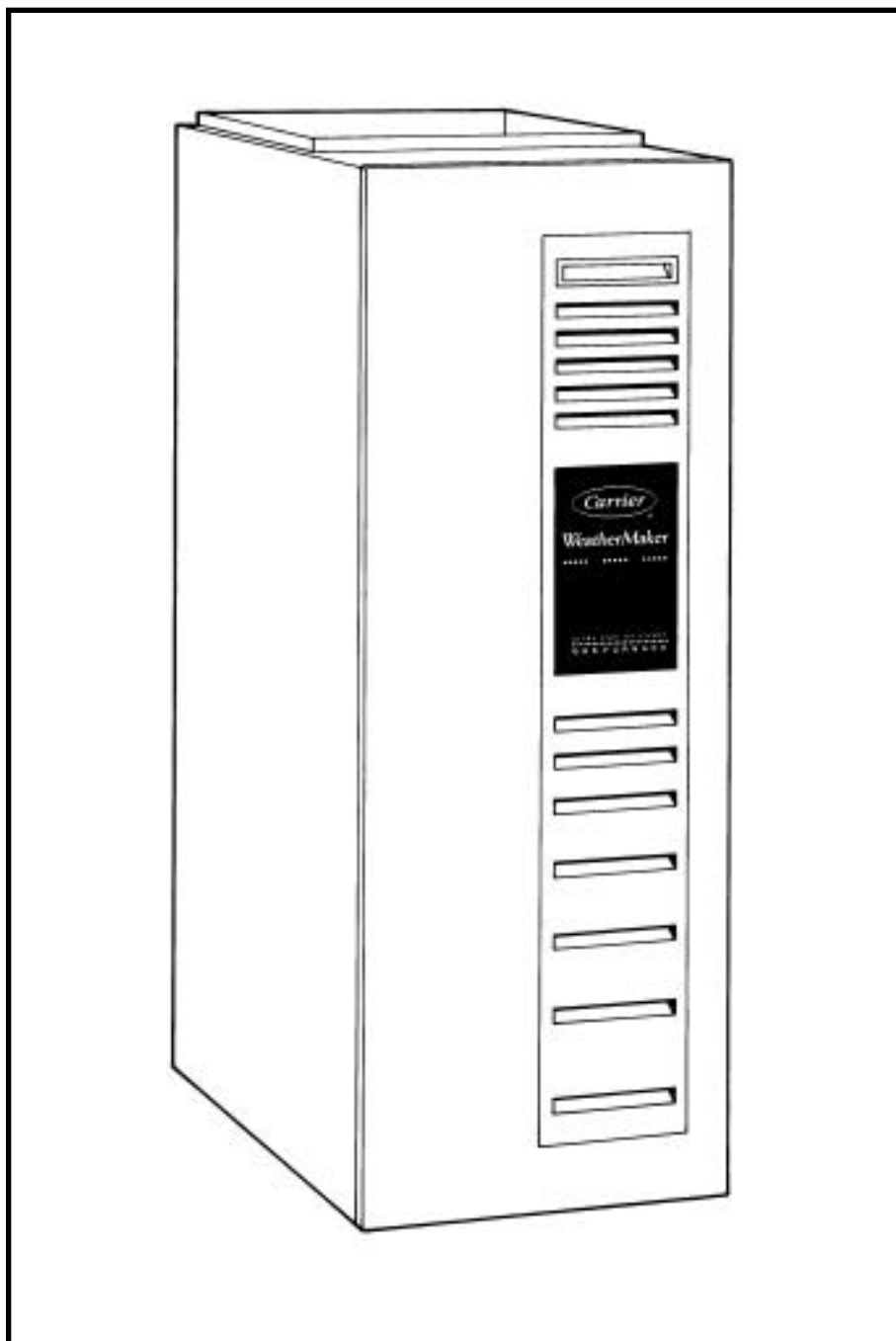




## Product Data

# 58MXA Deluxe 4-Way Multipoise Fixed-Capacity Condensing Gas Furnace

Series 111  
Input Capacities: 40,000 thru 120,000 Btuh



### 4-way Multipoise Design Allows More Applications . . .

The model 58MXA is a must for your product line. This high-efficiency furnace allows more applications with its reliable 4-way multipoise design. The model 58MXA is available in 10 heat/airflow combinations and with the 4-way multipoise design can be installed in upflow, downflow, or horizontal positions covering up to 40 different applications. The furnace is factory configured for upflow application.

This versatile unit utilizes hot surface ignition (HSI) which ignites the burners directly. HSI eliminates gas waste that typical continuous-pilot designs can bring. Hot surface ignition provides reliable start-up and operation.

Take a look at the control center on the model 58MXA. Control of the ignition, inducer, and blower operation is all handled in 1 central printed circuit board. The status indicator on the control signals when a fault has occurred and identifies where the problem is. This, along with the component test feature, makes the 58MXA one of the easiest gas furnaces to troubleshoot.

High efficiency is achieved by maximizing heat transfer. The model 58MXA uses 100% outdoor air for combustion in a sealed combustion system. The result is energy-saving efficiency, 92% Annual Fuel Utilization Efficiency (AFUE), and reduced operational noise. The model 58MXA is 1 of the quietest furnaces in the industry.

A unique feature of this unit is the patented polypropylene-laminated heat exchanger. This secondary heat exchanger ensures that all available heat is properly transferred to the airstream

and throughout the home. Using the exclusive flow-through design, the secondary heat exchanger reduces the pressure drop in the furnace which leads to lower electrical usage, an important part of this unit's efficiency. Carrier heat exchangers are backed by a Lifetime Limited Warranty.\*

When we put it all together, the model 58MXA combines quality and design to bring high efficiency and comfort. You will enjoy the versatility and ease of installation of this unit. The model 58MXA is equipped for either left- or right-side connections. Blower speeds are easily adjustable with speed-taps easily located on the control center. An updated, more efficient inducer allows for more use of 2-in. vent and combustion-air piping, keeping installation costs low.

As with other Carrier furnaces, this model is designed to work as a part of the total home comfort system which includes elements for cooling, air cleaning, humidification, ventilation, and zoning.

## 58MXA FEATURES/ BENEFITS

**Casing**—One piece, seamless wrap-around construction of heavy, galvanized steel resists corrosion.

**Insulated Blower Compartment**—The acoustical insulation reduces air and

motor noise to promote quiet operation.

\*See warranty details.

**Certifications**—The 58MXA units are A.G.A. and C.G.A. design certified for use with natural and propane gases. The efficiency is GAMA efficiency rating certified. The 58MXA meets the oxides of nitrogen (NO<sub>x</sub>) emission levels set by South Coast and Bay Area Air Quality Management Districts in California.

**Warranties**—Limited Lifetime Warranty on the heat exchangers for the lifetime of original owner in single family residence; 20 years in other residential and commercial applications. Three-year Warranty on microprocessor control, HSI, and inducer motor. Contact your dealer for details.

**Combustion Products 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.

**Blower Access Panel Switch**—Shuts off all 24-v power to furnace whenever blower access panel is opened.

**Hot Surface Ignitor**—No pilot flame to waste gas or cause problems.

**Slow Opening Redundant Gas Valve**—Shuts off gas to burners if one of the valves fails to close completely for any reason. The slow opening feature reduces start-up noise from rapid ignition.

**Insulation**—Foil-faced insulation in heat exchanger section of the casing minimizes heat loss.

**Control Center**—Microprocessor controls sequencing and furnace operation. Equipped with a component test feature and status indicator light to assist in troubleshooting. Microprocessor blower control timed blowers start after main burners ignite to eliminate cold air blowing into rooms.

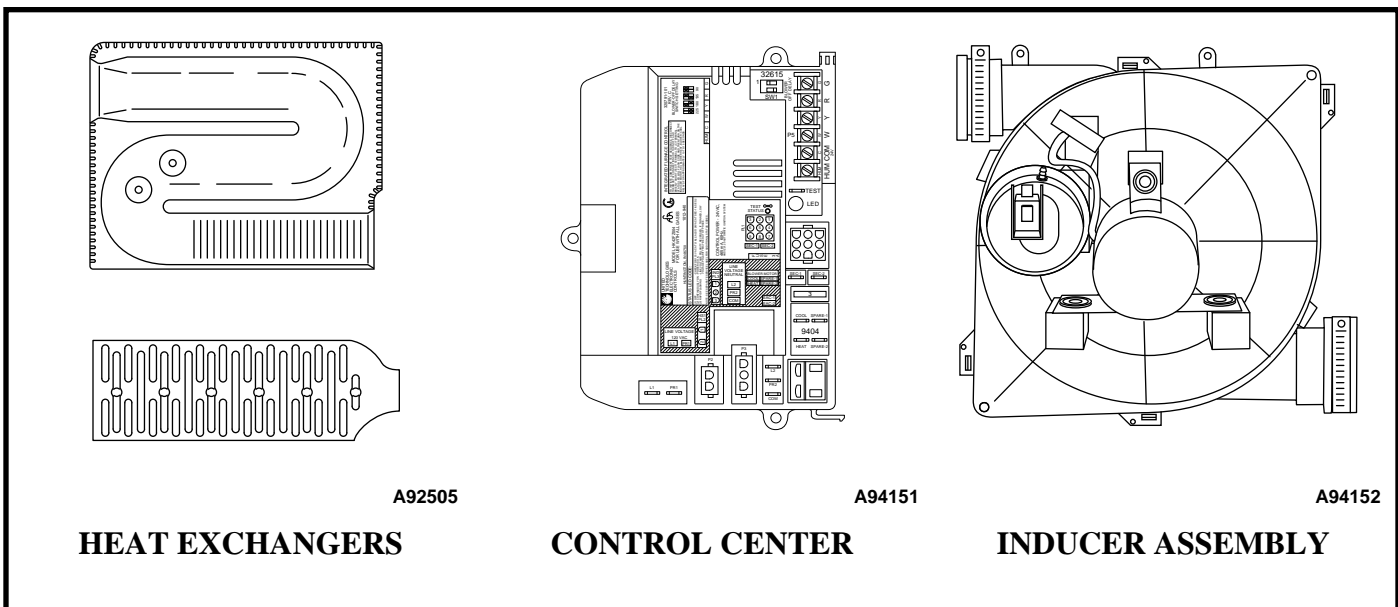
**Adjustable Blower Speed**—For precise airflow selection of heating or cooling operation.

