, carefully check all piping connections (factory and field) for gas leaks. Use a leak detecting solution or other preferred means. Some soaps used for leak detection are corrosive to certain metals. Carefully rinse piping thoroughly after leak detection has been completed.

WARNING

The gas valve supplied with this furnace is rated at 1/2 psig maximum. Any higher pressure may rupture the pressure regulator diaphragm and may cause over-firing of the burners and improper burner operation. The over-firing may result in the creation of carbon monoxide which could cause asphyxiation.

WARNING

Fire or Explosion Hazard

Failure to follow the safety warnings exactly could result in serious injury, death, or property damage.

Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury, or loss of life.

Thermostat

The room thermostat should be located on an inside wall where it will not be subject to drafts, sun exposure, or heat from electrical fixtures or appliances. Follow manufacturer's instructions enclosed with the thermostat for general installation procedures. Color-coded insulated wires (#18 AWG) should be used to connect the thermostat to the unit.

For ****MGE*-14-361**** models, a two-stage thermostat is recommended for reaching highest efficiency and full use of two-stage compressor.

Start-Up

For Your Safety, Read Before Lighting

WARNING

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

CAUTION

This furnace is equipped with a direct ignition control. Do not attempt to manually light the burners.

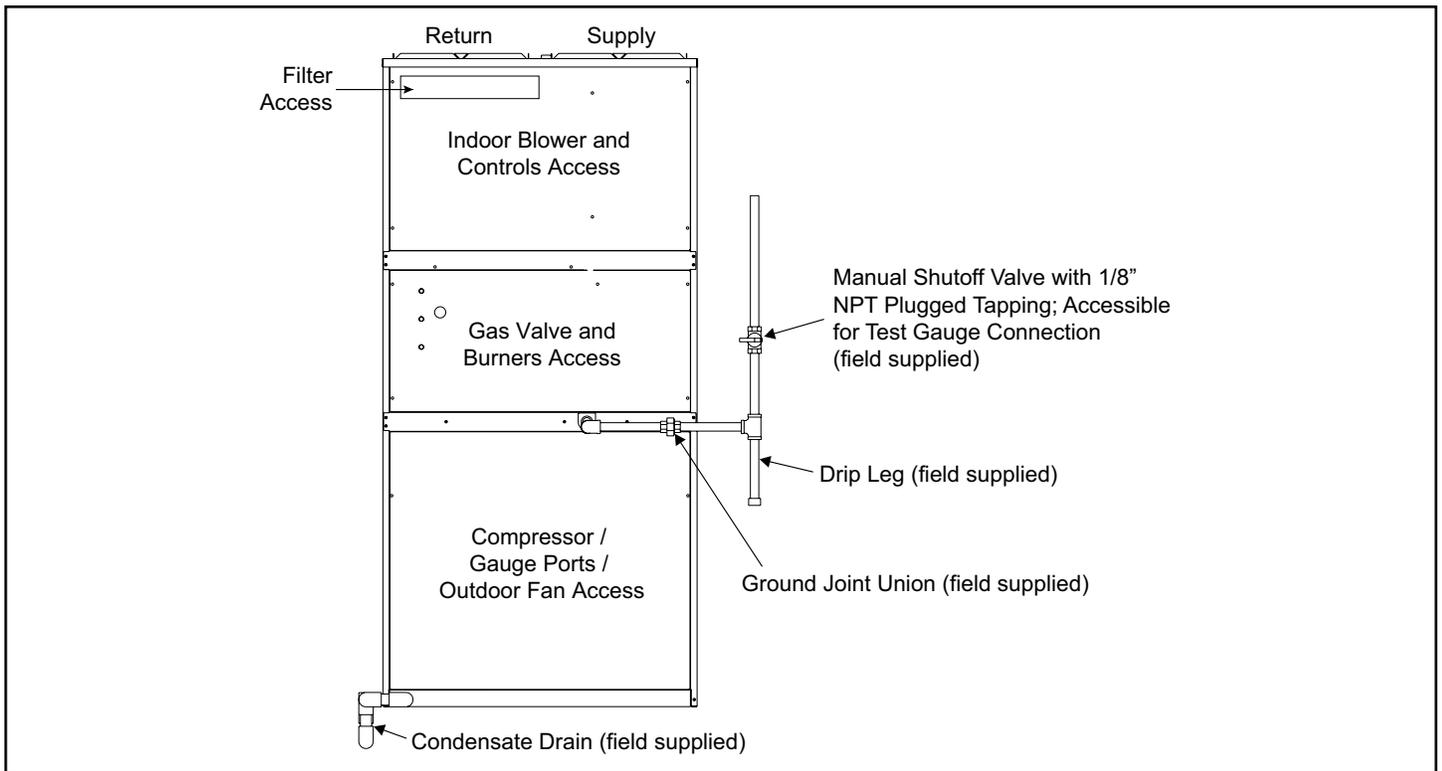


Figure 9. Gas Supply Piping

To Light Burners

1. Turn off electrical power to unit.
2. Turn the thermostat to lowest setting.
3. Move the gas valve switch to the “ON” position (see Figure 10).
4. Turn on electrical power to the unit.
5. Set the room thermostat to the desired temperature. If the thermostat “set” temperature is above room temperature after the pre-purge time expires, burners will light.

