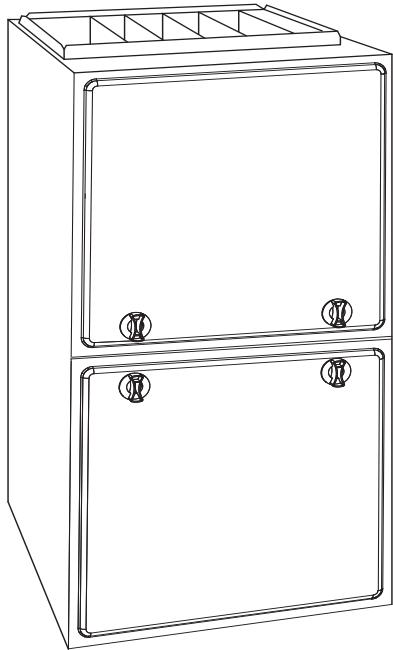


PG96MSA

Up to 97% AFUE, Single-Stage, Multi 18-Speed ECM, Condensing Gas Furnace

Product Data



A11300

Representative drawing only. Some product models may vary.

WARNING

CARBON MONOXIDE POISONING AND FIRE HAZARD

Failure to follow this warning could result in personal injury, death, and/or property damage.

This furnace is not designed for use in recreation vehicles or outdoors. This furnace is designed for use in manufactured (Mobile) homes when an optional Mobile Home accessory kit is installed.

Failure to follow this warning could result in personal injury, death, and/or property damage.

The PG96MSA Multipoise Condensing Gas Furnace features a single-stage gas valve and a fixed-speeds, constant torque (MCT) ECM blower motor. With an Annual Fuel Utilization Efficiency (AFUE) of up to 97.0% AFUE, this furnace provides added savings over standard gas furnaces. Improved serviceability with the 3 digit status display and NFC enabled board allowing setup via the service tech app. It features 4-way multipoise installation flexibility, and is available in ten model sizes. All sizes except the 26,000 BTU/h model can be vented for direct vent/two-pipe, ventilated combustion air, or single-pipe applications. The 26,000 BTU/h model can use the same 2-pipe venting system using outside air for combustion, but is not considered direct-vent. All sizes are design certified in Canada, and select sizes are certified for mobile/manufactured home use with conversion kit accessory.

PERFORMANCE

- Multi 18-speed, constant torque (MCT) ECM blower motor for electrically efficient operation all year long in heating, cooling and continuous fan operation.
- Enhanced diagnostics with easy to read 3-digit display for faults and status.
- Single-speed inducer motor, and single-stage gas valve.
- Silicon Nitride Hot Surface Igniter.
- Dual fuel capable with a compatible heat pump and thermostat for energy-saving heating performance
- Adjustable blower speed for heating and cooling.
- Aluminized-steel primary heat exchanger.
- Stainless-steel condensing secondary heat exchanger.

INSTALLATION FLEXIBILITY

- On-board NFC antenna makes setup a tap away when using the service technician app.
- 4-way multipoise design for upflow, downflow or horizontal installation, with unique vent elbow for optional venting through-the-cabinet downflow venting capability.
- Factory-configured ready for upflow applications.
- Ideal height 35" (889 mm) cabinet: short enough for taller coils, but still allows enough room for service.
- Two-pipe venting, single-pipe venting or ventilated combustion air.

APPLICATIONS

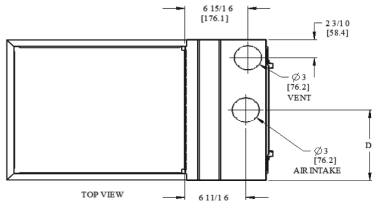
- Approved for Twinning applications with manufacturer's approved accessory kit.
- Approved for Manufactured Housing/Mobile Home applications with MH accessory kit.
- Convertible to propane with gas conversion accessory kit.

CERTIFICATIONS

- All sizes meet ENERGY STAR® Version 4.1 criteria for gas furnaces: 95%+ AFUE.
- Cabinet air leakage less than 2.0% at 1.0 in. w.c. and cabinet air leakage less than 1.4% at 0.5 in. w.c. when tested in accordance with ASHRAE standard 193.
- All sizes can be installed in air quality management districts with a 40 ng/J NOx emissions requirements.

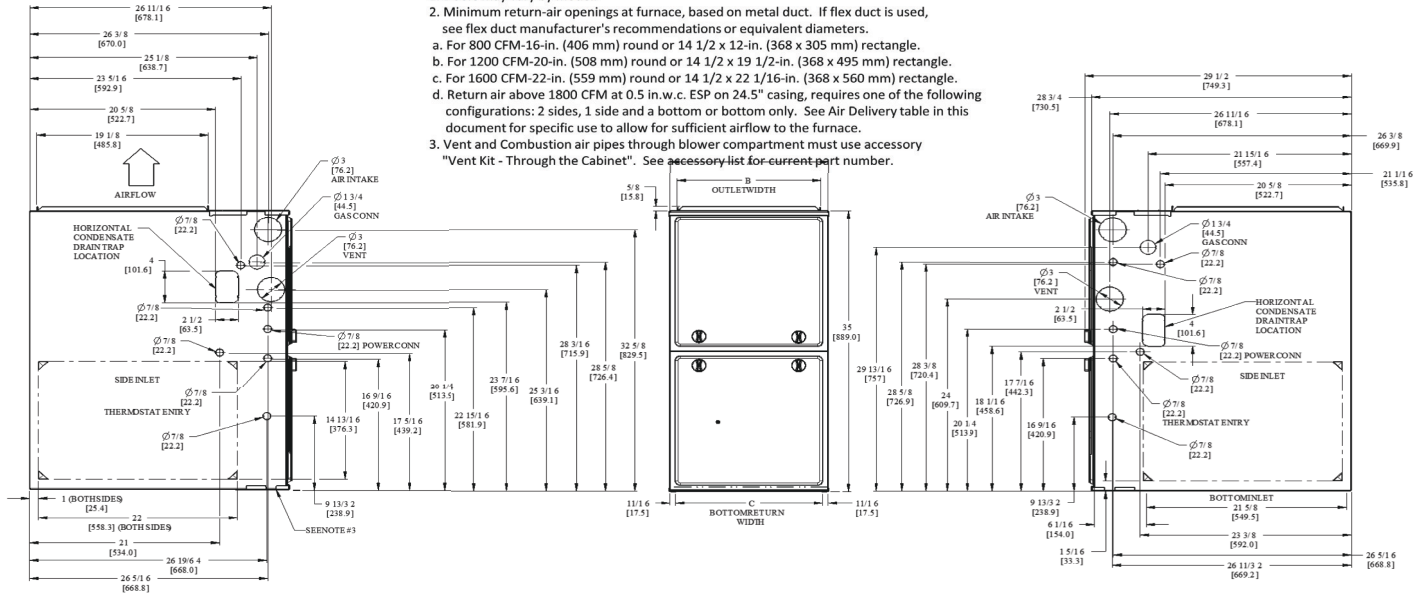


A200352



NOTES:

1. Doors may vary by model.
2. Minimum return-air openings at furnace, based on metal duct. If flex duct is used, see flex duct manufacturer's recommendations or equivalent diameters.
 - a. For 800 CFM-16-in. (406 mm) round or 14 1/2 x 12-in. (368 x 305 mm) rectangle.
 - b. For 1200 CFM-20-in. (508 mm) round or 14 1/2 x 19 1/2-in. (368 x 495 mm) rectangle.
 - c. For 1600 CFM-22-in. (559 mm) round or 14 1/2 x 22 1/16-in. (368 x 560 mm) rectangle.
 - d. Return air above 1800 CFM at 0.5 in.w.c. ESP on 24.5" casing, requires one of the following configurations: 2 sides, 1 side and a bottom or bottom only. See Air Delivery table in this document for specific use to allow for sufficient airflow to the furnace.
3. Vent and Combustion air pipes through blower compartment must use accessory "Vent Kit - Through the Cabinet". See [accessory list for current part number](#).



NOTE: ALL DIMENSIONS IN INCH (MM) SD9604 REV. -

A210796

Dimensional Drawing

Dimensions

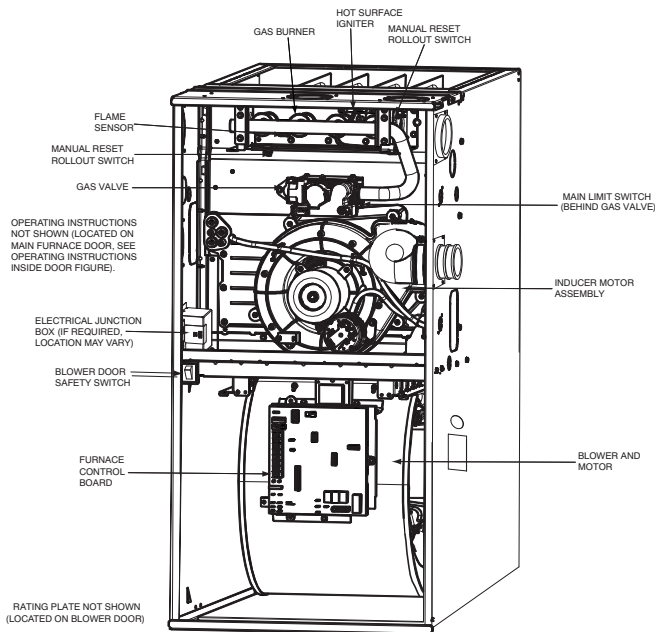
| FURNACE SIZE | A | B | C | D | SHIP WT. LB (KG) |
|--------------|---------------|--------------|--------------------|--------------|---------------------|
| | CABINET WIDTH | OUTLET WIDTH | BOTTOM INLET WIDTH | AIR INTAKE | |
| 30026A | 14-3/16 (361) | 12-1/2 (319) | 12-9/16 (322) | 7-1/8 (181) | 119 (54) |
| 30040A | 14-3/16 (361) | 12-1/2 (319) | 12-9/16 (322) | 7-1/8 (181) | 123 (56) |
| 36040B | 17-1/2 (445) | 15-7/8 (403) | 16 (406) | 8-3/4 (222) | 130 (59) |
| 36060A | 14-3/16 (361) | 12-1/2 (319) | 12-9/16 (322) | 7-1/8 (181) | 129 (59) |
| 48060B | 17-1/2 (445) | 15-7/8 (403) | 16 (406) | 8-3/4 (222) | 142 (64) |
| 48080B | 17-1/2 (445) | 15-7/8 (403) | 16 (406) | 8-3/4 (222) | 150 (68) |
| 60080C | 21 (533) | 19-3/8 (492) | 19-1/2 (495) | 10-1/2 (267) | 158 (72) |
| 60100C | 21 (533) | 19-3/8 (492) | 19-1/2 (495) | 10-1/2 (267) | 167 (76) |
| 66120D | 24-1/2 (622) | 22-7/8 (581) | 23 (584) | 12-1/4 (311) | 181 (82) |
| 66140D | 24-1/2 (622) | 22-7/8 (581) | 23 (584) | 12-1/4 (311) | 189 (86) |