**Direct Vent Sealed Combustion System**—Model 58MXA uses 100% outdoor air, which results in especially quiet operation. Direct venting also minimizes the possibility of chloride contamination which can result in heat exchanger corrosion. Also reduces air infiltration into the home.

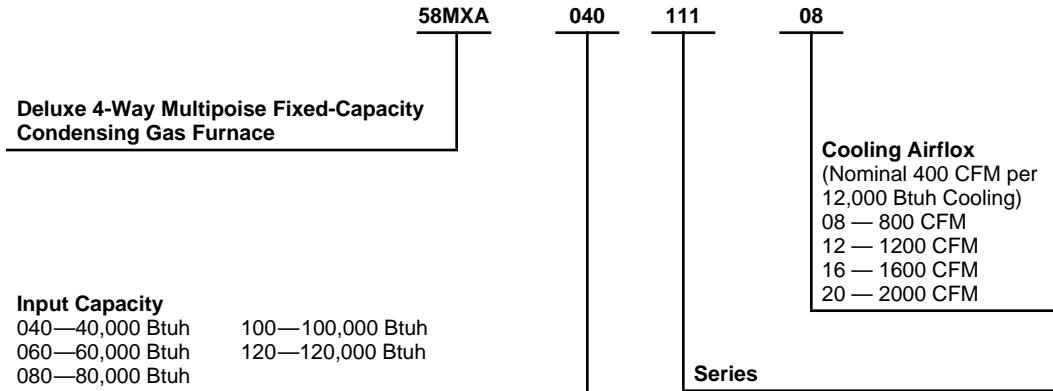
**Monoport Burners**—The burners are finely tuned for smooth, quiet combustion plus economical gas usage.

**Serpentuff™**—Exclusive Serpentuff coating, a patented Polypropylene laminate is used on the secondary heat exchanger.

**Bottom Closure**—Factory-installed for side return; easily removable for bottom return.



# Model number nomenclature



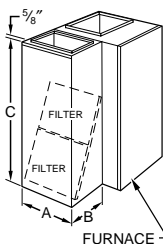
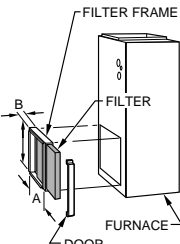
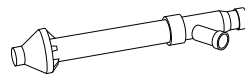
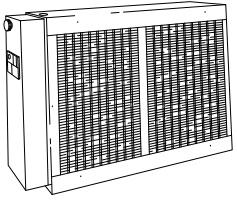
## Carrier accessories\*

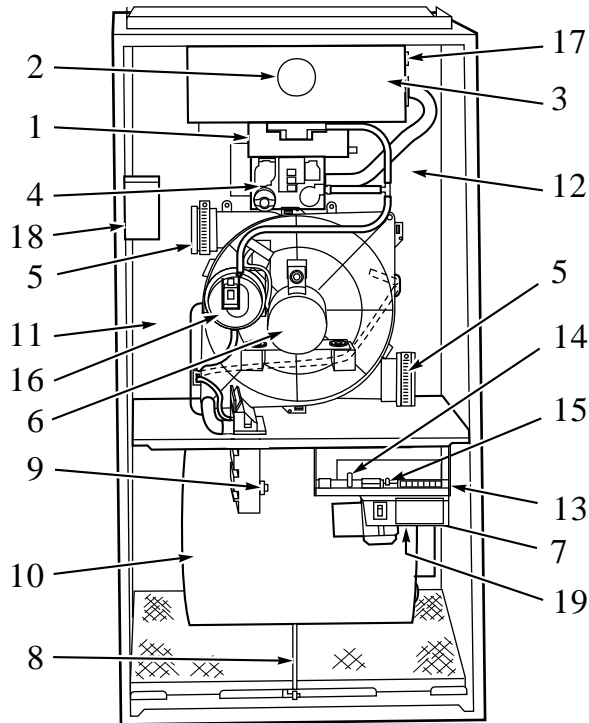
| UNIT SIZE  | 040   | 060           | 080 | 100 | 120                |
|--|---|---------------|-----|-----|--------------------|
| ELECTRONIC AIR CLEANER (EAC)                                     | Model 31KAX                                   |               |     |     |                    |
| HUMIDIFIER   | Models 49BF, 49BG, 49BP, 49FH, 49FP, and 49WS |               |     |     |                    |
| 2 TWINNING KIT (Upflow Only)                                     | N/A   | KGATW0301HSI† |     |     |                    |
| 2 RETURN-AIR PLENUM (With Washable Filters) Upflow Only          | KGARP0201ALL                                  |               |     |     |                    |
| SIDE FILTER RACK (Without Filter) Upflow Only                    | KGAFR0206ALL                                  |               |     |     |                    |
| GAS CONVERSION KIT—<br>NATURAL-TO-PROPANE                        | KGANP2001ALL                                  |               |     |     |                    |
| GAS CONVERSION KIT—<br>PROPANE-TO-NATURAL                        | KGAPN1601ALL                                  |               |     |     |                    |
| DOWNFLOW BASE (For Combustible Floors, with or without A/C Coil) | KGASB0201ALL                                  |               |     |     |                    |
| VENT TERMINATION KIT (Bracket Only for 2 Pipes)                  | 2-in.—KGAVT0101BRA                            |               |     |     | 3-in.—KGAVT0201BRA |
| CONCENTRIC TERMINATION KIT (Single Exit)                         | 2-in.—KGAVT0501CVT                            |               |     |     | 3-in.—KGAVT0601CVT |
| SIDE-WALL VENT TERMINAL COVER                                    | 2-in.—KGAVT0301COV                            |               |     |     | 3-in.—KGAVT0401COV |

\* Factory authorized and field installed. Gas conversion kits are A.G.A. recognized.

† For 16 and 20 sizes only and in upflow application ONLY. See kit Installation Instructions for details.

N/A—Not Applicable

|   |            |        |          |        |          |            |  |          |            |          |           |          |            |  |   |
|---|------------|--------|----------|--------|----------|------------|--|----------|------------|----------|-----------|----------|------------|--|---|
|  <p><b>A93067</b></p> <p><b>RETURN-AIR<br/>PLENUM</b></p> <p>Custom-made return-air plenum can be mounted on either side of the furnace. Two framed washable filters included.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>A</b></td><td style="text-align: center;">25 in.</td></tr> <tr><td style="text-align: center;"><b>B</b></td><td style="text-align: center;">16 in.</td></tr> <tr><td style="text-align: center;"><b>C</b></td><td style="text-align: center;">38-7/8 in.</td></tr> </table> | <b>A</b>   | 25 in. | <b>B</b> | 16 in. | <b>C</b> | 38-7/8 in. |  <p><b>A93068</b></p> <p><b>SIDE FILTER RACK</b></p> <p>Custom made filter rack for easy connection when a return plenum already exists. Provides easy access for cleaning filter. Accepts one 16 x 25 x 1 in. filter.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;"><b>A</b></td><td style="text-align: center;">23-1/8 in.</td></tr> <tr><td style="text-align: center;"><b>B</b></td><td style="text-align: center;">2-3/8 in.</td></tr> <tr><td style="text-align: center;"><b>C</b></td><td style="text-align: center;">14-1/2 in.</td></tr> </table> | <b>A</b> | 23-1/8 in. | <b>B</b> | 2-3/8 in. | <b>C</b> | 14-1/2 in. |  <p><b>A93086</b></p> <p><b>CONCENTRIC<br/>VENT</b></p> <p>A concentric vent kit allows vent and combustion-air pipes to terminate through a single exit in a roof or sidewall.</p> <p>One pipe runs inside the other allowing venting through the inner pipe and combustion air to be drawn through the outer pipe.</p> |  <p><b>A91465</b></p> <p><b>INDOOR AIR<br/>QUALITY</b></p> <p>EAC (shown) cleans the air of smoke, dirt, and many pollens.</p> <p>A Carrier humidifier will add moisture to winter-dry air to improve comfort and help keep household items in better condition. Moisturizing household air also helps to retain body heat and provide comfort at lower temperature.</p> |
| <b>A</b>  | 25 in.     |        |          |        |          |            |  |          |            |          |           |          |            |  |   |
| <b>B</b>  | 16 in.     |        |          |        |          |            |  |          |            |          |           |          |            |  |   |
| <b>C</b>  | 38-7/8 in. |        |          |        |          |            |  |          |            |          |           |          |            |  |   |
| <b>A</b>  | 23-1/8 in. |        |          |        |          |            |  |          |            |          |           |          |            |  |   |
| <b>B</b>  | 2-3/8 in.  |        |          |        |          |            |  |          |            |          |           |          |            |  |   |
| <b>C</b>  | 14-1/2 in. |        |          |        |          |            |  |          |            |          |           |          |            |  |   |



A93202

**NOTES:**

1. The 58MXA Furnaces are for use with natural gas, but can be field-converted for propane gas with a factory-authorized and listed accessory conversion kit.
2. Component location and configuration may be different than shown above.