To Shut Down Unit

1. Turn off electrical power to unit.
2. Move the gas valve switch to the “OFF” position (see Figure 10).

Operation

Operation of the unit is automatic and will provide heating and cooling depending on the setting of the thermostat.

Heating

1. Turn on main power supply.
2. Open manual gas shutoff valve.
3. Set thermostat system to “HEAT”.
4. Set thermostat to temperature desired.

Sequence of Operation

1. Thermostat calls for heat.
2. Combustion air inducer starts and proper air flow is proven by the pressure switch closing.
3. Blower continues to operate for 30 seconds prior to the burners lighting.
4. Ignition control begins spark and opens gas valve. The burners are lit. Ignition is proved through flame sensor.
5. Supply air blower starts 30 seconds after the burners light.

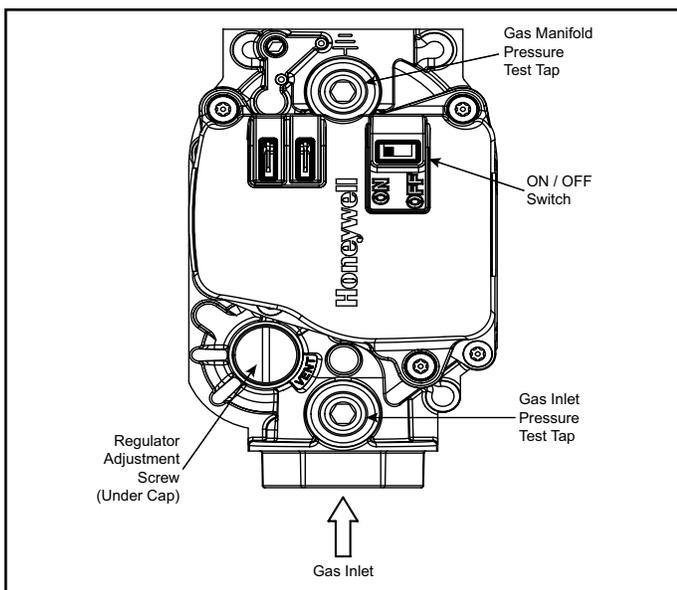


Figure 10. Gas Valve

6. When the thermostat is satisfied, the burners and combustion air inducer shut off.
7. Supply air blower will shut off 120 seconds later.

If the burners should fail to ignite, the ignition control will try to ignite the burners a total of three times. Should the burners fail to ignite within the three trials for ignition, the ignition control will lock out for 1 hour before beginning another ignition cycle. To reset the control, turn the thermostat down or off for 10 seconds and then set to desired setting. At this time, the ignition sequence will try again.

Cooling

1. Set thermostat system switch to "COOL."
2. Set thermostat to temperature desired.

NOTE: When Y is energized, the combustion air inducer will operate for 10 seconds. The purpose of this action is to deter insect nesting in the flue pipe.

To Shut Down Unit

For temporary or short periods of shutdown, set the thermostat system switch to "OFF". For a prolonged period of shutdown, set the thermostat system switch to "OFF" and turn off the electrical power supply and the gas supply to the unit.