MODEL NUMBER NOMENCLATURE

| 1 | 2 | 3,4 | 5 | 6 | 7 | 8 | 9-10 | 11, 12, 13 | 14 | 15 | 16 | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------|---|---|---|--|--------------|---|---|--|--------------------|----------------------------|-----------|--|---|---|---|--|--|---|---|--|--------------------|----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Brand Identifier | Product | Base Effy. | Motor | Heating Stages | NOx Level | Major Series | Cooling Capacity | Heating Input | Width | Minor Series | Variations | | | | | | | | | | | | | | | | | | | | | | | | |
| P | G | 92 | E | S | A | A | 36 | 040 | A | A | A | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%; border: 1px solid black; padding: 5px;">P = Payne</td> <td style="width:10%;"></td> <td style="width:10%; border: 1px solid black; padding: 5px;"> 80 = 80% AFUE 92 = 92% AFUE 95 = 95% AFUE 96 = 96% AFUE 97 = 97% AFUE 98 = 98% AFUE G = Gas Furnace </td> <td style="width:10%; border: 1px solid black; padding: 5px;"> C = Constant Airflow Variable-Speed (VCA) ECM V = Variable-Speed (VCT) PWM M = Multi 18-Speed Constant Torque (MCT) ECM </td> <td style="width:10%; border: 1px solid black; padding: 5px;"> M = Modulating S = Single Stage T = Two-Stage </td> <td style="width:10%;"></td> <td style="width:10%;"></td> <td style="width:10%; border: 1px solid black; padding: 5px;"> 24 - 800 CFM 30 - 1000 CFM 36 - 1200 CFM 42 - 1400 CFM 48 - 1600 CFM 54 - 1800 CFM 60 - 2000 CFM 66 - 2200 CFM </td> <td style="width:10%; border: 1px solid black; padding: 5px;"> 026 = 26,000 BTU/h 040 = 40,000 BTU/h 060 = 60,000 BTU/h 080 = 80,000 BTU/h --- </td> <td style="width:10%; border: 1px solid black; padding: 5px;"> A = 14.2" B = 17.5" C = 21.0" D = 24.5" </td> <td style="width:10%; border: 1px solid black; padding: 5px;"> A B C --- </td> <td style="width:10%; padding: 5px;"> A = Standard Configuration </td> </tr> <tr> <td colspan="5"></td> <td style="padding: 5px;">A = Standard L = Low NOx U = Ultra Low NOx</td> <td colspan="2"></td> <td colspan="4"></td> </tr> </table> | | | | | | | | | | | | P = Payne | | 80 = 80% AFUE 92 = 92% AFUE 95 = 95% AFUE 96 = 96% AFUE 97 = 97% AFUE 98 = 98% AFUE G = Gas Furnace | C = Constant Airflow Variable-Speed (VCA) ECM V = Variable-Speed (VCT) PWM M = Multi 18-Speed Constant Torque (MCT) ECM | M = Modulating S = Single Stage T = Two-Stage | | | 24 - 800 CFM 30 - 1000 CFM 36 - 1200 CFM 42 - 1400 CFM 48 - 1600 CFM 54 - 1800 CFM 60 - 2000 CFM 66 - 2200 CFM | 026 = 26,000 BTU/h 040 = 40,000 BTU/h 060 = 60,000 BTU/h 080 = 80,000 BTU/h --- | A = 14.2" B = 17.5" C = 21.0" D = 24.5" | A B C --- | A = Standard Configuration | | | | | | A = Standard L = Low NOx U = Ultra Low NOx | | | | | | |
| P = Payne | | 80 = 80% AFUE 92 = 92% AFUE 95 = 95% AFUE 96 = 96% AFUE 97 = 97% AFUE 98 = 98% AFUE G = Gas Furnace | C = Constant Airflow Variable-Speed (VCA) ECM V = Variable-Speed (VCT) PWM M = Multi 18-Speed Constant Torque (MCT) ECM | M = Modulating S = Single Stage T = Two-Stage | | | 24 - 800 CFM 30 - 1000 CFM 36 - 1200 CFM 42 - 1400 CFM 48 - 1600 CFM 54 - 1800 CFM 60 - 2000 CFM 66 - 2200 CFM | 026 = 26,000 BTU/h 040 = 40,000 BTU/h 060 = 60,000 BTU/h 080 = 80,000 BTU/h --- | A = 14.2" B = 17.5" C = 21.0" D = 24.5" | A B C --- | A = Standard Configuration | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | A = Standard L = Low NOx U = Ultra Low NOx | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

A220583

FURNACE COMPONENTS



A190145

For California Residents:

If installed with a manufactured (mobile) home conversion kit in SCAQMD: This furnace does not meet the SCAQMD Rule 1111 14 ng/J NOx emission limit, and thus is subject to a mitigation fee of up to \$450. This furnace is not eligible for the Clean Air Furnace Rebate Program: www.CleanAirFurnaceRebate.com

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

| POSITION | CLEARANCE |
|---|-------------------|
| REAR | 0 |
| FRONT (Combustion air openings in furnace and in structure) | 1 in. (25 mm) |
| Required for service | * 24 in. (610 mm) |
| All Sides of Supply Plenum | * 1 in. (25 mm) |
| Sides | 0 |
| Vent | 0 |
| Top of Furnace | 1 in. (25 mm) |

*. Consult local building codes

The furnace should be sized to provide 100 percent of the design heating load requirement plus any margin that occurs because of furnace model size capacity increments. None of the furnace model sizes can be used if the heating load is 12,000 BTU/h or lower. Use Air Conditioning Contractors of America (Manual J and S); American Society of Heating, Refrigerating, and Air-Conditioning Engineers; or other approved engineering method to calculate heating load estimates and select the furnace. Excessive oversizing of the furnace may cause the furnace and/or vent to fail prematurely, customer discomfort and/or vent freezing.

Failure to follow these guidelines is considered faulty installation and/or misapplication of the furnace; and resulting failure, damage, or repairs may impact warranty coverage.

SPECIFICATIONS

| Unit Size | | 30026A | 30040A | 36040B | 36060A | 48060B | 48080B |
|---|-----------|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| HEATING AND CAPACITY AND EFFICIENCY | | | | | | | |
| Input BTUh [†] | | 26,000 | 40,000 | 40,000 | 60,000 | 60,000 | 80,000 |
| Output Capacity (BTUh) [†] | | 25,000 | 39,000 | 39,000 | 56,000 | 58,000 | 78,000 |
| Certified Temperature Rise Range - °F (°C) | | 25-55 (14-31) | 40-70 (22-39) | 40-70 (22-39) | 35-65 (19-36) | 40-70 (22-39) | 40-70 (22-39) |
| AFUE | Upflow/Hz | 96.0% | 96.0% | 96.7% | 95.0% | 97.0% | 97.0% |
| | Downflow | 95.0% | 95.0% | 95.0% | 95.0% | 95.0% | 95.0% |
| AIRFLOW CAPACITY AND BLOWER DATA | | | | | | | |
| Rated Certified External Static Pressure | Heating | 0.10 | 0.10 | 0.10 | 0.12 | 0.12 | 0.12 |
| | Cooling | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Airflow CFM @ Rated ESP (CFM) [‡] | Heating | 620 | 705 | 700 | 945 | 1030 | 1290 |
| | Cooling | 175-970 | 155-1000 | 160-1075 | 200-1165 | 315-1580 | 370-1625 |
| Direct Drive Motor HP | | 1/3 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 |
| Motor Full Load Amps | | 4.4 | 6.3 | 6.7 | 6.3 | 8.8 | 9.2 |
| Heating Blower Control (Htg OFF-Delay) | | Adjustable: 90, 120 (factory-set), 150, 180 seconds | | | | | |
| Cooling Blower Control (Clg OFF-Delay) | | Adjustable: 90 (factory-set), 5, 30 seconds | | | | | |
| Blower Wheel Diameter x Width - In. (mm) | | 11x7 (279x178) | 11x7 (279x178) | 11x8 (279x203) | 11x7 (279x178) | 11x8 (279x203) | 11x8 (279x203) |
| Air Filtration System | | Field Supplied Filter | | | | | |
| Filter used for Certified Watt Data | | 325531-40** | | | | | |
| ELECTRICAL DATA | | | | | | | |
| Unit Volts-Hertz-Phase | | 115-60-1 | | | | | |
| Operating Voltage Range | | Min-Max 104-127 | | | | | |
| Maximum Unit Amps | | 5.2 | 7.0 | 7.4 | 7.1 | 10.1 | 10.0 |
| Unit Ampacity | | 7.5 | 9.7 | 10.2 | 9.8 | 13.6 | 13.4 |
| Maximum Wire Length (Measure 1 way in Ft/M) | | 50/15.2 | 38/11.7 | 36/11.1 | 38/11.5 | 27/8.3 | 27/8.4 |
| Minimum Wire Size | | AWG 14 | | | | | |
| Max. Fuse/Ckt Bk Size (Time-Delay Type Recommended) | | Amps 15 | | | | | |
| Transformer Capacity (24 VAC output) | | 40VA | | | | | |
| External Control Power Available | Heating | 12VA | | | | | |
| | Cooling | 35VA | | | | | |
| GAS CONTROLS | | | | | | | |
| Burners | | 2 | 2 | 3 | 3 | 4 | 4 |
| Gas Connection Size | | 1/2 in. NPT | | | | | |
| Gas Valve (Redundant) | | Mfr White Rodgers™ | | | | | |
| Min. inlet pressure | | (in.w.c.) 4.5 (Natural Gas) | | | | | |
| Max. inlet pressure | | (in.w.c.) 13.6 (Natural Gas) | | | | | |
| Ignition Device | | Silicon Nitride | | | | | |
| Factory installed orifice | | Size 44 | | | | | |
| CONNECTIONS | | | | | | | |
| Communication System | | None | | | | | |
| Thermostat Connections | | G, C, W, Y, R | | | | | |
| Accessory Connections | | EAC-1 (115 VAC); HUM (24 VAC); 1-STG AC (via Y) | | | | | |

*. Gas input ratings are certified for elevations to 2000 ft. (610 M). In USA, For elevations above 2000 ft (610 M), reduce ratings 4 percent for each 1000 ft (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 Table F.4 or furnace installation instructions.

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

‡. Airflow shown is for bottom only return-air supply for the as-shipped speed tap. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return-air supply. An airflow reduction of up to 7 percent may occur when using the factory-specified 4-5/16-in. (110 mm) wide, high efficiency media filter.

** See Accessory List for part numbers available.

| UNIT SIZE | | 60080C | 60100C | 66120D | 66140D |
|--|-----------|---|--------------------|--------------------|--------------------|
| HEATING AND CAPACITY AND EFFICIENCY | | | | | |
| Input BTU ^h * | | 80,000 | 100,000 | 120,000 | 140,000 |
| Output Capacity (BTU ^h) [†] | | 78,000 | 97,000 | 116,000 | 135,000 |
| Certified Temperature Rise Range - °F (°C) | | 40-70 (22-39) | 40-70 (22-39) | 40-70 (22-39) | 45-75 (25-42) |
| AFUE | Upflow/Hz | 97.0% | 96.3% | 96.1% | 95.0% |
| | Downflow | 95.0% | 95.0% | 95.0% | 95.0% |
| AIRFLOW CAPACITY AND BLOWER DATA | | | | | |
| Rated Certified External Static Pressure | Heating | 0.12 | 0.15 | 0.20 | 0.20 |
| | Cooling | 0.50 | 0.50 | 0.50 | 0.50 |
| Airflow CFM @ Rated ESP (CFM) [‡] | Heating | 1310 | 1730 | 1965 | 2040 |
| | Cooling | 225-2125 | 375-2145 | 290-2240 | 380-2230 |
| Direct Drive Motor HP | | 1 | 1 | 1 | 1 |
| Motor Full Load Amps | | 11.5 | 11.7 | 11.5 | 11.7 |
| Heating Blower Control (Htg OFF-Delay) | | Adjustable: 90, 120 (factory-set), 150, 180 seconds | | | |
| Cooling Blower Control (Clg OFF-Delay) | | Adjustable: 90 (factory-set), 5, 30 seconds | | | |
| Blower Wheel Diameter x Width - In. (mm) | | 11x10 (279x254) | 11x10 (279x254) | 11x11 (279x279) | 11x11 (279x279) |
| Air Filtration System | | Field Supplied Filter | | | |
| Filter used for Certified Watt Data | | 325531-40** | | | |
| ELECTRICAL DATA | | | | | |
| Unit Volts-Hertz-Phase | | 115-60-1 | | | |
| Operating Voltage Range | | Min-Max 104-127 | | | |
| Maximum Unit Amps | | 13.1 | 12.6 | 13.2 | 12.6 |
| Unit Ampacity | | 17.3 | 16.7 | 17.4 | 16.7 |
| Maximum Wire Length (Measure 1 way in Ft/M) | | 33/10.1 | 34/10.5 | 33/10.0 | 34/10.5 |
| Minimum Wire Size | | AWG 14 | 14 | 14 | 14 |
| Max. Fuse/Ckt Bkr Size (Time-Delay Type Recommended) | | Amps 15 | 15 | 15 | 15 |
| Transformer Capacity (24 VAC output) | | 40VA | | | |
| External Control Power Available | Heating | 12VA | | | |
| | Cooling | 35VA | | | |
| GAS CONTROLS | | | | | |
| Burners | | 4 | 5 | 6 | 7 |
| Gas Connection Size | | 1/2 in. NPT | | | |
| Gas Valve (Redundant) | | Mfr | White Rodgers™ | | |
| Min. inlet pressure | | (in.w.c.) | 4.5 (Natural Gas) | | |
| Max. inlet pressure | | (in.w.c.) | 13.6 (Natural Gas) | | |
| Ignition Device | | Silicon Nitride | | | |
| Factory installed orifice | | Size 44 | | | |
| CONNECTIONS | | | | | |
| Communication System | | None | | | |
| Thermostat Connections | | G, C, W, Y, R | | | |
| Accessory Connections | | EAC-1 (115 VAC); HUM (24 VAC); 1-STG AC (via Y) | | | |

*. Gas input ratings are certified for elevations to 2000 ft. (610 M). In USA, For elevations above 2000 ft (610 M), reduce ratings 4 percent for each 1000 ft (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 Table F.4 or furnace installation instructions.