- |  |  |
|--|--|
| <p><b>1</b> Combustion-air intake connection to ensure contaminant-free air (right or left side).</p> <p><b>2</b> Burner sight glass for viewing burner flame.</p> <p><b>3</b> Burner assembly (inside). Operates with energy-saving, inshot burners and hot surface ignitor for safe, dependable heating.</p> <p><b>4</b> Redundant gas valve. Safe, efficient. Features 1 gas control with 2 internal shut-off valves.</p> <p><b>5</b> Vent outlet. Uses PVC pipe to carry vent gases from the furnace's combustion system (right or left side).</p> <p><b>6</b> Inducer motor. Pulls hot flue gases through the heat exchangers, maintaining negative pressure for added safety.</p> <p><b>7</b> Blower access panel safety interlock switch.</p> <p><b>8</b> Air filter and retainer. May be used for side return application.</p> <p><b>9</b> Condensate drain connection. Collects moisture condensed during the combustion process.</p> <p><b>10</b> Heavy-duty blower. Circulates air across the heat exchangers to transfer heat into the home.</p> | <p><b>11</b> Secondary condensing heat exchanger (inside). Wrings out more heat through condensation. Constructed with Polypropylene-laminated steel to ensure durability.</p> <p><b>12</b> Primary serpentine heat exchanger (inside). Stretches fuel dollars with the S-shaped heat-flow design. Solid construction of corrosion-resistant aluminized steel means reliability.</p> <p><b>13</b> Control center.</p> <p><b>14</b> 3-amp fuse provides electrical and component protection.</p> <p><b>15</b> Light emitting diode (LED) on control center. Code lights are for diagnosing furnace operation and service requirements.</p> <p><b>16</b> Pressure switch ensures adequate flow of flue products through furnace and out vent system.</p> <p><b>17</b> Rollout switch (manual reset) to prevent overtemperature.</p> <p><b>18</b> Junction box for 115-v electrical power supply.</p> <p><b>19</b> Transformer (24v) behind control center provides low-voltage power to furnace control center and thermostat.</p> |
|--|--|

# Physical data

| UNIT SIZE                                     |         | 040-08                              | 040-12 | 060-12 | 060-16 | 080-12 | 080-16 | 080-20        | 100-16  | 100-20        | 120-20        |
|---|---------|-------------------------------------|--------|--------|--------|--------|--------|---------------|---------|---------------|---------------|
| OUTPUT CAPACITY BTUH†<br>(Nonweatherized ICS) |         | 37,200                              | 37,200 | 55,800 | 55,800 | 74,400 | 74,400 | 74,400        | 93,000  | 93,000        | 111,600       |
| INPUT BTUH*                                   |         | 40,000                              | 40,000 | 60,000 | 60,000 | 80,000 | 80,000 | 80,000        | 100,000 | 100,000       | 120,000       |
| SHIPPING WEIGHT (Lb)                          |         | 149                                 | 152    | 163    | 166    | 172    | 175    | 197           | 193     | 196           | 228           |
| CERTIFIED TEMP RISE RANGE (°F)                |         | 30—60                               | 15—45  | 30—60  | 20—50  | 40—70  | 30—60  | 20—50         | 45—75   | 30—60         | 40—70         |
| CERTIFIED EXT STATIC PRESSURE<br>(In. wc)     | Heating | 0.10                                | 0.10   | 0.12   | 0.12   | 0.15   | 0.15   | 0.15          | 0.20    | 0.20          | 0.20          |
|   | Cooling | 0.50                                | 0.50   | 0.50   | 0.50   | 0.50   | 0.50   | 0.50          | 0.50    | 0.50          | 0.50          |
| AIRFLOW CFM‡                                  | Heating | 740                                 | 1205   | 1260   | 1300   | 1160   | 1285   | 1785          | 1315    | 1690          | 1650          |
|   | Cooling | 895                                 | 1230   | 1250   | 1545   | 1255   | 1525   | 1925/<br>2035 | 1570    | 1930/<br>2130 | 2040/<br>2130 |
| LIMIT CONTROL                                 |         | SPST                                |        |        |        |        |        |               |         |               |               |
| HEATING BLOWER CONTROL (Off Delay)            |         | Selectable 90, 135, 180, or 225 Sec |        |        |        |        |        |               |         |               |               |
| BURNERS (Monoport)                            |         | 2                                   | 2      | 3      | 3      | 4      | 4      | 4             | 5       | 5             | 6             |
| GAS CONNECTION SIZE                           |         | 1/2-in. NPT                         |        |        |        |        |        |               |         |               |               |
| GAS VALVE (Redundant) Manufacturer            |         | White-Rodgers                       |        |        |        |        |        |               |         |               |               |
| Minimum Inlet Pressure (In. wc)               |         | 4.5 (Natural Gas)                   |        |        |        |        |        |               |         |               |               |
| Maximum Inlet Pressure (In. wc)               |         | 13.6 (Natural Gas)                  |        |        |        |        |        |               |         |               |               |
| IGNITION DEVICE                               |         | Hot Surface                         |        |        |        |        |        |               |         |               |               |

\* Gas input ratings are certified for elevations to 2000 ft. For elevations above 2000 ft, reduce ratings 4% for each 1000 ft above sea level. In Canada, derate the unit 10% for elevations 2000 to 4500 ft above sea level.

† Capacity in accordance with U.S. Government DOE test procedures.

‡ Air delivery above 1800 CFM requires that both sides, or a combination of 1 side and bottom, or bottom only of the furnace be used for return air. Where 2 sets of data are listed, the first set is for bottom only return-air supply. The second set is for both sides, or 1 side and bottom return-air supply. A filter is required for each return-air supply.

ICS—Isolated Combustion System

## Clearance to combustibles

This unit complies with CAN/CGA 2.3 M86, CAN/CSA C22.2 No. 0-M91, CSA C22.2 No.3-1988 standards.

This appliance is equipped only for altitudes 0 - 2,000 ft (0-610 m) for use with natural gas and propane. A conversion kit, supplied by the manufacturer, shall be used to convert to the alternate fuel or elevation.

This direct-vent, forced-air furnace is for indoor installation in a building constructed on site. For installation in alcove or closet at minimum clearances from combustible material as shown below, minimum front clearance for service is 30 inches (762 mm).

This furnace is for use with schedule-40 PVC, PVC-DWV, or ABS-DWV pipe, and must not be vented in common with other gas-fired appliances. Construction through which vent/air intake pipes may be installed is maximum 24 inches (600 mm), minimum 3/4 inches (19 mm) thickness (including roofing materials).

Special venting system required. In Canada use certified venting system specified by furnace manufacturer. See Installation Instructions provided with furnace. Flue gas temperature 131°F (55°C) vent pressure positive.

### MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL

| INCHES | TOP | BOTTOM | SIDES | BACK | FRONT | VENT       |  |
|--------|-----|--------|-------|------|-------|------------|--|
|        | 1   | 0      | 0     | 0    | 3     | 0          |  |
| 1      | ++  | 0      | 0     | 3    | 0     | DOWNFLOW   |  |
| 1      | 0+  | 1*     | 0     | 3    | 0     | HORIZONTAL |  |

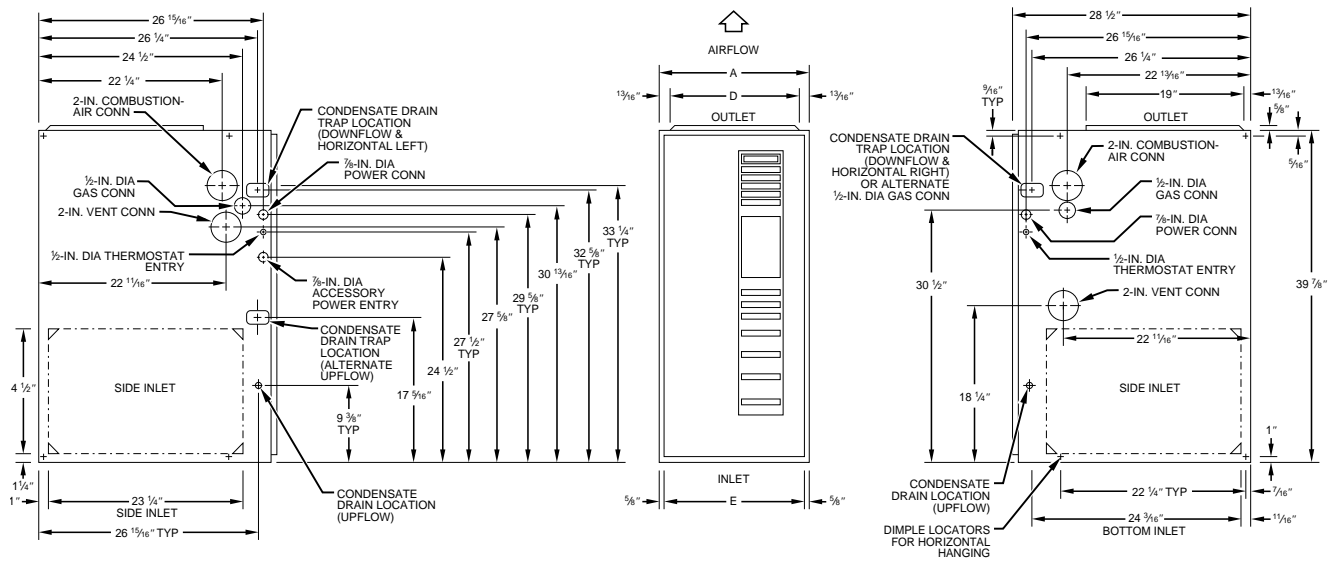
++ For installation on combustible floors only when installed on special base No. KGASB0201ALL.