Adjustments – Heating Section

Temperature Rise

At time of installation, the temperature rise must be adjusted to be within the range specified on the unit rating plate.

Checking and Adjusting Gas Input

The gas input must not exceed the figures shown on the rating plate. The unit is equipped for rated inputs with manifold pressures of: 3.5" w.c. for natural gas and 10.0" w.c. for propane. The furnace requires conversion for use with propane; the MagicPak propane conversion kit must be used.

The manifold pressure can be measured by removing the pipe plug in the downstream side of the gas valve and connecting a water manometer or gauge.

Only small variations in gas input may be made by adjusting the regulator. **In no case should the final manifold pressure vary more than 0.3" w.c. for natural gas or 0.7" w.c. for propane.**

WARNING

The furnace rate must be within +/- 2% of the appliance rating input.

To adjust the regulator, turn the adjusting screw on the regulator clockwise to increase pressure and input or counterclockwise to decrease pressure and input.

$$\text{BTU/HR Input} = \frac{\text{Cubic Feet per Revolution}}{\text{\# Seconds per Revolution}} \times 3600 \times \text{Heating Value}$$

For Natural Gas: Check the furnace rate by observing the gas meter, when available, making sure all other gas appliances are turned off. The test hand on the meter should be timed for at least one revolution. Note the number of seconds for one revolution.

The heating value of the gas can be obtained from the local utility company.

For Propane Gas: The only check for the furnace rate is to verify proper orifice spud size is installed and properly adjust the manifold pressure using a manometer. Typical manifold set point for installations is 10.0" W.C.

Adjustments – Cooling Section

No adjustments are required or should be attempted regarding any of the components of the cooling system. The system should be checked for loose or missing wiring.

Blower

The unit contains a constant torque ECM blower motor with dedicated blower speed taps for continuous fan, cooling and heating operation. The proper speeds have been preset at the factory for typical heating and cooling operation. Refer to the wiring diagram and Blower Performance table for recommended heating/cooling speeds for specific models. Speeds may require adjustment due to duct design and application.

Blower Operation

Continuous operation of the air handling blower will be obtained if the thermostat fan switch is set to "ON". With the thermostat fan switch set to "AUTO", the air handling blower will cycle corresponding with the thermostat cycling.

Fan Control

The blower will start approximately 30 seconds after the burners ignite and will stop approximately 120 seconds after the thermostat is satisfied. The time delay is preset at the factory and timing cannot be adjusted.

When the thermostat system switch is set for "COOL", the blower will start 5 seconds after the thermostat calls for cooling and will stop 90 seconds after the thermostat is satisfied.

A fan switch is provided on the thermostat which will bring the blower on for continuous operation when the switch is set for "ON".

Limit Control

A fixed temperature limit control is provided which will shut off the gas to the burners if the unit is overheated for any reason. The control must not be adjusted or relocated.

Rollout Switch

If for any reason the heat exchanger were to become blocked, there is a temperature sensitive switch located above the burners that will turn off the burners. After correcting the problem, this switch must be manually reset by pressing the button on top of it.

Installation and Operation in Extremely Cold Weather Areas

In areas where extremely cold outdoor temperatures (below – 20°F) can be expected, some additional installation and operating precautions should be taken. The following precautions are designed to prevent possible vent system ice blockage that could result in safety shutdown of the burners:

1. Adjust to the highest achievable temperature rise within the rise and static pressure ranges specified on the rating plate. Depending on specific model, it may be possible to change to a lower heating blower speed tap to get a higher temperature rise. This also increases comfort.
2. Make sure there are no leaks of outside air into the return air system.
3. Keep the louver free from ice that may form and obstruct the flue outlet.

High Altitude

This unit is approved for operation at altitudes from 0 to 5,500 feet above sea level without any required modifications. For installations above 5,500 feet, refer to Table 6.

Altitude	Natural Gas		LP Gas	
	Burner Orifices	Manifold Pressure	Burner Orifices LP Kit	Manifold Pressure
0 - 5,500 ft.	As shipped	3.5" w.c.	ALPKT613 or 614 (model dependent)	10.0" w.c.
5,500 - 8,500 ft.		3.0" w.c.		8.0" w.c.
Above 8,500 ft.	Per National Fuel Gas Code	3.5" w.c.	Per National Fuel Gas Code	10.0" w.c.

