



Twinning Kit for Model 58GP,GS,SC,SS Upflow Gas-Fired Furnaces

Part No. 58SS900031

INTRODUCTION

This furnace twinning kit permits 2 furnaces to operate as a single unit on the same ductwork. Typical twinned furnaces are shown with the doors removed in Fig. 1. The kit is applicable for 2 natural draft furnaces (58GS or 58GP), sizes 100 thru 150, or 2 induced-draft furnaces (58SS or 58SC), sizes 070 thru 140. The furnaces installed with this twinning kit must be of the same model number and size. Refer to Tables 1 and 2 for specific furnaces applicable with this kit.

NOTE: If standing pilot furnaces (58GP) are installed with this twinning kit, the use of a vent damper is not permitted.

Refer to the basic furnace Installation Instructions and Procedures for Gas-Fired Furnaces (packaged with the equipment) for information not covered in this publication.

NOTE: Read the entire instructions before starting the installation.

The kit comprises the following items:

- Control box assembly (1)
- Top discharge seal (1)
- Snap bushing (1)
- Wiring label (6)
- Limit reset label (2)
- Large wire passage strain-relief bushing (2)
- Small wire passage strain-relief bushing (2)
- Screw (5)
- Installation Instructions (1)

INSTALLATION

Installation Procedures:

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Furnace Installation

The furnaces as shipped are identical. There is no right-hand (RH) or left-hand (LH) unit.

NOTE: A common bottom inlet must be used.

CLEARANCES (in.)

Sides	1
Back	0
Top of Plenum	1

Vent Connector

(single wall)	6
Type B (double wall)	1
Front	6
Provide service clearance of 30 in. in front of unit.	

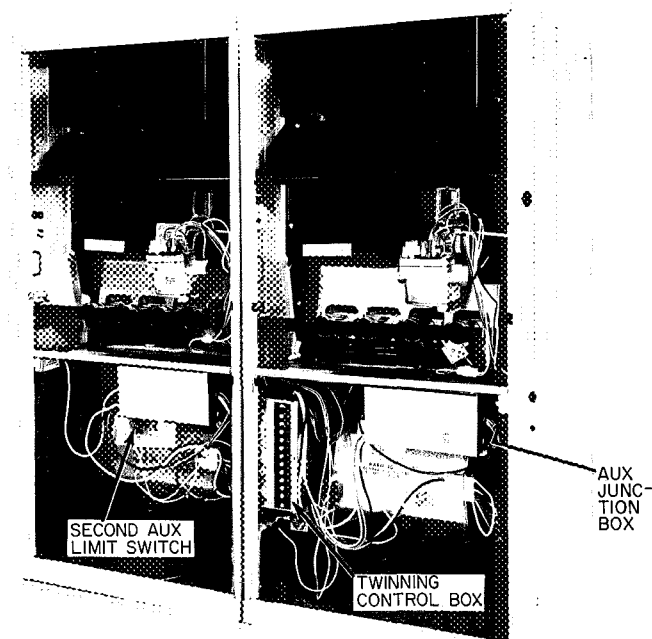


Fig. 1 — Twinning Kit Installed

The furnaces may be installed on a raised platform or wood floor. The mounting base must be level. See Fig. 2 and Table 1 or 2 for return-air opening dimensions. Install the furnaces as follows:

1. Position one furnace over LH side of return-air opening.
2. Position twinning control box template under blower deck and against front edge of LH side of RH unit as shown in Fig. 3. If unit has sound insulation, cut away insulation in area of template. Centerpunch and drill four 3/16-in. holes in locations shown on template.
3. Remove 2 knockouts located just below blower deck on RH side of LH unit. Depending on furnace model, this will either be two 7/8-in. knockouts or a 3/8- and a 7/8-in. knockout. Knockout removal is facilitated by removing main control box and hanging it on front of blower deck.