\* Clearance shown is for air inlet and air outlet end.

Horizontal position: Line contact is permissible only between lines formed by intersections of top and two sides of furnace jacket, and building joists, studs, or framing.

+ 120,000 BTU Input Furnaces require 1 inch bottom clearance to combustible materials.

# Dimensions



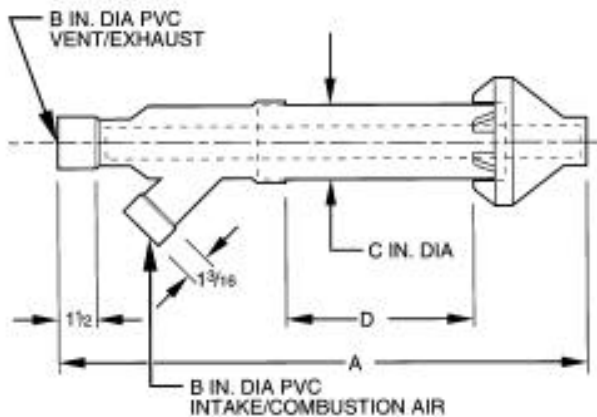
- NOTES:** Minimum return-air opening at furnace:
1. For 800 CFM--16-In. round or 14 1/2 x 12-In. rectangle.
  2. For 1200 CFM--20-In. round or 14 1/2 x 19 1/2-In. rectangle.
  3. For 1600 CFM--22-In. round or 14 1/2 x 23 1/4-In. rectangle.
  4. For airflow requirements above 1800 CFM, use both side inlets, a combination of 1 side inlet and the bottom, or the bottom only.

A93024

## DIMENSIONS (In.)

| UNIT SIZE | A      | D      | E      |
|-----------|--------|--------|--------|
| 040-08    | 17-1/2 | 15-7/8 | 16     |
| 040-12    | 17-1/2 | 15-7/8 | 16     |
| 060-12    | 17-1/2 | 15-7/8 | 16     |
| 060-16    | 17-1/2 | 15-7/8 | 16     |
| 080-12    | 17-1/2 | 15-7/8 | 16     |
| 080-16    | 17-1/2 | 15-7/8 | 16     |
| 080-20    | 21     | 19-3/8 | 19-1/2 |
| 100-16    | 21     | 19-3/8 | 19-1/2 |
| 100-20    | 21     | 19-3/8 | 19-1/2 |
| 120-20    | 24-1/2 | 22-7/8 | 23     |

## CONCENTRIC VENT



## DIMENSIONS (In.)

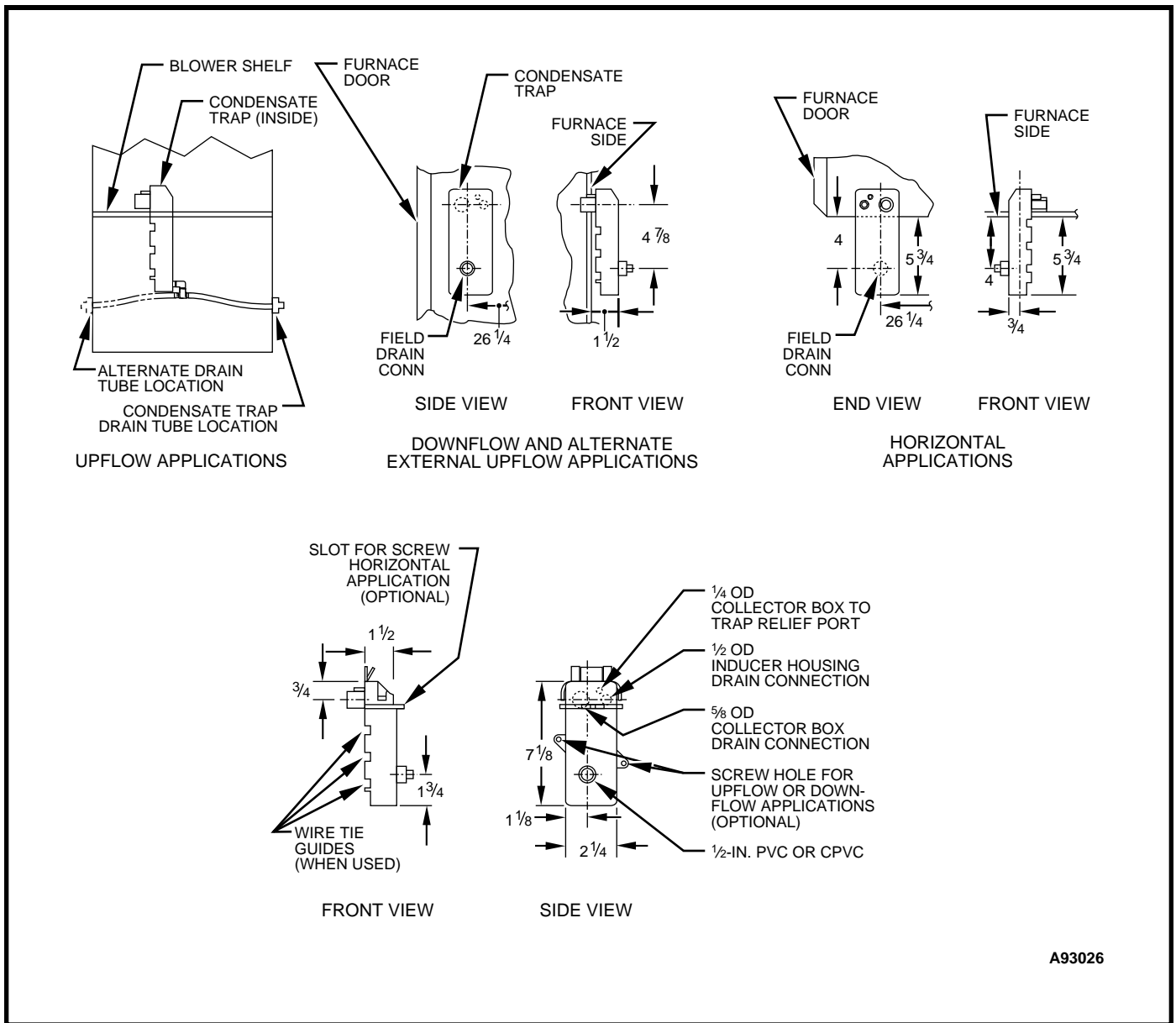
| PART NO.     | A*     | B | C     | D†     |
|--------------|--------|---|-------|--------|
| KGAVT0501CVT | 41-1/8 | 2 | 3-1/2 | 27-1/4 |
| KGAVT0601CVT | 46-3/4 | 3 | 4-1/2 | 31-7/8 |

\* Dimension A will change accordingly as dimension D is lengthened or shortened.

† Dimension D may be lengthened to 60 in. maximum. Dimension D may also be shortened by cutting the pipes provided in the kit to 12 in. minimum.

A93294

# CONDENSATE TRAP



A93026

MEETS DOE RESIDENTIAL CONSERVATION SERVICES PROGRAM STANDARDS.

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



# Performance data

| UNIT SIZE                           | 040-08          | 040-12 | 060-12 | 060-16 | 080-12 | 080-16 | 080-20          | 100-16 | 100-20  | 120-20             |
|-------------------------------------|-----------------|--------|--------|--------|--------|--------|-----------------|--------|---------|--------------------|
| DIRECT-DRIVE MOTOR<br>Hp (PSC)      | 1/5             | 1/3    | 1/3    | 1/2    | 1/3    | 1/2    | 3/4             | 1/2    | 3/4     | 3/4                |
| MOTOR FULL LOAD AMPS                | 4.9             | 5.8    | 5.8    | 7.9    | 5.8    | 7.9    | 11.1            | 7.9    | 11.1    | 11.1               |
| RPM (Nominal)—SPEEDS                | 1075—3          | 1075—4 |        |        |        |        |                 |        |         |                    |
| BLOWER WHEEL DIAMETER X WIDTH (In.) | 10 x 6          | 10 x 7 | 10 x 7 | 11 x 8 | 10 x 7 | 11 x 8 | 11 x 10         | 11 x 8 | 11 x 10 | 11 x 10            |
| FILTER SIZE (In.)—(Washable)        | (1) 16 x 25 x 1 |        |        |        |        |        | (1) 20 x 25 x 1 |        |         | (2)<br>16 x 25 x 1 |

PSC—Permanent Split Capacitor

## EFFICIENCY

| UNIT SIZE                       | 040-08 | 040-12 | 060-12 | 060-16 | 080-12 | 080-16 | 080-20 | 100-16 | 100-20 | 120-20  |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| CAPACITY*<br>Nonweatherized ICS | 37,200 | 37,200 | 55,800 | 55,800 | 74,400 | 74,400 | 74,400 | 93,000 | 93,000 | 111,600 |
| AFUE%*<br>Nonweatherized ICS    | 92.0   | 92.0   | 92.0   | 92.0   | 92.0   | 92.0   | 92.0   | 92.0   | 92.0   | 92.0    |

\* Capacity and AFUE in accordance with U.S. Government DOE test procedures.