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

‡. Airflow shown is for bottom only return-air supply for the as-shipped speed tap. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return-air supply. An airflow reduction of up to 7 percent may occur when using the factory-specified 4-5/16-in. (110 mm) wide, high efficiency media filter.

** See Accessory List for part numbers available.

AIR DELIVERY (with filter)

Air Delivery - CFM (with filter)

| Unit Size | Airflow Setting | Default Setting | External Static Pressure (in. w.c.) | | | | | | | | | |
|-----------|-----------------|-----------------|-------------------------------------|------|------|------|------|------|------|-----|-----|-----|
| | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
| 30026A | 1 | Cont. Fan | 470 | 395 | 320 | 250 | 175 | - | - | - | - | - |
| | 2 | | 510 | 445 | 370 | 305 | 240 | 165 | - | - | - | - |
| | 3 | | 535 | 470 | 400 | 335 | 275 | 200 | 130 | - | - | - |
| | 4 | | 560 | 495 | 430 | 365 | 310 | 245 | 170 | - | - | - |
| | 5 | | 595 | 535 | 470 | 405 | 350 | 295 | 225 | 155 | - | - |
| | 6 | Heat | 620 | 560 | 500 | 435 | 375 | 320 | 265 | 195 | 130 | - |
| | 7 | | 665 | 605 | 550 | 490 | 430 | 380 | 330 | 270 | 205 | 140 |
| | 8 | | 705 | 650 | 600 | 540 | 480 | 430 | 380 | 335 | 280 | 215 |
| | 9 | | 745 | 695 | 645 | 590 | 535 | 480 | 435 | 385 | 340 | 285 |
| | 10 | | 785 | 735 | 685 | 635 | 585 | 530 | 480 | 435 | 390 | 350 |
| | 11 | | 820 | 775 | 730 | 680 | 630 | 575 | 525 | 485 | 440 | 400 |
| | 12 | | 855 | 810 | 765 | 720 | 675 | 620 | 570 | 525 | 485 | 445 |
| | 13 | | 890 | 845 | 800 | 755 | 710 | 665 | 615 | 570 | 530 | 490 |
| | 14 | | 945 | 905 | 860 | 820 | 775 | 735 | 690 | 640 | 595 | 560 |
| | 15 | | 980 | 940 | 900 | 860 | 820 | 780 | 735 | 690 | 645 | 605 |
| | 16 | | 1025 | 985 | 950 | 910 | 870 | 830 | 795 | 750 | 710 | 665 |
| | 17 | | 1065 | 1030 | 995 | 955 | 920 | 880 | 845 | 805 | 760 | 720 |
| | 18 | Cooling | 1115 | 1080 | 1045 | 1010 | 970 | 935 | 900 | 865 | 825 | 785 |
| 30040A | 1 | Cont. Fan | 390 | 335 | 275 | 215 | 155 | - | - | - | - | - |
| | 2 | | 405 | 355 | 300 | 240 | 185 | 125 | - | - | - | - |
| | 3 | | 455 | 405 | 355 | 305 | 250 | 200 | 140 | - | - | - |
| | 4 | | 485 | 440 | 390 | 345 | 295 | 245 | 190 | 140 | - | - |
| | 5 | | 530 | 485 | 440 | 395 | 350 | 300 | 255 | 205 | 155 | - |
| | 6 | | 565 | 525 | 485 | 440 | 400 | 355 | 310 | 270 | 220 | 170 |
| | 7 | | 600 | 560 | 520 | 480 | 440 | 400 | 360 | 320 | 275 | 230 |
| | 8 | | 645 | 605 | 570 | 530 | 495 | 455 | 415 | 375 | 335 | 300 |
| | 9 | Heat | 705 | 665 | 630 | 595 | 560 | 525 | 490 | 455 | 415 | 380 |
| | 10 | | 720 | 685 | 650 | 615 | 580 | 545 | 515 | 480 | 440 | 405 |
| | 11 | | 760 | 730 | 695 | 660 | 630 | 595 | 560 | 530 | 495 | 460 |
| | 12 | | 820 | 785 | 755 | 725 | 690 | 660 | 630 | 600 | 570 | 535 |
| | 13 | | 865 | 835 | 805 | 775 | 745 | 715 | 690 | 660 | 630 | 600 |
| | 14 | | 910 | 885 | 855 | 825 | 800 | 770 | 740 | 710 | 685 | 655 |
| | 15 | | 965 | 935 | 905 | 880 | 855 | 825 | 800 | 770 | 745 | 715 |
| | 16 | | 1005 | 975 | 950 | 925 | 900 | 870 | 845 | 820 | 795 | 765 |
| | 17 | | 1055 | 1025 | 1000 | 975 | 950 | 925 | 900 | 875 | 850 | 825 |
| | 18 | Cooling | 1100 | 1075 | 1050 | 1025 | 1000 | 980 | 955 | 930 | 905 | 880 |
| 36040B | 1 | Cont. Fan | 415 | 350 | 290 | 230 | 160 | 105 | - | - | - | - |
| | 2 | | 450 | 385 | 325 | 270 | 210 | 150 | - | - | - | - |
| | 3 | | 480 | 420 | 360 | 310 | 260 | 195 | 140 | - | - | - |
| | 4 | | 525 | 470 | 415 | 360 | 315 | 265 | 205 | 150 | - | - |
| | 5 | | 565 | 515 | 460 | 410 | 360 | 315 | 265 | 210 | 160 | - |
| | 6 | | 605 | 555 | 505 | 455 | 405 | 365 | 320 | 270 | 215 | 170 |
| | 7 | | 655 | 605 | 560 | 510 | 465 | 420 | 385 | 340 | 290 | 240 |
| | 8 | Heat | 700 | 655 | 610 | 565 | 520 | 475 | 435 | 400 | 360 | 310 |
| | 9 | | 740 | 695 | 655 | 610 | 570 | 525 | 485 | 450 | 415 | 380 |
| | 10 | | 780 | 740 | 700 | 660 | 615 | 575 | 535 | 500 | 465 | 430 |
| | 11 | | 830 | 790 | 750 | 715 | 675 | 635 | 595 | 560 | 520 | 490 |
| | 12 | | 880 | 840 | 800 | 765 | 730 | 690 | 655 | 615 | 575 | 545 |
| | 13 | | 930 | 895 | 860 | 825 | 790 | 750 | 715 | 680 | 645 | 610 |
| | 14 | | 980 | 945 | 910 | 875 | 845 | 810 | 775 | 740 | 705 | 670 |
| | 15 | | 1030 | 995 | 960 | 930 | 895 | 860 | 830 | 795 | 760 | 730 |
| | 16 | | 1085 | 1050 | 1020 | 985 | 955 | 925 | 890 | 860 | 825 | 795 |
| | 17 | | 1140 | 1105 | 1080 | 1045 | 1015 | 985 | 955 | 925 | 895 | 865 |
| | 18 | Cooling | 1220 | 1185 | 1150 | 1115 | 1075 | 1040 | 1005 | 965 | 925 | 885 |

Air Delivery - CFM (with filter) (Continued)

| Unit Size | Airflow Setting | Default Setting | External Static Pressure (in. w.c.) | | | | | | | | | |
|-----------|-----------------|-----------------|-------------------------------------|------|------|------|------|------|------|------|------|------|
| | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
| 36060A | 1 | Cont. Fan | 440 | 380 | 320 | 260 | 200 | 140 | - | - | - | - |
| | 2 | | 460 | 400 | 345 | 285 | 225 | 165 | - | - | - | - |
| | 3 | | 510 | 460 | 405 | 350 | 295 | 240 | 185 | 130 | - | - |
| | 4 | | 575 | 525 | 475 | 425 | 375 | 325 | 280 | 230 | 175 | - |
| | 5 | | 605 | 560 | 510 | 460 | 415 | 365 | 320 | 270 | 225 | 170 |
| | 6 | | 665 | 615 | 570 | 525 | 480 | 435 | 390 | 350 | 305 | 260 |
| | 7 | | 700 | 660 | 615 | 570 | 525 | 485 | 440 | 400 | 355 | 315 |
| | 8 | | 750 | 710 | 670 | 625 | 585 | 545 | 505 | 460 | 420 | 385 |
| | 9 | | 810 | 770 | 730 | 690 | 650 | 615 | 575 | 535 | 495 | 460 |
| | 10 | | 865 | 825 | 790 | 750 | 715 | 680 | 640 | 605 | 565 | 530 |
| | 11 | | 915 | 880 | 845 | 810 | 775 | 740 | 705 | 670 | 630 | 595 |
| | 12 | Heat | 955 | 920 | 890 | 855 | 820 | 785 | 750 | 715 | 680 | 650 |
| | 13 | | 1015 | 980 | 950 | 915 | 885 | 850 | 820 | 785 | 755 | 720 |
| | 14 | | 1070 | 1040 | 1005 | 975 | 945 | 915 | 885 | 855 | 820 | 790 |
| | 15 | | 1105 | 1075 | 1045 | 1015 | 985 | 955 | 925 | 895 | 865 | 835 |
| | 16 | | 1165 | 1135 | 1105 | 1080 | 1050 | 1020 | 995 | 965 | 935 | 910 |
| | 17 | | 1215 | 1190 | 1160 | 1135 | 1105 | 1080 | 1055 | 1025 | 995 | 970 |
| | 18 | Cooling | 1270 | 1240 | 1215 | 1190 | 1165 | 1135 | 1110 | 1085 | 1060 | 1030 |
| 48060B | 1 | Cont. Fan | 590 | 520 | 455 | 380 | 315 | 250 | 185 | 120 | - | - |
| | 2 | | 640 | 575 | 515 | 445 | 375 | 320 | 260 | 195 | 130 | - |
| | 3 | | 710 | 650 | 595 | 535 | 470 | 410 | 355 | 305 | 245 | 175 |
| | 4 | | 755 | 700 | 645 | 590 | 535 | 465 | 410 | 360 | 310 | 260 |
| | 5 | | 835 | 780 | 730 | 680 | 630 | 580 | 515 | 465 | 420 | 370 |
| | 6 | | 890 | 840 | 790 | 745 | 695 | 645 | 595 | 540 | 490 | 445 |
| | 7 | | 960 | 915 | 870 | 825 | 780 | 735 | 690 | 635 | 580 | 535 |
| | 8 | | 1010 | 965 | 920 | 875 | 835 | 790 | 745 | 705 | 650 | 605 |
| | 9 | Heat | 1040 | 995 | 950 | 910 | 870 | 825 | 785 | 745 | 700 | 650 |
| | 10 | | 1095 | 1055 | 1015 | 975 | 935 | 895 | 855 | 815 | 775 | 730 |
| | 11 | | 1165 | 1130 | 1090 | 1050 | 1010 | 975 | 940 | 900 | 865 | 830 |
| | 12 | | 1235 | 1200 | 1160 | 1125 | 1090 | 1055 | 1020 | 985 | 945 | 915 |
| | 13 | | 1315 | 1280 | 1245 | 1210 | 1175 | 1140 | 1110 | 1075 | 1045 | 1010 |
| | 14 | | 1380 | 1345 | 1315 | 1280 | 1250 | 1215 | 1185 | 1150 | 1120 | 1090 |
| | 15 | | 1455 | 1420 | 1390 | 1360 | 1330 | 1300 | 1270 | 1240 | 1210 | 1180 |
| | 16 | | 1525 | 1495 | 1465 | 1435 | 1410 | 1380 | 1350 | 1325 | 1295 | 1270 |
| | 17 | | 1605 | 1580 | 1550 | 1525 | 1500 | 1470 | 1445 | 1420 | 1395 | 1370 |
| | 18 | Cooling | 1720 | 1685 | 1650 | 1615 | 1580 | 1545 | 1505 | 1470 | 1430 | 1395 |
| 48080B | 1 | Cont. Fan | 625 | 560 | 495 | 430 | 370 | 310 | 250 | 190 | 130 | - |
| | 2 | | 695 | 635 | 575 | 515 | 455 | 400 | 345 | 285 | 235 | 175 |
| | 3 | | 760 | 700 | 645 | 590 | 530 | 480 | 430 | 370 | 325 | 270 |
| | 4 | | 815 | 765 | 710 | 660 | 605 | 550 | 500 | 455 | 400 | 355 |
| | 5 | | 875 | 820 | 770 | 725 | 675 | 620 | 570 | 525 | 475 | 430 |
| | 6 | | 945 | 895 | 845 | 800 | 755 | 710 | 655 | 610 | 565 | 525 |
| | 7 | | 1005 | 960 | 915 | 870 | 830 | 785 | 740 | 690 | 645 | 610 |
| | 8 | | 1070 | 1025 | 985 | 940 | 900 | 855 | 815 | 770 | 725 | 685 |
| | 9 | | 1145 | 1100 | 1060 | 1020 | 980 | 940 | 900 | 860 | 820 | 775 |
| | 10 | | 1215 | 1175 | 1135 | 1095 | 1055 | 1020 | 980 | 940 | 905 | 865 |
| | 11 | | 1295 | 1255 | 1215 | 1180 | 1145 | 1105 | 1070 | 1035 | 1000 | 960 |
| | 12 | Heat | 1300 | 1265 | 1225 | 1190 | 1155 | 1120 | 1085 | 1050 | 1010 | 980 |
| | 13 | | 1355 | 1320 | 1280 | 1245 | 1210 | 1175 | 1135 | 1100 | 1070 | 1030 |
| | 14 | | 1440 | 1400 | 1365 | 1335 | 1300 | 1265 | 1230 | 1200 | 1165 | 1130 |
| | 15 | | 1515 | 1480 | 1445 | 1415 | 1380 | 1350 | 1320 | 1285 | 1255 | 1220 |
| | 16 | | 1575 | 1540 | 1510 | 1480 | 1450 | 1415 | 1385 | 1355 | 1320 | 1290 |
| | 17 | | 1655 | 1625 | 1590 | 1560 | 1530 | 1500 | 1470 | 1440 | 1410 | 1375 |
| | 18 | Cooling | 1760 | 1730 | 1700 | 1665 | 1625 | 1585 | 1535 | 1490 | 1450 | 1405 |

