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INSTALLATION INSTRUCTIONS

AGENCY REQUIRED

RETAIN THESE INSTRUCTIONS
FOR FUTURE REFERENCE

PACKAGED GAS UNITS
508943-01
11/2026

SGH036-060 UNITS

3, 5 TONS

SGH120-240 UNITS (BELT DRIVE)

10, 20 TONS

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Safety

⚠ 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 HVAC installer or equivalent, service agency, or the gas supplier.

⚠ CAUTION

The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction

⚠ CAUTION

Children should be supervised not to play with the appliance.

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

If this unit has been used for heating or cooling of buildings or structures under construction, the following conditions must be met or the warranty will be void:

- The vent hood must be installed per these installation instructions.
- A room thermostat must control the unit. The use of fixed jumpers that will provide continuous heating or cooling is not allowed
- A pre-filter must be installed at the entry to the return air duct.
- The return air duct must be provided and sealed to the unit.
- Return air temperature range between 55°F (13°C) and 80°F (27°C) must be maintained.
- Air filters must be replaced and pre-filter must be removed upon construction completion.
- The input rate and temperature rise must be set per the unit rating plate.
- The heat exchanger, components, duct system, air filters and evaporator coil must be thoroughly cleaned following final construction clean-up.
- The unit operating conditions (including airflow, cooling operation, ignition, input rate, temperature rise and venting) must be verified according to these installation instructions.

***NOTE** - The Commonwealth of Massachusetts stipulates these additional requirements:*

- **Gas units shall be installed by a licensed plumber or gas fitter only.**
- **The gas cock must be "T handle" type.**

The unit is certified for installation on noncombustible floors only. However, it may be installed on wood flooring, or on class A, class B, or class C material covered floors when used in horizontal discharge applications or in downflow discharge applications when mounted on an LARMF roof mounting frame.

Adequate clearance shall be provided around air openings into the vestibule area. Provisions shall be made for proper operation and for combustion air and ventilation air supply. Unit must be adjusted for the temperature rise range and within the allowable external static pressure on furnaces with

a duct system as listed on unit nameplate.

United States

The unit is ETL/CSA certified for outdoor installations only at the clearances to combustible materials listed on the unit nameplate and in Figure 1.

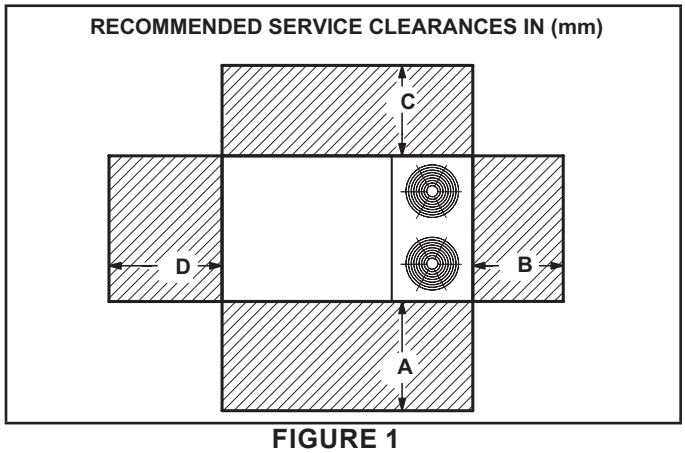


FIGURE 1

[1]Unit Clearance	A in.(mm)	B in.(mm)	C in.(mm)	D in.(mm)	Top Clearance
036, 060 Service Clearance	48 (1219)	36 (914)	60 (1524)	60 (1524)	Unobstructed
120 Service Clearance	60 (1524)	36 (914)	60 (1524)	60 (1524)	Unobstructed
240 Service Clearance	72 (1829)	36 (914)	60 (1524)	96 (2438)	Unobstructed
Clearance to Combustibles	36 (914)	1 (25)	1 (25)	1 (25)	Unobstructed
Minimum Operation Clearance	36 (914)	36 (914)	36 (914)	36 (914)	Unobstructed

Note - Entire perimeter of unit base requires support when elevated above mounting surface.

