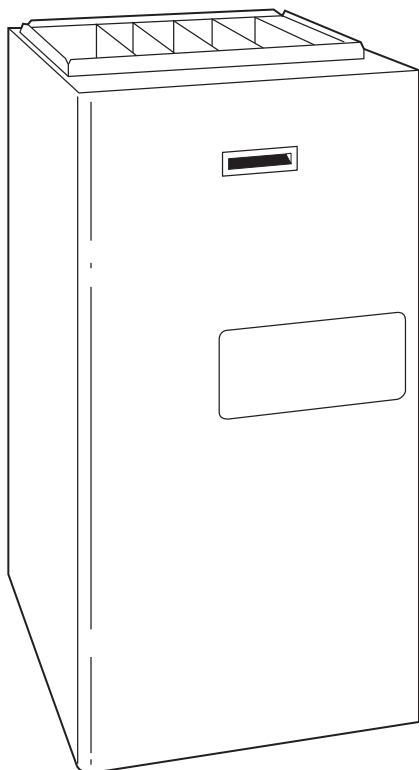


**350AAV**

**Highly-Efficient 4-Way Multipoise Fixed-Capacity  
Deluxe Condensing Gas Furnace  
Sizes 040 thru 140**



## Product Data



A05085

Utilizing the extensive resources available to Bryant, a new standard of excellence has been achieved with the model 350AAV Plus 90™ 4-Way Multipoise Furnace.

The model 350AAV was designed around requirements established by customer focus groups. The result is a unique 4-way multipoise condensing furnace with features like no other product in its class. The 350AAV builds on the many Bryant successes in the furnace industry and establishes a new standard for all high-efficiency gas furnaces.

### FEATURES

**3-Pass Primary Heat Exchangers**—This design accelerates heat transfer and extracts heat that conventional heat exchangers waste up the flue. The weld-free primary heat exchangers are made of aluminized steel for corrosion resistance.

**Flow-Through Secondary Heat Exchangers**—Each cell is laminated with our patented Everlastic™ polypropylene for greater resistance to corrosion. This breakthrough in heating technology helps extend the life of the furnace for years of trouble-free Plus 90 performance. The heat exchanger is positioned in the furnace to extract additional heat from the combustion products regardless of furnace orientation.

**Perfect Light™ Igniter**—The unique Bryant SiN igniter is not only physically robust but it is also electrically robust. It is capable of running at line voltage and does not require complex voltage regulators as do other brands. This unique feature further enhances the reliability of 350AAV gas furnace and continues Bryant's tradition of providing a reliable and durable product.

**Fan On Plus™**—Improves comfort all year long by allowing you to select the continuous fan speed right at the thermostat.

**SmartEvap™**—Allows your system to reduce summertime humidity levels by nearly 10% over standard systems.

**Media Filter Cabinet**—Enhanced indoor air quality in your home is made easier with our media filter cabinet—a standard accessory on all Deluxe furnaces. When installed as a part of your system, this cabinet allows for easy and convenient addition of a Bryant high-efficiency air filter.

**Microprocessor Control Center**—The printed-circuit board and all internal wiring are factory installed. Convenient terminals permit quick-connection of a thermostat, a humidifier, an air cleaner, and air conditioning control circuits.

The control has adjustable blower off delay switches. As an added feature, the control has a built-in status indicator and self-test feature. The status indicator flashes to indicate a problem condition and assists the servicer in diagnosis. The self-test feature allows for a complete check of the major components in only seconds.

**4-Way Multipoise Design**—Allows a 350AAV model to be installed in an upflow, downflow, or horizontal orientation. Factory configured for upflow applications. Simple changes in the drain connections are all it takes to change to any of the 3 other possible positions.

The model 350AAV is available in 12 heat/airflow combinations, and when combined with the 4-way design, allows for 48 different applications.

**Direct or Non-direct Venting**—The 350AAV can be installed as a 1 pipe/Non-Direct vent or 2 pipe/Direct vent furnace (except 140 size unit and in manufactured/mobile home installations). This provides added flexibility to meet diverse installation needs.

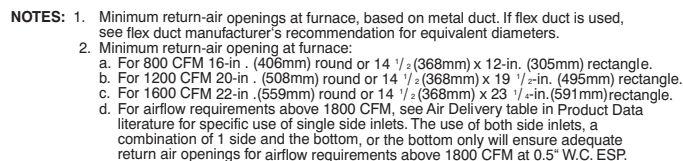
**Fully-Insulated Casing**—Foil-faced insulation in the heat exchanger section cuts heat loss, and insulation in the blower section reduces noise levels. The casing also has the required openings for left- or right-side connection of gas, electric, drain, and vent connections.

**Monoport Inshot Burners**—Produce precise air-to-gas mixture which gives a clean burn. The large monoport on the inshot or injection-type burners seldom, if ever, needs cleaning.

**Quality Registration**—The 350AAV is engineered and manufactured under an ISO 9001 registered quality system.

**Certifications**—The 350AAV units are CSA (A.G.A. and C.G.A.) design certified for use with natural and propane gases, as well as GAMA efficiency rating certified. The furnace is factory-shipped for use with natural gas. A CSA listed gas conversion kit is required to convert furnace for use with propane gas. The model 350AAV meets the California Air Quality Management District emission requirements. Except for the 140 size unit, all 350AAV models can be installed in a manufactured (mobile) home when the optional kit is used in direct vent (2-pipe) application, and in elevations up to 10,000 ft. (3048 M) (140 size unit limitation 7,000 ft (2134 M)).

**350AAV**



| UNIT SIZE | A            | D            | E            |
|-----------|--------------|--------------|--------------|
| 024040    | 17-1/2 (445) | 15-7/8 (403) | 16 (406)     |
| 036040    | 17-1/2 (445) | 15-7/8 (403) | 16 (406)     |
| 024060    | 17-1/2 (445) | 15-7/8 (403) | 16 (406)     |
| 036060    | 17-1/2 (445) | 15-7/8 (403) | 16 (406)     |
| 048060    | 17-1/2 (445) | 15-7/8 (403) | 16 (406)     |
| 036080    | 17-1/2 (445) | 15-7/8 (403) | 16 (406)     |
| 048080    | 17-1/2 (445) | 15-7/8 (403) | 16 (406)     |
| 060080    | 21 (533)     | 19-3/8 (492) | 19-1/2 (495) |
| 048100    | 21 (533)     | 19-3/8 (492) | 19-1/2 (495) |
| 060100    | 21 (533)     | 19-3/8 (492) | 19-1/2 (495) |
| 060120    | 24-1/2 (622) | 22-7/8 (581) | 23 (584)     |
| 060140    | 24-1/2 (622) | 22-7/8 (581) | 23 (584)     |