ICS—Isolated Combustion System

## AIR DELIVERY—CFM (With Filter)\*

| UNIT SIZE | RETURN-AIR SUPPLY               | SPEED    | EXTERNAL STATIC PRESSURE (In. wc) |      |      |      |      |      |      |      |
|-----------|---------------------------------|----------|-----------------------------------|------|------|------|------|------|------|------|
|           |                                 |          | 0.1                               | 0.2  | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  | 0.8  |
| 040-08    | 1 side or bottom                | High     | 1075                              | 1040 | 995  | 945  | 895  | 840  | 760  | 670  |
|           |                                 | Med-High | 850                               | 825  | 780  | 740  | 685  | 635  | 560  | 480  |
|           |                                 | Med-Low  | 740                               | 700  | 650  | 620  | 565  | 515  | 455  | 385  |
| 040-12    | 1 side or bottom                | High     | 1500                              | 1445 | 1370 | 1300 | 1230 | 1145 | 1030 | 1500 |
|           |                                 | Med-High | 1370                              | 1310 | 1255 | 1195 | 1130 | 1040 | 950  | 840  |
|           |                                 | Med-Low  | 1205                              | 1160 | 1125 | 1070 | 1020 | 940  | 855  | 760  |
|           |                                 | Low      | 1035                              | 1005 | 970  | 930  | 885  | 825  | 745  | 675  |
| 060-12    | 1 side or bottom                | High     | 1505                              | 1445 | 1385 | 1320 | 1250 | 1170 | 1505 | 1445 |
|           |                                 | Med-High | 1415                              | 1360 | 1295 | 1235 | 1170 | 1100 | 1010 | 920  |
|           |                                 | Med-Low  | 1270                              | 1230 | 1170 | 1120 | 1050 | 985  | 905  | 810  |
|           |                                 | Low      | 1080                              | 1045 | 1005 | 965  | 915  | 855  | 785  | 705  |
| 060-16    | 1 side or bottom                | High     | 1700                              | 1695 | 1640 | 1580 | 1545 | 1450 | 1380 | 1310 |
|           |                                 | Med-High | 1500                              | 1465 | 1435 | 1385 | 1355 | 1300 | 1250 | 1185 |
|           |                                 | Med-Low  | 1325                              | 1295 | 1265 | 1230 | 1190 | 1150 | 1105 | 1050 |
|           |                                 | Low      | 1205                              | 1170 | 1145 | 1110 | 1080 | 1035 | 990  | 950  |
| 080-12    | 1 side or bottom                | High     | 1525                              | 1465 | 1400 | 1335 | 1255 | 1175 | 1070 | 960  |
|           |                                 | Med-High | 1385                              | 1330 | 1280 | 1220 | 1155 | 1075 | 985  | 880  |
|           |                                 | Med-Low  | 1165                              | 1150 | 1115 | 1060 | 1005 | 940  | 865  | 780  |
|           |                                 | Low      | 1000                              | 985  | 950  | 905  | 860  | 790  | 725  | 655  |
| 080-16    | 1 side or bottom                | High     | 1750                              | 1685 | 1635 | 1575 | 1525 | 1445 | 1380 | 1310 |
|           |                                 | Med-High | 1495                              | 1455 | 1405 | 1355 | 1305 | 1250 | 1185 | 1120 |
|           |                                 | Med-Low  | 1310                              | 1260 | 1225 | 1170 | 1125 | 1095 | 1040 | 980  |
|           |                                 | Low      | 1135                              | 1105 | 1075 | 1040 | 995  | 955  | 910  | 860  |
| 080-20    | bottom only                     | High     | 2200                              | 2175 | 2085 | 2025 | 1925 | 1820 | 1735 | 1635 |
|           |                                 | Med-High | 2100                              | 2025 | 1945 | 1865 | 1785 | 1700 | 1620 | 1540 |
|           |                                 | Med-Low  | 1815                              | 1760 | 1720 | 1670 | 1620 | 1550 | 1480 | 1405 |
|           |                                 | Low      | 1560                              | 1555 | 1515 | 1460 | 1435 | 1390 | 1340 | 1270 |
|           | both sides or 1 side and bottom | High     | 2360                              | 2280 | 2210 | 2130 | 2035 | 1960 | 1875 | 1790 |
| Med-High  | 1965                            | 1925     | 1870                              | 1830 | 1760 | 1710 | 1670 | 1670 | 1575 |      |
| 100-16    | 1 side or bottom                | High     | 1740                              | 1705 | 1660 | 1615 | 1570 | 1500 | 1425 | 1355 |
|           |                                 | Med-High | 1500                              | 1470 | 1445 | 1410 | 1375 | 1330 | 1280 | 1210 |
|           |                                 | Med-Low  | 1340                              | 1315 | 1300 | 1270 | 1235 | 1200 | 1140 | 1095 |
|           |                                 | Low      | 1195                              | 1175 | 1165 | 1130 | 1100 | 1070 | 1030 | 975  |
| 100-20    | bottom only                     | High     | 2250                              | 2175 | 2090 | 2020 | 1930 | 1855 | 1760 | 1670 |
|           |                                 | Med-High | 2020                              | 1950 | 1900 | 1840 | 1790 | 1710 | 1640 | 1545 |
|           |                                 | Med-Low  | 1725                              | 1690 | 1660 | 1630 | 1575 | 1520 | 1460 | 1370 |
|           |                                 | Low      | 1490                              | 1480 | 1460 | 1440 | 1380 | 1340 | 1295 | 1230 |
|           | both sides or 1 side and bottom | High     | 2360                              | 2315 | 2265 | 2200 | 2130 | 2055 | 1965 | 1890 |
| Med-High  | 1960                            | 1940     | 1930                              | 1900 | 1850 | 1800 | 1740 | 1740 | 1660 |      |
| 120-20    | bottom only                     | High     | 2350                              | 2250 | 2160 | 2070 | 2000 | 1885 | 1790 | 1635 |
|           |                                 | Med-High | 2100                              | 2015 | 1955 | 1875 | 1810 | 1710 | 1650 | 1540 |
|           |                                 | Med-Low  | 1770                              | 1720 | 1675 | 1620 | 1575 | 1515 | 1450 | 1365 |
|           |                                 | Low      | 1545                              | 1520 | 1465 | 1415 | 1365 | 1325 | 1265 | 1185 |
|           | both sides or 1 side and bottom | High     | 2435                              | 2360 | 2285 | 2220 | 2130 | 2050 | 1965 | 1875 |
| Med-High  | 2040                            | 2000     | 1950                              | 1905 | 1835 | 1790 | 1725 | 1725 | 1650 |      |

\* Air delivery above 1800 CFM requires that both sides, a combination of 1 side and bottom, or bottom only of the furnace be used for return air.

A filter is required for each return-air supply.



# Electrical data

| UNIT SIZE                            | 040-08   | 040-12 | 060-12 | 060-16 | 080-12 | 080-16 | 080-20 | 100-16 | 100-20 | 120-20 |
|--------------------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| UNIT VOLTS—HERTZ—PHASE               | 115—60—1 |        |        |        |        |        |        |        |        |        |
| OPERATING VOLTAGE RANGE (Min—Max)†   | 104—127  |        |        |        |        |        |        |        |        |        |
| MAXIMUM UNIT AMPS                    | 6.1      | 7.3    | 7.1    | 9.5    | 7.6    | 10.0   | 14.1   | 10.2   | 14.8   | 14.6   |
| UNIT AMPACITY**                      | 8.4      | 10.0   | 9.8    | 12.8   | 10.4   | 13.4   | 18.4   | 13.5   | 19.3   | 19.1   |
| MINIMUM WIRE SIZE                    | 14       | 14     | 14     | 14     | 14     | 14     | 12     | 14     | 12     | 12     |
| MAXIMUM WIRE LENGTH (Ft)*            | 44       | 37     | 38     | 29     | 36     | 28     | 31     | 27     | 30     | 30     |
| MAXIMUM FUSE SIZE OR CKT BKR (Amps)‡ | 15       | 15     | 15     | 15     | 15     | 15     | 20     | 15     | 20     | 20     |
| TRANSFORMER (24v)                    | 40VA     |        |        |        |        |        |        |        |        |        |
| EXTERNAL CONTROL POWER AVAILABLE     | Heating  |        |        |        |        | 13VA   |        |        |        |        |
|                                      | Cooling  |        |        |        |        | 21VA   |        |        |        |        |
| AIR CONDITIONING BLOWER RELAY        | Standard |        |        |        |        |        |        |        |        |        |