Table 6.

Maintenance

WARNING

Disconnect all electrical power to the unit before conducting any maintenance procedures. Failure to disconnect the power could result in personal injury or death.

Periodic inspection and maintenance normally consists of changing or cleaning filters and (under some conditions) cleaning the coils.

Cooling System

The refrigeration system normally requires no maintenance since it is a closed, self-contained system. Periodic maintenance is limited to:

- Cleaning the air filter. Follow directions noted on the filter and label attached to the access panel.
- Cleaning the indoor and outdoor coil if covered with any foreign material, lint, leaves, or other obstructions.

The condensing coil should be cleaned at a minimum once per year. In areas subject to high traffic or environmental conditions which may contain chloride, sulfites, dust, ammonia, etc., more frequent cleaning is required.

Heating System

Burners

The burners can be removed for cleaning or to change orifices. To remove the burners:

1. Disconnect electrical service and turn off gas to the appliance.
2. Remove access panel to burners and gas valve compartment.
3. Burners can be individually removed from burner assembly by removing the two screws that hold each burner in the burner rack.
 - Burners can be cleaned using a bottle brush.
 - Orifices are threaded into the gas manifold and can be removed by unscrewing.
4. Reinstall orifices and burners in the reverse order in which they were removed. Ensure burners are properly seated over orifices and properly aligned.
5. Reinstall access panel and turn on gas and electrical service.

Heat Exchanger

The heat exchanger should be inspected periodically and cleaned if necessary. If cleaning is necessary, use a stiff brush with a wire handle to remove scale. While cleaning the heat exchanger, the vent extension tube should also be cleaned. Remove the four screws on the combustion air inducer mounting plate and take out the blower. Use a brush to clean the vent extension tube.

Blower

Direct-drive blower motors are permanently lubricated and do not require oiling.

Filters

Inspect the filter once a month. Replace disposable filter or clean the washable filter as necessary (a minimum of three times each heating or cooling season is recommended).

To clean the washable filter, shake filter to remove excess dirt and/or use a vacuum cleaner. Wash filter in soap or detergent water and replace after filter is dry.

Outdoor Coil

Foreign material should not be allowed to accumulate on the outdoor coil surface or other parts in the air circuit.

Cleaning should be as often as necessary to keep the coil clean. To clean the coil, remove the lower access panel and blow out debris by using compressed air or water. Be sure power to unit is shut off before using water to clean the coil.

Care should be used when cleaning the coils so that the coil fins are not damaged.

Motors

The indoor and outdoor fan motors are permanently lubricated and require no maintenance.

Condensate Drain Pan

Foreign material should not be allowed to clog the drain hole. Inspect and clear drain opening prior to cooling season