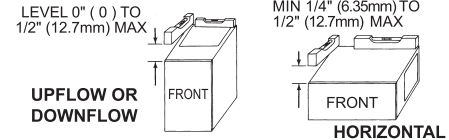
# CLEARANCE TO COMBUSTIBLES

## INSTALLATION

- This forced air furnace is equipped for use with natural gas at altitudes 0 - 10,000 ft (0 - 3,050m), except 140 size furnaces are only approved for altitudes 0 - 7,000 ft (0 - 2,135m).
- An accessory kit, supplied by the manufacturer, shall be used to convert to propane gas use or may be required for some natural gas applications.
- This furnace is for indoor installation in a building constructed on site. This furnace may be installed in a manufactured (mobile) home when stated on rating plate and using factory authorized kit.
- This furnace may be installed on combustible flooring in alcove or closet at **Minimum Inches Clearance To Combustible Construction** as described below.
- This furnace requires a special venting system. Refer to the installation instructions for parts list and method of installation. In the US this furnace is for use with schedule-40 PVC, PVC-DWV, CPVC, or ABS-DWV pipe, and must not be vented in common with other gas-fired appliances. In Canada, refer to installation instructions for vent materials. Construction through which vent/air intake pipes may be installed is maximum 24 inches (610 mm), minimum 3/4 inches (19 mm) thickness (including roofing materials).
- Cette fournaise à air pulsé est équipée pour utilisation avec gaz naturel et altitudes comprises entre 0 - 3,050m (0 - 10,000 pi), excepté que les fournaises de 140 taille sont pour altitudes comprises entre 0 - 2,135m (0 - 7,000 pi).
- Utiliser une trousse de conversion, fournie par le fabricant, pour passer au gaz propane ou pour certaines installations au gaz naturel.
- Cette fournaise à air pulsé est pour installation à l'intérieur dans un bâtiment construit sur place. Cette fournaise à air pulsé peut être installée dans une maison préfabriquée (maison mobile) si prescrit par la plaque signalétique et si l'on utilise une trousse spécifiée par le fabricant.
- Cette fournaise peut être installée sur un plancher combustible dans un enfoncement ou un placard en observant les **Dégagement Minimum En Pouces Avec Éléments De Construction Combustibles**.
- Cette fournaise nécessite un système d'évacuation spécial. La méthode d'installation et la liste des pièces nécessaires figurent dans les instructions d'installation. Aux États-Unis, cette fournaise doit s'utiliser avec la tuyauterie des nomenclatures 40 PVC, PVC-DWV, CPVC, ou ABS-DWV et elle ne peut pas être ventilée conjointement avec d'autres appareils à gaz. Au Canada, référer aux instructions d'installation pour les matériaux à ventiler. Épaisseur de la construction au travers de laquelle il est possible de faire passer les tuyaux d'aération (admission/évacuation): 24 po (610 mm) maximum, 3/4 po (19mm) minimum (y compris la toiture).

For upflow and downflow applications, furnace must be installed level, or pitched within 1/2" (12.7mm) of level. For a horizontal application, the furnace must be pitched minimum 1/4" (6.35mm) to maximum of 1/2" (12.7mm) forward for proper drainage. See Installation Manual for IMPORTANT unit support details on horizontal applications.

Pour des applications de flux ascendant et descendant, la fournaise doit être installée de niveau ou inclinée à pas plus de 1/2" (12.7mm) du niveau. Pour une application horizontale, la fournaise doit être inclinée entre minimum 1/4" (6.35mm) et maximum 1/2" (12.7mm) du niveau pour le drainage approprié. En cas d'installation en position horizontale, consulter les renseignements IMPORTANTS sur le support dans le manuel d'installation.



### MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

#### ALL POSITIONS:

- ★ Minimum front clearance for service 24 inches (610mm).
- †† 140 size furnaces require 1 inch back clearance to combustible materials.

#### DOWNFLOW POSITIONS:

- † For installation on combustible floors only when installed on special base No. KGASB0201ALL or NAHA01101SB, Coil Assembly, Part No. CAR, CAP, CNPV, CNRV or Coil Casing, Part No. KCAKC, or WENC or WTNC.

#### HORIZONTAL POSITIONS:

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

- § Clearance shown is for air inlet and air outlet ends.
- Ø 120 and 140 size furnaces require 1 inch bottom clearance to combustible materials.

### DÉGAGEMENT MINIMUM EN POUCES AVEC ÉLÉMENTS DE CONSTRUCTION COMBUSTIBLES

#### POUR TOUTS LES POSITIONS:

- ★ Dégagement avant minimum de 24 po (610mm) pour l'entretien.
- †† Pour les fournaises de 140 taille, 1 po (25mm) dégagement des matériaux combustibles est requis au-arrière.

#### POUR LA POSITION COURANT DESCENDANT:

- † Pour l'installation sur le plancher combustible seulement quand on utilise la base spéciale, pièce n° KGASB0201ALL ou NAHA01101SB, l'ensemble serpentin, pièce n° CAR, CAP, CNPV, CNRV, ou le carter de serpentin, pièce n° KCAKC ou WENC ou WTNC.

#### POUR LA POSITION HORIZONTALE:

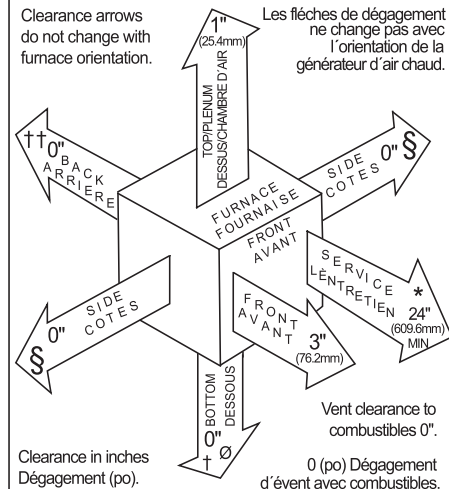
Le contact n'est permis qu'entre les lignes formées par les intersections du dessus et des deux côtés de la chemise de la fournaise, et des solives, des montants ou de la charpente du bâtiment.

- § La distance indiquée concerne l'extrémité du tuyau d'arrivée d'air et l'extrémité du tuyau de sortie d'air.
- Ø Pour les fournaises de 120 et 140 taille, 1 po (25mm) dégagement des matériaux combustibles est requis au-dessous.

This furnace is approved for UPFLOW, DOWNFLOW and HORIZONTAL installations.

Cette fournaise est approuvée pour l'installation HORIZONTALE et la circulation d'air VERS LE HAUT et VERS LE BAS.

Clearance arrows do not change with furnace orientation. Les flèches de dégagement ne changent pas avec l'orientation de la génératrice d'air chaud.



335122-201 REV. B LIT TOP

350AAV

A08435

## CONTROLS - THERMOSTATS AND ZONING

### Non-Programmable Thermostat Section

|                |                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------|
| T6–NAC, T2–NAC | For use with 1–speed Air Conditioner – deg. F/C, Auto Changeover                                  |
| T6–NHP, T2–NHP | For use with 1 or 2–speed Heat Pumps – deg. F/C, Auto Changeover                                  |
| T6–NRH†‡       | For multi-use / stage configurations – deg. F/C, Auto Changeover/Temperature and Humidity Control |

### Programmable Thermostat Section

|         |                                                                                                                       |
|---------|-----------------------------------------------------------------------------------------------------------------------|
| T2–PAC  | For use with 1-speed Air Conditioner - deg. F/C, Auto Changeover, 7-Day Programmable                                  |
| T2–PHP  | For use with 1 or 2-speed Heat Pumps - deg. F/C, Auto Changeover, 5-2 Day Programmable                                |
| T6–PAC  | For use with 1-speed Air Conditioner - deg. F/C, 7 Day Programmable                                                   |
| T6–PHP  | For use with 1 or 2-speed Heat Pumps F/C, Auto Changeover, 7-Day Programmable                                         |
| T6–PRH‡ | For multi-use / stage configurations - deg. F/C, Auto Changeover, 7-Day Programmable/Temperature and Humidity Control |

### Zoning Control Selection

|                              |                                                               |
|------------------------------|---------------------------------------------------------------|
| ZONEBB3ZAC01<br>ZONEBB3ZHP01 | Zone Perfect Two–Zone kit                                     |
| ZONEBB2KIT01 – B             | Zone Perfect Plus 2–Zone kit/Temperature and Humidity Control |
| ZONEBB4KIT01 – B             | Zone Perfect Plus 4–Zone kit/Temperature and Humidity Control |
| ZONEBB8KIT01 – B             | Zone Perfect Plus 8–Zone kit/Temperature and Humidity Control |

†Thermidistat™ Control control can be configured for multiple use and staging. It must be configured for each specific application.