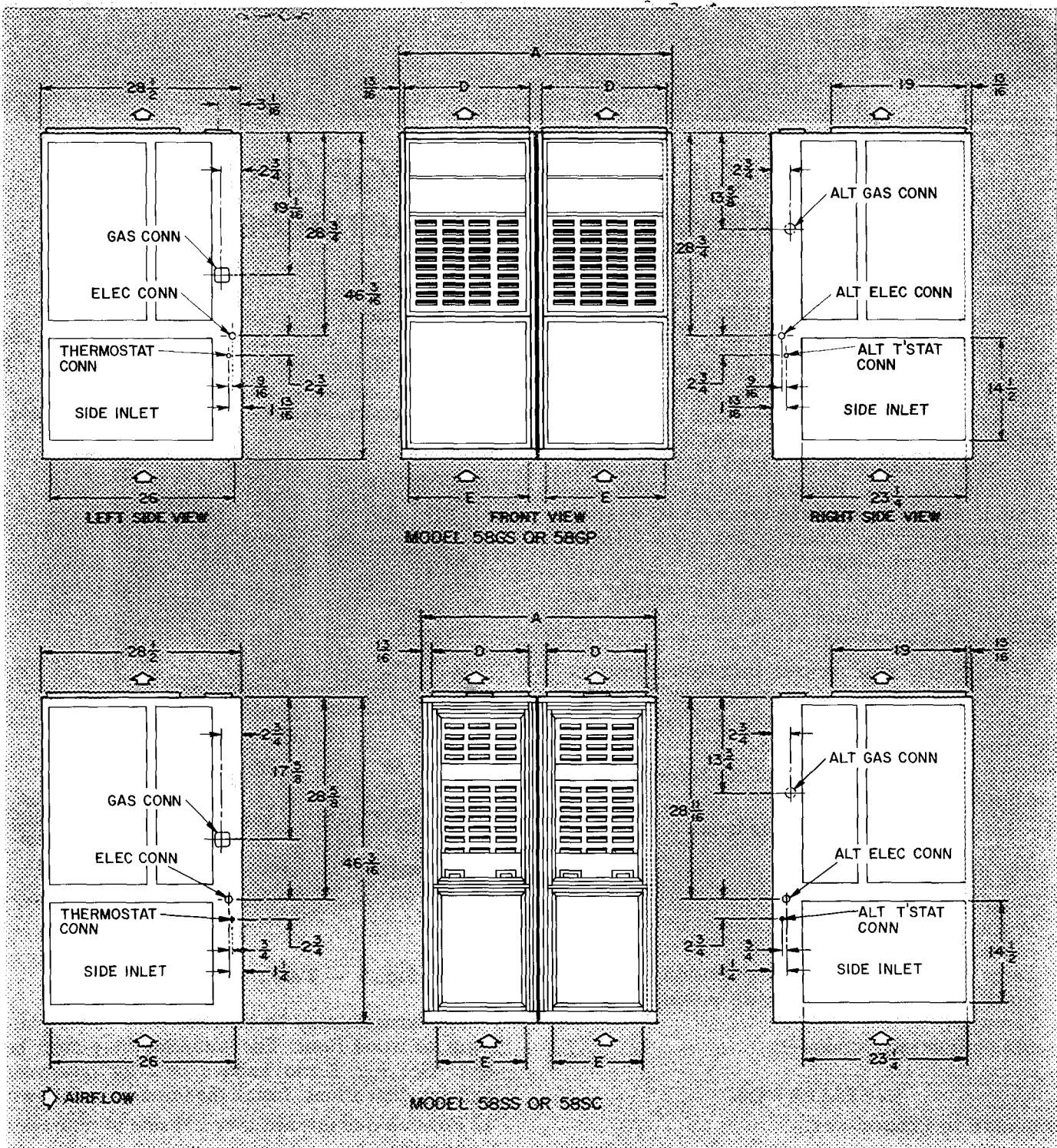


Fig. 2 — Dimensions (in.)

Table 1 — Dimensions (in.)
Model 58GS or 58GP

SIZE (2 each)	A	D	E	VENT DIA
100-300	42	19 3/8	18 1/2	5
125-300	42	19 3/8	18 1/2	5
125-400	49	22 7/8	22	5
150-200	49	22 7/8	22	6
150-300	49	22 7/8	22	6

Table 2 — Dimensions (in.)
Model 58SS or 58SC

SIZE (2 each)		A	D	E	VENT DIA
58SS	58SC				
80-CC	070-CA	42	19 3/8	18 1/2	4
100-CC	090-CA	42	19 3/8	18 1/2	4
100-DC	090-DA	49	22 7/8	22	4
120-BC	—	42	19 3/8	18 1/2	5
120-CC	110-CA	49	22 7/8	22	5
140-BC	—	49	22 7/8	22	5

NOTE: Model 58SC not available in 140 size

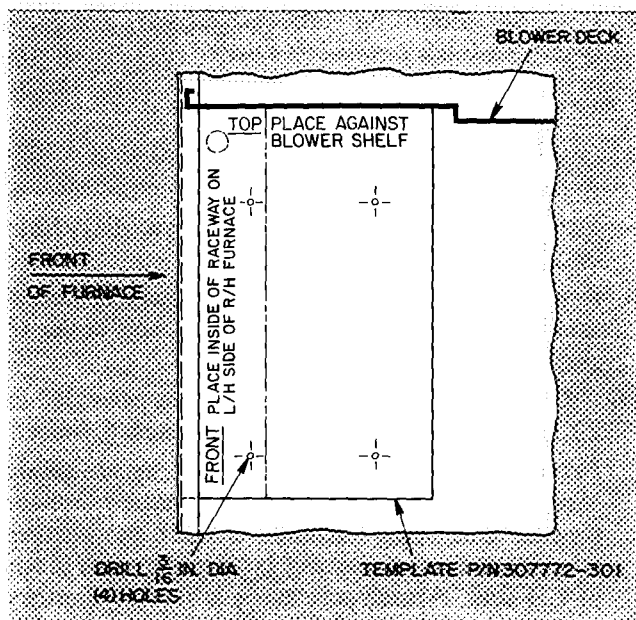


Fig. 3 — Positioning Template in RH Furnace

4. Remove same knockouts on both sides of RH unit and position unit over RH side of return-air opening. Adjust and shim units as required so that knockout openings are in alignment, as bushing will be placed in knockouts later.
5. Remove screws holding auxiliary junction box (small box located in upper LH corner of blower compartment) of RH unit and reinstall box in upper RH corner by drilling two 3/16-in. holes as located by factory indentations in front and back of 7/8-in. knockout in RH casing side. Mount box using these holes.
6. Install top discharge air seal as shown in Fig. 4. No screws are required.
7. Using 3/16-in. holes in LH side of RH unit as guides, drill four 1/8-in. holes in RH side of LH unit.
8. Remove covers from main control boxes of both furnaces.
9. Lay twinning control box in front of RH furnace. Complete wiring of units with box in this position to provide sufficient wire length so blower may be removed without disconnecting any wires.

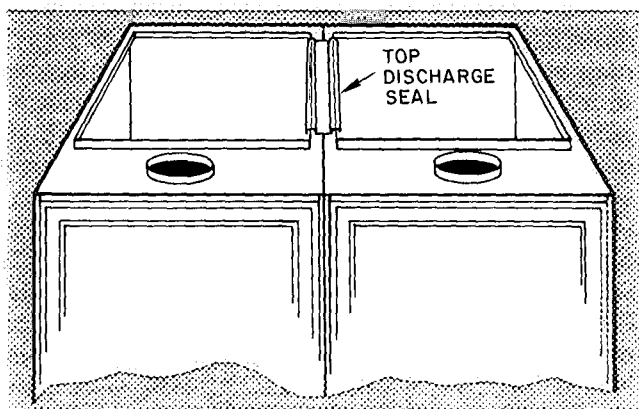


Fig. 4 — Installation of Seal

Electrical Connections

CAUTION: Both LI lines must be connected to the same polarity hot line. When 2 circuits are connected to the service panel, the breakers involved in most panels must be located one breaker apart when arranged vertically or side-by-side.