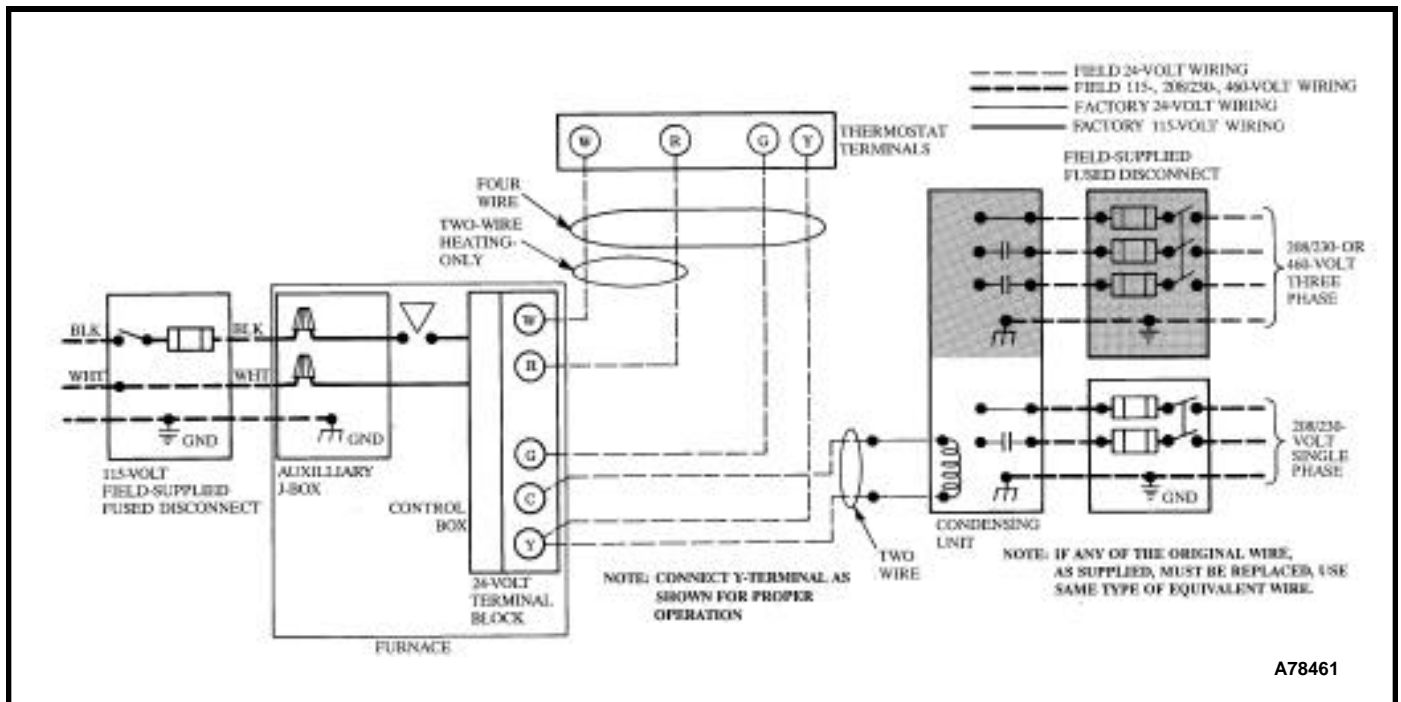
\* Length shown is as measured 1 way along wire path between unit and service panel for maximum 2% voltage drop.

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

‡ Time-delay fuse is recommended.

\*\* Unit ampacity = 125 percent of largest operating component's full load amps plus, 100 percent of all other potential operating component's (EAC, humidifier, etc.) full load amps.

## Typical wiring schematic



# Combustion-air and vent piping

## MAXIMUM ALLOWABLE PIPE LENGTH (FT)

| ALTITUDE ABOVE SEA LEVEL (FT) | UNIT SIZE                  | TERMINATION TYPE           | PIPE DIA (IN.)*            | NUMBER OF 90° ELBOWS |    |    |     |    |    |    |
|-------------------------------|----------------------------|----------------------------|----------------------------|----------------------|----|----|-----|----|----|----|
|                               |                            |                            |                            | 1                    | 2  | 3  | 4   | 5  | 6  |    |
| 0 to 2000                     | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric | 1                          | 5                    | NA | NA | NA  | NA | NA |    |
|                               |                            |                            | 1-1/2                      | 70                   | 70 | 65 | 60  | 60 | 55 |    |
|                               |                            |                            | 2                          | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               | 060-12<br>060-16           | 2 Pipe or 2-In. Concentric | 1-1/2                      | 20                   | 15 | 10 | 5   | NA | NA |    |
|                               |                            |                            | 2                          | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               | 080-12<br>080-16<br>080-20 | 2 Pipe or 2-In. Concentric | 1-1/2                      | 10                   | NA | NA | NA  | NA | NA |    |
|                               |                            |                            | 2                          | 55                   | 50 | 35 | 30  | 30 | 20 |    |
|                               |                            |                            | 2-1/2                      | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               | 100-16<br>100-20           | 2 Pipe or 3-In. Concentric | 2                          | 5                    | NA | NA | NA  | NA | NA |    |
|                               |                            |                            | 2-1/2                      | 40                   | 30 | 20 | 20  | 10 | NA |    |
|                               | 120-20                     | 2 Pipe or 3-In. Concentric | 3                          | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               |                            |                            | 2-1/2 one disk             | 10                   | NA | NA | NA  | NA | NA |    |
| 3 one disk                    |                            |                            | 35                         | 30                   | 15 | NA | NA  | NA |    |    |
| 3† one disk                   |                            |                            | 35                         | 35                   | 35 | 30 | 30  | 30 |    |    |
|                               |                            |                            | 3† no disk                 | 70                   | 70 | 70 | 70  | 70 | 70 |    |
| 2001 to 3000                  | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric | 1-1/2                      | 67                   | 62 | 57 | 52  | 52 | 47 |    |
|                               |                            |                            | 2                          | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               | 060-12<br>060-16           | 2 Pipe or 2 In. Concentric | 1-1/2                      | 17                   | 12 | 7  | NAS | NA | NA |    |
|                               |                            |                            | 2                          | 70                   | 67 | 66 | 61  | 61 | 61 |    |
|                               | 080-12<br>080-16<br>080-20 | 2 Pipe or 2-In. Concentric | 2                          | 49                   | 44 | 30 | 25  | 25 | 15 |    |
|                               |                            |                            | 2-1/2                      | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               | 100-16<br>100-20           | 2 Pipe or 3-In. Concentric | 2-1/2                      | 35                   | 26 | 16 | 16  | 6  | NA |    |
|                               |                            |                            | 3                          | 70                   | 70 | 70 | 70  | 66 | 61 |    |
|                               | 120-20                     | 2 Pipe or 3-In. Concentric | 3 one disk                 | 31                   | 26 | 12 | NA  | NA | NA |    |
|                               |                            |                            | 3† one disk                | 31                   | 30 | 30 | 25  | 25 | 24 |    |
|                               |                            |                            | 3† no disk                 | 63                   | 62 | 62 | 61  | 61 | 61 |    |
|                               | 3001 to 4000               | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric | 1-1/2                | 64 | 59 | 54  | 49 | 48 | 43 |
| 2                             |                            |                            |                            | 70                   | 70 | 70 | 70  | 70 | 70 |    |
| 060-12<br>060-16              |                            | 2 Pipe or 2-In. Concentric | 1-1/2                      | 16                   | 11 | 6  | NA  | NA | NA |    |
|                               |                            |                            | 2                          | 68                   | 63 | 62 | 57  | 57 | 56 |    |
| 080-12<br>080-16<br>080-20    |                            | 2 Pipe or 2-In. Concentric | 2                          | 46                   | 41 | 28 | 23  | 22 | 13 |    |
|                               |                            |                            | 2-1/2                      | 70                   | 70 | 70 | 70  | 70 | 70 |    |
| 100-16<br>100-20              |                            | 2 Pipe or 3-In. Concentric | 2-1/2                      | 33                   | 24 | 15 | 14  | 5  | NA |    |
|                               |                            |                            | 3                          | 70                   | 70 | 70 | 66  | 61 | 56 |    |
| 120-20                        |                            | 2 Pipe or 3-In. Concentric | 3 one disk                 | 29                   | 24 | 10 | NA  | NA | NA |    |
|                               |                            |                            | 3† one disk                | 29                   | 28 | 28 | 23  | 22 | 21 |    |
|                               |                            |                            | 3† no disk                 | 59                   | 59 | 58 | 57  | 57 | 56 |    |
| 4001 to 5000†                 |                            | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric | 1-1/2                | 60 | 55 | 50  | 45 | 44 | 39 |
|                               | 2                          |                            |                            | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               | 060-12<br>060-16           | 2 Pipe or 2-In. Concentric | 1-1/2                      | 15                   | 10 | 5  | NA  | NA | NA |    |
|                               |                            |                            | 2                          | 64                   | 59 | 58 | 53  | 52 | 52 |    |
|                               | 080-12<br>080-16<br>080-20 | 2 Pipe or 2-in Concentric  | 2                          | 44                   | 39 | 26 | 21  | 20 | 11 |    |
|                               |                            |                            | 2-1/2                      | 70                   | 70 | 70 | 70  | 70 | 70 |    |
|                               | 100-16<br>100-20           | 2 Pipe or 3-In. Concentric | 2-1/2                      | 31                   | 22 | 13 | 12  | NA | NA |    |
|                               |                            |                            | 3                          | 70                   | 70 | 67 | 62  | 57 | 52 |    |
|                               | 120-20                     | 2 Pipe or 3-In. Concentric | 3† one disk                | 27                   | 26 | 26 | 21  | 20 | 19 |    |
|                               |                            |                            | 3† no disk                 | 56                   | 55 | 54 | 53  | 52 | 52 |    |
|                               | 5001 to 6000†              | 040-08<br>040-12           | 2 Pipe 2-In. Concentric    | 1-1/2                | 57 | 52 | 47  | 42 | 40 | 35 |
|                               |                            |                            |                            | 2                    | 70 | 70 | 70  | 70 | 70 | 70 |
| 060-12<br>060-16              |                            | 2 Pipe or 2-In. Concentric | 1-1/2                      | 14                   | 9  | NA | NA  | NA | NA |    |
|                               |                            |                            | 2                          | 60                   | 55 | 54 | 49  | 48 | 47 |    |
| 080-12<br>080-16<br>080-20    |                            | 2 Pipe or 2-In. Concentric | 2                          | 41                   | 36 | 23 | 18  | 17 | 8  |    |
|                               |                            |                            | 2-1/2                      | 70                   | 70 | 70 | 70  | 70 | 70 |    |
| 100-16<br>100-20              |                            | 2 Pipe or 3-in Concentric  | 2-1/2                      | 29                   | 21 | 12 | 11  | NA | NA |    |
|                               |                            |                            | 3                          | 70                   | 67 | 62 | 57  | 52 | 47 |    |
| 120-20                        |                            | 2 Pipe or 3-In. Concentric | 3† one disk                | 26                   | 24 | 23 | 18  | 17 | 16 |    |
|                               |                            |                            | 3† no disk                 | 53                   | 52 | 50 | 49  | 48 | 47 |    |