‡HYBRID HEAT™ thermostat is used with furnace and heat pump application.



MEETS DOE RESIDENTIAL  
CONSERVATION SERVICES  
PROGRAM STANDARDS

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



As an ENERGY STAR®  
Partner, Bryant Heating &  
Cooling Systems has  
determined that this  
product meets the  
ENERGY STAR®  
guidelines for energy  
efficiency.



REGISTERED QUALITY SYSTEM

These products are engineered and  
manufactured under an ISO 9001 registered  
quality system.

# SPECIFICATIONS

| UNIT SIZE                                                                                              |                             |                             | 024040                              | 036040                | 024060                | 036060                | 048060                | 036080                |
|--------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------|-------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| RATINGS AND PERFORMANCE                                                                                |                             |                             |                                     |                       |                       |                       |                       |                       |
| Input Btuh*                                                                                            |                             |                             | 40,000                              | 40,000                | 60,000                | 60,000                | 60,000                | 80,000                |
| Output Capacity<br>BTUH* (ICS)<br>(Shaded capa-<br>cities are spe-<br>cified on rating<br>plate)       | Direct Vent (2–Pipe)        | Upflow                      | 38,000                              | 38,000                | 56,000                | 56,000                | 56,000                | 75,000                |
|                                                                                                        |                             | Downflow                    | 38,000                              | 38,000                | 56,000                | 56,000                | 56,000                | 75,000                |
|                                                                                                        |                             | Horizontal                  | 38,000                              | 38,000                | 56,000                | 56,000                | 56,000                | 74,000                |
|                                                                                                        | Non – Direct Vent (1 –Pipe) | Upflow                      | 38,000                              | 38,000                | 56,000                | 56,000                | 56,000                | 75,000                |
|                                                                                                        |                             | Downflow                    | 38,000                              | 38,000                | 56,000                | 56,000                | 56,000                | 74,000                |
|                                                                                                        |                             | Horizontal                  | 38,000                              | 38,000                | 56,000                | 56,000                | 56,000                | 74,000                |
| AFUE%<br>Nonweather-<br>ized ICS                                                                       | Direct Vent (2–Pipe)        | Upflow                      | 94.3                                | 95.5                  | 93.0                  | 93.0                  | 93.0                  | 93.0                  |
|                                                                                                        |                             | Downflow                    | 92.9                                | 94.0                  | 91.5                  | 91.5                  | 91.5                  | 91.5                  |
|                                                                                                        |                             | Horizontal                  | 93.9                                | 94.9                  | 92.3                  | 92.3                  | 92.3                  | 92.3                  |
|                                                                                                        | Non – Direct Vent (1 –Pipe) | Upflow                      | 92.4                                |                       |                       |                       |                       |                       |
|                                                                                                        |                             | Downflow                    | 91.4                                |                       |                       |                       |                       |                       |
|                                                                                                        |                             | Horizontal                  | 91.4                                |                       |                       |                       |                       |                       |
| Certified Temperature Rise Range ° F (° C)                                                             |                             |                             | 30–60<br>(17–33)                    | 15–45<br>(8–25)       | 45–75<br>(25–41)      | 30–60<br>(17–33)      | 20–50<br>(11–28)      | 40–70<br>(22–39)      |
| Certified External Static Pressure                                                                     |                             | Heating                     | 0.10                                | 0.10                  | 0.12                  | 0.12                  | 0.12                  | 0.15                  |
|                                                                                                        |                             | Cooling                     | 0.50                                | 0.50                  | 0.50                  | 0.50                  | 0.50                  | 0.50                  |
| Airflow CFM‡                                                                                           |                             | Heating                     | 850                                 | 1125                  | 885                   | 1065                  | 1320                  | 1190                  |
|                                                                                                        |                             | Cooling                     | 895                                 | 1215                  | 900                   | 1200                  | 1545                  | 1245                  |
| ELECTRICAL                                                                                             |                             |                             |                                     |                       |                       |                       |                       |                       |
| Unit Volts–Hertz–Phase                                                                                 |                             |                             | 115–60–1                            |                       |                       |                       |                       |                       |
| Operating Voltage Range Min –Max**                                                                     |                             |                             | 104–127                             |                       |                       |                       |                       |                       |
| Maximum Unit Amps                                                                                      |                             |                             | 6.1                                 | 7.3                   | 6.1                   | 7.1                   | 9.5                   | 7.6                   |
| Unit Ampacity††                                                                                        |                             |                             | 8.4                                 | 10.0                  | 8.4                   | 9.8                   | 12.8                  | 10.4                  |
| Minimum Wire Size                                                                                      |                             |                             | 14                                  | 14                    | 14                    | 14                    | 14                    | 14                    |
| Maximum Wire Length Ft. (M)‡‡                                                                          |                             |                             | 44<br>(13.4)                        | 37<br>(11.2)          | 44<br>(13.4)          | 38<br>(11.5)          | 29<br>(8.8)           | 36<br>(10.9)          |
| Maximum Fuse Size or Ckt Bkr Amps (Time–Delay Type Recommended)                                        |                             |                             | 15                                  | 15                    | 15                    | 15                    | 15                    | 15                    |
| Transformer (24v)                                                                                      |                             |                             | 40va                                |                       |                       |                       |                       |                       |
| External Control Power Available                                                                       |                             | Heating                     | 12va                                |                       |                       |                       |                       |                       |
|                                                                                                        |                             | Cooling                     | 21va                                |                       |                       |                       |                       |                       |
| Air Conditioning Blower Relay                                                                          |                             |                             | Standard                            |                       |                       |                       |                       |                       |
| CONTROLS                                                                                               |                             |                             |                                     |                       |                       |                       |                       |                       |
| Limit Control                                                                                          |                             |                             | SPST                                |                       |                       |                       |                       |                       |
| Heating Blower Control (Off Delay)                                                                     |                             |                             | Selectable 90, 120, 150, or 180 Sec |                       |                       |                       |                       |                       |
| Burners (Monoport)                                                                                     |                             |                             | 2                                   | 2                     | 3                     | 3                     | 3                     | 4                     |
| Gas Connection Size                                                                                    |                             |                             | 1/2–in. NPT                         |                       |                       |                       |                       |                       |
| GAS CONTROLS                                                                                           |                             |                             |                                     |                       |                       |                       |                       |                       |
| Gas Valve (Redundant)                                                                                  |                             | Manufacturer                | White–Rodgers                       |                       |                       |                       |                       |                       |
|                                                                                                        |                             | Min Inlet Pressure (In. wc) | 4.5 (Natural Gas)                   |                       |                       |                       |                       |                       |
|                                                                                                        |                             | Max Inlet Pressure (In. wc) | 13.6 (Natural Gas)                  |                       |                       |                       |                       |                       |
| Ignition Device                                                                                        |                             |                             | Hot Surface                         |                       |                       |                       |                       |                       |
| BLOWER DATA                                                                                            |                             |                             |                                     |                       |                       |                       |                       |                       |
| Direct–Drive Motor HP (Permanent Split Capacitor)                                                      |                             |                             | 1/5                                 | 1/3                   | 1/5                   | 1/3                   | 1/2                   | 1/3                   |
| Motor Full Load Amps                                                                                   |                             |                             | 4.9                                 | 5.8                   | 4.9                   | 5.8                   | 7.9                   | 5.8                   |
| RPM (Nominal) –Speeds                                                                                  |                             |                             | 1075–3                              | 1075–4                | 1075–3                | 1075–4                |                       |                       |
| Blower Wheel Diameter x Width – In. (mm)                                                               |                             |                             | 10 x 6<br>(254 x 152)               | 10 x 7<br>(254 x 178) | 10 x 6<br>(254 x 152) | 10 x 7<br>(254 x 178) | 11 x 8<br>(279 x 203) | 10 x 7<br>(254 x 178) |
| Filter Size – In. (mm)                                                                                 |                             |                             | (1) 16 x 25 x 3/4 (406 x 635 x 19)  |                       |                       |                       |                       |                       |
| FACTORY –AUTHORIZED AND LISTED, DEALER –INSTALLED OPTIONS                                              |                             |                             |                                     |                       |                       |                       |                       |                       |
| Gas Conversion Kit –Natural –to –Propane                                                               |                             |                             | KGANP4601ALL                        |                       |                       |                       |                       |                       |
| Gas Conversion Kit –Propane –to –Natural                                                               |                             |                             | KGAPN3901ALL                        |                       |                       |                       |                       |                       |
| Twinning Kit                                                                                           |                             |                             | N/A                                 |                       |                       |                       | KGATW<br>0601HSI      | N/A                   |
| Manufactured (Mobile) Home Kit                                                                         |                             |                             | KGAMH0301KIT                        |                       |                       |                       |                       |                       |
| Downflow Base***                                                                                       |                             |                             | KGASB0301ALL                        |                       |                       |                       |                       |                       |
| Vent Termination Kit (Bracket Only for 2 Pipes)                                                        |                             |                             | 2–in. –KGA VT0101BRA                |                       |                       | 3–in. –KGA VT0201BRA  |                       |                       |
| Concentric Vent Termination Kit (Single Exit)                                                          |                             |                             | 2–in. –KGA VT0701CVT                |                       |                       | 3–in. –KGA VT0801CVT  |                       |                       |
| Condensate Freeze Protection Kit                                                                       |                             |                             | KGA HT0101CFP                       |                       |                       |                       |                       |                       |
| Condensate Neutralizer Kit (Obtained Thru RCD)                                                         |                             |                             | P908 –0001                          |                       |                       |                       |                       |                       |
| Side Filter Rack (Without Filter) –Upflow ONLY                                                         |                             |                             | KGA FR0206ALL                       |                       |                       |                       |                       |                       |
| Electronic/Mechanical Air Cleaner                                                                      |                             |                             | Model EACA, EZXCAB, or FILCAB       |                       |                       |                       |                       |                       |
| Humidifier                                                                                             |                             |                             | Model HUM                           |                       |                       |                       |                       |                       |
| Heat/Energy Recovery Ventilator                                                                        |                             |                             | Model HRV                           |                       |                       |                       |                       |                       |
| UV Lights                                                                                              |                             |                             | Model UVL                           |                       |                       |                       |                       |                       |
| Door Gasket Kit                                                                                        |                             |                             | KGBAC0110DGK                        |                       |                       |                       |                       |                       |
| Unframed Filter Permanent Washable 3/4–in. (19 mm) thick<br>16 x 25 (406 x 635)<br>24 x 25 (610 x 635) |                             |                             | KGA WF1306UFR<br>KGA WF1506UFR      |                       |                       |                       |                       |                       |

