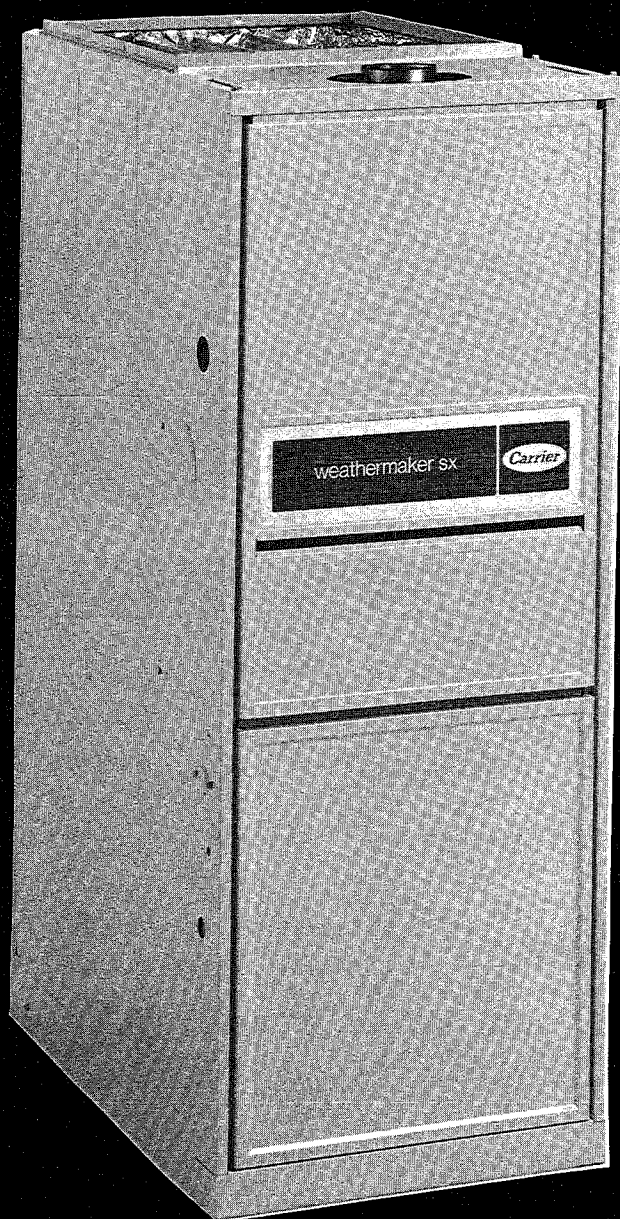




## Product Data

## 58SX Deluxe Upflow Gas Furnace

40,000 — 123,000 Btuh Output



Carrier presents the 58SX — This upflow condensing furnace is superb for low operating cost and maximum energy savings. The 58SX is a technically advanced furnace that has been designed and engineered to provide the owner with highly dependable, efficient, and economical heating.

The design goal was accomplished in several ways. First, the 58SX Furnace uses a pilot relite system to eliminate wasteful gas usage — a common characteristic of older furnaces with continuous pilot. The pilot burns only during the heating cycle to ignite the burners that heat the serpentine heat exchanger.

Then the 58SX uses induced combustion to increase the heat transfer that occurs inside the furnace. The induced combustion system is a sealed system which uses 100% outdoor air for combustion. Since the combustion air is piped directly into the furnace, infiltration of outside air into home to support combustion is eliminated. This precludes cold drafts in the house and improves living comfort. Additionally, this isolates the noise of operation to make the 58SX Furnace one of the quietest in the industry.

The final touch is the special laminated polypropylene secondary heat exchanger that extracts most of the remaining heat that is available in the furnace to heat the house. The result is economical and comfortable heating with an AFUE up to 97.3%. The secondary heat exchanger is a special design of the serpentine clam-shell heat exchanger. This design reduces pressure drop in the furnace and minimizes the risk of airflow blockage from a dirty coil as experienced by competitive products.

The 58SX Furnace is easy to install. At only 46-3/16 inches tall, it can be conveniently applied in a new or replacement application. The furnace has left- or right-hand gas, electrical, vent pipe, combustion-air pipe connections, and adjustable blower speeds to fit most applications. Carrier makes it easy to adjust the blower speed with a speed-tap selector located on the blower housing. No need to remove the blower or perform other complex procedures.

When using a Carrier gas furnace, you have the option of expanding your comfort system to include air conditioning, humidifier, and

electronic air cleaner. A factory-installed 40-VA transformer, air conditioner relay, and multi-speed blower motor simplifies installation of add-on options.