Air Delivery - CFM (with filter) (Continued)

| Unit Size | Airflow Setting | Default Setting | External Static Pressure (in. w.c.) | | | | | | | | | |
|-----------|-----------------|-----------------|-------------------------------------|------|------|------|------|------|------|------|------|------|
| | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
| 60080C | 1 | Cont. Fan | 615 | 515 | 415 | 325 | 225 | 140 | - | - | - | - |
| | 2 | | 695 | 610 | 515 | 430 | 340 | 255 | 165 | - | - | - |
| | 3 | | 805 | 725 | 645 | 560 | 485 | 405 | 325 | 245 | 165 | - |
| | 4 | | 870 | 795 | 720 | 640 | 560 | 490 | 415 | 345 | 270 | 195 |
| | 5 | | 955 | 885 | 815 | 740 | 670 | 595 | 530 | 460 | 390 | 330 |
| | 6 | | 1070 | 1005 | 935 | 870 | 805 | 740 | 675 | 615 | 545 | 485 |
| | 7 | | 1150 | 1085 | 1025 | 960 | 900 | 835 | 775 | 710 | 650 | 590 |
| | 8 | | 1245 | 1185 | 1125 | 1065 | 1005 | 950 | 890 | 835 | 775 | 720 |
| | 9 | Heat | 1325 | 1270 | 1215 | 1160 | 1105 | 1050 | 995 | 945 | 885 | 830 |
| | 10 | | 1415 | 1360 | 1310 | 1255 | 1205 | 1150 | 1100 | 1045 | 995 | 945 |
| | 11 | | 1535 | 1485 | 1435 | 1385 | 1335 | 1285 | 1240 | 1195 | 1145 | 1095 |
| | 12 | | 1610 | 1560 | 1515 | 1465 | 1420 | 1375 | 1325 | 1280 | 1235 | 1190 |
| | 13 | | 1715 | 1670 | 1625 | 1580 | 1535 | 1495 | 1450 | 1405 | 1360 | 1315 |
| | 14 | | 1820 | 1775 | 1735 | 1690 | 1650 | 1610 | 1570 | 1530 | 1485 | 1445 |
| | 15 | | 1915 | 1875 | 1835 | 1795 | 1760 | 1720 | 1680 | 1645 | 1605 | 1565 |
| | 16 | | 1995 | 1960 | 1920 | 1885 | 1845 | 1810 | 1775 | 1740 | 1700 | 1665 |
| | 17 | Cooling | 2105 | 2070 | 2035 | 2000 | 1970 | 1935 | 1900 | 1870 | 1835 | 1805 |
| | 18 | | 2305 | 2260 | 2215 | 2170 | 2125 | 2080 | 2030 | 1985 | 1935 | 1890 |
| 60100C | 1 | Cont. Fan | 720 | 630 | 540 | 450 | 375 | 285 | 205 | 130 | - | - |
| | 2 | | 815 | 735 | 650 | 570 | 490 | 415 | 345 | 265 | 190 | 135 |
| | 3 | | 910 | 835 | 760 | 680 | 605 | 535 | 465 | 400 | 330 | 255 |
| | 4 | | 995 | 925 | 855 | 780 | 710 | 640 | 575 | 510 | 445 | 385 |
| | 5 | | 1105 | 1040 | 975 | 910 | 845 | 780 | 710 | 650 | 585 | 530 |
| | 6 | | 1200 | 1140 | 1080 | 1020 | 955 | 895 | 835 | 770 | 710 | 655 |
| | 7 | | 1290 | 1230 | 1175 | 1120 | 1065 | 1005 | 945 | 885 | 825 | 770 |
| | 8 | | 1375 | 1320 | 1265 | 1215 | 1160 | 1105 | 1050 | 995 | 935 | 880 |
| | 9 | | 1475 | 1425 | 1375 | 1325 | 1275 | 1220 | 1170 | 1115 | 1060 | 1010 |
| | 10 | | 1565 | 1520 | 1470 | 1425 | 1375 | 1330 | 1280 | 1230 | 1175 | 1125 |
| | 11 | | 1675 | 1625 | 1580 | 1535 | 1490 | 1450 | 1400 | 1355 | 1305 | 1255 |
| | 12 | Heat | 1755 | 1710 | 1665 | 1625 | 1580 | 1535 | 1490 | 1450 | 1405 | 1360 |
| | 13 | | 1885 | 1840 | 1795 | 1755 | 1715 | 1670 | 1630 | 1590 | 1550 | 1505 |
| | 14 | | 1970 | 1925 | 1885 | 1845 | 1805 | 1765 | 1725 | 1685 | 1645 | 1610 |
| | 15 | | 2085 | 2045 | 2005 | 1960 | 1925 | 1885 | 1845 | 1810 | 1775 | 1735 |
| | 16 | | 2145 | 2105 | 2070 | 2030 | 1990 | 1955 | 1920 | 1885 | 1845 | 1805 |
| | 17 | | 2185 | 2145 | 2105 | 2070 | 2035 | 1995 | 1960 | 1925 | 1885 | 1850 |
| | 18 | Cooling | 2315 | 2280 | 2240 | 2200 | 2145 | 2090 | 2035 | 1980 | 1925 | 1870 |
| 66120D | 1 | Cont. Fan | 720 | 610 | 490 | 390 | 290 | 205 | 110 | - | - | - |
| | 2 | | 800 | 695 | 590 | 480 | 390 | 300 | 220 | 135 | - | - |
| | 3 | | 870 | 770 | 675 | 570 | 475 | 395 | 310 | 235 | 155 | - |
| | 4 | | 970 | 880 | 785 | 700 | 605 | 525 | 440 | 365 | 290 | 230 |
| | 5 | | 1060 | 975 | 890 | 805 | 725 | 635 | 555 | 485 | 410 | 345 |
| | 6 | | 1145 | 1070 | 985 | 905 | 830 | 750 | 665 | 595 | 525 | 455 |
| | 7 | | 1250 | 1175 | 1105 | 1025 | 955 | 880 | 805 | 730 | 660 | 595 |
| | 8 | | 1345 | 1280 | 1205 | 1135 | 1065 | 1000 | 930 | 860 | 785 | 725 |
| | 9 | | 1435 | 1370 | 1305 | 1240 | 1170 | 1105 | 1045 | 980 | 910 | 845 |
| | 10 | | 1545 | 1485 | 1425 | 1360 | 1300 | 1235 | 1175 | 1115 | 1050 | 990 |
| | 11 | | 1645 | 1590 | 1530 | 1475 | 1415 | 1350 | 1295 | 1240 | 1180 | 1125 |
| | 12 | | 1740 | 1685 | 1635 | 1580 | 1525 | 1465 | 1410 | 1355 | 1300 | 1250 |
| | 13 | | 1830 | 1775 | 1725 | 1675 | 1620 | 1565 | 1510 | 1455 | 1405 | 1355 |
| | 14 | Heat | 2015 | 1965 | 1920 | 1870 | 1825 | 1775 | 1725 | 1680 | 1630 | 1580 |
| | 15 | | 2035 | 1990 | 1940 | 1895 | 1850 | 1805 | 1760 | 1710 | 1660 | 1615 |
| | 16 | | 2140 | 2095 | 2050 | 2005 | 1960 | 1915 | 1875 | 1830 | 1785 | 1740 |
| | 17 | | 2230 | 2190 | 2150 | 2110 | 2070 | 2025 | 1985 | 1945 | 1905 | 1860 |
| | 18 | Cooling | 2425 | 2385 | 2340 | 2290 | 2240 | 2190 | 2135 | 2080 | 2025 | 1965 |

Air Delivery - CFM (with filter) (Continued)

| Unit Size | Airflow Setting | Default Setting | External Static Pressure (in. w.c.) | | | | | | | | | |
|-----------|-----------------|-----------------|-------------------------------------|------|------|------|------|------|------|------|------|------|
| | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
| 66140D | 1 | Cont. Fan | 795 | 685 | 585 | 475 | 380 | 290 | 205 | 135 | - | - |
| | 2 | | 900 | 795 | 700 | 605 | 505 | 420 | 340 | 260 | 180 | - |
| | 3 | | 960 | 865 | 775 | 685 | 590 | 500 | 420 | 345 | 265 | 195 |
| | 4 | | 1050 | 960 | 870 | 785 | 700 | 610 | 530 | 455 | 385 | 315 |
| | 5 | | 1160 | 1075 | 985 | 910 | 835 | 755 | 670 | 590 | 525 | 455 |
| | 6 | | 1260 | 1180 | 1100 | 1020 | 950 | 880 | 800 | 720 | 650 | 585 |
| | 7 | | 1355 | 1285 | 1205 | 1130 | 1060 | 995 | 925 | 855 | 775 | 705 |
| | 8 | | 1445 | 1375 | 1300 | 1230 | 1160 | 1095 | 1035 | 970 | 895 | 825 |
| | 9 | | 1545 | 1480 | 1415 | 1345 | 1280 | 1220 | 1155 | 1095 | 1035 | 965 |
| | 10 | | 1650 | 1585 | 1520 | 1460 | 1395 | 1330 | 1275 | 1215 | 1155 | 1100 |
| | 11 | | 1740 | 1680 | 1620 | 1560 | 1500 | 1435 | 1380 | 1320 | 1265 | 1210 |
| | 12 | | 1840 | 1785 | 1725 | 1670 | 1615 | 1555 | 1500 | 1445 | 1390 | 1340 |
| | 13 | | 1940 | 1885 | 1830 | 1775 | 1720 | 1670 | 1610 | 1555 | 1505 | 1450 |
| | 14 | | 2050 | 1995 | 1945 | 1890 | 1840 | 1790 | 1735 | 1680 | 1630 | 1575 |
| | 15 | Heat | 2095 | 2040 | 1990 | 1940 | 1890 | 1840 | 1790 | 1735 | 1680 | 1630 |
| | 16 | | 2150 | 2100 | 2050 | 2000 | 1950 | 1905 | 1855 | 1800 | 1745 | 1695 |
| | 17 | | 2255 | 2205 | 2155 | 2110 | 2060 | 2015 | 1965 | 1915 | 1860 | 1810 |
| | 18 | Cooling | 2420 | 2370 | 2325 | 2280 | 2230 | 2165 | 2095 | 2025 | 1955 | 1880 |

NOTE:

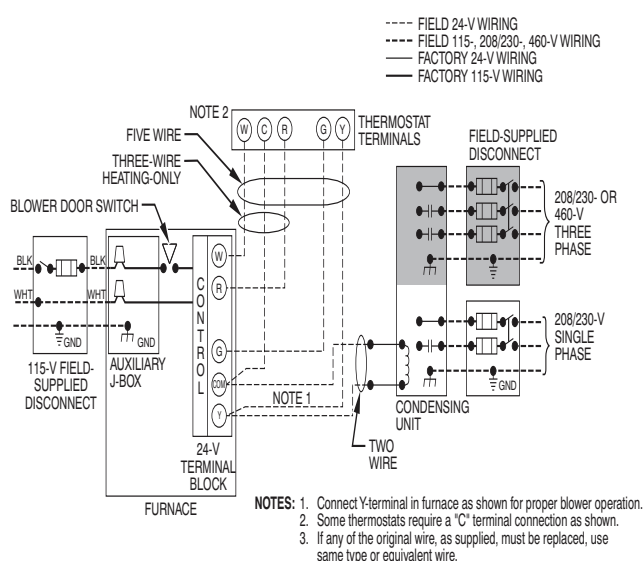
1. A filter is required for each return-air inlet. Airflow performance included 3/4-in. (19 mm) washable filter media such as contained in a factory - authorized accessory filter rack. See accessory list. To determine airflow performance without this filter, assume an additional 0.1 in. w.c. available external static pressure.
2. Adjust the blower airflow setting as necessary for the proper air temperature rise for each installation.
3. Airflows over 1800 CFM require bottom return, two-side return, or bottom and side return. A minimum filter size of 20" x 25" (508 x 635 mm) is required.
4. For upflow applications, air entering from one side into both the side of the furnace and a return air base counts as a side and bottom return
5. The -- entry indicates unstable operating conditions