See notes at end of table.

350AAV

# SPECIFICATIONS (CONTINUED)

| UNIT SIZE                                                                                              |                             |                      | 048080                               | 060080                                | 048100                | 060100                 | 060120                               | 060140                 |      |
|--------------------------------------------------------------------------------------------------------|-----------------------------|----------------------|--------------------------------------|---------------------------------------|-----------------------|------------------------|--------------------------------------|------------------------|------|
| RATINGS AND PERFORMANCE                                                                                |                             |                      |                                      |                                       |                       |                        |                                      |                        |      |
| Input Btuh*                                                                                            |                             |                      | 80,000                               | 80,000                                | 100,000               | 100,000                | 120,000                              | 138,000                |      |
| Output Capacity<br>BTUH* (ICS)<br>(Shaded capacities are specified on rating plate)                    | Direct Vent (2-Pipe)        | Upflow               | 75,000                               | 75,000                                | 94,000                | 94,000                 | 113,000                              | 129,000                |      |
|                                                                                                        |                             | Downflow             | 75,000                               | 75,000                                | 94,000                | 94,000                 | 113,000                              | 129,000                |      |
|                                                                                                        |                             | Horizontal           | 75,000                               | 75,000                                | 93,000                | 93,000                 | 112,000                              | 128,000                |      |
|                                                                                                        | Non-Direct Vent (1-Pipe)    | Upflow               | 75,000                               | 75,000                                | 94,000                | 94,000                 | 112,000                              | NA                     |      |
|                                                                                                        |                             | Downflow             | 75,000                               | 75,000                                | 93,000                | 93,000                 | 113,000                              | NA                     |      |
|                                                                                                        |                             | Horizontal           | 75,000                               | 75,000                                | 93,000                | 93,000                 | 112,000                              | NA                     |      |
|                                                                                                        | AFUE%<br>Nonweatherized ICS | Direct Vent (2-Pipe) | Upflow                               | 93.0                                  |                       |                        |                                      |                        | 92.6 |
|                                                                                                        |                             |                      | Downflow                             | 91.5                                  |                       |                        |                                      |                        | 91.2 |
| Horizontal                                                                                             |                             |                      | 92.3                                 |                                       |                       |                        |                                      | 92                     |      |
| Non-Direct Vent (1-Pipe)                                                                               |                             | Upflow               | 92.4                                 |                                       |                       |                        |                                      | NA                     |      |
|                                                                                                        |                             | Downflow             | 91.4                                 |                                       |                       |                        |                                      | NA                     |      |
|                                                                                                        |                             | Horizontal           | 91.4                                 |                                       |                       |                        |                                      | NA                     |      |
| Certified Temperature Rise Range ° F (° C)                                                             |                             |                      | 30-60<br>(17-33)                     | 20-50<br>(11-28)                      | 45-75<br>(25-41)      | 30-60<br>(17-33)       | 40-70<br>(22-39)                     | 50-80<br>(28-44)       |      |
| Certified External Static Pressure                                                                     | Heating                     | 0.15                 | 0.15                                 | 0.20                                  | 0.20                  | 0.20                   | 0.20                                 |                        |      |
|                                                                                                        | Cooling                     | 0.50                 | 0.50                                 | 0.50                                  | 0.50                  | 0.50                   | 0.50                                 |                        |      |
| Airflow CFM‡                                                                                           | Heating                     | 1285                 | 1785                                 | 1315                                  | 1690                  | 1720                   | 1970                                 |                        |      |
|                                                                                                        | Cooling                     | 1525                 | 1925                                 | 1570                                  | 1930                  | 2000                   | 1990                                 |                        |      |
| ELECTRICAL                                                                                             |                             |                      |                                      |                                       |                       |                        |                                      |                        |      |
| Unit Volts-Hertz-Phase                                                                                 |                             |                      | 115-60-1                             |                                       |                       |                        |                                      |                        |      |
| Operating Voltage Range Min-Max**                                                                      |                             |                      | 104-127                              |                                       |                       |                        |                                      |                        |      |
| Maximum Unit Amps                                                                                      |                             |                      | 10.1                                 | 14.1                                  | 10.2                  | 14.8                   | 14.6                                 | 14.6                   |      |
| Unit Ampacity††                                                                                        |                             |                      | 13.4                                 | 18.4                                  | 13.5                  | 19.3                   | 19.1                                 | 18.8                   |      |
| Minimum Wire Size                                                                                      |                             |                      | 14                                   | 12                                    | 14                    | 12                     | 12                                   | 12                     |      |
| Maximum Wire Length - Ft (M)‡‡                                                                         |                             |                      | 28<br>(8.5)                          | 31<br>(9.4)                           | 27<br>(8.2)           | 30<br>(9.1)            | 30<br>(9.1)                          | 30<br>(9.1)            |      |
| Maximum Fuse Size or Ckt Bkr Amps (Time-Delay Type Recommended)                                        |                             |                      | 15                                   | 20                                    | 15                    | 20                     | 20                                   | 20                     |      |
| Transformer (24v)                                                                                      |                             |                      | 40va                                 |                                       |                       |                        |                                      |                        |      |
| External Control Power Available                                                                       | Heating                     |                      | 12va                                 |                                       |                       |                        |                                      |                        |      |
|                                                                                                        | Cooling                     |                      | 21va                                 |                                       |                       |                        |                                      |                        |      |
| Air Conditioning Blower Relay                                                                          |                             |                      | Standard                             |                                       |                       |                        |                                      |                        |      |