The 58SX Upflow Condensing Furnace heat exchangers are backed by Carrier's lifetime Warranty. See Warranty Card for more details.

## 58SX FEATURES/BENEFITS

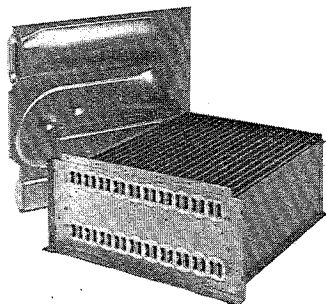
### INSULATED BLOWER COMPARTMENT

— The acoustical insulation reduces air and motor noise to promote quiet operation.

**CERTIFICATIONS** — The 58SX units are A.G.A. and C.G.A. design

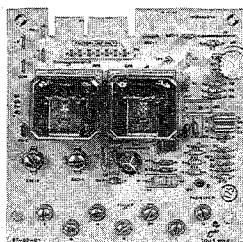
certified (040-FG is A.G.A. only) for use with natural and propane gases (040-FG natural gas only). The efficiency is GAMA efficiency rating certified. The 58SX surpasses California minimum seasonal efficiency requirements, and meets the oxides of nitrogen (NO<sub>x</sub>) emission levels set by South Coast and Bay Area Air Quality Management Districts in California.

**SIDE WALL VENTING** — The combustion-air and vent pipes can terminate through a side wall or through the roof when used with a factory-authorized vent termination kit.