[1] **Service Clearance -** Required for removal of serviceable parts.
Clearance to Combustibles - Required clearance to combustible material.
Minimum Operation Clearance - Required clearance for proper unit operation.

Installation of the ETL/CSA certified units must conform with local building codes. In the absence of local codes, units must be installed according to the current National Fuel Gas Code ANSI Z223.1/NFPA 54.

When installed, the unit must be electrically wired and grounded according to local codes or, in the absence of local codes, with the current National Electric Code, ANSI/NFPA 70.

The current American National Standard (ANSIZ233.1/NFPA54) National Fuel Gas Code is available from the following address:

American National Standard Institute Inc.

11 West 42nd Street

New York, NY 10036

The current National Electric Code (ANSI/NFPA 70) is available from the following address:

National Fire Protection Association

1 Batterymarch Park

PO Box 9101

Quincy, MA 02269-9101

Use only the type of gas approved for use with this furnace. Refer to unit nameplate.

Never test for gas leaks with an open flame. Check all connections with a commercially available soap solution made specifically for leak detection.

***NOTE** - Furnace must be adjusted to obtain a temperature rise (high and low fire) within the range(s) specified on the unit nameplate. Failure to do so may cause erratic limit operation.*

Canada

The unit is CSA International (CSA) certified for combination heating/cooling for outdoor installations and non-residential use only at the clearances to combustible materials as listed on the unit nameplate.

Installation of CSA international certified units must conform with current standard CSA B149.1, “Natural Gas and Propane Installation Codes” and applicable local codes. Authorities having jurisdiction should be consulted before installation.

The unit must be wired and electrically grounded according to local codes or, in the absence of local codes, current CSA Standard C22.1 Canadian Electrical Code Part 1. Installation of combination heating/cooling units must also conform with current CSA Standard B52 “Mechanical Refrigeration Code.”

Connect Gas Piping

A manual main shut-off valve must be installed external to the unit when local codes require the installation of such a valve.

Install a ground joint union between the gas control manifold and the main manual shut-off valve.

When making piping connections a drip leg should be installed on vertical pipe runs to serve as a trap for sediment or condensate.

A 1/8” N.P.T. plugged tap is located on gas valve for test gauge connection. See Figure 2 or Figure 3 for tap location. See Figure 4 for gas supply piping entry through the side of the unit and Figure 5 for gas piping through the bottom of the unit. A kit is required when routing gas supply piping through the bottom of the unit.

Compounds used on threaded joints of gas piping must be resistant to the actions of liquified petroleum gases.

High Alititue Derate

Locate the high altitude conversion sticker in the unit literature bag. Fill out the conversion sticker and affix next to the unit nameplate.

Refer to TABLE 1 for high altitude adjustments.

TABLE 1

HIGH ALTITUDE DERATE

Altitude Ft.*	Gas Manifold Pressure
2000-4500	See Unit Nameplate
4500 And Above	036-060 Models - Derate 2% / 1000 Ft. Above Sea Level 120-240 Models - Derate 4% / 1000 Ft. Above Sea Level

*Units installed at 0-2000 feet do not need to be modified.