See notes on pg. 11.

**MAXIMUM ALLOWABLE PIPE LENGTH (FT) Continued**

| ALTITUDE ABOVE SEA LEVEL (FT) | UNIT SIZE                  | TERMINATION TYPE             | PIPE DIA (IN.)* | NUMBER OF 90° ELBOWS |    |    |    |    |    |
|-------------------------------|----------------------------|------------------------------|-----------------|----------------------|----|----|----|----|----|
|                               |                            |                              |                 | 1                    | 2  | 3  | 4  | 5  | 6  |
| 6001 to 7000‡                 | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric   | 1-1/2           | 53                   | 48 | 43 | 38 | 37 | 32 |
|                               |                            |                              | 2               | 70                   | 70 | 68 | 67 | 66 | 64 |
|                               | 060-12<br>060-16           | 2 Pipe or 2-In. Concentric   | 1-1/2           | 13                   | 8  | NA | NA | NA | NA |
|                               |                            |                              | 2               | 57                   | 52 | 50 | 45 | 44 | 43 |
|                               | 080-12<br>080-16<br>080-20 | 2 Pipe or 2-In. Concentric   | 2               | 38                   | 33 | 21 | 16 | 15 | 6  |
|                               |                            |                              | 2-1/2           | 70                   | 70 | 68 | 67 | 66 | 64 |
|                               | 100-16<br>100-20           | 2 Pipe or 3-In. Concentric † | 2-1/2           | 27                   | 19 | 10 | 9  | NA | NA |
|                               |                            |                              | 3               | 68                   | 63 | 58 | 53 | 48 | 43 |
|                               | 120-20                     | 2 Pipe or 3-In. Concentric   | 3† one disk     | 24                   | 22 | 21 | 16 | 15 | 13 |
|                               |                            |                              | 3† no disk      | 49                   | 48 | 47 | 45 | 44 | 43 |
| 7001 to 8000‡                 | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric   | 1-1/2           | 49                   | 44 | 39 | 34 | 33 | 28 |
|                               |                            |                              | 2               | 66                   | 65 | 63 | 62 | 60 | 59 |
|                               | 060-12<br>060-16           | 2 Pipe or 2-In. Concentric   | 1-1/2           | 12                   | 7  | NA | NA | NA | NA |
|                               |                            |                              | 2               | 53                   | 48 | 46 | 41 | 40 | 2  |
|                               | 080-12<br>080-16<br>080-20 | 2 Pipe or 2-In. Concentric   | 2               | 36                   | 31 | 19 | 14 | 12 | NA |
|                               |                            |                              | 2 1/2           | 66                   | 65 | 63 | 62 | 60 | 59 |
|                               | 100-16<br>100-20           | 2 Pipe or 3-In. Concentric   | 2-1/2           | 25                   | 17 | 8  | 7  | NA | NA |
|                               |                            |                              | 3               | 63                   | 58 | 53 | 48 | 43 | 38 |
|                               | 120-20                     | 2 Pipe or 3-In. Concentric   | 3† one disk     | 22                   | 20 | 19 | 14 | 12 | 11 |
|                               |                            |                              | 3† no disk      | 46                   | 44 | 43 | 41 | 40 | 38 |
| 8001 to 9000‡                 | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric   | 1-1/2           | 46                   | 41 | 36 | 31 | 29 | 24 |
|                               |                            |                              | 2               | 62                   | 60 | 58 | 56 | 55 | 53 |
|                               | 060-12<br>060-16           | 2 Pipe or 2-In. Concentric   | 1-1/2           | 11                   | 6  | NA | NA | NA | NA |
|                               |                            |                              | 2               | 49                   | 44 | 42 | 37 | 35 | 34 |
|                               | 080-12<br>080-16<br>080-20 | 2 Pipe or 2-In. Concentric   | 2               | 33                   | 28 | 17 | 12 | 10 | NA |
|                               |                            |                              | 2-1/2           | 62                   | 60 | 58 | 56 | 55 | 53 |
|                               | 100-16<br>100-20           | 2 Pipe or 3-In. Concentric   | 2-1/2           | 23                   | 15 | 7  | 5  | NA | NA |
|                               |                            |                              | 3               | 59                   | 54 | 49 | 44 | 39 | 34 |
|                               | 120-20                     | 2 Pipe or 3-In. Concentric   | 3† one disk     | 20                   | 18 | 17 | 12 | 10 | 8  |
|                               |                            |                              | 3† no disk      | 43                   | 41 | 39 | 37 | 35 | 34 |
| 9001 to 10,000‡               | 040-08<br>040-12           | 2 Pipe or 2-In. Concentric   | 1-1/2           | 42                   | 37 | 32 | 27 | 25 | 20 |
|                               |                            |                              | 2               | 57                   | 55 | 53 | 51 | 49 | 47 |
|                               | 060-12<br>060-16           | 2 Pipe or 2-In. Concentric   | 2               | 45                   | 40 | 38 | 33 | 31 | 29 |
|                               |                            |                              | 2               | 30                   | 25 | 14 | 9  | 7  | NA |
|                               | 080-12<br>080-16<br>080-20 | 2 Pipe or 2-In. Concentric   | 2-1/2           | 57                   | 55 | 53 | 51 | 49 | 47 |
|                               |                            |                              | 2-1/2           | 21                   | 13 | 5  | NA | NA | NA |
|                               | 100-16<br>100-20           | 2 Pipe or 3-In. Concentric   | 3               | 54                   | 49 | 44 | 39 | 34 | 29 |
|                               |                            |                              | 3† one disk     | 18                   | 16 | 14 | 9  | 7  | 5  |
|                               | 120-20                     | 2 Pipe or 3-In. Concentric   | 3† no disk      | 39                   | 37 | 35 | 33 | 31 | 29 |

\* Disk usage—Unless otherwise specified, use perforated disk assembly (factory supplied in loose parts bag). If stated, unsnap 1/2 perforated disk assembly and use shouldered disk half or no disk assembly.  
 † Wide radius elbow.  
 ‡ Vent sizing for Canadian installations above 4500 ft (1370m) above sea level are subject to acceptance by the local authorities having jurisdiction.

**NOTES:**

1. Do not use pipe size greater than those specified in table or incomplete combustion, flame disturbance, or flame sense lockout may occur.
2. Size both the combustion-air and vent pipe independently, then use the larger diameter for both pipes.
3. Assume two 45° elbows equal one 90° elbow. Long radius elbows are desirable and may be required in some cases.
4. Elbows and pipe sections within the furnace casing and at the vent termination should not be included in vent length or elbow count.
5. The minimum pipe length is 5 ft for all applications.