| CONTROLS                                                                                               |                             |                      |                                      |                                       |                       |                        |                                      |                        |      |
| Limit Control                                                                                          |                             |                      | SPST                                 |                                       |                       |                        |                                      |                        |      |
| Heating Blower Control (Off Delay)                                                                     |                             |                      | Selectable 90, 120, 150, or 180 Sec  |                                       |                       |                        |                                      |                        |      |
| Burners (Monoport)                                                                                     |                             |                      | 4                                    | 4                                     | 5                     | 5                      | 6                                    | 6                      |      |
| Gas Connection Size                                                                                    |                             |                      | 1/2-in. NPT                          |                                       |                       |                        |                                      |                        |      |
| GAS CONTROLS                                                                                           |                             |                      |                                      |                                       |                       |                        |                                      |                        |      |
| Gas Valve (Redundant)                                                                                  | Manufacturer                |                      | White-Rodgers                        |                                       |                       |                        |                                      |                        |      |
|                                                                                                        | Min Inlet Pressure (In. wc) |                      | 4.5 (Natural Gas)                    |                                       |                       |                        |                                      |                        |      |
|                                                                                                        | Max Inlet Pressure (In. wc) |                      | 13.6 (Natural Gas)                   |                                       |                       |                        |                                      |                        |      |
| Ignition Device                                                                                        |                             |                      | Hot Surface                          |                                       |                       |                        |                                      |                        |      |
| BLOWER DATA                                                                                            |                             |                      |                                      |                                       |                       |                        |                                      |                        |      |
| Direct-Drive Motor HP (Permanent Split Capacitor)                                                      |                             |                      | 1/2                                  | 3/4                                   | 1/2                   | 3/4                    | 3/4                                  | 3/4                    |      |
| Motor Full Load Amps                                                                                   |                             |                      | 7.9                                  | 11.1                                  | 7.9                   | 11.1                   | 11.1                                 | 11.1                   |      |
| RPM (Nominal)-Speeds                                                                                   |                             |                      | 1075-4                               |                                       |                       |                        |                                      |                        |      |
| Blower Wheel Diameter x Width - In. (mm)                                                               |                             |                      | 11 x 8<br>(279 x 203)                | 11 x 10<br>(279 x 254)                | 11 x 8<br>(279 x 203) | 11 x 10<br>(279 x 254) | 11 x 10<br>(279 x 254)               | 11 x 10<br>(279 x 254) |      |
| Filter Size - In.(mm)                                                                                  |                             |                      | (1)16 x 25 x 3/4<br>(406 x 635 x 19) | (1) 20 x 25 x 3/4<br>(508 x 635 x 19) |                       |                        | (1)24 x 25 x 3/4<br>(610 x 635 x 19) |                        |      |
| FACTORY-AUTHORIZED AND LISTED, DEALER-INSTALLED OPTIONS                                                |                             |                      |                                      |                                       |                       |                        |                                      |                        |      |
| Gas Conversion Kit-Natural-to-Propane                                                                  |                             |                      | KGANP4601ALL                         |                                       |                       |                        |                                      |                        |      |
| Gas Conversion Kit-Propane-to-Natural                                                                  |                             |                      | KGAPN3901ALL                         |                                       |                       |                        |                                      |                        |      |
| Twinning Kit                                                                                           |                             |                      | KGATW0601HSI                         |                                       |                       |                        |                                      | N/A                    |      |
| Manufactured (Mobile) Home Kit                                                                         |                             |                      | KGAMH0301KIT                         |                                       |                       |                        |                                      | N/A                    |      |
| Downflow Base***                                                                                       |                             |                      | KGASB0301ALL                         |                                       |                       |                        |                                      |                        |      |
| Vent Termination Kit (Bracket Only for 2 Pipes)                                                        |                             |                      | 2-in.-KGAVT0101BRA                   |                                       |                       | 3-in.-KGAVT0201BRA     |                                      |                        |      |
| Concentric Vent Termination Kit (Single Exit)                                                          |                             |                      | 2-in.-KGAVT0701CVT                   |                                       |                       | 3-in.-KGAVT0801CVT     |                                      |                        |      |
| Condensate Freeze Protection Kit                                                                       |                             |                      | KGAHT0101CFP                         |                                       |                       |                        |                                      |                        |      |
| Condensate Neutralizer Kit (Obtained Thru RCD)                                                         |                             |                      | P908-0001                            |                                       |                       |                        |                                      |                        |      |
| Side Filter Rack (Without Filter)-Upflow ONLY                                                          |                             |                      | KGAFR0206ALL                         |                                       |                       |                        |                                      |                        |      |
| Electronic/Mechanical Air Cleaner                                                                      |                             |                      | Model EACB, EZXCAB, or FILCAB        |                                       |                       |                        |                                      |                        |      |
| Humidifier                                                                                             |                             |                      | Model HUM                            |                                       |                       |                        |                                      |                        |      |
| Heat/Energy Recovery Ventilator                                                                        |                             |                      | Model HRV                            |                                       |                       |                        |                                      |                        |      |
| UV Lights                                                                                              |                             |                      | Model UVL                            |                                       |                       |                        |                                      |                        |      |
| Door Gasket Kit                                                                                        |                             |                      | KGBAC0110DGGK                        |                                       |                       |                        |                                      |                        |      |
| Unframed Filter Permanent Washable 3/4-in. (19 mm) thick<br>16 x 25 (406 x 635)<br>24 x 25 (610 x 635) |                             |                      | KGAWF1306UFR<br>KGAWF1506UFR         |                                       |                       |                        |                                      |                        |      |

\* Gas input ratings are certified for elevations to 2000 ft. (610 M). For elevations above 2000 ft. (610 M), reduce ratings 2% for each 1000 ft. (305 M) above sea level. In Canada, derate the unit 5% from 2000 to 4500 ft. (610 to 1372 M) above sea level.