Each furnace must be wired with its own power supply. The twinning control box assembly and the internal high- and low-voltage wiring changes connect the furnaces electrically, causing them to function as a single unit.

REMOVING UNNEEDED WIRES

1. Remove and discard high- and low-speed blower leads from both units. Disconnect wires from HI and LO terminals on blower control center and from blower speed selector on blower housing.
2. Remove and discard blower timing lead from LH unit. This white lead runs from terminal 1 of the gas valve to the blower control center.
 - a. Being careful not to cut white lead from terminal 1 of gas valve to pilot connector, cut timing lead from terminal 1.
 - b. On units equipped with blower control center edge connector, cut timing lead from position 3 on edge connector.
 - c. On units where timing lead is connected separately to blower control center, disconnect it from GAS-3 terminal.

CONNECTING HIGH-VOLTAGE WIRING IN RH FURNACE

NOTE: When making the following connections, route the wires thru the same control box openings as the corresponding wires in the individual furnaces. Refer to Fig. 8, 9 and 10.

1. Connect high-voltage power supply leads as shown in Fig. 6 and 7.
2. Connect wire marked no. 1 to HI terminal on blower control center of furnace.
3. Connect wire no. 2 to LO terminal on blower control center of furnace.
4. Connect wire no. 3 and black lead from auxiliary junction box to LI terminal on blower control center of furnace.
5. Connect wire no. 4 and white common lead from blower to COM terminal on blower control center of furnace.
6. Connect wire no. 8 to terminal no. 1 of blower speed selector.
7. Connect wire no. 7 to terminal no. 3 of blower speed selector.
8. Replace small wire passage strain-relief bushing in lower opening in LH side of furnace control box with one 7/8-in. large wire passage strain-relief bushing provided in kit.

CONNECTING HIGH-VOLTAGE WIRING IN LH FURNACE

Refer to Fig. 8, 9 and 10 and proceed as follows:

1. Remove knockout in RH side of furnace control box in LH unit.
2. Connect high-voltage power supply leads as shown in Fig. 6 and 7.
3. Remove wires no. 13 and no. 14 from unmounted auxiliary limit switch and set switch aside. Feed wires in this bundle thru upper hole (7/8-in.) between 2 units. Install one 7/8-in. large wire passage strain-relief bushing provided in kit. Be sure strain-relief bushing seats firmly in opening.
4. Connect wire no. 9 and black lead from auxiliary junction box to terminal L1 on blower control center of furnace.
5. Connect wire no. 5 to LO terminal on blower control center of furnace.
6. Connect wire no. 10 to terminal 3 of blower speed selector.
7. Connect wire no. 11 to terminal 1 of blower speed selector.
8. Replace strain-relief bushing in LH side of furnace control box and install one 7/8-in. small wire passage strain-relief bushing provided in kit in RH side of control box.
9. Position twinning control box in blower compartment of RH furnace as shown in Fig. 3. Mount control box with blunt-tip screws provided in kit.

CAUTION: Make sure blower motors are wired to operate on the same speed tap.

CONNECTING LOW-VOLTAGE WIRING

Refer to Fig. 8, 9 and 10 and proceed as follows:

1. Using minimum 3-wire thermostat cable cut to proper length, make following connections between low-voltage strips on RH furnace control box and twinning control box:
 - a. R to R1
 - b. GC to G1
 - c. W to W1
2. Route adequate length of thermostat cable thru 3/8-in. diameter or lower 7/8-in. diameter hole near top of twinning control box so one end is in each furnace, and install either 3/8-in. snap bushing or one 7/8-in. small wire passage strain-relief bushing provided with kit, depending on size of hole in unit side, to enclose thermostat cable. Make following connections between low-voltage strips of LH furnace control box and twinning control box:
 - a. R to R2
 - b. W to W2

3. Position mounting tab of second auxiliary switch in back lower-left corner of LH control box alongside of transformer mounting screw, and mark mounting screw hole.
4. Drill hole using 1/8-in. drill and mount limit switch.
5. Connect wires no. 13 and 14 to LH auxiliary limit switch. Polarity is unimportant.
6. Replace LH control box cover. It may be necessary to trim 1/16 in. from control box cover to clear bracket.
7. Attach one each of limit reset labels provided in kit to top side of blower deck in each furnace.
8. From 6 labels supplied, select appropriate wiring connection label and schematic label for type of unit being installed. Attach connection label over factory wiring label on blower door of LH unit. Attach schematic label over factory wiring label on blower door of RH unit.
9. Dress wires with ties provided in kit.