Airflow Settings

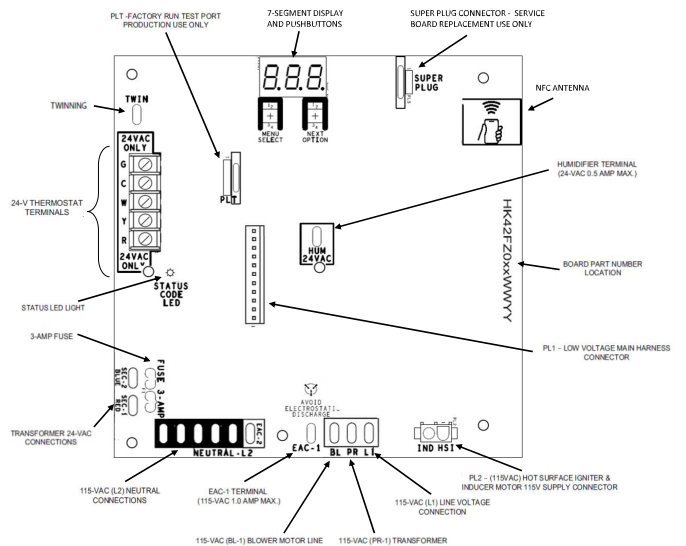
| Unit Size | Default Airflow Settings* | | Designated Airflow Settings | |
|-----------|---------------------------|---------|-----------------------------|--------------|
| | Heating | Cooling | Heating | Constant Fan |
| 30026A | 6 | 18 | (5-14) | (1-7) |
| 30040A | 9 | 18 | (6-11) | (1-1) |
| 36040B | 8 | 18 | (5-9) | (1-5) |
| 36060A | 12 | 18 | (9-12) | (1-3) |
| 48060B | 9 | 18 | (5-10) | (1-7) |
| 48080B | 12 | 18 | (7-13) | (1-1) |
| 60080C | 9 | 17 | (5-11) | (1-8) |
| 60100C | 12 | 18 | (10-12) | (1-4) |
| 66120D | 14 | 18 | (11-14) | (1-3) |
| 66140D | 15 | 18 | (10-15) | (1-1) |

*. Setting #1 is the default setting for Constant Fan

TYPICAL WIRING SCHEMATIC



FURNACE CONTROL BOARD



MAXIMUM ALLOWABLE EXPOSED VENT LENGTH

Maximum Allowable Exposed Vent Lengths in Unconditioned Space Insulation Table - Ft.

| Winter Design Temp °F | Unit Size | 26,000* BTUH | | | | | |
|-----------------------|---------------|--------------|----|--------------------|----|--------------------|----|
| | | Uninsulated | | 3/8-in. Insulation | | 1/2-in. Insulation | |
| | Pipe Dia. in. | 1 ½ | 2 | 1 ½ | 2 | 1 ½ | 2 |
| 20 | | 20 | 20 | 50 | 45 | 60 | 50 |
| 0 | | 5 | 5 | 25 | 20 | 30 | 25 |
| -20 | | | | 15 | 10 | 20 | 15 |
| -40 | | | | 10 | 5 | 15 | 10 |

| Winter Design Temp °F | Unit Size | 40,000* BTUH | | | | | | | | | 60,000 BTUH | | | | | | | | | | | |
|-----------------------|---------------|--------------|----|-----|--------------------|----|-----|--------------------|----|-----|-------------|----|-----|--------------------|-----|----|--------------------|----|-----|----|-----|----|
| | | Uninsulated | | | 3/8-in. Insulation | | | 1/2-in. Insulation | | | Uninsulated | | | 3/8-in. Insulation | | | 1/2-in. Insulation | | | | | |
| | Pipe Dia. in. | 1 ½ | 2 | 2 ½ | 1 ½ | 2 | 2 ½ | 1 ½ | 2 | 2 ½ | 1 ½ | 2 | 2 ½ | 3 | 1 ½ | 2 | 2 ½ | 3 | 1 ½ | 2 | 2 ½ | 3 |
| 20 | | 20 | 20 | 20 | 20 | 50 | 45 | 20 | 60 | 50 | 20 | 30 | 30 | 25 | 20 | 75 | 65 | 60 | 20 | 85 | 75 | 65 |
| 0 | | 10 | 5 | 5 | 20 | 25 | 20 | 20 | 30 | 25 | 15 | 15 | 10 | 10 | 20 | 40 | 30 | 25 | 20 | 45 | 40 | 30 |
| -20 | | 5 | | | 20 | 15 | 10 | 20 | 20 | 15 | 10 | 5 | | | 20 | 25 | 20 | 15 | 20 | 30 | 25 | 20 |
| -40 | | | | | 15 | 10 | 5 | 15 | 15 | 10 | 5 | | | | 20 | 15 | 15 | 10 | 20 | 20 | 15 | 10 |

| Winter Design Temp °F | Unit Size | 80,000 BTUH | | | | | | | | | | | | | | |
|-----------------------|---------------|-------------|----|-----|----|----|--------------------|----|-----|----|----|--------------------|----|-----|----|----|
| | | Uninsulated | | | | | 3/8-in. Insulation | | | | | 1/2-in. Insulation | | | | |
| | Pipe Dia. in. | 1 ½ | 2 | 2 ½ | 3 | 4 | 1 ½ | 2 | 2 ½ | 3 | 4 | 1 ½ | 2 | 2 ½ | 3 | 4 |
| 20 | | 15 | 40 | 40 | 35 | 30 | 15 | 50 | 90 | 75 | 65 | 15 | 50 | 70 | 70 | 70 |
| 0 | | 15 | 20 | 15 | 10 | 5 | 15 | 50 | 45 | 35 | 30 | 15 | 50 | 50 | 40 | 35 |
| -20 | | 15 | 10 | 5 | | | 15 | 35 | 30 | 20 | 15 | 15 | 40 | 30 | 25 | 15 |
| -40 | | 10 | 5 | | | | 15 | 25 | 20 | 15 | 5 | 15 | 30 | 25 | 20 | 10 |

| Winter Design Temp °F | Unit Size | 100,000 BTUH | | | | | | | | | | | | 120,000 BTUH | | | | | | | | |
|-----------------------|---------------|--------------|-----|----|----|--------------------|-----|----|----|--------------------|-----|-----|----|--------------|----|----|--------------------|----|----|--------------------|----|-----|
| | | Uninsulated | | | | 3/8-in. Insulation | | | | 1/2-in. Insulation | | | | Uninsulated | | | 3/8-in. Insulation | | | 1/2-in. Insulation | | |
| | Pipe Dia. in. | 2 | 2 ½ | 3 | 4 | 2 | 2 ½ | 3 | 4 | 2 | 2 ½ | 3 | 4 | 2 ½ | 3 | 4 | 2 ½ | 3 | 4 | 2 ½ | 3 | 4 |
| 20 | | 20 | 50 | 40 | 35 | 20 | 80 | 95 | 80 | 20 | 80 | 105 | 90 | 10 | 50 | 40 | 10 | 75 | 95 | 10 | 75 | 105 |
| 0 | | 20 | 20 | 15 | 10 | 20 | 55 | 45 | 35 | 20 | 65 | 55 | 45 | 10 | 20 | 15 | 10 | 55 | 45 | 10 | 65 | 50 |
| -20 | | 15 | 10 | 5 | | 20 | 35 | 30 | 20 | 20 | 45 | 35 | 25 | 10 | 10 | | 10 | 35 | 25 | 10 | 45 | 30 |
| -40 | | 10 | 5 | | | 20 | 25 | 20 | 10 | 20 | 30 | 25 | 15 | 10 | 5 | | 10 | 25 | 15 | 10 | 30 | 20 |

| Winter Design Temp °F | Unit Size | 140,000* BTUH | | | | | | | | |
|-----------------------|---------------|---------------|----|----|--------------------|----|-----|--------------------|----|-----|
| | | Uninsulated | | | 3/8-in. Insulation | | | 1/2-in. Insulation | | |
| | Pipe Dia. in. | 2 ½ | 3 | 4 | 2 ½ | 3 | 4 | 2 ½ | 3 | 4 |
| 20 | | 5 | 55 | 50 | 5 | 65 | 105 | 5 | 65 | 125 |
| 0 | | 5 | 25 | 15 | 5 | 65 | 50 | 5 | 65 | 60 |
| -20 | | 5 | 10 | 5 | 5 | 45 | 30 | 5 | 50 | 40 |
| -40 | | 5 | 5 | | 5 | 30 | 20 | 5 | 35 | 25 |

*. Not all model families have this size.

Maximum Allowable Exposed Vent Length in Unconditioned Space - Meters

| Winter Design Temp °C | Unit Size | 26,000* BTUH | | | | | |
|-----------------------|--------------|--------------|-----|--------------------|------|--------------------|------|
| | | Uninsulated | | 3/8-in. Insulation | | 1/2-in. Insulation | |
| | Pipe Dia. mm | 38 | 51 | 38 | 51 | 38 | 51 |
| -7 | | 6.1 | 6.1 | 15.2 | 13.7 | 18.3 | 15.2 |
| -18 | | 1.5 | 1.5 | 7.6 | 6.1 | 9.1 | 7.6 |
| -29 | | | | 4.6 | 3.0 | 6.1 | 4.6 |
| -40 | | | | 3.0 | 1.5 | 4.6 | 3.0 |

| Winter Design Temp °C | Unit Size | 40,000 BTUH | | | | | | | | | 60,000 BTUH | | | | | | | | | | | |
|-----------------------|--------------|-------------|-----|-----|--------------------|------|------|--------------------|------|------|-------------|-----|-----|-----|--------------------|------|------|------|--------------------|------|------|------|
| | | Uninsulated | | | 3/8-in. Insulation | | | 1/2-in. Insulation | | | Uninsulated | | | | 3/8-in. Insulation | | | | 1/2-in. Insulation | | | |
| | Pipe Dia. mm | 38 | 51 | 64 | 38 | 51 | 64 | 38 | 51 | 64 | 38 | 51 | 64 | 76 | 38 | 51 | 64 | 76 | 38 | 51 | 64 | 76 |
| -7 | | 6.1 | 6.1 | 6.1 | 6.1 | 15.2 | 13.7 | 6.1 | 18.3 | 15.2 | 6.1 | 9.1 | 9.1 | 7.6 | 6.1 | 22.9 | 19.8 | 18.3 | 6.1 | 25.9 | 22.9 | 19.8 |
| -18 | | 3.0 | 1.5 | 1.5 | 6.1 | 7.6 | 6.1 | 6.1 | 9.1 | 7.6 | 4.6 | 4.6 | 3.0 | 3.0 | 6.1 | 12.2 | 9.1 | 7.6 | 6.1 | 13.7 | 12.2 | 9.1 |
| -29 | | 1.5 | | | 6.1 | 4.6 | 3.0 | 6.1 | 6.1 | 4.6 | 3.0 | 1.5 | | | 6.1 | 7.6 | 6.1 | 4.6 | 6.1 | 9.1 | 7.6 | 6.1 |
| -40 | | | | | 4.6 | 3.0 | 1.5 | 4.6 | 4.6 | 3.0 | 1.5 | | | | 6.1 | 4.6 | 4.6 | 3.0 | 6.1 | 6.1 | 4.6 | 3.0 |

| Winter Design Temp °C | Unit Size | 80,000 BTUH | | | | | | | | | | | | | | |
|-----------------------|--------------|-------------|------|------|------|-----|--------------------|------|------|------|------|--------------------|------|------|------|------|
| | | Uninsulated | | | | | 3/8-in. Insulation | | | | | 1/2-in. Insulation | | | | |
| | Pipe Dia. mm | 38 | 51 | 64 | 76 | 102 | 38 | 51 | 64 | 76 | 102 | 38 | 51 | 64 | 76 | 102 |
| -7 | | 4.6 | 12.2 | 12.2 | 10.7 | 9.1 | 4.6 | 15.2 | 27.4 | 22.9 | 19.8 | 4.6 | 15.2 | 21.3 | 21.3 | 21.3 |
| -18 | | 4.6 | 6.1 | 4.6 | 3.0 | 1.5 | 4.6 | 15.2 | 13.7 | 10.7 | 9.1 | 4.6 | 15.2 | 15.2 | 12.2 | 10.7 |
| -29 | | 4.6 | 3.0 | 1.5 | | | 4.6 | 10.7 | 9.1 | 6.1 | 4.6 | 4.6 | 12.2 | 9.1 | 7.6 | 4.6 |
| -40 | | 3.0 | 1.5 | | | | 4.6 | 7.6 | 6.1 | 4.6 | 1.5 | 4.6 | 9.1 | 7.6 | 6.1 | 3.0 |