***NOTE** - This is the only permissible derate for these units.*

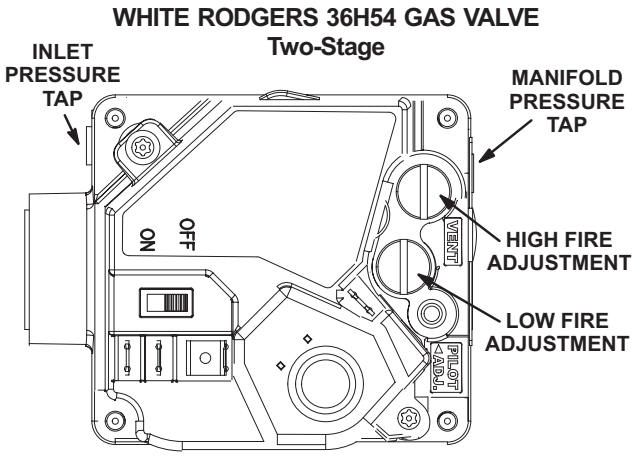


FIGURE 2

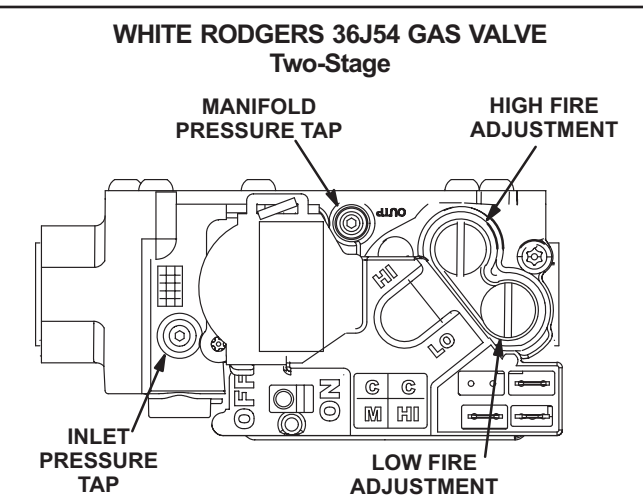


FIGURE 3

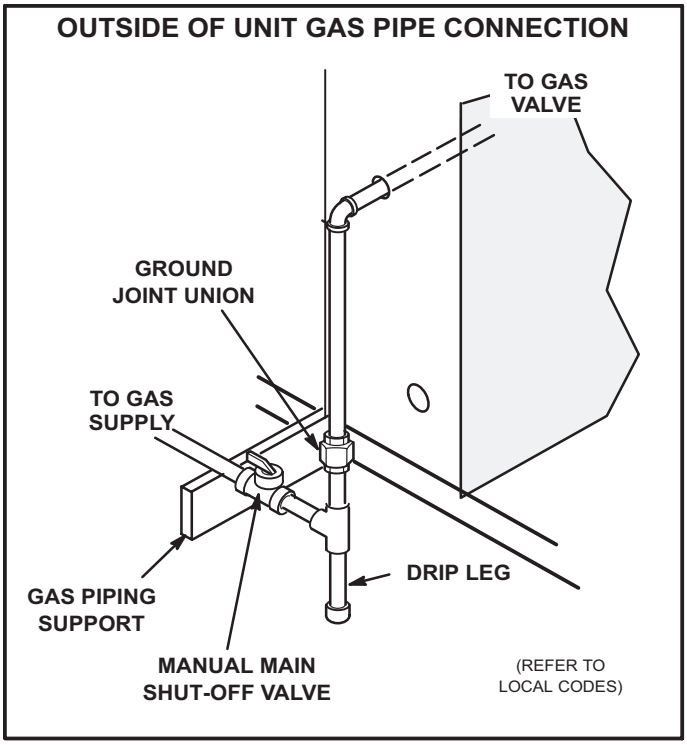


FIGURE 4

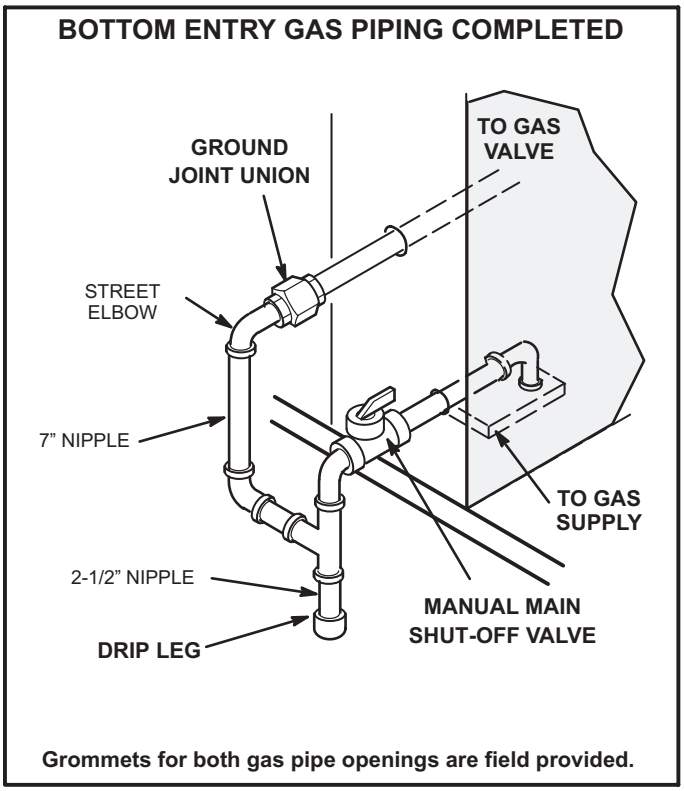


FIGURE 5

Pressure Test Gas Piping

Operating pressures at the unit gas connection must be as shown in TABLE 2.

TABLE 2			
OPERATING PRESSURE AT GAS CONNECTION "w.c.			
Natural Gas		LP/ Propane Gas	
Min.	Max.	Min	Max.
4.5*	10.5	10.8	13.5

*120 & 240 models should be 4.7 minimum

When testing the pressure of gas lines, the gas valve must be disconnected and isolated. Gas valves can be damaged if subjected to more than 0.5 psig.

⚠ 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.

Two-Stage Gas Valve Adjustment

Gas manifold pressures should match pressures shown in TABLE 3. On two stage gas valves, initiate a W2 thermostat demand to check high fire pressure before low fire pressure. With high fire operating, reduce the thermostat demand to W1 and check the low fire pressure. Refer to the Unit Controller manual to initiate a thermostat demand.

***IMPORTANT - Do not set low fire pressure lower than the certified minimum input rating listed in* TABLE 3.**

TABLE 3

MANIFOLD INPUT PRESSURES in.wg. (kPa)

Unit	Natural Gas		Propane (LP) Gas	
	1st Stage ± 0.2	2nd Stage ± 0.3	1st Stage ± 0.2	2nd Stage ± 0.3
036, 060	2.0 (0.50)	3.5 (0.87)	5.9 (1.47)	10.5 (2.61)
120, 240	1.6 (0.40)	3.7 (0.92)	5.5 (1.37)	10.5 (2.61)

Gas Heat Operation

See the operating instruction plate on the unit for details

Proper Gas Flow (Approximate)

1- Operate unit at least 15 minutes before checking gas flow. Determine the time in seconds for two revolutions of gas through the meter. (Two revolutions assures a more accurate time.) A portable LP gas meter (17Y44) is available for LP applications.

2- Divide the number of seconds by two and compare to the time in TABLE 4. If manifold pressure is correct and rate is incorrect, check gas orifices for proper size and restriction.

3- Remove temporary gas meter if installed.