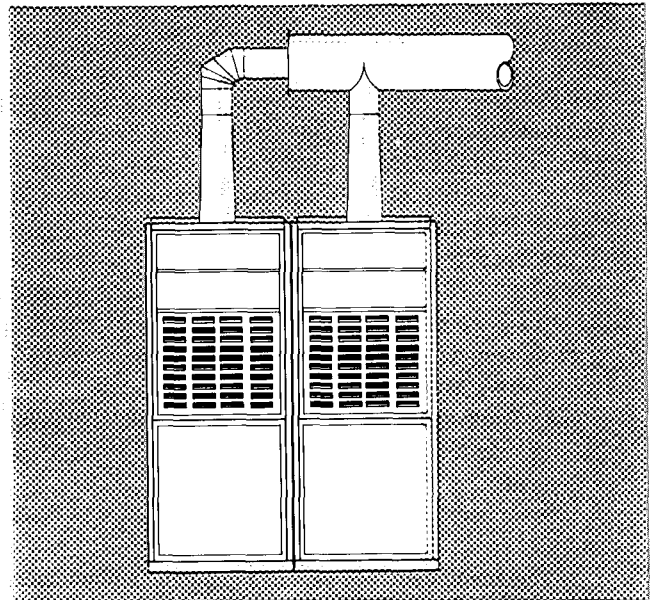


Fig. 5 — Venting

Venting

The furnaces may be vented individually, if desired, or a breaching design, as shown in Fig. 5, may also be used. The furnaces should be located to minimize the vent length and number of elbows between the breaching and the vertical stack. It is recommended that there be at least 4 ft of vertical stack (3 ft for induced-draft units) between the furnace and the breaching. The breaching and vent pipe after the breaching should be sized to handle the combined gas input of both furnaces, and the horizontal runs of vent pipe should be pitched upward as specified in the National Fuel Gas Code NFPA No. 54-1980/ANSI Z223.1-1980. The complete vent system must comply with Section 1.5 of the Fuel Gas Code.

Gas Supply Piping

CAUTION: The furnaces must be plumbed with a single gas supply shutoff valve. Individual furnaces should not have their own shutoff.

Refer to basic furnace Installation Instructions for start-up, service, and other venting and piping information.

Single-Stage Heating & Single-Stage Cooling—(Automatic Changeover)

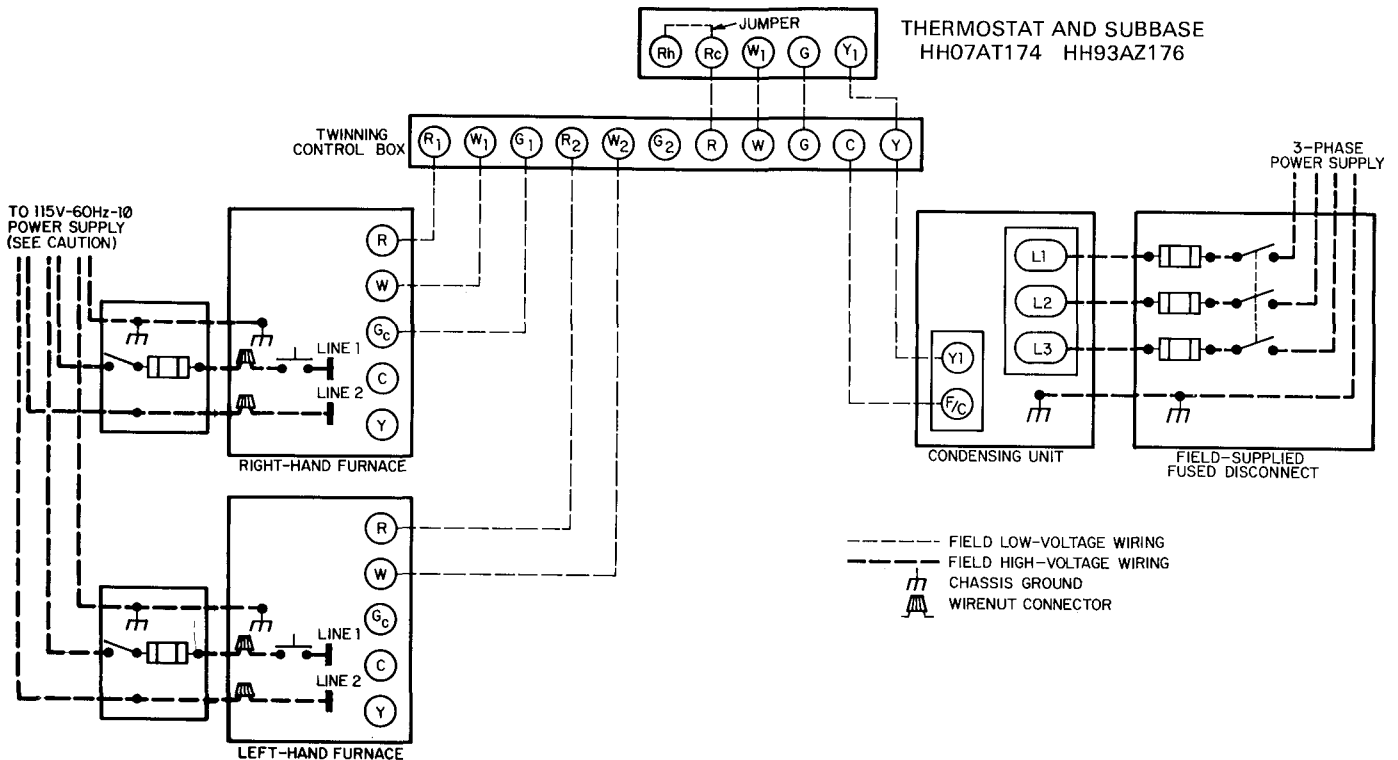


Fig. 6 — Field High- and Low-Voltage Wiring

Single-Stage Heating & Single-Stage Cooling—(Manual Changeover)