Accessories

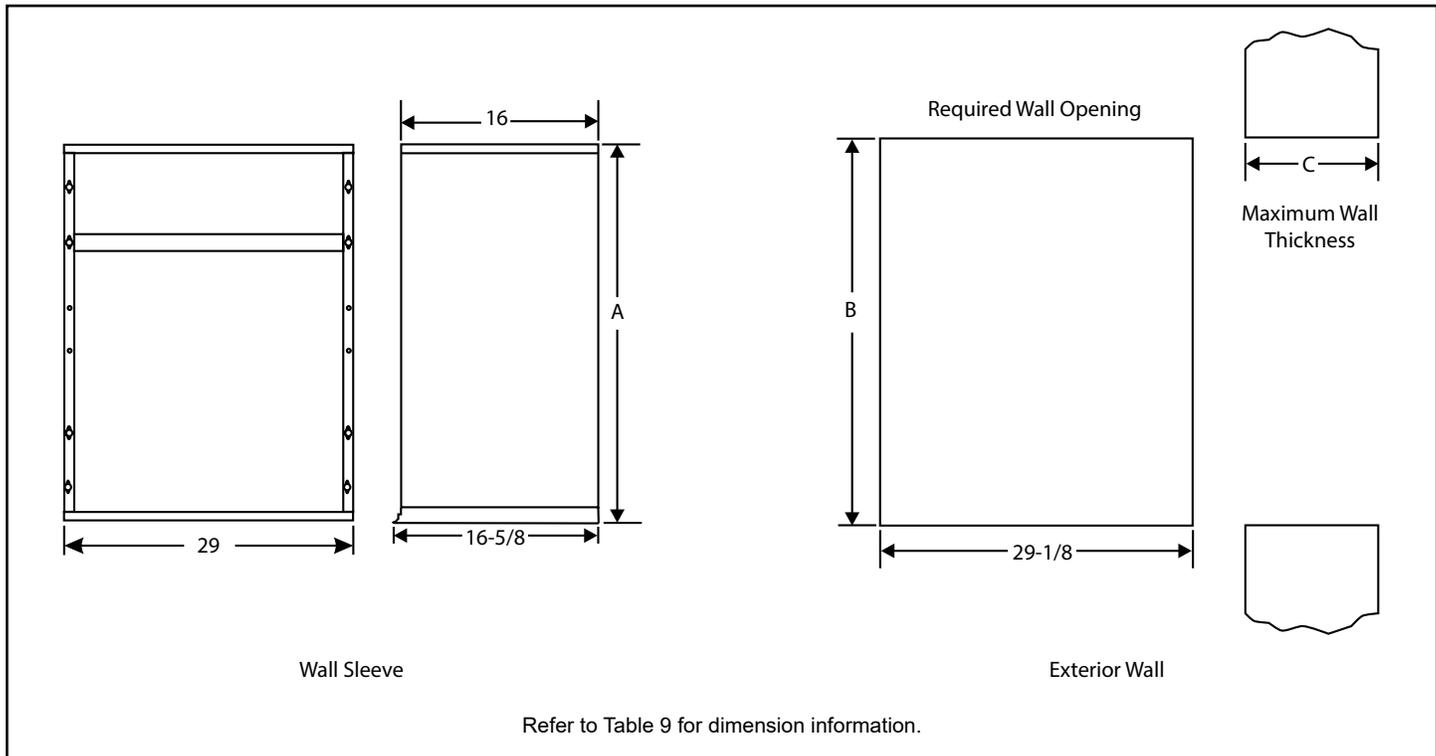


Figure 11.

! WARNING

The unit must be installed with approved wall sleeve and louver accessories for safe operation. Improper installations could result in property damage, personal injury, or death.