***NOTE** - To obtain accurate reading, shut off all other gas appliances connected to meter.*

TABLE 4

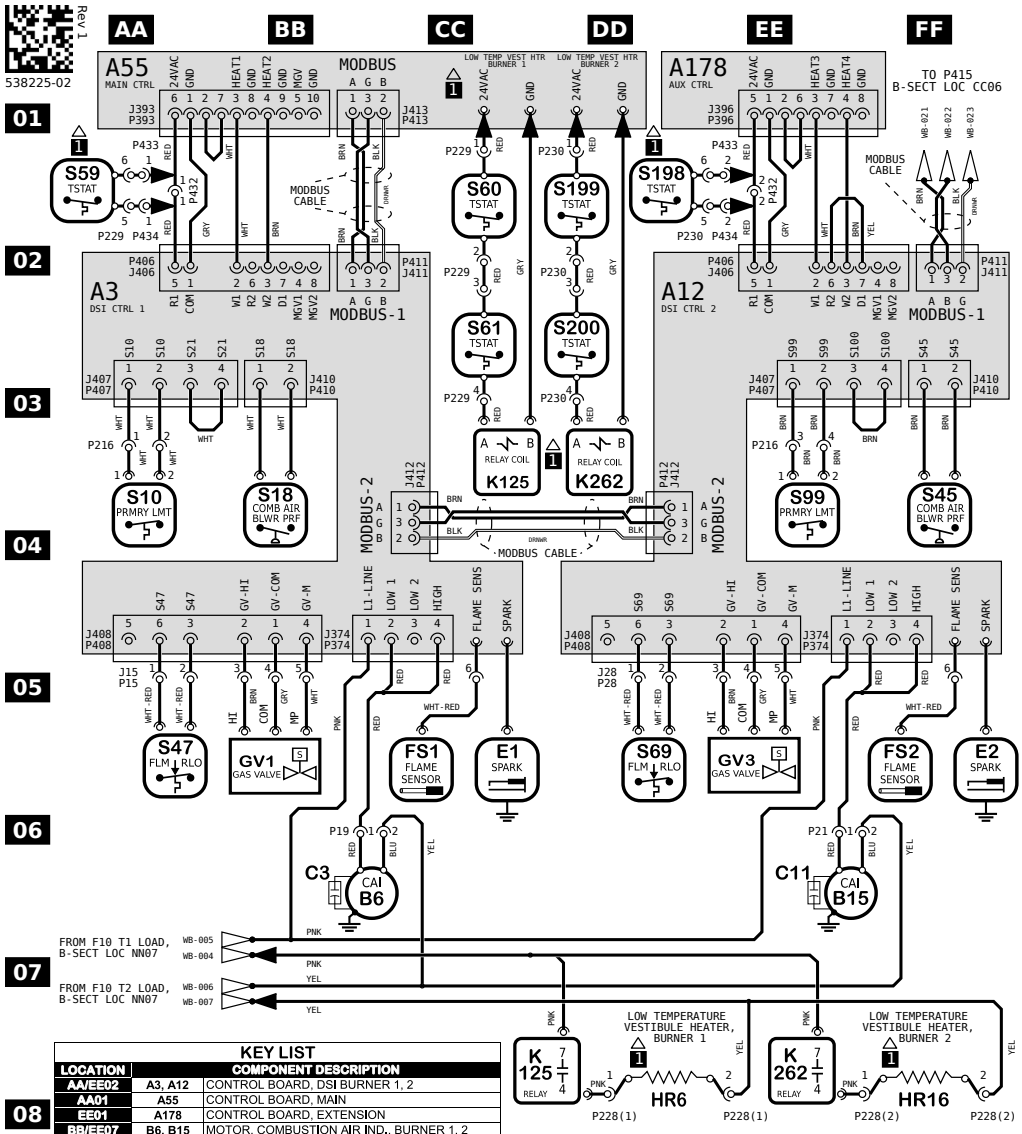
GAS METER CLOCKING CHART

Unit Input Rate (Btuh)	Seconds for One Revolution			
	Natural		LP	
	1 cu ft Dial	2 cu ft Dial	1 cu ft Dial	2 cu ft Dial
70,000	51	103	129	257
108,000	33	67	83	167
130,000	28	55	69	138
150,000	24	48	60	120
169,000	21	43	53	107
180,000	20	40	50	100
240,000	15	30	38	75
260,000	14	28	35	69
360,000	10	20	25	50
480,000	8	15	19	38
Natural-1000 btu/cu ft		LP-2500 btu/cu ft		

***NOTE** - Table assumes standard temperature (60°F), pressure (30in.Hg.), and fuel heating values (Btuh/Ft.3). Apply pressure corrections in altitudes above 2000 ft.*

Typical Gas Heat Schematic

This schematic is typical. See the wiring schematic on the unit for actual unit wiring.