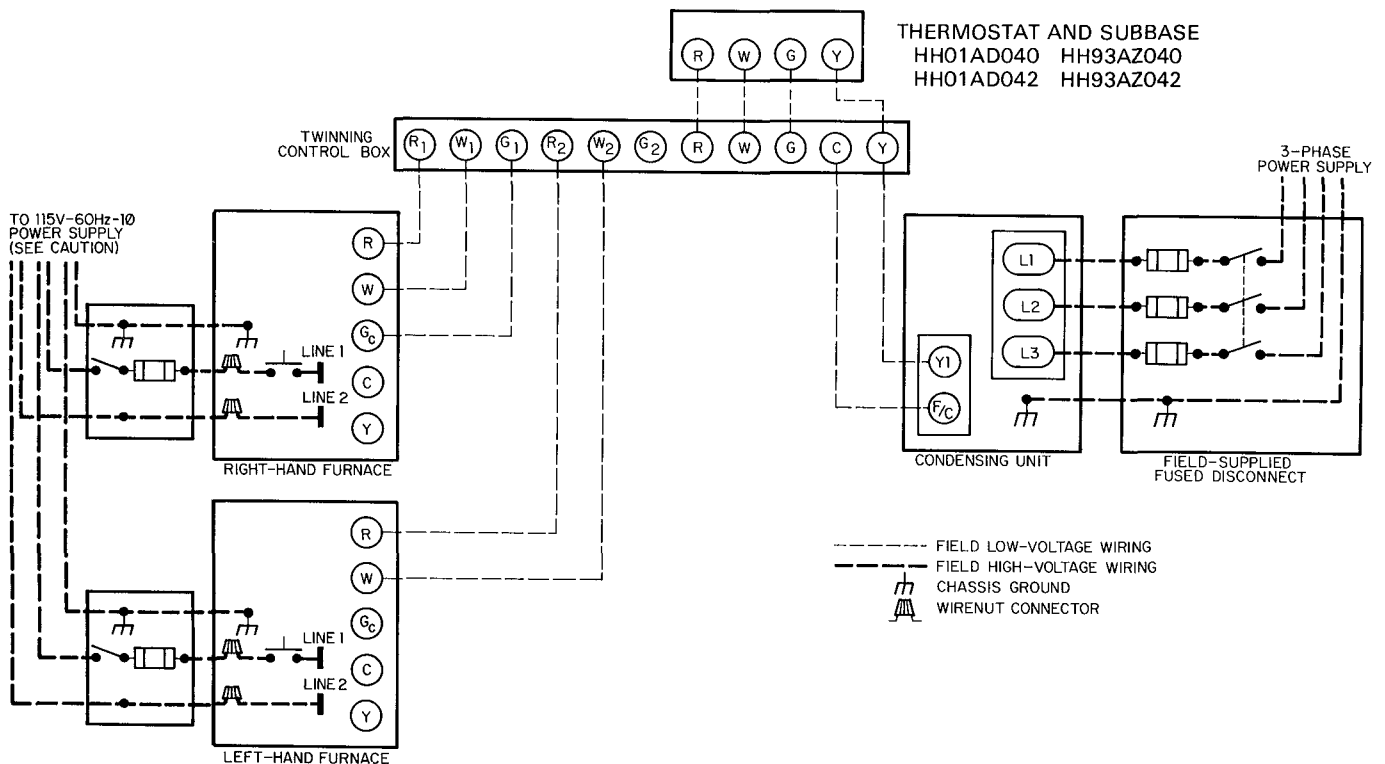


Fig. 7 — Field High- and Low-Voltage Wiring

PICTORIAL CONNECTION DIAGRAM FOR 58GS INSTALLATIONS

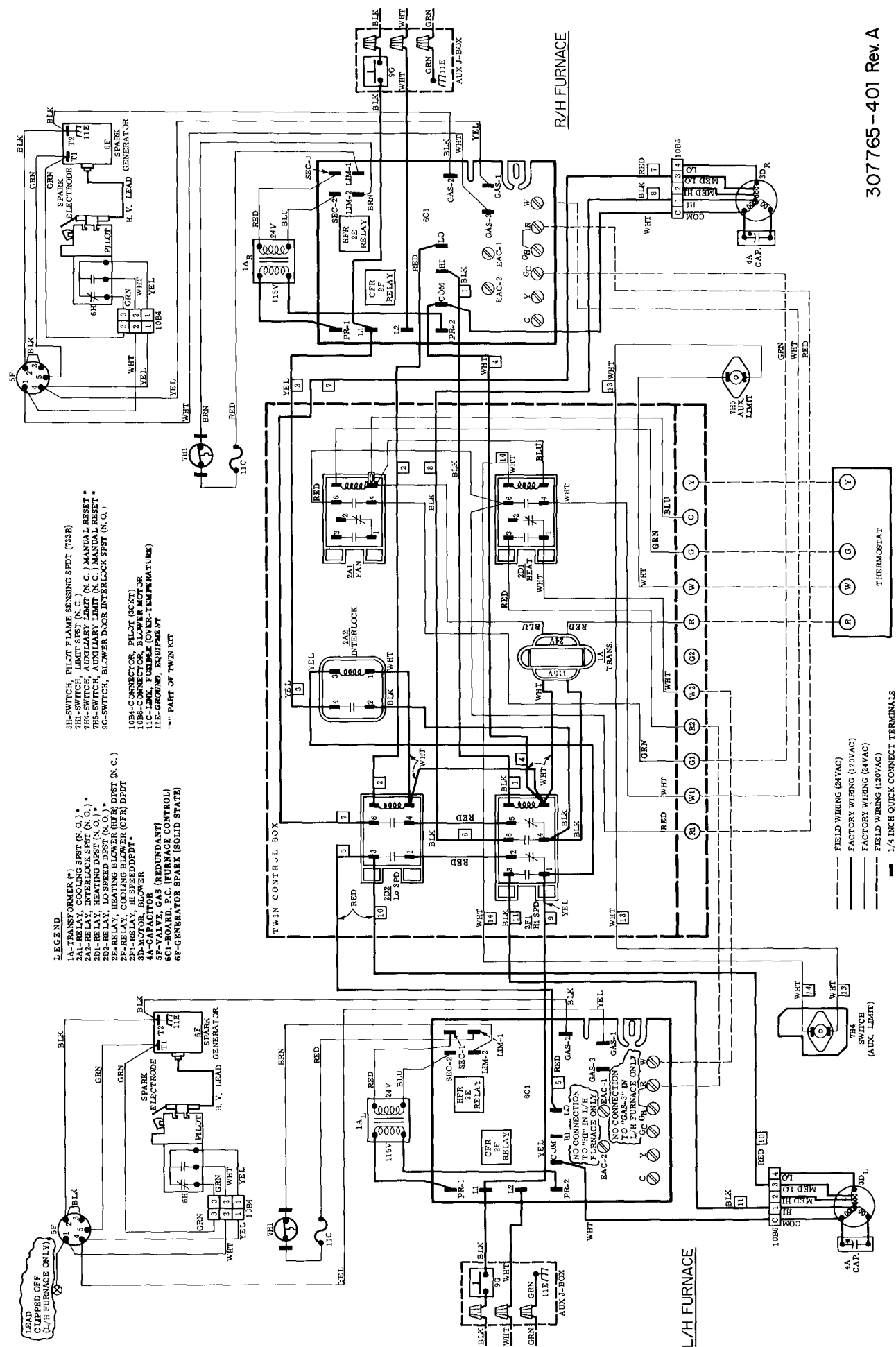


Fig. 8 — Model 58GS Connection Diagram