Wall Sleeves		Louvers			Model						Dimensions (in.)			
Wall Sleeve	Wall Sleeve Extension	Polypropylene Louvers	Aluminum Louvers	Impact Louvers	*MGE*-12-091*P	*MGE*-12-121*P	*MGE*-12-181*P	*MGE*-12-241*P	*MGE*-12-301*P	*MGE*-14-361*P	Wall Sleeve	Wall Opening		
											Height (A)	Height (B)	Depth (C)	
												Sleeve Only	Sleeve Plus Extension	
ASLEEVE6-1	---	ALVRP***MGE-1	ALVRAL-1^	ALVRALC-1^	•	•	•	•			29	29-1/8	6	---
ASLEEVE8-1	---	ALVRP***MGE-1	ALVRAL-1^	ALVRALC-1^	•	•	•	•			29	29-1/8	8	---
ASLEEVE10-1	ASLEEVEXT4-1	ALVRP***MGE-1	ALVRAL-1^	ALVRALC-1^	•	•	•	•			29	29-1/8	10	14
ASLEEVE12-1	ASLEEVEXT4-1	ALVRP***MGE-1	ALVRAL-1^	ALVRALC-1^	•	•	•	•			29	29-1/8	12	16
ASLEEVE6-2	---	ALVRP***MGE-2	ALVRAL-2^	ALVRALC-2^					•		32-3/4	32-7/8	6	---
ASLEEVE8-2	---	ALVRP***MGE-2	ALVRAL-2^	ALVRALC-2^					•		32-3/4	32-7/8	8	---
ASLEEVE10-2	ASLEEVEXT4-2	ALVRP***MGE-2	ALVRAL-2^	ALVRALC-2^					•		32-3/4	32-7/8	10	14
ASLEEVE12-2	ASLEEVEXT4-2	ALVRP***MGE-2	ALVRAL-2^	ALVRALC-2^					•		32-3/4	32-7/8	12	16
ASLEEVE6-2	---	---	ALVRAL-7^	ALVRALC-7^	o	o	o	o			32-3/4	32-7/8	6	---
ASLEEVE8-2	---	---	ALVRAL-7^	ALVRALC-7^	o	o	o	o			32-3/4	32-7/8	8	---
ASLEEVE10-2	ASLEEVEXT4-2	---	ALVRAL-7^	ALVRALC-7^	o	o	o	o			32-3/4	32-7/8	10	14