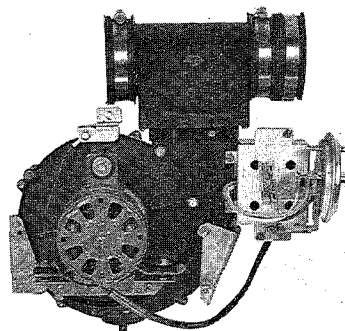
A89077

HEAT EXCHANGERS



A88200

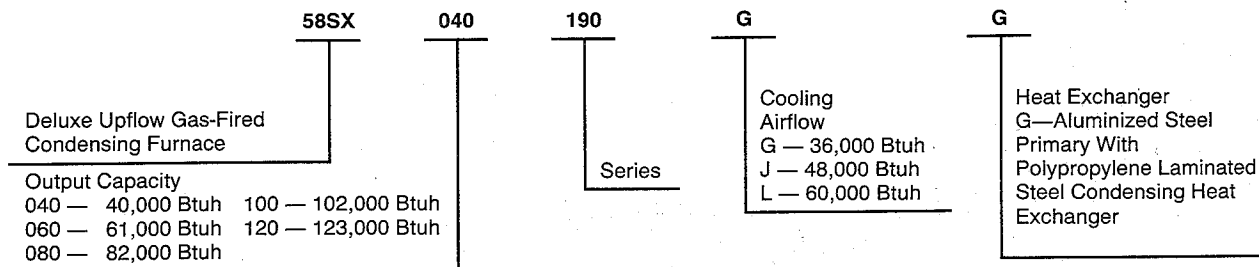
PRINTED-CIRCUIT BOARD

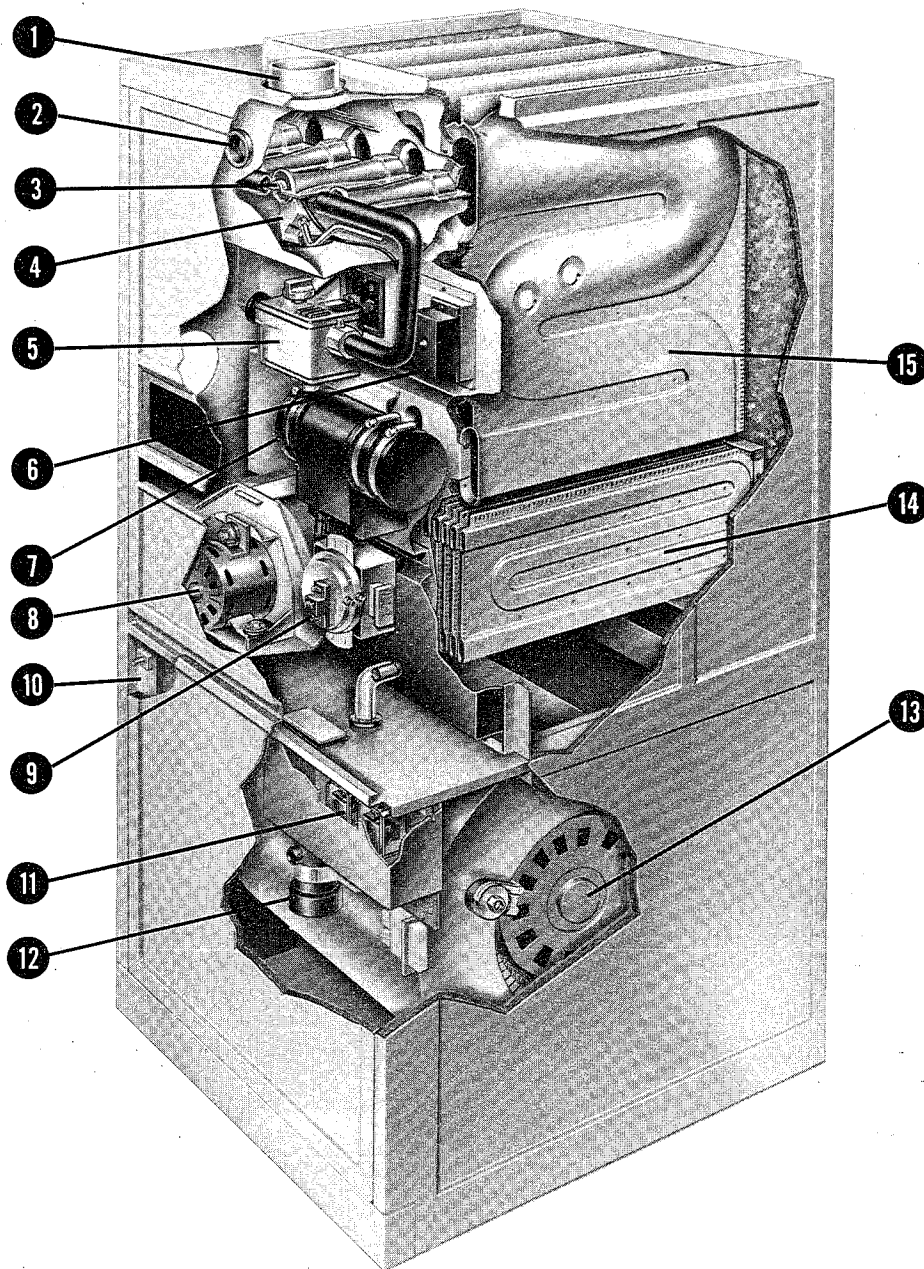


A89078

INDUCER BLOWER

## Model number nomenclature





A89079

**NOTE:** The 58SX Furnaces are for use with natural gas. These furnaces can be field-converted for propane gas (except 040-FG) with a factory-authorized and listed accessory conversion kit.

**NOTE:** Component location and configuration may be different than shown above.

- |                                    |                              |
|------------------------------------|------------------------------|
| 1 Combustion-Air Pipe Connection   | 9 Pressure Switch            |
| 2 Sight Glass                      | 10 Blower Door Safety Switch |
| 3 Burner Assembly                  | 11 Control Box               |
| 4 Pilot                            | 12 Condensate Trap           |
| 5 Gas Control Valve                | 13 Blower and Blower Motor   |
| 6 Electronic Spark Ignition System | 14 Secondary Heat Exchanger  |
| 7 Vent Pipe Connection             | 15 Primary Heat Exchanger    |
| 8 Inducer Motor                    |                              |

# Physical data

| FURNACE MODEL 58SX                     | 040                        |        | 060    | 080    |        | 100     |         | 120     |
|----------------------------------------|----------------------------|--------|--------|--------|--------|---------|---------|---------|
|                                        | FG                         | GG     | GG     | GG     | JC     | JC      | LG      | LG      |
| OUTPUT CAPACITY BTUH† (Indoor)         | 40,000                     | 41,000 | 61,000 | 82,000 | 82,000 | 102,000 | 102,000 | 123,000 |
| OUTPUT CAPACITY BTUH† (ICS)**          | 40,000                     | 41,000 | 61,000 | 81,000 | 81,000 | 102,000 | 102,000 | 122,000 |
| INPUT BTUH*                            | 41,000                     | 44,000 | 66,000 | 88,000 | 88,000 | 110,000 | 110,000 | 132,000 |
| SHIPPING WEIGHT (lb)                   | 217                        | 170    | 177    | 190    | 195    | 221     | 228     | 263     |
| CERTIFIED TEMP RISE RANGE (F)          | 15—45                      | 20—50  | 35—65  | 45—75  | 35—65  | 45—75   | 35—65   | 45—75   |
| CERTIFIED EXT STATIC PRESSURE (in. wc) | Heating                    | 0.10   | 0.10   | 0.12   | 0.15   | 0.15    | 0.20    | 0.20    |
|                                        | Cooling                    | 0.40   | 0.50   | 0.50   | 0.50   | 0.50    | 0.50    | 0.50    |
| AIRFLOW CFM‡                           | Heating                    | 1315   | 1350   | 1340   | 1405   | 1650    | 1620    | 2065    |
|                                        | Cooling                    | 2165   | 1275   | 1230   | 1315   | 1535    | 1580    | 2135    |
| LIMIT CONTROL                          | SPST                       |        |        |        |        |         |         |         |
| HEATING BLOWER CONTROL                 | Solid-State Time Operation |        |        |        |        |         |         |         |
| BURNERS (Monoport)                     | 2                          | 2      | 3      | 4      | 4      | 5       | 5       | 6       |
| GAS CONNECTION SIZE                    | 1/2-inch NPT               |        |        |        |        |         |         |         |
| GAS VALVE (Redundant) Manufacturer     | White-Rodgers              |        |        |        |        |         |         |         |
| Minimum Inlet Pressure (in. wc)        | 4.5                        |        |        |        |        |         |         |         |
| Maximum Inlet Pressure (in. wc)        | 13.6                       |        |        |        |        |         |         |         |
| PILOT SAFETY Model                     | 740                        |        |        |        |        |         |         |         |