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

‡ Airflow shown is for bottom only return-air supply. Air delivery above 1800 CFM may require that both sides, a combination of 1 side and bottom, or bottom only of the furnace be used for return air, see Air Delivery table. 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.

\*\* Permissible voltage limits for proper furnace operation.

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

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

\*\*\* Required for installation on combustible floors when no coil box is used, or when any coil box other than a Bryant CD5, CK5, CAP(R), CNP(R), or KCAKC cased coil is used.

N/A - Not applicable

ICS - Isolated Combustion System

# MAXIMUM ALLOWABLE PIPE LENGTH - FT. (M)

| ALTITUDE<br>FT. (M)                    | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                        | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|----------------------------------------|---------------------|------------------------------------------|------------------------|-------------------------------------|----------------------|--------------|--------------|--------------|--------------|--------------|
|                                        |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)*  | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 0 to 2000<br>(0 to 610)                | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1 (25)                 | 1 (25)                              | 5<br>(1.5)           | NA           | NA           | NA           | NA           | NA           |
|                                        |                     |                                          | 1-1/2 (38)             | 1-1/2 (38)                          | 70<br>(21.3)         | 70<br>(21.3) | 65<br>(19.8) | 60<br>(18.3) | 60<br>(18.3) | 55<br>(16.8) |
|                                        |                     |                                          | 2 (51)                 | 2 (51)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 20<br>(6.1)          | 15<br>(4.6)  | 10<br>(3.0)  | 5<br>(1.5)   | NA           | NA           |
|                                        |                     |                                          | 2 (51)                 | 2 (51)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 10<br>(3.0)          | NA           | NA           | NA           | NA           | NA           |
|                                        |                     |                                          | 2 (51)                 | 2 (51)                              | 55<br>(16.8)         | 50<br>(15.2) | 35<br>(10.7) | 30<br>(9.1)  | 30<br>(9.1)  | 20<br>(6.1)  |
|                                        |                     |                                          | 2-1/2 (64)             | 2-1/2 (64)                          | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2 (51)                 | 2 (51)                              | 5<br>(1.5)           | NA           | NA           | NA           | NA           | NA           |
|                                        |                     |                                          | 2-1/2 (64)             | 2-1/2 (64)                          | 40<br>(12.2)         | 30<br>(9.1)  | 20<br>(6.1)  | 20<br>(6.1)  | 10<br>(3.0)  | NA           |
|                                        |                     |                                          | 3 (76)                 | 3 (76)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)<br>one disk | 2-1/2 (64)                          | 10<br>(3.0)          | NA           | NA           | NA           | NA           | NA           |
|                                        |                     |                                          | 3 (76)†                | NA                                  | 45<br>(13.7)         | 40<br>(12.2) | 35<br>(10.7) | 30<br>(9.1)  | 25<br>(7.6)  | 20<br>(6.1)  |
|                                        |                     |                                          | 3 (76) † no disk       | 3 (76)†                             | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 140,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)<br>one disk | NA                                  | 5<br>(1.5)           | NA           | NA           | NA           | NA           | NA           |
|                                        |                     |                                          | 3 (76)†                | NA                                  | 40<br>(12.1)         | 35<br>(10.6) | 30<br>(9.1)  | 25<br>(7.6)  | 20<br>(6.1)  | 15<br>(4.6)  |
|                                        |                     |                                          | 3 (76) † no disk       | NA                                  | 60<br>(18.3)         | 56<br>(17.0) | 52<br>(15.8) | 48<br>(14.6) | 44<br>(13.4) | 40<br>(12.2) |
|                                        |                     |                                          | 4 (102) † no<br>disk   | NA                                  | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
| ALTITUDE<br>FT. (M)                    | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                        | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|                                        |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)*  | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 2001 to 3000<br>(610 to 914)<br>Canada | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 67<br>(20.4)         | 62<br>(18.9) | 57<br>(17.4) | 52<br>(15.8) | 52<br>(15.8) | 47<br>(14.3) |
|                                        |                     |                                          | 2 (51)                 | 2 (51)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 17<br>(5.2)          | 12<br>(3.7)  | 7<br>(2.1)   | NA           | NA           | NA           |
|                                        |                     |                                          | 2 (51)                 | 2 (51)                              | 70<br>(21.3)         | 67<br>(20.4) | 66<br>(20.1) | 61<br>(18.6) | 61<br>(18.6) | 61<br>(18.6) |
|                                        | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                 | 2 (51)                              | 49<br>(14.9)         | 44<br>(13.4) | 30<br>(9.1)  | 25<br>(7.6)  | 25<br>(7.6)  | 15<br>(4.6)  |
|                                        |                     |                                          | 2-1/2 (64)             | 2-1/2 (64)                          | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)             | 2-1/2 (64)                          | 35<br>(10.7)         | 26<br>(7.9)  | 16<br>(4.9)  | 16<br>(4.9)  | 6<br>(1.8)   | NA           |
|                                        |                     |                                          | 3 (76)                 | 3 (76)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 66<br>(20.1) | 61<br>(18.6) |
|                                        | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)                 | NA                                  | 14<br>(4.3)          | 9<br>(2.7)   | NA           | NA           | NA           | NA           |
|                                        |                     |                                          | NA                     | 3 (76)†                             | 63<br>(19.2)         | 62<br>(18.9) | 62<br>(18.9) | 61<br>(18.6) | 61<br>(18.6) | 61<br>(18.6) |
|                                        |                     |                                          | 3 (76)† no disk        | NA                                  | 70<br>(21.3)         | 70<br>(21.3) | 63<br>(19.2) | 56<br>(17.1) | 50<br>(15.2) | 43<br>(13.1) |
|                                        |                     |                                          | 4 (102)† no<br>disk    | 4 (102)† no disk                    | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                        | 140,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76) one<br>disk†    | NA                                  | 20<br>(6.1)          | 15<br>(4.6)  | 10<br>(3.0)  | 5<br>(1.5)   | NA           | NA           |
|                                        |                     |                                          | 3 (76)† no disk        | NA                                  | 39<br>(11.8)         | 35<br>(10.6) | 31<br>(11.9) | 27<br>(8.2)  | 23<br>(7.0)  | 19<br>(5.8)  |
|                                        |                     |                                          | 4 (102)† no<br>disk    | NA                                  | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |

See notes at end of table.