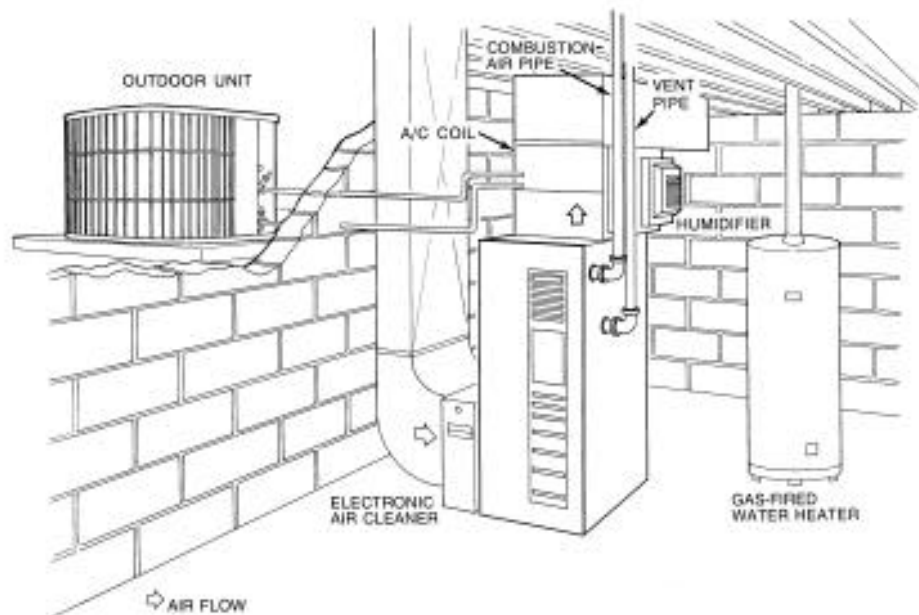
**MAXIMUM ALLOWABLE EXPOSED VENT PIPE LENGTH (FT) WITH INSULATION  
IN WINTER DESIGN TEMPERATURE AMBIENT\***

| UNIT SIZE                  | WINTER DESIGN TEMP °F | MAXIMUM PIPE DIA | INSULATION THICKNESS (IN.)† |     |     |     |    |
|----------------------------|-----------------------|------------------|-----------------------------|-----|-----|-----|----|
|                            |                       |                  | 0                           | 3/8 | 1/2 | 3/4 | 1  |
| 040-08<br>040-12           | 20                    | 1-1/2            | 31                          | 56  | 63  | 70  | 70 |
|                            | 0                     | 1-1/2            | 16                          | 34  | 39  | 47  | 54 |
|                            | -20                   | 1-1/2            | 9                           | 23  | 27  | 34  | 39 |
| 060-12<br>060-16           | 20                    | 2                | 45                          | 70  | 70  | 70  | 70 |
|                            | 0                     | 2                | 25                          | 51  | 58  | 70  | 70 |
|                            | -20                   | 2                | 16                          | 36  | 42  | 51  | 60 |
| 080-12<br>080-16<br>080-20 | 20                    | 2-1/2            | 55                          | 70  | 70  | 70  | 70 |
|                            | 0                     | 2-1/2            | 31                          | 61  | 69  | 70  | 70 |
|                            | -20                   | 2-1/2            | 20                          | 43  | 49  | 61  | 70 |
| 100-16<br>100-20           | 20                    | 3                | 61                          | 70  | 70  | 70  | 70 |
|                            | 0                     | 3                | 33                          | 65  | 70  | 70  | 70 |
|                            | -20                   | 3                | 20                          | 45  | 52  | 65  | 70 |
| 120-20                     | 20                    | 3                | 70                          | 70  | 70  | 70  | 70 |
|                            | 0                     | 3                | 40                          | 70  | 70  | 70  | 70 |
|                            | -20                   | 3                | 26                          | 55  | 64  | 70  | 70 |

\* Pipe length (ft) specified for maximum vent pipe lengths located in unconditioned spaces. Vent pipes located in unconditioned space cannot exceed the total allowable pipe length as specified in maximum allowable pipe length table.

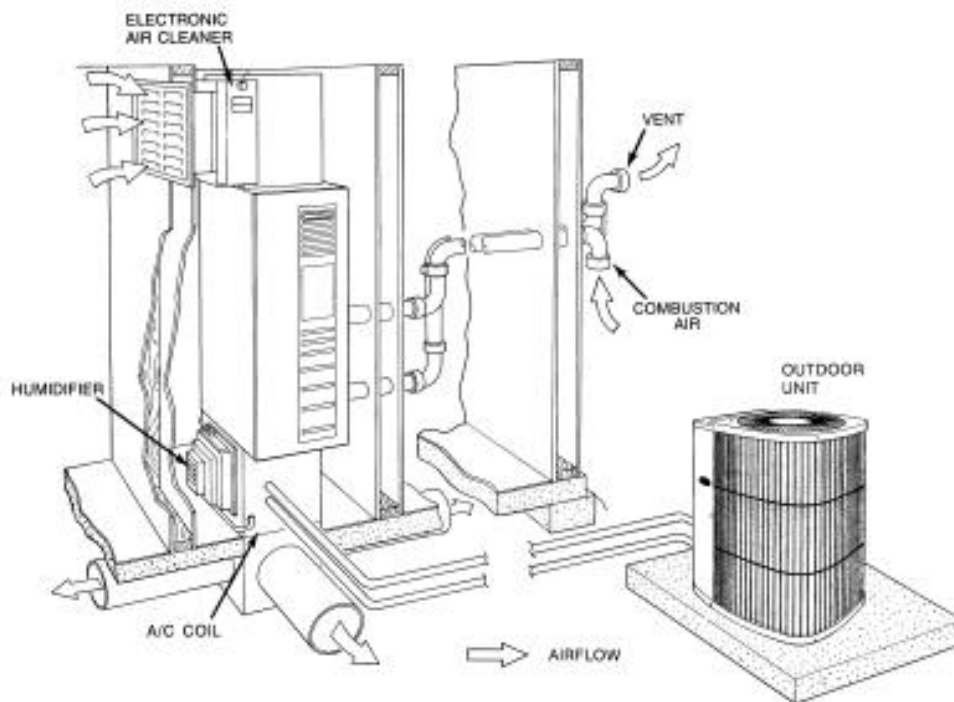
† Insulation thickness based on R value of 3.5 per in.

# Typical installations



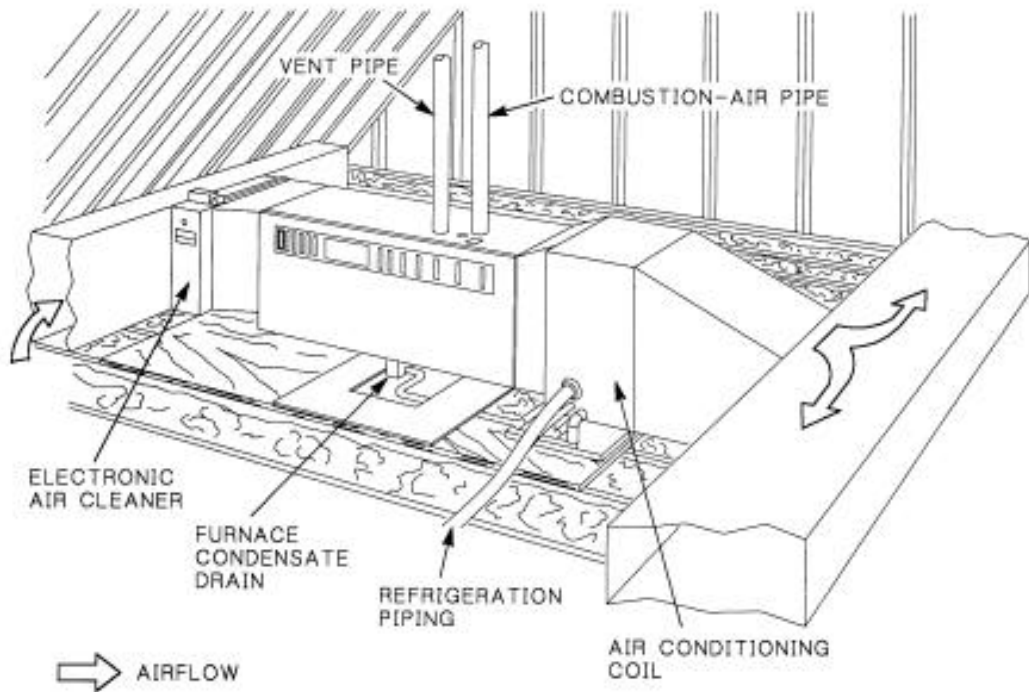
**Basement — Upflow Application**

A93063



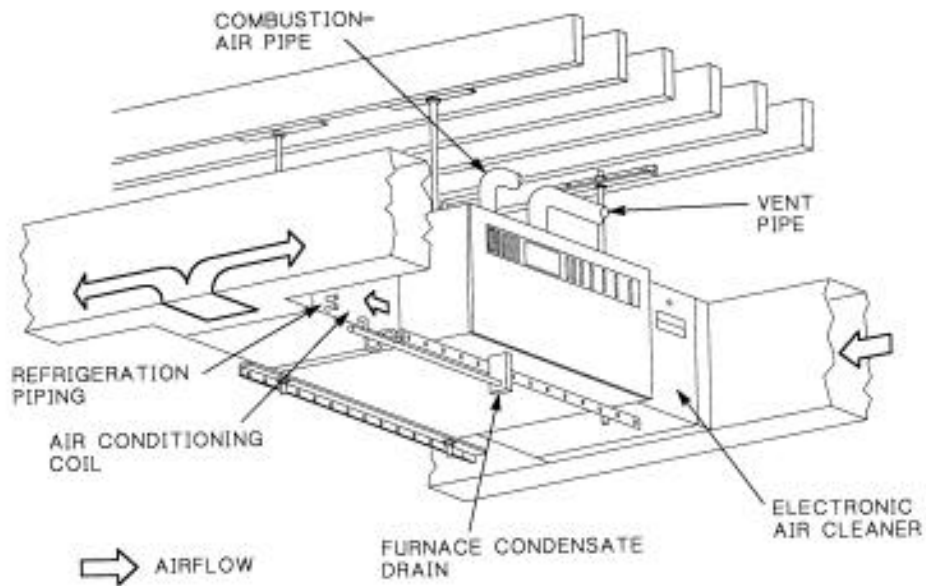
**Closet — Downflow Application**

A93064



Attic — Horizontal Application

A93065



Crawlspace — Horizontal Application

A93066