\*Gas input ratings are certified for elevations to 2000 feet. For elevations above 2000 feet, reduce ratings 4% for each 1000 feet above sea level.

†Capacity and AFUE in accordance with U.S. Government DOE test procedures. California Seasonal Efficiencies based on California-specified procedures.

‡Air delivery above 1800 cfm requires that both sides, or a combination of one side and bottom, or bottom only, of the furnace be used for return air. A filter is required for each return-air supply.

\*\*ICS — Isolated Combustion System.

## Accessories

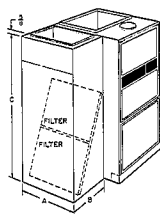
| ITEM                   | ACCESSORY* |
|------------------------|------------|
| Cold-Air Return Plenum | ✓          |
| Side Filter Rack       | ✓          |
| Electronic Air Cleaner | ✓          |
| Humidifier             | ✓          |

\*Factory-authorized and listed, field-installed.

| ITEM                 | ACCESSORY* |
|----------------------|------------|
| Cooling Coils        | ✓          |
| Gas Conversion Kitt† | ✓          |
| Twinning Kit         | ✓          |
| Thermostat           | ✓          |

†Natural-to-propane and propane-to-natural.

‡Not available for 040-FG.

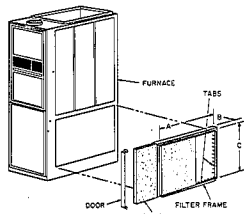


A89080

### RETURN-AIR PLENUM

Custom-made return-air plenum can be mounted on either side of the furnace. Accommodates two throwaway or washable filters.

|   |             |
|---|-------------|
| A | 25 in.      |
| B | 16 in.      |
| C | 46-3/16 in. |

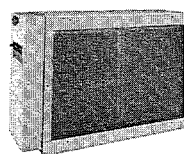


A89081

### SIDE FILTER RACK

Custom made filter rack for easy connection when a return plenum already exists. Provides easy access for cleaning filter.

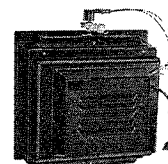
|   |            |
|---|------------|
| A | 23-1/8 in. |
| B | 2-3/8 in.  |
| C | 14-1/2 in. |



A86132

### ELECTRONIC AIR CLEANER

Cleans the air of smoke, dirt, and many pollens commonly found in the air. Saves on decorating and cleaning expenses.



A86131

### HUMIDIFIER

By adding moisture to winter-dry air, a Carrier humidifier can often improve comfort and keep furniture, rugs, and draperies in better condition. Moisturizing household air also helps to retain normal body heat and provides comfort at lower temperatures.