350AAV

# MAXIMUM ALLOWABLE PIPE LENGTH - FT. (M) (CONTINUED)

350AAV

| ALTITUDE<br>FT. (M)             | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                        | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|---------------------------------|---------------------|------------------------------------------|------------------------|-------------------------------------|----------------------|--------------|--------------|--------------|--------------|--------------|
|                                 |                     | TERMINATION<br>TYPE                      | PIPE DIA –<br>IN (mm)* | PIPE DIA –<br>IN (mm)*              | 1                    | 2            | 3            | 4            | 5            | 6            |
| 3001 to 4000<br>(914 to 1219)   | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 64<br>(19.5)         | 59<br>(18.0) | 54<br>(16.5) | 49<br>(14.9) | 48<br>(14.6) | 43<br>(13.1) |
|                                 |                     |                                          | 2 (51)                 | 2 (51)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 16<br>(4.9)          | 11<br>(3.4)  | 6<br>(1.8)   | NA           | NA           | NA           |
|                                 |                     |                                          | 2 (51)                 | 2 (51)                              | 68<br>(20.7)         | 63<br>(19.2) | 62<br>(18.9) | 57<br>(17.4) | 57<br>(17.4) | 56<br>(17.1) |
|                                 | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                 | 2 (51)                              | 46<br>(14.0)         | 41<br>(12.5) | 28<br>(8.5)  | 23<br>(7.0)  | 22<br>(6.7)  | 13<br>(4.0)  |
|                                 |                     |                                          | 2-1/2 (64)             | 2-1/2 (64)                          | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)             | 2-1/2 (64)                          | 33<br>(10.1)         | 24<br>(7.3)  | 15<br>(4.6)  | 14<br>(4.3)  | 5<br>(1.5)   | NA           |
|                                 |                     |                                          | 3 (76)                 | 3 (76)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 66<br>(20.1) | 61<br>(18.6) | 56<br>(17.1) |
|                                 | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)† no disk        | NA                                  | 65<br>(19.8)         | 58<br>(17.7) | 51<br>(15.5) | 44<br>(13.4) | 38<br>(11.6) | 31<br>(9.4)  |
|                                 |                     |                                          | NA                     | 3 (76)†                             | 59<br>(18.0)         | 59<br>(18.0) | 58<br>(17.7) | 57<br>(17.4) | 57<br>(17.4) | 56<br>(17.1) |
|                                 |                     | 4† no disk                               | 4 (102)† no disk       | 4 (102) † no disk                   | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 140,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76) one disk†       | NA                                  | 11<br>(3.4)          | 6<br>(1.8)   | NA           | NA           | NA           | NA           |
|                                 |                     |                                          | 3 (76)† no disk        | NA                                  | 30<br>(9.1)          | 26<br>(7.9)  | 22<br>(6.7)  | 18<br>(5.5)  | 14<br>(4.3)  | 10<br>(3.0)  |
|                                 |                     |                                          | 4 (102)† no disk       | NA                                  | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
| ALTITUDE<br>FT. (M)             | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                        | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|                                 |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)*  | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 4001 to 5000†<br>(1219 to 1524) | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 60<br>(18.3)         | 55<br>(16.8) | 50<br>(15.2) | 45<br>(13.7) | 44<br>(13.4) | 39<br>(11.9) |
|                                 |                     |                                          | 2 (51)                 | 2 (51)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)             | 1-1/2 (38)                          | 15<br>(4.6)          | 10<br>(3.0)  | 5<br>(1.5)   | NA           | NA           | NA           |
|                                 |                     |                                          | 2 (51)                 | 2 (51)                              | 64<br>(19.5)         | 59<br>(18.0) | 58<br>(17.7) | 53<br>(16.2) | 52<br>(15.8) | 52<br>(15.8) |
|                                 | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                 | 2 (51)                              | 44<br>(13.4)         | 39<br>(11.9) | 26<br>(7.9)  | 21<br>(6.4)  | 20<br>(6.1)  | 11<br>(3.4)  |
|                                 |                     |                                          | 2-1/2 (64)             | 2-1/2 (64)                          | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)             | 2-1/2 (64)                          | 31<br>(9.4)          | 22<br>(6.7)  | 13<br>(4.0)  | 12<br>(3.7)  | NA           | NA           |
|                                 |                     |                                          | 3 (76)                 | 3 (76)                              | 70<br>(21.3)         | 70<br>(21.3) | 67<br>(20.4) | 62<br>(18.9) | 57<br>(17.4) | 52<br>(15.8) |
|                                 | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)† no disk        | NA                                  | 53<br>(16.2)         | 46<br>(14.0) | 40<br>(12.2) | 33<br>(10.1) | 26<br>(7.9)  | 20<br>(6.1)  |
|                                 |                     |                                          | NA                     | 3 (76)†                             | 56<br>(17.1)         | 55<br>(16.8) | 54<br>(16.5) | 53<br>(16.2) | 52<br>(15.8) | 52<br>(15.8) |
|                                 |                     |                                          | 4 (102)† no disk       | 4 (102)† no disk                    | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 140,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)† no disk        | NA                                  | 21<br>(6.4)          | 17<br>(5.1)  | 13<br>(3.9)  | 9<br>(2.7)   | 5<br>(1.5)   | NA           |
|                                 |                     |                                          | 4 (102)† no disk       | NA                                  | 69<br>(21.0)         | 64<br>(19.5) | 59<br>(17.9) | 54<br>(16.4) | 49<br>(15.0) | 44<br>(13.4) |

See notes at end of table.

# MAXIMUM ALLOWABLE PIPE LENGTH - FT. (M) (CONTINUED)

| ALTITUDE<br>FT. (M)             | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                       | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|---------------------------------|---------------------|------------------------------------------|-----------------------|-------------------------------------|----------------------|--------------|--------------|--------------|--------------|--------------|
|                                 |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)* | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 5001 to 6000†<br>(1524 to 1829) | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 57<br>(17.4)         | 52<br>(15.8) | 47<br>(14.3) | 42<br>(12.8) | 40<br>(12.2) | 35<br>(10.7) |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 14<br>(4.3)          | 9<br>(2.7)   | NA           | NA           | NA           | NA           |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 60<br>(18.3)         | 55<br>(16.8) | 54<br>(16.5) | 49<br>(14.9) | 48<br>(14.6) | 47<br>(14.3) |
|                                 | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                | 2 (51)                              | 41<br>(12.5)         | 36<br>(11.0) | 23<br>(7.0)  | 18<br>(5.5)  | 17<br>(5.2)  | 8<br>(2.4)   |
|                                 |                     |                                          | 2-1/2 (64)            | 2-1/2 (64)                          | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)            | 2-1/2 (64)                          | 29<br>(8.8)          | 21<br>(6.4)  | 12<br>(3.7)  | 11<br>(3.4)  | NA           | NA           |
|                                 |                     |                                          | 3 (76)                | 3 (76)                              | 70<br>(21.3)         | 67<br>(20.4) | 62<br>(18.9) | 57<br>(17.4) | 52<br>(15.8) | 47<br>(14.3) |
|                                 | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)†<br>no disk    | NA                                  | 42<br>(12.8)         | 35<br>(10.7) | 29<br>(8.8)  | 22<br>(6.7)  | 15<br>(4.6)  | 9<br>(2.7)   |
|                                 |                     |                                          | NA                    | 3 (76)†                             | 53<br>(16.2)         | 52<br>(15.8) | 50<br>(15.2) | 49<br>(14.9) | 48<br>(14.6) | 47<br>(14.3) |
|                                 |                     |                                          | 4 (102)†<br>no disk   | 4 (102)†<br>no disk                 | 70<br>(21.3)         | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) | 70<br>(21.3) |
|                                 | 140,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)†<br>no disk    | NA                                  | 12<br>(3.6)          | 8<br>(2.4)   | NA           | NA           | NA           | NA           |
|                                 |                     |                                          | 4 (102)†<br>no disk   | NA                                  | 42<br>(12.8)         | 37<br>(11.2) | 32<br>(9.7)  | 27<br>(8.2)  | 22<br>(6.7)  | 17<br>(5.1)  |
| ALTITUDE<br>FT. (M)             | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                       | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|                                 |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)* | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 6001 to 7000†<br>(1829 to 2134) | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 53<br>(16.2)         | 48<br>(14.6) | 43<br>(13.1) | 38<br>(11.6) | 37<br>(11.3) | 32<br>(9.8)  |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 70<br>(21.3)         | 70<br>(21.3) | 68<br>(20.7) | 67<br>(20.4) | 66<br>(20.1) | 64<br>(19.5) |
|                                 | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 13<br>(4.0)          | 8<br>(2.4)   | NA           | NA           | NA           | NA           |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 57<br>(17.4)         | 52<br>(15.8) | 50<br>(15.2) | 45<br>(13.7) | 44<br>(13.4) | 43<br>(13.1) |
|                                 | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                | 2 (51)                              | 38<br>(11.6)         | 33<br>(10.1) | 21<br>(6.4)  | 16<br>(4.9)  | 15<br>(4.6)  | 6<br>(1.8)   |
|                                 |                     |                                          | 2-1/2 (64)            | 2-1/2 (64)                          | 70<br>(21.3)         | 70<br>(21.3) | 68<br>(20.7) | 67<br>(20.4) | 66<br>(20.1) | 64<br>(19.5) |
|                                 | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)            | 2-1/2 (64)                          | 27<br>(8.2)          | 19<br>(5.8)  | 10<br>(3.0)  | 9<br>(2.7)   | NA           | NA           |
|                                 |                     |                                          | 3 (76)                | 3 (76)                              | 68<br>(20.7)         | 63<br>(19.2) | 58<br>(17.7) | 53<br>(16.2) | 48<br>(14.6) | 43<br>(13.1) |
|                                 | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)†<br>no disk    | NA                                  | 31<br>(9.4)          | 24<br>(7.3)  | 18<br>(5.5)  | 11<br>(3.4)  | NA           | NA           |
|                                 |                     |                                          | NA                    | 3 (76)†                             | 49<br>(14.9)         | 48<br>(14.6) | 47<br>(14.3) | 45<br>(13.7) | 44<br>(13.4) | 43<br>(13.1) |
|                                 | 140,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 4 (102)†<br>no disk   | NA                                  | 17<br>(5.1)          | 12<br>(3.6)  | 7<br>(2.1)   | NA           | NA           | NA           |