| Winter Design Temp °C | Unit Size | 100,000 BTUH | | | | | | | | | | | | 120,000 BTUH | | | | | | | | |
|-----------------------|--------------|--------------|------|------|------|--------------------|------|------|------|--------------------|------|------|------|--------------|------|------|--------------------|------|------|--------------------|------|------|
| | | Uninsulated | | | | 3/8-in. Insulation | | | | 1/2-in. Insulation | | | | Uninsulated | | | 3/8-in. Insulation | | | 1/2-in. Insulation | | |
| | Pipe Dia. mm | 51 | 64 | 76 | 102 | 51 | 64 | 76 | 102 | 51 | 64 | 76 | 102 | 64 | 76 | 102 | 64 | 76 | 102 | 64 | 76 | 102 |
| -7 | | 6.1 | 15.2 | 12.2 | 10.7 | 6.1 | 24.4 | 28.9 | 24.4 | 6.1 | 24.4 | 32.0 | 27.4 | 3.0 | 15.2 | 12.2 | 3.0 | 22.9 | 28.9 | 3.0 | 22.9 | 32.0 |
| -18 | | 6.1 | 6.1 | 4.6 | 3.0 | 6.1 | 16.8 | 13.7 | 10.7 | 6.1 | 19.8 | 16.7 | 13.7 | 3.0 | 6.1 | 4.6 | 3.0 | 16.8 | 13.7 | 3.0 | 19.8 | 15.2 |
| -29 | | 4.6 | 3.0 | 1.5 | | 6.1 | 10.7 | 9.1 | 6.1 | 6.1 | 13.7 | 10.7 | 7.6 | 3.0 | 3.0 | | 3.0 | 10.7 | 7.6 | 3.0 | 13.7 | 9.1 |
| -40 | | 3.0 | 1.5 | | | 6.1 | 7.6 | 6.1 | 3.0 | 6.1 | 9.1 | 7.6 | 4.6 | 3.0 | 1.5 | | 3.0 | 7.6 | 4.6 | 3.0 | 9.1 | 6.1 |

| Winter Design Temp °C | Unit Size | 140,000* BTUH* | | | | | | | | |
|-----------------------|--------------|----------------|------|------|--------------------|------|------|--------------------|------|------|
| | | Uninsulated | | | 3/8-in. Insulation | | | 1/2-in. Insulation | | |
| | Pipe Dia. mm | 64 | 76 | 102 | 64 | 76 | 102 | 64 | 76 | 102 |
| -7 | | 1.5 | 16.7 | 15.2 | 1.5 | 19.8 | 32.0 | 1.5 | 19.8 | 38.1 |
| -18 | | 1.5 | 7.6 | 4.6 | 1.5 | 19.8 | 15.2 | 1.5 | 19.8 | 18.3 |
| -29 | | 1.5 | 3.0 | 1.5 | 1.5 | 13.7 | 9.1 | 1.5 | 15.2 | 12.2 |
| -40 | | 1.5 | 1.5 | | 1.5 | 9.1 | 6.1 | 1.5 | 35 | 7.6 |

*. Not all model families have this size.

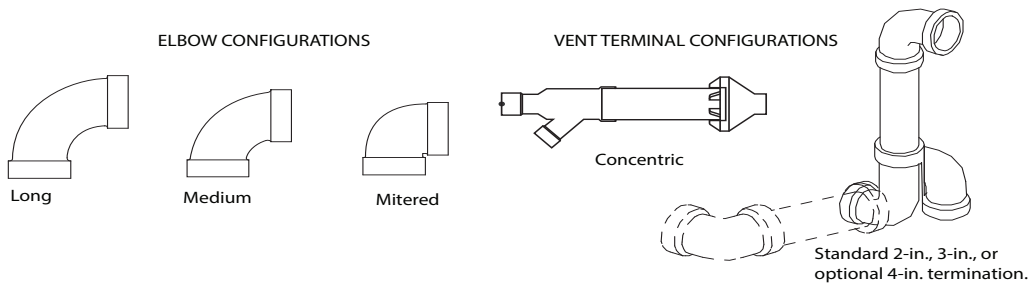
MAXIMUM EQUIVALENT VENT LENGTH - Ft. (M)

NOTE: Maximum Equivalent Vent Length (MEVL) includes standard and concentric vent termination and does NOT include elbows. Use Deductions from Maximum Equivalent Vent Length to determine allowable vent length for each application.

| Altitude (feet) | Unit Size | 26,000 ² | | 40,000 ¹ | | | 60,000 ² | | | | 80,000 | | | | | 100,000 ³ | | | | 120,000 | | | 140,000 ³ | | |
|-----------------|----------------|---------------------|----|---------------------|-----|-----|---------------------|-----|-----|-----|--------|----|-----|-----|-----|----------------------|-----|-----|-----|---------|-----|-----|----------------------|----|-----|
| | Pipe Dia. (in) | 1 ½ | 2 | 1 ½ | 2 | 2 ½ | 1 ½ | 2 | 2 ½ | 3 | 1 ½ | 2 | 2 ½ | 3 | 4 | 2 | 2 ½ | 3 | 4 | 2 ½ | 3 | 4 | 2 ½ | 3 | 4 |
| 0-2000 | 70 | 200 | 40 | 155 | 185 | | 20 | 100 | 175 | 200 | 15 | 55 | 130 | 175 | 200 | 20 | 80 | 175 | 200 | 10 | 75 | 185 | 5 | 65 | 155 |
| 2001-3000 | 65 | 190 | 35 | 150 | 175 | | | 95 | 165 | 185 | | 49 | 125 | 165 | 185 | 15 | 75 | 165 | 185 | 10 | 70 | 175 | | 60 | 140 |
| 3001-4000 | 60 | 175 | 30 | 135 | 160 | | 16 | 90 | 155 | 175 | | | 115 | 155 | 175 | 15 | | 155 | 175 | 5 | 65 | 165 | | | 120 |
| 4001-4500 | 55 | 160 | | 130 | 155 | | | 85 | 150 | 170 | 10 | 44 | 110 | 150 | 165 | | 70 | | 170 | | | | | 50 | 110 |
| 4501-5000 | | | 25 | 125 | 145 | | 15 | 80 | 145 | 165 | | | 145 | 160 | | | 65 | 150 | 165 | | | | | 45 | 100 |
| 5001-6000 | 50 | 145 | 20 | 120 | 130 | | | 75 | 140 | 155 | | 41 | 100 | 135 | 150 | 10 | | 140 | 155 | | | | | 35 | 80 |
| 6001-7000 | 45 | 135 | 15 | 110 | 120 | | 13 | 70 | 130 | 145 | | 38 | 90 | 125 | 140 | | 60 | 135 | 145 | N/A | 50 | 140 | N/A | 30 | 65 |
| 7001-8000 | 40 | 120 | | 100 | 110 | 10 | 10 | 65 | 120 | 135 | | 36 | | 120 | 125 | | 55 | 125 | 135 | N/A | 46 | 130 | | 25 | 45 |
| 8001-9000 | 35 | 110 | 10 | 90 | 95 | 5 | 60 | 115 | 125 | N/A | 33 | 80 | 110 | 115 | N/A | 50 | 115 | 125 | | 43 | 120 | | 15 | 30 | |
| 9001-10000 | 30 | 95 | 5 | 80 | 85 | N/A | 55 | 105 | 115 | | 30 | 75 | 100 | 105 | A | 45 | 100 | 115 | | 39 | 115 | | 10 | 15 | |

| Maximum Equivalent Vent Length - Meters | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------|---------------------|------|---------------------|------|-----|---------------------|------|------|------|--------|------|------|------|------|----------------------|------|------|------|---------|------|------|----------------------|------|------|
| Altitude (meters) | Unit Size | 26,000 ² | | 40,000 ¹ | | | 60,000 ² | | | | 80,000 | | | | | 100,000 ³ | | | | 120,000 | | | 140,000 ³ | | |
| | Pipe Dia. (mm) | 38 | 51 | 38 | 51 | 64 | 38 | 51 | 64 | 76 | 38 | 51 | 64 | 76 | 102 | 51 | 64 | 76 | 102 | 64 | 76 | 102 | 64 | 76 | 102 |
| 0-610 | 21.3 | 60.9 | 12.1 | 47.2 | 56.3 | | 6.0 | 30.4 | 53.3 | 60.9 | 4.5 | 16.7 | 39.6 | 53.3 | 60.9 | 6.0 | 24.3 | 53.3 | 60.9 | 3.0 | 22.8 | 56.3 | 1.5 | 19.8 | 47.2 |
| 611-914 | 19.8 | 57.9 | 10.6 | 45.7 | 53.3 | | | 28.9 | 50.2 | 56.3 | | 14.9 | 38.1 | 50.2 | 56.3 | 4.5 | 22.8 | 50.2 | 56.3 | 3.0 | 21.3 | 53.3 | | 18.2 | 42.6 |
| 915-1219 | 18.2 | 53.3 | 9.1 | 41.1 | 48.7 | | 4.8 | 27.4 | 47.2 | 53.3 | | | 35.0 | 47.2 | 53.3 | | | 47.2 | 53.3 | 1.5 | 19.8 | 50.2 | | | 36.5 |
| 1220-1370 | 16.7 | 48.7 | 7.6 | 39.6 | 47.2 | | | 25.9 | 45.7 | 51.8 | 3.0 | 13.4 | 33.5 | 45.7 | 50.2 | | 21.3 | | 51.8 | | | | | 15.2 | 33.5 |
| 1371-1524 | | | | 38.1 | 44.1 | | 4.5 | 24.3 | 44.1 | 50.2 | | | | 44.1 | 48.7 | | 19.8 | 45.7 | 50.2 | | 18.2 | 48.7 | | 13.7 | 30.4 |
| 1525-1829 | 15.2 | 44.1 | 6.0 | 36.5 | 39.6 | | | 22.8 | 42.6 | 47.2 | | 12.4 | 30.4 | 41.1 | 45.7 | 3.0 | | 42.6 | 47.2 | | | | | 10.6 | 24.3 |
| 1830-2134 | 13.7 | 41.1 | 4.5 | 33.5 | 36.5 | 3.9 | 21.3 | 39.6 | 44.1 | | 11.5 | 27.4 | 38.1 | 42.6 | | 18.2 | 41.1 | 44.1 | NA | 15.2 | 42.6 | | 9.1 | 19.8 | |
| 2135-2438 | 12.1 | 36.5 | | 30.4 | 33.5 | 3.0 | 19.8 | 36.5 | 41.1 | | 10.9 | | 36.5 | 38.1 | | 16.7 | 38.1 | 41.1 | | 14.0 | 39.6 | | 7.6 | 13.7 | |
| 2439-2743 | 10.6 | 33.5 | 3.0 | 27.4 | 28.9 | 1.5 | 18.2 | 35.0 | 38.1 | NA | 10.0 | 24.3 | 33.5 | 35.0 | NA | 15.2 | 35.0 | 38.1 | | 13.1 | 36.5 | | 4.5 | 9.1 | |
| 2744-3048 | 9.1 | 28.9 | 1.5 | 24.3 | 25.9 | NA | 16.7 | 32.0 | 35.0 | | 9.1 | 22.8 | 30.4 | 32.0 | | 13.7 | 30.4 | 35.0 | | 11.8 | 35.0 | | 3.0 | 4.5 | |

- 40K Inducer Outlet Restrictor disk (P/N 337683-401; 1.25-in. (32 mm) Dia.) shipped in the loose parts bag or available through Replacement Components required under 10-ft. (3 M) TEVL in all orientations. Required for installations from 0 - 2000 ft. (0 to 610 M) above sea level. Failure to use an outlet restrictor may result in flame disturbances or flame sense lock-out.
- 26K (shipped in loose parts bag) & 60K Inducer Outlet Restrictor disk (P/N 337683-401; 1.25-in. (32 mm) Dia. available through Replacement Components) required for less than 5-ft. (1.5 M) TEVL in downflow and horizontal orientations only. Required for installations from 0 - 2000 ft. (0 to 610 M) above sea level.
- 120K & 140K Inducer Outlet Restrictor disk (P/N 337683-402; 1.50-in. (38 mm) Dia. available through Replacement Components) required for less than 5-ft. (1.5 M) TEVL in downflow and horizontal orientations only. Required for installations from 0 - 2000 ft. (0 to 610 M) above sea level.