ASLEEVE12-2	ASLEEVEXT4-2	---	ALVRAL-7^	ALVRALC-7^	o	o	o	o			32-3/4	32-7/8	12	16
ASLEEVE6-5	---	---	ALVRAL-3^	ALVRALC-3^	o	o	o	o			45	45-1/8	6	---
ASLEEVE8-5	---	---	ALVRAL-3^	ALVRALC-3^	o	o	o	o			45	45-1/8	8	---
ASLEEVE10-5	ASLEEVEXT4-3	---	ALVRAL-3^	ALVRALC-3^	o	o	o	o			45	45-1/8	10	14
ASLEEVE12-5	ASLEEVEXT4-3	---	ALVRAL-3^	ALVRALC-3^	o	o	o	o			45	45-1/8	12	16
ASLEEVE6-5	---	ALVRP***MGE-3							•		45	45-1/8	6	---
ASLEEVE8-5	---	ALVRP***MGE-3							•		45	45-1/8	8	---
ASLEEVE10-5	ASLEEVEXT4-3	ALVRP***MGE-3							•		45	45-1/8	10	14
ASLEEVE12-5	ASLEEVEXT4-3	ALVRP***MGE-3							•		45	45-1/8	12	16
ASLEEVE6-5	---	---	ALVRAL-4^	ALVRALC-4^					o	•	45	45-1/8	6	---
ASLEEVE8-5	---	---	ALVRAL-4^	ALVRALC-4^					o	•	45	45-1/8	8	---
ASLEEVE10-5	ASLEEVEXT4-3	---	ALVRAL-4^	ALVRALC-4^					o	•	45	45-1/8	10	14
ASLEEVE12-5	ASLEEVEXT4-3	---	ALVRAL-4^	ALVRALC-4^					o	•	45	45-1/8	12	16

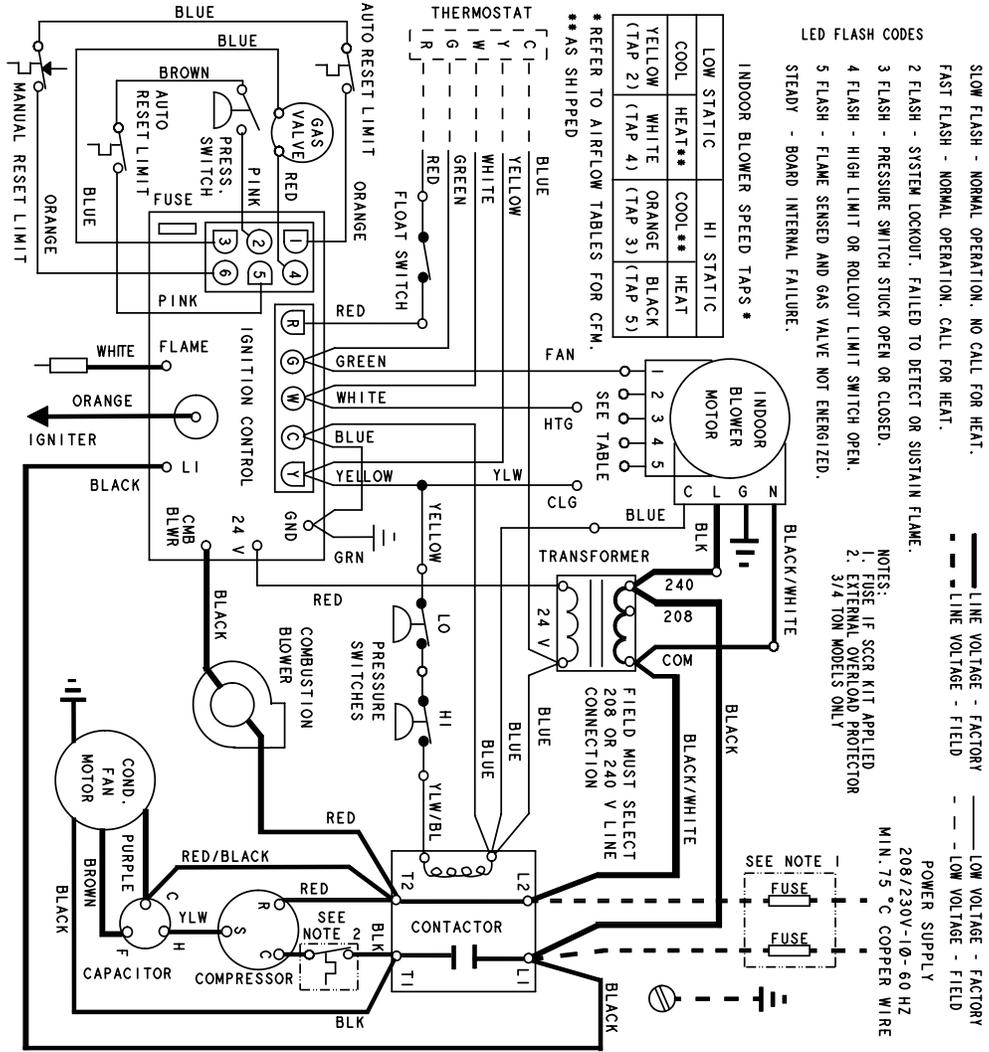
*** Louver colors: WHT = white, SAN = sandstone, BGE = beige, TPST = taupestone
^ -P: Option to paint standard, aluminum, and impact-resistant louver
o Optional: Wall sleeves and louvers can be oversized to maintain a uniform appearance
NOTE: ALVRP***MGE louvers may not be oversized due to vent pipe and metal grate insert location