KEY LIST		
LOCATION	COMPONENT DESCRIPTION	
AA/EE02	A3, A12	CONTROL BOARD, DSI BURNER 1, 2
AA01	A55	CONTROL BOARD, MAIN
EE01	A178	CONTROL BOARD, EXTENSION
BB/EE07	B6, B15	MOTOR, COMBUSTION AIR IND., BURNER 1, 2
BB/EE08	C3, C11	CAPACITOR, CAI MOTOR 1, 2
CC/FF08	E1, E2	IGNITER, SPARK, BURNER 1, 2
CC/FF08	FS1, FS2	SENSOR, FLAME, BURNER 1, 2
BB/EE06	GV1, GV2	VALVE, GAS, BURNER 1, 2
DD/FF08	HR6, HR16	HEATER, -50C LOW TEMP VEST, BURNER 1, 2
CC/DD03	K125, K262	RELAY, LOW TEMP VEST HEATER, BURNER 1, 2
DD/EE08	K125, K262	
AA/EE04	S10, S99	LIMIT, PRIMARY, BURNER 1, 2
BB/FF04	S18, S45	SWITCH, COMB AIR BLWR PROOF, BURNER 1, 2
AA/DD08	S47, S69	SWITCH, FLAME ROLLOUT, BURNER 1, 2
AA/DD02	S59, S198	TSTAT, OPEN -20F, CLOSE 10F, BURNER 1, 2
CC/DD02	S60, S199	TSTAT, OPEN 20F, CLOSE -10F, BURNER 1, 2
CC/DD03	S61, S200	TSTAT, OPEN 50F, CLOSE 20F, BURNER 1, 2

NOTES
1 - 50C LOW TEMPERATURE VESTIBULE HEATER - OPTIONAL

DENOTES OPTIONAL COMPONENTS AND WIRING

Model: LG, LD, SG Series RTU - Gas Heat
Input Heat Capacity 169k - 480k Btuh
Voltage: 208-240V/3~/60Hz (Y), 460V/3~/60Hz (G)
Supersedes: N/A Form No: 538225-02 Rev: 1

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HEATING SECTION A	COOLING SECTION B	COOLING SECTION B3	ACCS SECTION C	ACCS SECTION D