## AIR DELIVERY—Cfm\* (With Filter)

| FURNACE SIZE | SPEED    | EXTERNAL STATIC PRESSURE (in. wc) |      |      |      |      |      |      |
|--------------|----------|-----------------------------------|------|------|------|------|------|------|
|              |          | 0.1                               | 0.2  | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  |
| 040-FG       | High     | 1425                              | 1370 | 1320 | 1265 | 1195 | 1125 | 1060 |
|              | Med-High | 1315                              | 1275 | 1230 | 1180 | 1125 | 1070 | 1000 |
|              | Med-Low  | 1145                              | 1115 | 1090 | 1045 | 1010 | 955  | 880  |
|              | Low      | 1035                              | 1000 | 970  | 930  | 900  | 850  | 800  |
| 040-GG       | High     | 1515                              | 1465 | 1405 | 1345 | 1275 | 1210 | 1115 |
|              | Med-High | 1350                              | 1310 | 1275 | 1220 | 1160 | 1100 | 995  |
|              | Med-Low  | 1155                              | 1140 | 1110 | 1070 | 1020 | 945  | 825  |
|              | Low      | 975                               | 960  | 945  | 915  | 870  | 780  | 710  |
| 060-GG       | High     | 1510                              | 1450 | 1380 | 1320 | 1230 | 1150 | 1045 |
|              | Med-High | 1350                              | 1300 | 1245 | 1190 | 1115 | 1030 | 945  |
|              | Med-Low  | 1165                              | 1125 | 1090 | 1045 | 980  | 910  | 775  |
|              | Low      | 965                               | 945  | 915  | 880  | 830  | 735  | 640  |
| 080-GG       | High     | 1590                              | 1530 | 1470 | 1390 | 1315 | 1225 | 1140 |
|              | Med-High | 1425                              | 1390 | 1345 | 1285 | 1200 | 1135 | 1040 |
|              | Med-Low  | 1250                              | 1220 | 1185 | 1135 | 1085 | 1010 | 930  |
|              | Low      | 1060                              | 1055 | 1030 | 980  | 930  | 870  | 805  |
| 080-JG       | High     | 1860                              | 1780 | 1700 | 1625 | 1535 | 1440 | 1335 |
|              | Med-High | 1675                              | 1625 | 1555 | 1495 | 1415 | 1340 | 1235 |
|              | Med-Low  | 1445                              | 1420 | 1385 | 1345 | 1300 | 1210 | 1130 |
|              | Low      | 1260                              | 1255 | 1235 | 1205 | 1160 | 1095 | 1015 |
| 100-JG       | High     | 1910                              | 1835 | 1765 | 1680 | 1580 | 1470 | 1360 |
|              | Med-High | 1665                              | 1620 | 1580 | 1525 | 1460 | 1365 | 1290 |
|              | Med-Low  | 1410                              | 1400 | 1360 | 1335 | 1300 | 1255 | 1165 |
|              | Low      | 1250                              | 1230 | 1210 | 1190 | 1165 | 1100 | 1030 |
| 100-LG       | High     | 2415                              | 2360 | 2275 | 2200 | 2135 | 2050 | 1955 |
|              | Med-High | 2105                              | 2065 | 2020 | 1975 | 1905 | 1855 | 1785 |
|              | Med-Low  | 1810                              | 1775 | 1750 | 1725 | 1685 | 1625 | 1580 |
|              | Low      | 1580                              | 1565 | 1540 | 1520 | 1495 | 1455 | 1425 |
| 120-LG       | High     | 2520                              | 2440 | 2300 | 2240 | 2110 | 1990 | 1820 |
|              | Med-High | 2185                              | 2115 | 2045 | 1960 | 1855 | 1740 | 1510 |
|              | Med-Low  | 1955                              | 1895 | 1830 | 1765 | 1700 | 1560 | 1355 |
|              | Low      | 1730                              | 1695 | 1640 | 1590 | 1505 | 1340 | 1230 |