A13110

Deductions from Maximum Equivalent Vent Length - Ft. (M)

| Pipe Diameter (in): | 1-1/2 | | 2 | | 2-1/2 | | 3 | | 4 | |
|-----------------------------|-------|-------|-----|-------|-------|-------|-----|-------|-----|-------|
| Mitered 90° Elbow | 8 | (2.4) | 8 | (2.4) | 8 | (2.4) | 8 | (2.4) | 8 | (2.4) |
| Medium Radius 90° Elbow | 5 | (1.5) | 5 | (1.5) | 5 | (1.5) | 5 | (1.5) | 5 | (1.5) |
| Long Radius 90° Elbow | 3 | (0.9) | 3 | (0.9) | 3 | (0.9) | 3 | (0.9) | 3 | (0.9) |
| Mitered 45° Elbow | 4 | (1.2) | 4 | (1.2) | 4 | (1.2) | 4 | (1.2) | 4 | (1.2) |
| Medium Radius 45° Elbow | 2.5 | (0.8) | 2.5 | (0.8) | 2.5 | (0.8) | 2.5 | (0.8) | 2.5 | (0.8) |
| Long Radius 45° Elbow | 1.5 | (0.5) | 1.5 | (0.5) | 1.5 | (0.5) | 1.5 | (0.5) | 1.5 | (0.5) |
| Tee | 16 | (4.9) | 16 | (4.9) | 16 | (4.9) | 16 | (4.9) | 16 | (4.9) |
| Concentric Vent Termination | NA | | 0 | (0.0) | NA | | 0 | (0.0) | NA | |
| Standard Vent Termination | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) | 0 | (0.0) |

NOTE:

1. Use only the smallest diameter pipe possible for venting. Over-sizing may cause flame disturbance or excessive vent terminal icing or freeze-up.
2. NA - Not allowed. Pressure switch will not close, or flame disturbance may result.
3. Vent sizing for Canadian installations over 4500 ft (1370 M) above sea level are subject to acceptance by local authorities having jurisdiction.
4. Size both the combustion air and vent pipe independently, then use the larger size for both pipes.
5. Assume the two 45° elbows equal one 90° elbow. Wide radius elbows are desirable and may be required in some cases.
6. Elbow and pipe sections within the furnace casing and at the vent termination should not be included in vent length or elbow count.
7. The minimum pipe length is 5 ft. (2 M) linear feet (meters) for all applications.
8. Use 3-in. (76 mm) diameter vent termination kit for installations requiring 4-in. (102 mm) diameter pipe

Venting System Length Calculations

The Total Equivalent Vent Length (TEVL) for EACH combustion air or vent pipe equals the length of the venting system, plus the equivalent length of elbows used in the venting system from Deductions from Maximum Equivalent Vent Length - Ft. (M) Table.

Standard vent terminations or factory accessory concentric vent terminations count for zero deduction.

See vent system manufacturer’s data for equivalent lengths of flexible vent pipe or other termination systems. **DO NOT ASSUME** that one foot of flexible vent pipe equals one foot of straight PVC/ABS DWV vent pipe.

Compare the Total Equivalent Vent Length to the Maximum Equivalent Vent Lengths in Maximum Equivalent Vent Length Table.

Example 1

A direct-vent 60,000 BTUH furnace installed at 2100 ft. (640M). Venting system includes **FOR EACH PIPE:**

70 feet (22 M) of vent pipe, 65 feet (20 M) of combustion air inlet pipe, (3) 90° long-radius elbows, (2) 45° long-radius elbows, and a factory accessory concentric vent kit.

Can this application use 2” (50 mm ND) PVC/ABS DWV vent piping?

| | | | | | | |
|---|---|---|--------------------|---|------------------|--|
| Measure the required linear length of air inlet and vent pipe; insert the longest of the two here | | | | | 70 ft. (22 M) | Use length of the longer of the vent or air inlet piping system |
| Add equiv length of (3) 90° long-radius elbows (use the highest number of elbows for either the vent or inlet pipe) | 3 | x | 3 ft. (0.9 M) | = | 9 ft. (2.7 M) | From Deductions from Maximum Equivalent Vent Length - Ft. (M) Table. |
| Add equiv length of (2) 45° long-radius elbows (use the highest number of elbows for either the vent or inlet pipe) | 2 | x | 1.5 ft. (0.5 M) | = | 3 ft. (0.9 M) | From Deductions from Maximum Equivalent Vent Length - Ft. (M) Table. |
| Add equiv length of factory concentric vent term | | | | | 0 ft. | From Deductions from Maximum Equivalent Vent Length - Ft. (M) Table. |
| Add correction for flexible vent pipe, if any | | | | | 0 ft. | From Vent Manufacturer's instructions; zero for PVC/ABS DWV |
| Total Equivalent Vent Length (TEVL) | | | | | 82 ft. (25 M) | Add all of the above lines |
| Maximum Equivalent Vent Length (MEVL) | | | | | 95 ft. (29 M) | For 2” pipe from Maximum Equivalent Vent Length Table. |
| Is TEVL less than MEVL? | | | | | YES | Therefore, 2” pipe MAY be used |

Example 2

A direct-vent 60,000 BTUH furnace installed at 2100 ft. (640M). Venting system includes **FOR EACH PIPE:** 100 feet (30 M) of vent pipe, 95 feet (29 M) of combustion air inlet pipe, (3) 90° long-radius elbows, and a polypropylene concentric vent kit. Also includes 20 feet (6.1 M) of flexible polypropylene vent pipe, included within the 100 feet (30 M) of vent pipe.

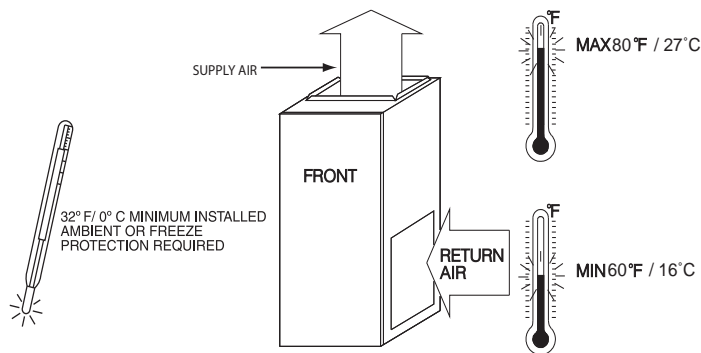
VERIFY FROM POLYPROPYLENE VENT MANUFACTURER'S INSTRUCTIONS for the multiplier correction for flexible vent pipe.

Can this application use 60mm o.d. (2") polypropylene vent piping? If not, what size piping can be used?

| | | | |
|---|----|---------------|---|
| Measure the required linear length of RIGID air inlet and vent pipe; insert the longest of the two here: 100 ft. Of rigid pipe - 20 ft. Of flexible pipe | = | 80 ft. (24 M) | Use length of the longer of the vent or air inlet piping system |
| Add equiv length of (3) 90° long-radius elbows (use the highest number of elbows for either the vent or inlet pipe) | 3 | x | 5 ft. (1.5 M) = 15 ft. (4.6 M) |
| Add equiv length of 45° long-radius elbows (use the highest number of elbows for either the vent or inlet pipe) | 0 | x | = 0 ft. (0 M) |
| Add equiv length of factory concentric vent term | 9 | x | 3.3 ft (0.9 M) = 30 ft. (9 M) |
| Add correction for flexible vent pipe, if any | 2* | x | 20 ft. (6.1 M) = 40 ft. (12.2 M) |
| * VERIFY FROM VENT MANUFACTURER'S INSTRUCTIONS; For example only, assume 1 meter of flexible 60mm (2") or 80mm (3") polypropylene pipe equals 2.0 meters (6.5 ft.) of PVC/ABS pipe. | | | |
| Total Equivalent Vent Length (TEVL) | | | 165 ft. (50 M) Add all of the above lines |
| Maximum Equivalent Vent Length (MEVL) | | | 95 ft. (29 M) For 2" pipe from Maximum Equivalent Vent Length Table. |
| Is TEVL less than MEVL? | | | NO Therefore, 60mm (2") pipe may NOT be used; try 80mm (3") |
| Maximum Equivalent Vent Length (MEVL) | | | 185 ft. (57 M) For 3" pipe from Maximum Equivalent Vent Length Table. |
| Is TEVL less than MEVL? | | | YES Therefore, 80mm (3") pipe MAY be used |

RETURN AIR TEMPERATURE

This furnace is designed for continuous return-air minimum temperature of 60°F (15°C) db or intermittent operation down to 55°F (13°C) db such as when used with a night setback thermometer. Return-air temperature must not exceed 80°F (27°C) db. Failure to follow these return air limits may affect reliability of heat exchangers, motors and controls.



A10490

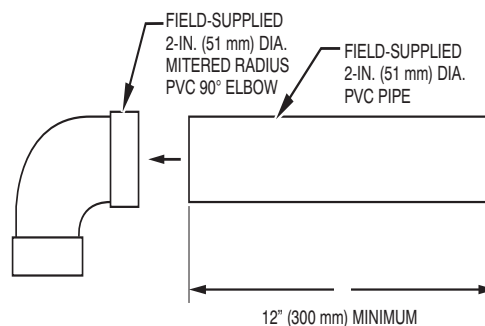
MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

| POSITION | CLEARANCE |
|---|------------------|
| Rear | 0 (0 mm) |
| Front (Combustion air openings in furnace and in structure) | 1 in. (25 mm) |
| Required for service* | 24 in. (610 mm)† |
| All Sides of Supply Plenum* | 1 in. (25 mm) |
| Sides | 0 (0 mm) |
| Vent | 0 (0 mm) |
| Top of Furnace | 1 in. (25 mm) |

*. Consult your local building codes

†. Recommended

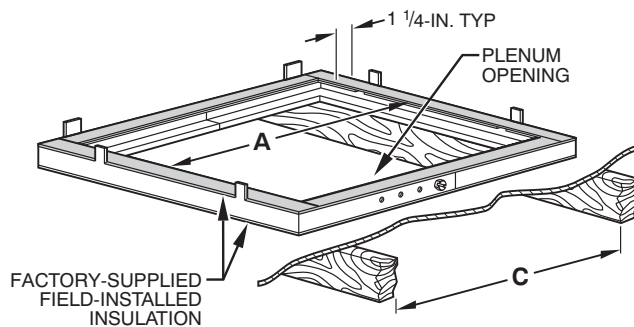
COMBUSTION-AIR PIPE FOR NON-DIRECT (1-PIPE) VENT APPLICATION



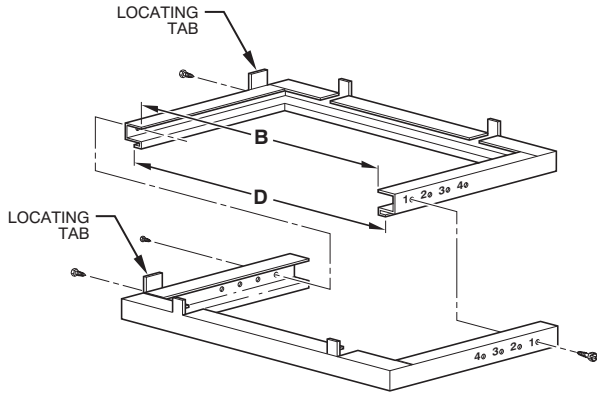
A12376

NOTE: See Installation Instructions for specific venting configurations.

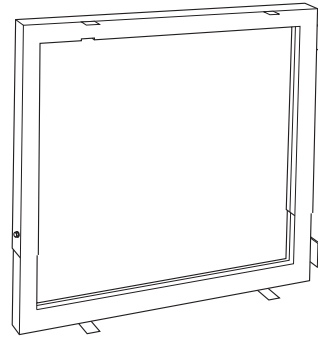
DOWNFLOW SUBBASE



A97427



A88207



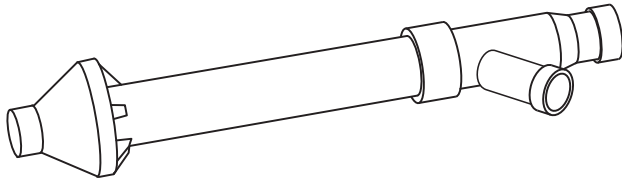
Downflow Subbase

A88202

One base fits all furnace sizes. The base is designed to be installed between the furnace and a combustible floor when no coil box is used or when a coil box other than a manufacturer's cased coil is used. It is CSA design certified for use with manufacturer's branded furnaces when installed in downflow applications.

| DIMENSIONS (IN. / MM) | | | | | | |
|-----------------------|---|-----------------|----------|---------------|--------------|-------------------------------|
| FURNACE CASING WIDTH | FURNACE IN DOWNFLOW APPLICATION | PLENUM OPENING* | | FLOOR OPENING | | HOLE NO. FOR WIDTH ADJUSTMENT |
| | | A | B | C | D | |
| 14-3/16 (360) | Furnace with or without Cased Coil Assembly or Coil Box | 11-3/16 (322) | 19 (483) | 13-7/16 (341) | 20-5/8 (600) | 4 |
| 17-1/2 (445) | Furnace with or without Cased Coil Assembly or Coil Box | 15-1/8 (384) | 19 (483) | 16-3/4 (426) | 20-5/8 (600) | 3 |
| 21 (533) | Furnace with or without Cased Coil Assembly or Coil Box | 18-5/8 (396) | 19 (483) | 20-1/4 (514) | 20-5/8 (600) | 2 |
| 24-1/2 (622) | Furnace with or without Cased Coil Assembly or Coil Box | 22-1/8 (562) | 19 (483) | 23-3/4 (603) | 20-5/8 (600) | 1 |

*. The plenum should be constructed 1/4-in. (6 mm) smaller in width and depth than the plenum dimensions shown above.