Table 7. Accessories

Accessory	Nomenclature	MagicPak Unit				
		15MGE*-12-***1*P	24MGE*-***-***1*P	36MGE*-***-***1*P	48MGE*-***-***1*P	60MGE*-***-***1*P
LP Conversion Kit	ALPKT613	•				
LP Conversion Kit	ALPKT614		•	•	•	•

Table 8. LP Conversion Kits

Wiring Diagrams



IF ANY OF THE ORIGINAL WIRE IS REPLACED, THE SAME SIZE AND TYPE WIRE MUST BE USED.

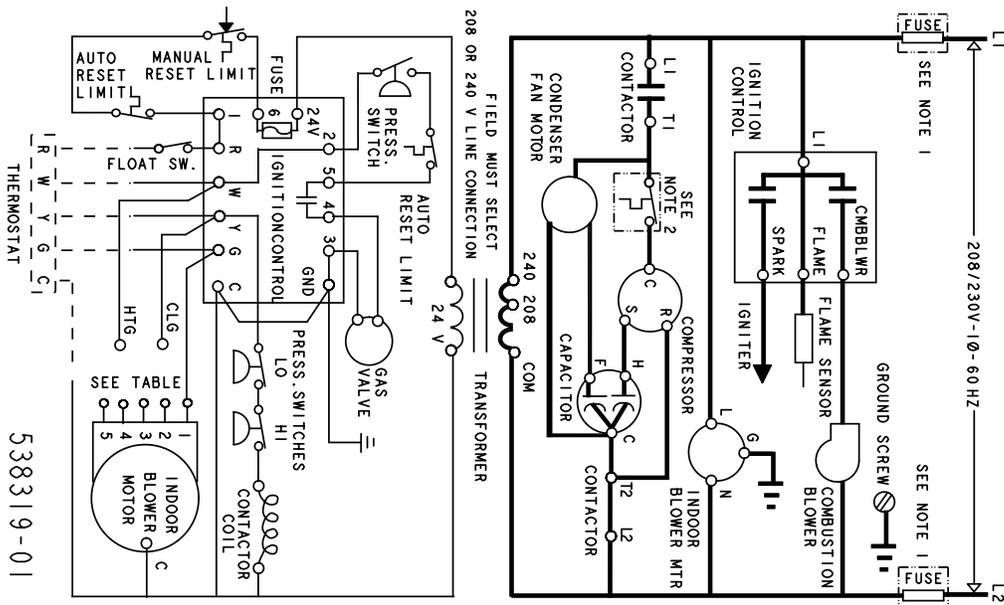


Figure 12. Wiring Diagram - MGE 0.75 Ton through 2 Ton

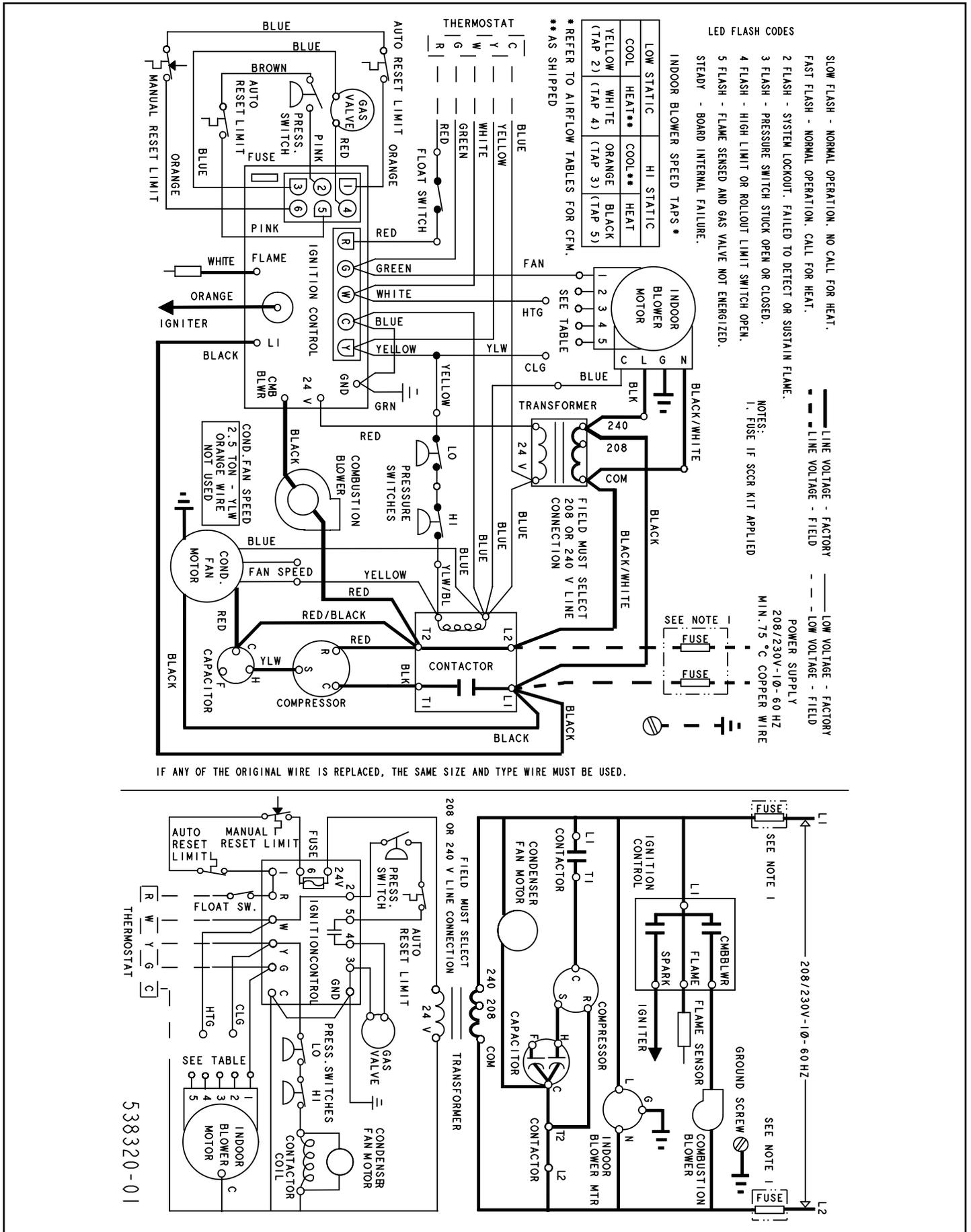


Figure 13. Wiring Diagram - MGE 2.5 Ton