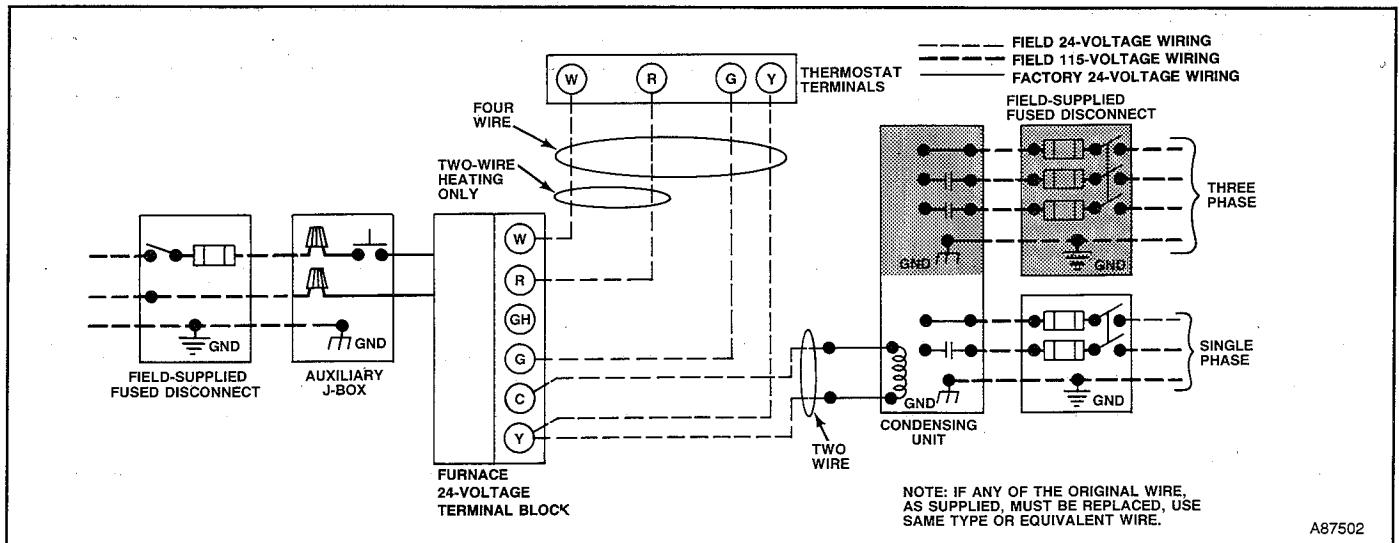
\*Air delivery above 1800 cfm requires that both sides, or a combination of one side and bottom, or bottom only, of the furnace be used for return air. A filter is required for each return-air supply.

### MEETS DOE RESIDENTIAL CONSERVATION SERVICES PROGRAM STANDARDS.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.



## Typical wiring schematic



# Electrical data

| FURNACE MODEL 58SX                             | 040-FG       | 040-GG | 060-GG | 080-GG | 080-JG | 100-JG | 100-LG | 120-LG |
|------------------------------------------------|--------------|--------|--------|--------|--------|--------|--------|--------|
| UNIT VOLTS — HERTZ — PHASE                     | 115 — 60 — 1 |        |        |        |        |        |        |        |
| MINIMUM WIRE SIZE                              | 14           | 14     | 14     | 14     | 14     | 14     | 12     | 14     |
| MAXIMUM WIRE LENGTH* (Ft.)                     | 39           | 41     | 42     | 42     | 37     | 37     | 41     | 31     |
| MAXIMUM UNIT AMPS                              | 9.1          | 8.8    | 8.5    | 8.4    | 9.7    | 9.8    | 13.9   | 11.7   |
| OPERATING VOLTAGE RANGE† (Min — Max)           | 127 — 104    |        |        |        |        |        |        |        |
| MAXIMUM FUSE SIZE OR HACR-TYPE CKT BKR‡ (Amps) | 15           | 15     | 15     | 15     | 15     | 15     | 20     | 15     |
| TRANSFORMER (24v)                              | 40 VA        |        |        |        |        |        |        |        |
| EXTERNAL CONTROL POWER AVAILABLE — Heating     | 21 VA        |        |        |        |        |        |        |        |
| Cooling                                        | 36 VA        |        |        |        |        |        |        |        |
| AIR CONDITIONING BLOWER RELAY                  | Standard     |        |        |        |        |        |        |        |

\*Length shown is as measured one way along wire path between unit and service panel for maximum 2% voltage drop.

†Permissible limits of the voltage range at which the unit will operate satisfactorily.

‡Time-delay fuse is recommended.