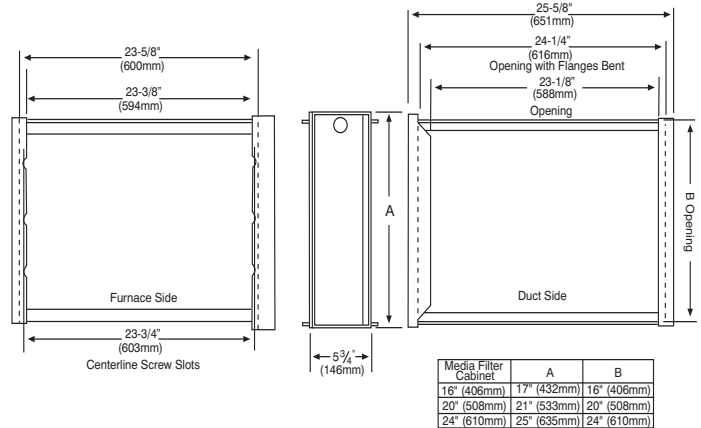


Concentric Vent Kit

A93086

A concentric vent kit allows vent and combustion-air pipes to terminate through a single exit in a roof or side wall. One pipe runs inside the other allowing venting through the inner pipe and combustion air to be drawn in through the outer pipe.

MEDIA FILTER CABINET (OPTIONAL ACCESSORY)



NOTE: Media cabinet is matched to the bottom opening on furnace. May also be used for side return.

A12428

ACCESSORIES

| PART NUMBER | DESCRIPTION | 30026A | 30040A | 36040B | 36060A | 48060B |
|---------------|---|-----------------------|--------|--------|--------|--------|
| P908-0001* | Condensate Neutralizer Kit | X | X | X | X | X |
| 92-1003* | Gas Valve Tower Port Adapter Kit | X | X | X | X | X |
| ACG1425NCB* | External Filter Rack, 14-1/2 x 25" | X | X | - | X | - |
| ACG1625NCF* | External Filter Rack, 16 x 25" | - | - | X | - | X |
| 325531-402* | Washable filter, 3/4" x 16" x 25" | X | X | X | X | X |
| KGADA0101ALL | Coil Adapter Kits - No Offset | X | X | X | X | X |
| KGADA0201ALL | Coil Adapter Kits - Single Offset | X | X | X | X | X |
| KGADA0301ALL | Coil Adapter Kits - Double Offset | X | X | X | X | X |
| KGARP0301B14 | Return Air Base (Upflow Applications) 14.0-in. wide | X | X | - | X | - |
| KGARP0301B17 | Return Air Base (Upflow Applications) 17.5-in. wide | - | - | X | - | X |
| KGAVT0701CVT | Vent Terminal - Concentric - 2" (51 mm) | See Venting Tables | | | | |
| KGAVT0801CVT | Vent Terminal - Concentric - 3" (76 mm) | | | | | |
| KGAVT0101BRA | Vent Terminal Bracket - 2" (51 mm) | | | | | |
| KGAVT0201BRA | Vent Terminal Bracket - 3" (76 mm) | | | | | |
| KGADC0101BVC | Vent Kit - Through the Cabinet for HZ left/right ONLY | X | X | X | X | X |
| KGAAC0101RVC | Polypropylene Inlet Air Pipe Coupling | X | X | X | X | X |
| KGACK0101HCK | Horizontal Trap Grommet - Direct Vent | All 2-Pipe Horizontal | | | | |
| KG AHT0101CFP | Freeze Protect Kit - Condensate Drain Line Tape | X | X | X | X | X |
| KG AHT0201CFP | Freeze Protect Kit - Condensate Trap with Heat Pad | X | X | X | X | X |
| KGAAD0110PVC | CPVC to PVC Drain Adapters - 1/2" CPVC to 3/4" PVC | X | X | X | X | X |
| KGAET0201ETK | External Trap Kit | X | X | X | X | X |
| KGASB0201ALL | Downflow Furnace Base Kit for Combustible Floors | X | X | X | X | X |
| KGAAD0101MEC | IAQ Device Duct Adapters 20.0-in. IAQ to 16 in. Side Return | 20"x25" IAQ Devices | | | | |
| KGAAD0201MEC | IAQ Device Duct Adapters 24.0-in. IAQ to 16 in. Side Return | 24"x25" IAQ Devices | | | | |
| AGAGCANPL01B | Gas Conversion Kit - Nat to LP† | X | - | - | - | - |
| AGAGCAPNL01B | Gas Conversion Kit - LP to Nat† | X | - | - | - | - |
| AGAGC9NPS01C* | Gas Conversion Kit - Nat to LP† | - | X | X | X | X |
| AGAGC9PNS01C* | Gas Conversion Kit - LP to Nat† | - | X | X | X | X |
| AGAGCAMHC01A | Manufactured Home Kit - Gas Conversion† | - | X | X | X | X |
| AGATWNDTE01C | Twining Kit - (MCT) ECM Motor | - | - | - | - | X |

* Purchased through Replacement Components

† Factory-authorized and field installed. Fuel conversion kits are CSA recognized.

X = Accessory

ACCESSORIES (continued)

| PART NUMBER | DESCRIPTION | 48080B | 60080C | 60100C | 66120D | 66140D |
|---------------|---|-----------------------|--------|--------|--------|--------|
| P908-0001* | Condensate Neutralizer Kit | X | X | X | X | X |
| 92-1003* | Gas Valve Tower Port Adapter Kit | X | X | X | X | X |
| ACG1625NCF* | External Filter Rack, 16 x 25" | X | - | - | - | - |
| ACG2025NCJ* | External Filter Rack, 20 x 25" | - | X | X | | |
| ACG2424NCL* | External Filter Rack, 24-1/2 x 24" | - | - | - | X | X |
| 325531-402 | Washable filter, 3/4" x 16" x 25" | X | - | - | - | - |
| 325531-403 | Washable filter, 3/4" x 20" x 25" | - | X | X | - | - |
| 325531-404 | Washable filter, 3/4" x 24" x 25" | - | - | - | X | X |
| KGADA0101ALL | Coil Adapter Kits - No Offset | X | X | X | X | X |
| KGADA0201ALL | Coil Adapter Kits - Single Offset | X | X | X | X | X |
| KGADA0301ALL | Coil Adapter Kits - Double Offset | X | X | X | X | X |
| KGARP0301B17 | Return Air Base (Upflow Applications) 17-1/2" wide | X | - | - | - | - |
| KGARP0301B21 | Return Air Base (Upflow Applications) 21" wide | - | X | X | - | - |
| KGARP0301B24 | Return Air Base (Upflow Applications) 24-1/2" wide | - | - | - | X | X |
| KGAVT0701CVT | Vent Terminal - Concentric - 2" (51 mm) | See Venting Tables | | | | |
| KGAVT0801CVT | Vent Terminal - Concentric - 3" (76 mm) | | | | | |
| KGAVT0101BRA | Vent Terminal Bracket - 2" (51 mm) | | | | | |
| KGAVT0201BRA | Vent Terminal Bracket - 3" (76 mm) | | | | | |
| KGADC0101BVC | Vent Kit - Through the Cabinet for HZ left/right ONLY | X | X | X | X | X |
| KGAAC0101RVC | Polypropylene Inlet Air Pipe Coupling | X | X | X | X | X |
| KGACK0101HCK | Horizontal Trap Grommet - Direct Vent | All 2-Pipe Horizontal | | | | |
| KGAHT0101CFP | Freeze Protect Kit - Condensate Drain Line Tape | X | X | X | X | X |
| KGAHT0201CFP | Freeze Protect Kit - Condensate Trap with Heat Pad | X | X | X | X | X |
| KGAAD0110PVC | CPVC to PVC Drain Adapters - 1/2" CPVC to 3/4" PVC | X | X | X | X | X |
| KGAET0201ETK | External Trap Kit | X | X | X | X | X |
| KGASB0201ALL | Downflow Furnace Base Kit for Combustible Floors | X | X | X | X | X |
| KGAAD0101MEC | IAQ Device Duct Adapters 20" IAQ to 16" Side Return | 20"x25" IAQ Devices | | | | |
| KGAAD0201MEC | IAQ Device Duct Adapters 24" IAQ to 16" Side Return | 24"x25" IAQ Devices | | | | |
| AGAGC9NPS01C* | Gas Conversion Kit - Nat to LP† | X | X | X | X | X |
| AGAGC9PNS01C* | Gas Conversion Kit - LP to Nat† | X | X | X | X | X |
| AGAGCAMHC01A | Manufactured Home Kit - Gas Conversion† | X | X | X | X | - |
| AGATWNDTE01C | Twinning Kit - (MCT) ECM Motor | X | X | X | X | X |

* Purchased through Replacement Components

† Factory-authorized and field installed. Fuel conversion kits are CSA (formerly AGA/CGA) recognized.

X = Accessory

ACCESSORIES (continued)

| DESCRIPTION | ACCESSORY | 14" | 17" | 21" | 24" |
|---|--------------|-----|-----|-----|-----|
| Cartridge Media Filter - 16" (407 mm) (MERV 11) | FILXXCAR0116 | X | X | - | - |
| Cartridge Media Filter - 16" (407 mm) (MERV 8) | FILXXCAR0016 | X | X | - | - |
| Cartridge Media Filter - 20" (508 mm) (MERV 8) | FILXXCAR0020 | - | - | X | - |
| Cartridge Media Filter - 20" (508 mm) (MERV11) | FILXXCAR0120 | - | - | X | - |
| Cartridge Media Filter - 24" (610 mm) (MERV 8) | FILXXCAR0024 | - | - | - | X |
| Cartridge Media Filter - 24" (610 mm) (MERV11) | FILXXCAR0124 | - | - | - | X |
| EZ Flex Cabinet Side or Bottom - 16" | EZXCAB--0016 | X | X | - | - |
| EZ Flex Cabinet Side or Bottom - 20" | EZXCAB--0020 | - | - | X | X |
| EZ Flex Replacement Filters 16" MERV 10 | EXPXXFIL0016 | X | X | - | - |
| EZ Flex Replacement Filters 16" MERV 13 | EXPXXFIL0316 | X | X | - | - |
| EZ Flex Replacement Filters 20" MERV 10 | EXPXXFIL0020 | - | - | X | - |
| EZ Flex Replacement Filters 20" MERV 13 | EXPXXFIL0320 | - | - | X | - |
| EZ Flex Replacement Filters 24" MERV 10 | EXPXXFIL0024 | - | - | - | X |
| EZ Flex Replacement Filters 24" MERV 13 | EXPXXFIL0324 | - | - | - | X |
| EZ-Flex Filter with End Caps - 16" (407 mm) (MERV 10) | EXPXXUNV0016 | X | X | - | - |
| EZ-Flex Filter with End Caps - 16" (407 mm) (MERV 13) | EXPXXUNV0316 | X | X | - | - |
| EZ-Flex Filter with End Caps - 20" (508 mm) (MERV 10) | EXPXXUNV0020 | - | - | X | - |
| EZ-Flex Filter with End Caps - 20" (508 mm) (MERV 13) | EXPXXUNV0320 | - | - | X | - |
| EZ-Flex Filter with End Caps - 24" (610 mm) (MERV 10) | EXPXXUNV0024 | - | - | - | X |
| EZ-Flex Filter with End Caps - 24" (610 mm) (MERV 13) | EXPXXUNV0324 | - | - | - | X |
| Media Filter Cabinet - 20" | FILCABXL0020 | - | - | X | - |
| Media Filter Cabinet - 24" | FILCABXL0024 | - | - | - | X |
| Media Filter Cabinet -16" | FILCABXL0016 | X | X | - | - |