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PICTORIAL CONNECTION DIAGRAM FOR 58GP INSTALLATIONS

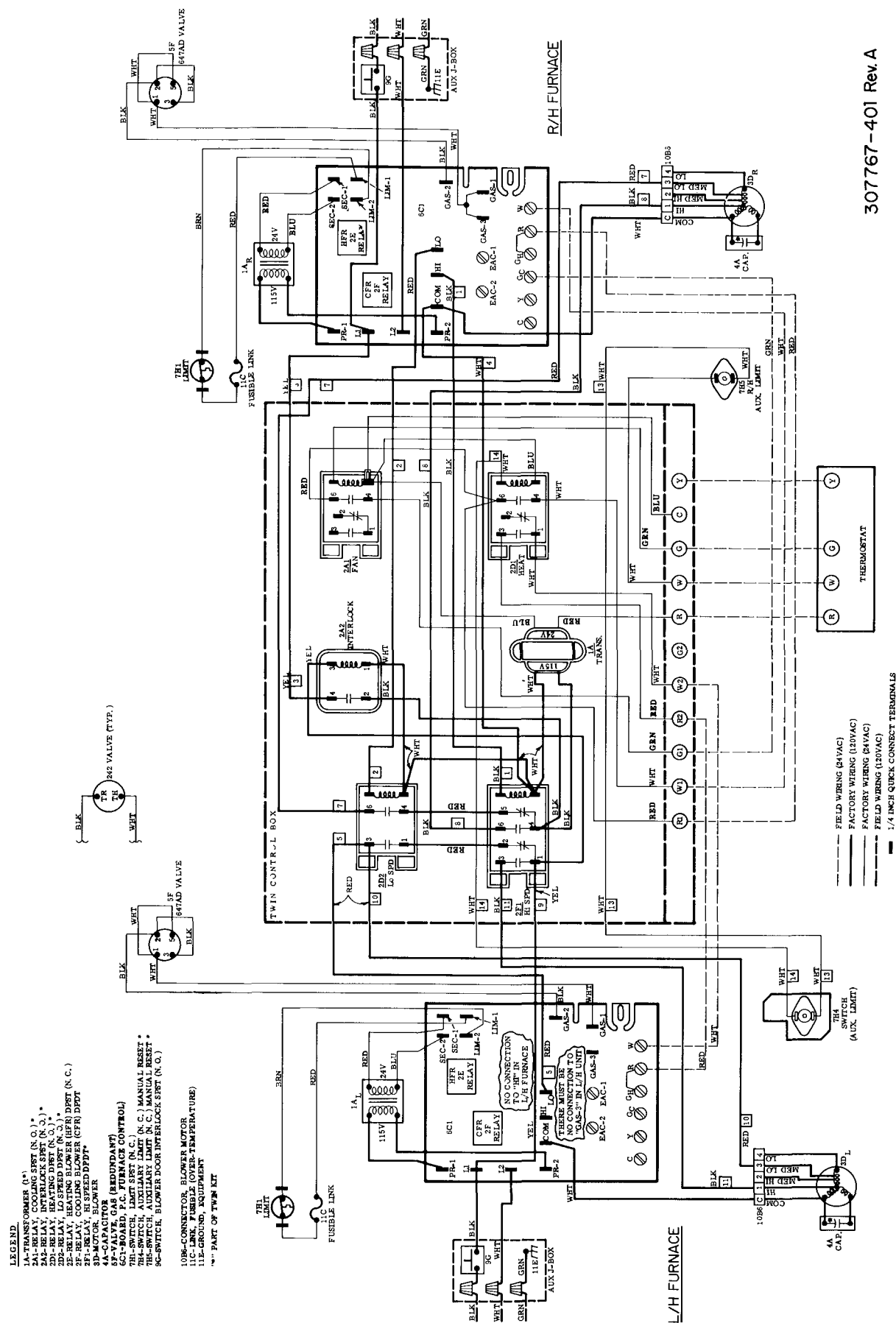


Fig. 9 — Model 58GP Connection Diagram

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SCHEMATIC DIAGRAM FOR 58GS INSTALLATIONS