## Combustion-Air and Vent Piping

### MAXIMUM ALLOWABLE PIPE LENGTH (In Ft)

| Altitude (feet<br>above sea level) | Furnace<br>Size | Pipe<br>Dia         | Number of 90 Degree Elbows |               |              |               |               |
|------------------------------------|-----------------|---------------------|----------------------------|---------------|--------------|---------------|---------------|
|                                    |                 |                     | 1                          | 2             | 3            | 4             | 5             |
| 0 to 2000                          | 040-FG          | 2                   | 35                         | 35            | 35           | 35            | 35            |
|                                    | 040-GG          | 1-1/2<br>2          | 20<br>35                   | 15<br>35      | 10<br>35     | 5<br>35       | —<br>35       |
|                                    | 060-GG          | 1-1/2<br>2<br>2-1/2 | 10<br>35<br>—              | 10<br>35<br>— | 5<br>35<br>— | —<br>30<br>35 | —<br>25<br>35 |
|                                    | 080-GG & JG     | 2<br>2-1/2<br>3     | 10<br>35<br>—              | —<br>35<br>—  | —<br>35<br>— | —<br>35<br>—  | —<br>30<br>35 |
|                                    | 100-JG & LG     | 2-1/2<br>3          | 20<br>35                   | 15<br>35      | 5<br>35      | —<br>35       | —<br>35       |
|                                    | 120-LG†         | 3                   | 35                         | 30            | 30           | 25            | 20            |
|                                    |                 | 3                   | 35                         | 35*           | 35*          | 35*           | 35*           |
| 2001 to 3000                       | 040-FG          | 2                   | 31                         | 30            | 30           | 29            | 29            |
|                                    | 040-GG          | 1-1/2<br>2          | 17<br>31                   | 12<br>30      | 7<br>30      | —<br>29       | —<br>29       |
|                                    | 060-GG          | 1-1/2<br>2<br>2-1/2 | 8<br>31<br>—               | 7<br>30<br>—  | —<br>30<br>— | —<br>24<br>29 | —<br>20<br>29 |
|                                    | 080-GG & JG     | 2<br>2-1/2<br>3     | 8<br>31<br>—               | —<br>30<br>—  | —<br>30<br>— | —<br>29<br>—  | —<br>24<br>29 |
|                                    | 100-JG & LG     | 2-1/2<br>3          | 17<br>31                   | 12<br>30      | —<br>30      | —<br>29       | —<br>29       |
|                                    | 120-LG†         | 3                   | 31                         | 25            | 25           | 20            | 15            |
|                                    |                 | 3                   | 31                         | 30*           | 30*          | 29*           | 29*           |
| 3001 to 4000                       | 040-FG          | 2                   | 28                         | 27            | 26           | 25            | 24            |
|                                    | 040-GG          | 1-1/2<br>2          | 15<br>28                   | 10<br>27      | —<br>26      | —<br>25       | —<br>24       |
|                                    | 060-GG          | 1-1/2<br>2<br>2-1/2 | 6<br>28<br>—               | 5<br>27<br>—  | —<br>26<br>— | —<br>20<br>25 | —<br>16<br>24 |
|                                    | 080-GG & JG     | 2<br>2-1/2<br>3     | 6<br>28<br>—               | —<br>27<br>—  | —<br>26<br>— | —<br>25<br>—  | —<br>19<br>24 |
|                                    | 100-JG & LG     | 2-1/2<br>3          | 15<br>28                   | 10<br>27      | —<br>26      | —<br>25       | —<br>24       |
|                                    | 120-LG†         | 3                   | 28                         | 22            | 21           | 17            | 11            |
|                                    |                 | 3                   | 28                         | 27*           | 26*          | 25*           | 24*           |
| 4001 to 5000                       | 040-FG          | 2                   | 26                         | 25            | 24           | 23            | 22            |
|                                    | 040-GG          | 1-1/2<br>2          | 13<br>26                   | 9<br>25       | —<br>24      | —<br>23       | —<br>22       |
|                                    | 060-GG          | 1-1/2<br>2<br>2-1/2 | 5<br>26<br>—               | —<br>25<br>—  | —<br>24<br>— | —<br>18<br>23 | —<br>14<br>22 |
|                                    | 080-GG & JG     | 2<br>2-1/2<br>3     | 5<br>26<br>—               | —<br>25<br>—  | —<br>24<br>— | —<br>23<br>—  | —<br>17<br>22 |
|                                    | 100-GG & LG     | 2-1/2<br>3          | 13<br>26                   | 9<br>25       | —<br>24      | —<br>23       | —<br>22       |
|                                    | 120-LG†         | 3                   | 26                         | 20            | 19           | 15            | 9             |
|                                    |                 | 3                   | 26                         | 25*           | 24*          | 23*           | 22*           |