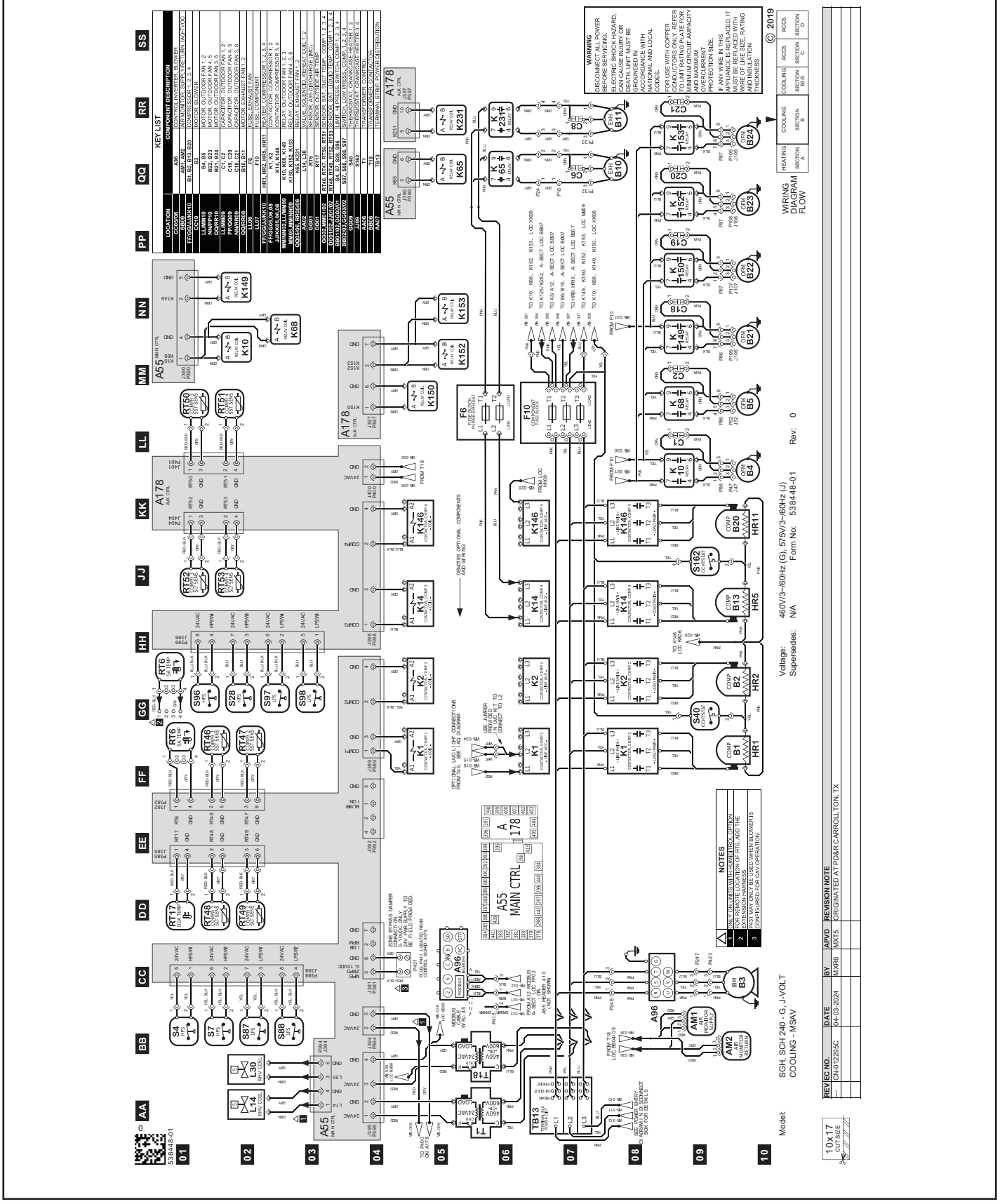
WIRING DIAGRAM FLOW

7x10 CUT SIZE

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
---	CN-013234W	10-08-2025	RV	AC	ORIGINATED AT PD&R CARROLLTON, TX
001	CN-013481AC	09-10-2026	RV	AC	ADDED SG MODEL TO THE TITLE

Typical Unit Schematic

This schematic is typical. See the wiring schematic on the unit for actual unit wiring.



Repair Parts Listing

When ordering repair parts, include the complete model number and serial number listed on the ETL/CSA rating plate - e.g. SGH240H5MH4G.

Gas Heat Section Parts

Heat Exchanger
Combustion Air Assembly
Combustion Air Proving Switch
Burner Assembly
Burner Manifold Assembly
Main Burner Orifices
Flame Roll-out Switches
Auxiliary Limit Controls
Ignition Electrode Assembly
Ignition Lead
Ignition Sensor Assembly
Sensor Lead
Combination Gas Valve
Limit Controls

Cooling Parts

Compressors
Low Pressure switch
High Pressure Switch
Condenser Fan Motors
Condenser Fan Blades
Condenser Fan Run Capacitors
Freezestats
Low Ambient Pressure Switch
Low Ambient Thermostat
Condenser Fan Mounting Bracket
Fan Grille
Indoor Blower Motors
Blower Wheel
Expansion Valve
Distributor
Crankcase Heaters
Exhaust Fans (Opt.)

Electrical Control Parts

Main Control Panel
Economizer Control Panel (Opt.)
Compressor 2 Control Panel
Compressor 3 and 4 Control Panel
Gas 2 Control Panel
Compressor Contactors
Circuit Breakers (Opt.)
Transformer (Control)
Transformer (Contactor)
Transformer (CAB)
Blower Contactor
Limit, Blower Relay
Heat Relays
Condenser Fan Relays
Capacitor CAB
Relay CAB
Low Ambient Relay
Low Amb. Low Pressure Switches
Disconnect (opt.)
Blower Motor Inverter