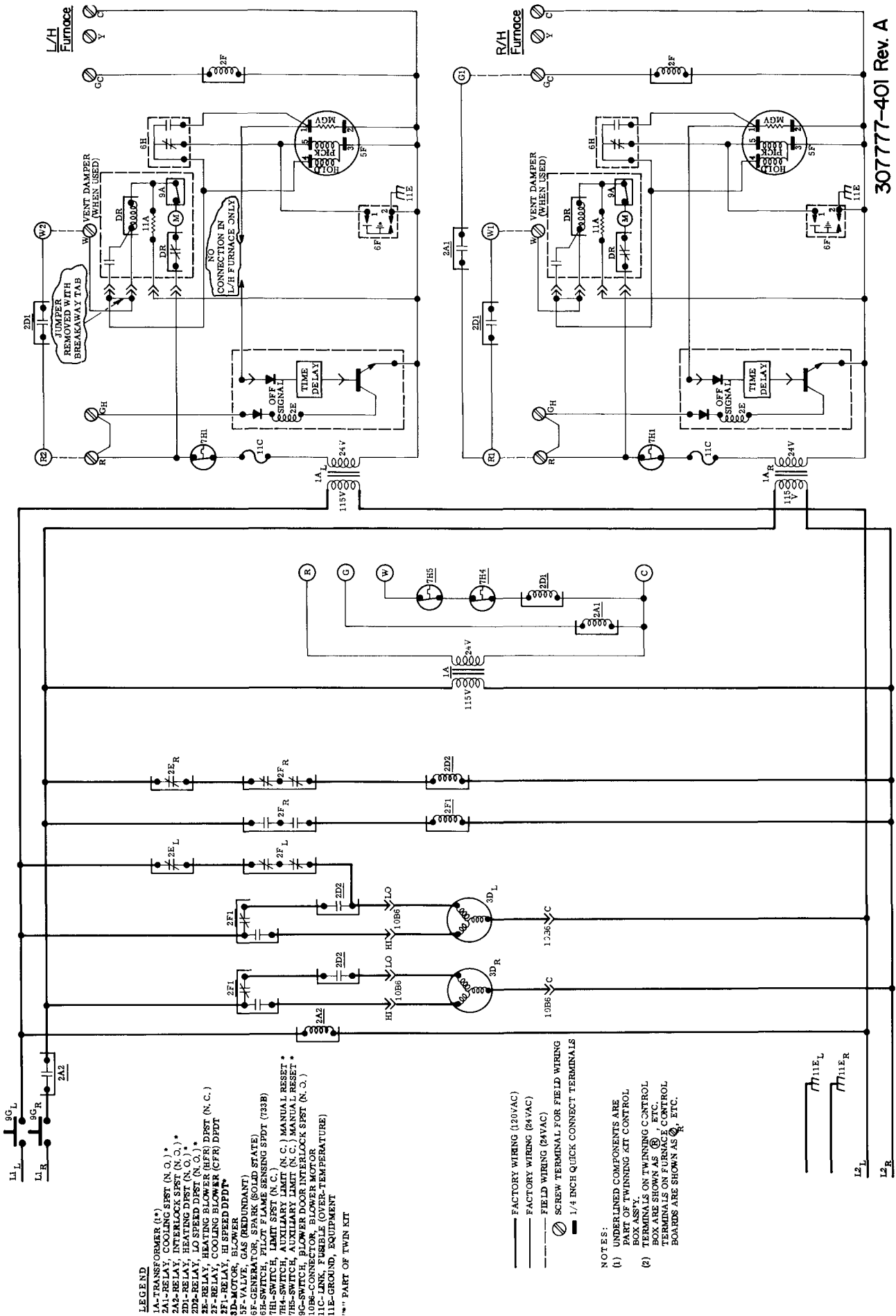


Fig. 11 — Model 58GS Schematic Diagram

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SCHEMATIC DIAGRAM FOR 58GP INSTALLATIONS