| Altitude (feet<br>above sea level) | Furnace<br>Size | Pipe<br>Dia | Number of 90 Degree Elbows |         |         |          |          |
|------------------------------------|-----------------|-------------|----------------------------|---------|---------|----------|----------|
|                                    |                 |             | 1                          | 2       | 3       | 4        | 5        |
| 5001 to 6000                       | 040-FG          | 2           | 24                         | 22      | 21      | 19       | 18       |
|                                    | 040-GG          | 1-1/2<br>2  | 11<br>24                   | 7<br>22 | —<br>21 | —<br>19  | —<br>18  |
|                                    | 060-GG          | 2<br>2-1/2  | 24<br>—                    | 22<br>— | 21<br>— | 14<br>19 | 10<br>18 |
|                                    | 080-GG & JG     | 2-1/2<br>3  | 24<br>—                    | 22<br>— | 21<br>— | 19<br>—  | 13<br>18 |
|                                    | 100-JG & LG     | 2-1/2<br>3  | 11<br>24                   | 7<br>22 | —<br>21 | —<br>19  | —<br>18  |
|                                    | 120-LG†         | 3           | 24                         | 17      | 16      | 12       | 5        |
|                                    |                 | 3           | 24                         | 22*     | 21*     | 19*      | 18*      |
| 6001 to 7000                       | 040-FG          | 2           | 22                         | 20      | 19      | 17       | 16       |
|                                    | 040-GG          | 1-1/2<br>2  | 10<br>22                   | 6<br>20 | —<br>19 | —<br>17  | —<br>16  |
|                                    | 060-GG          | 2<br>2-1/2  | 22<br>—                    | 20<br>— | 19<br>— | 12<br>17 | 9<br>16  |
|                                    | 080-GG & JG     | 2-1/2<br>3  | 22<br>—                    | 20<br>— | 19<br>— | 17<br>—  | 11<br>16 |
|                                    | 100-JG & LG     | 2-1/2<br>3  | 10<br>22                   | 6<br>20 | —<br>19 | —<br>17  | —<br>16  |
|                                    | 120-LG†         | 3           | 22                         | 15      | 14      | 10       | —        |
|                                    |                 | 3           | 22                         | 20*     | 19*     | 17*      | 16*      |
| 7001 to 8000                       | 040-FG          | 2           | 19                         | 17      | 15      | 13       | 11       |
|                                    | 040-GG          | 1-1/2<br>2  | 8<br>19                    | —<br>17 | —<br>15 | —<br>13  | —<br>11  |
|                                    | 060-GG          | 2<br>2-1/2  | 19<br>—                    | 17<br>— | 15<br>— | 8<br>13  | 5<br>11  |
|                                    | 080-GG & JG     | 2-1/2<br>3  | 19<br>—                    | 17<br>— | 15<br>— | 13<br>—  | 6<br>11  |
|                                    | 100-JG & LG     | 2-1/2<br>3  | 8<br>19                    | —<br>17 | —<br>15 | —<br>13  | —<br>11  |
|                                    | 120-LG†         | 3           | 19                         | 12      | 10      | 7        | —        |
|                                    |                 | 3           | 19                         | 17*     | 15*     | 13*      | 11*      |
| 8001 to 9000                       | 040-FG          | 2           | 17                         | 15      | 13      | 11       | 9        |
|                                    | 040-GG          | 1-1/2<br>2  | 6<br>17                    | —<br>15 | —<br>13 | —<br>11  | —<br>9   |
|                                    | 060-GG          | 2<br>2-1/2  | 17<br>—                    | 15<br>— | 13<br>— | 6<br>11  | —<br>9   |
|                                    | 080-GG & JG     | 2-1/2<br>3  | 17<br>—                    | 15<br>— | 13<br>— | 11<br>—  | —<br>9   |
|                                    | 100-JG & LG     | 2-1/2<br>3  | 6<br>17                    | —<br>15 | —<br>13 | —<br>11  | —<br>9   |
|                                    | 120-LG†         | 3           | 17                         | 10      | 8       | 5        | —        |
|                                    |                 | 3           | 17                         | 15*     | 13*     | 11*      | 9*       |
| 9001 to 10,000                     | 040-FG          | 2           | 15                         | 12      | 10      | 7        | 5        |
|                                    | 040-GG          | 2<br>2-1/2  | 15<br>—                    | 12<br>— | 10<br>— | 7<br>—   | 5<br>—   |
|                                    | 060-GG          | 2<br>2-1/2  | 15<br>—                    | 12<br>— | 10<br>— | 7<br>—   | 5<br>—   |
|                                    | 080-GG & JG     | 2-1/2<br>3  | 15<br>—                    | 12<br>— | 10<br>— | 7<br>—   | —<br>5   |
|                                    | 100-JG & LG     | 3           | 15                         | 12      | 10      | 7        | 5        |
|                                    | 120-LG†         | 3           | 15                         | 7       | 5       | —        | —        |
|                                    |                 | 3           | 15                         | 12*     | 10*     | 7*       | 5*       |

\*Remove one combustion-air disk.

†Long radius elbows must be used on this model.

#### NOTES:

1. Size both the combustion-air and vent pipe independently, then use the larger diameter for both pipes.
2. Assume two 45-degree elbows equal one 90-degree elbow. Long radius elbows are desirable. Short radius elbows may be prohibited on some models.
3. Elbows and pipe sections within the furnace casing and supplied in the vent terminal kit should not be included in count.
4. The installer may use one larger pipe size than what is specified above (up to 3-in. diameter maximum).
5. The minimum pipe length is 5-ft. for all applications.

# Typical installation