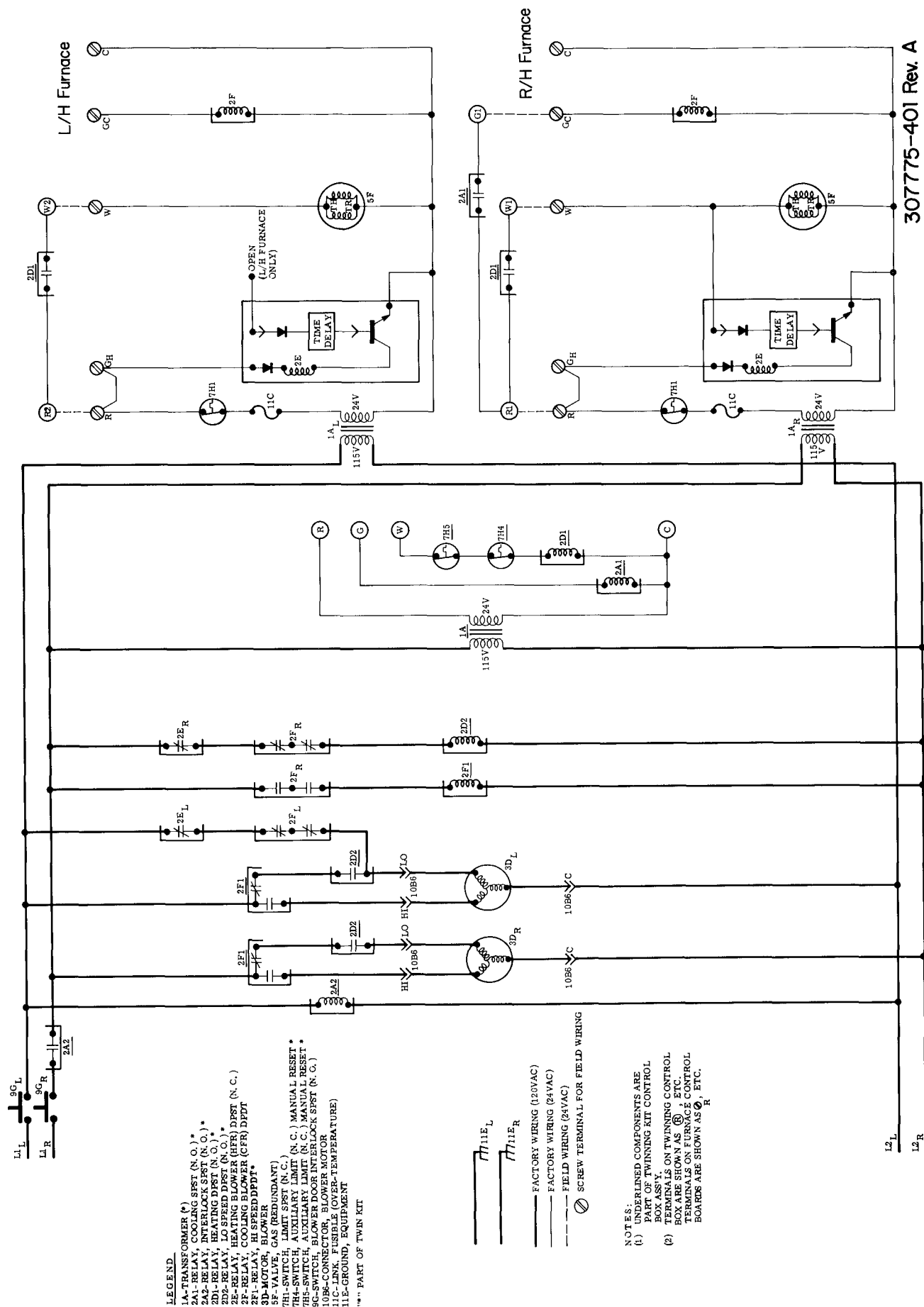
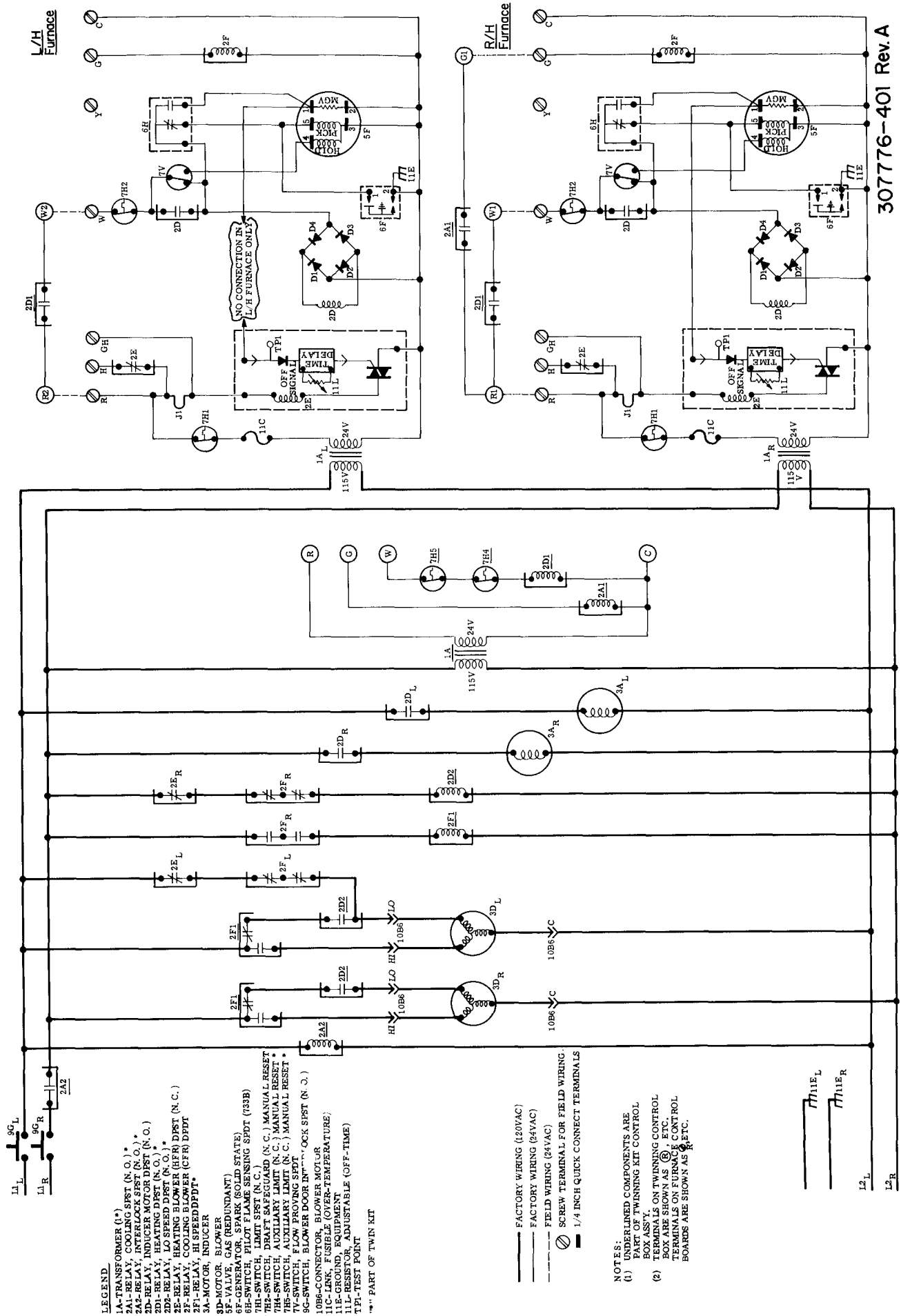


Fig. 12 — Model 58GP Schematic Diagram

SCHEMATIC DIAGRAM FOR 58SC AND 58SS INSTALLATIONS



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Fig. 13 — Models 58SC and 58SS Schematic Diagram

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

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