See notes at end of table.

350AAV

# MAXIMUM ALLOWABLE PIPE LENGTH - FT. (M) (CONTINUED)

350AAV

| ALTITUDE<br>FT. (M)             | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                       | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|---------------------------------|---------------------|------------------------------------------|-----------------------|-------------------------------------|----------------------|--------------|--------------|--------------|--------------|--------------|
|                                 |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)* | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 7001 to 8000‡<br>(2134 to 2438) | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 49<br>(14.9)         | 44<br>(13.4) | 39<br>(11.9) | 34<br>(10.4) | 33<br>(10.1) | 28<br>(6.5)  |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 66<br>(20.1)         | 65<br>(19.8) | 63<br>(19.2) | 62<br>(18.9) | 60<br>(18.3) | 59<br>(18.0) |
|                                 | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 12<br>(3.7)          | 7<br>(2.1)   | NA           | NA           | NA           | NA           |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 53<br>(16.2)         | 48<br>(14.6) | 46<br>(14.0) | 41<br>(12.5) | 40<br>(12.2) | 38<br>(11.6) |
|                                 | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                | 2 (51)                              | 36<br>(11.0)         | 31<br>(9.4)  | 19<br>(5.8)  | 14<br>(4.3)  | 12<br>(3.7)  | NA           |
|                                 |                     |                                          | 2-1/2 (64)            | 2-1/2 (64)                          | 66<br>(20.1)         | 65<br>(19.8) | 63<br>(19.2) | 62<br>(18.9) | 60<br>(18.3) | 59<br>(18.0) |
|                                 | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)            | 2-1/2 (64)                          | 25<br>(7.6)          | 17<br>(5.2)  | 8<br>(2.4)   | 7<br>(2.1)   | NA           | NA           |
|                                 |                     |                                          | 3 (76)                | 3 (76)                              | 63<br>(19.2)         | 58<br>(17.7) | 53<br>(16.2) | 48<br>(14.6) | 43<br>(13.1) | 38<br>(11.6) |
|                                 | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)† no disk       | NA                                  | 20<br>(6.1)          | 13<br>(4.0)  | 7<br>(2.1)   | NA           | NA           | NA           |
|                                 |                     |                                          | NA                    | 3 (76)†                             | 46<br>(14.0)         | 44<br>(13.4) | 43<br>(13.1) | 41<br>(12.5) | 40<br>(12.2) | 38<br>(11.6) |
|                                 |                     |                                          | 4 (102)† no disk      | 4 (102)† no disk                    | 61<br>(18.6)         | 56<br>(17.1) | 51<br>(15.5) | 46<br>(14.0) | 41<br>(12.5) | 36<br>(11.0) |
|                                 | 140,000             | NA                                       |                       |                                     |                      |              |              |              |              |              |
| ALTITUDE<br>FT. (M)             | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                       | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|                                 |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)* | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 8001 to 9000‡<br>(2438 to 2743) | 40,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 46<br>(14.0)         | 41<br>(12.5) | 36<br>(11.0) | 31<br>(9.4)  | 29<br>(8.8)  | 24<br>(7.3)  |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 62<br>(18.9)         | 60<br>(18.3) | 58<br>(17.7) | 56<br>(17.1) | 55<br>(16.8) | 53<br>(16.2) |
|                                 | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 1-1/2 (38)            | 1-1/2 (38)                          | 11<br>(3.4)          | 6<br>(1.8)   | NA           | NA           | NA           | NA           |
|                                 |                     |                                          | 2 (51)                | 2 (51)                              | 49<br>(14.9)         | 44<br>(13.4) | 42<br>(12.8) | 37<br>(11.3) | 35<br>(10.7) | 34<br>(10.4) |
|                                 | 80,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                | 2 (51)                              | 33<br>(10.1)         | 28<br>(8.5)  | 17<br>(5.2)  | 12<br>(3.7)  | 10<br>(3.0)  | NA           |
|                                 |                     |                                          | 2-1/2 (64)            | 2-1/2 (64)                          | 62<br>(18.9)         | 60<br>(18.3) | 58<br>(17.7) | 56<br>(17.1) | 55<br>(16.8) | 53<br>(16.2) |
|                                 | 100,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 2-1/2 (64)            | 2-1/2 (64)                          | 23<br>(7.0)          | 15<br>(4.6)  | 7<br>(2.1)   | 5<br>(1.5)   | NA           | NA           |
|                                 |                     |                                          | 3 (76)                | 3 (76)                              | 59<br>(18.0)         | 54<br>(16.5) | 49<br>(14.9) | 44<br>(13.4) | 39<br>(11.9) | 34<br>(10.4) |
|                                 | 120,000             | 2 Pipe or 3-in.<br>(76 mm)<br>Concentric | 3 (76)† no disk       | NA                                  | 10<br>(3.0)          | NA           | NA           | NA           | NA           | NA           |
|                                 |                     |                                          | NA                    | 3 (76)†                             | 43<br>(13.1)         | 41<br>(12.5) | 39<br>(11.9) | 37<br>(11.3) | 35<br>(10.7) | 34<br>(10.4) |
|                                 |                     |                                          | 4 (102)† no disk      | 4† no disk                          | 35<br>(10.7)         | 30<br>(9.1)  | 25<br>(7.6)  | 20<br>(6.1)  | 15<br>(4.6)  | 10<br>(3.0)  |
|                                 | 140,000             | NA                                       |                       |                                     |                      |              |              |              |              |              |

See notes at end of table.

## MAXIMUM ALLOWABLE PIPE LENGTH - FT. (M) (CONTINUED)

| ALTITUDE<br>FT. (M)               | UNIT SIZE<br>(BTUH) | DIRECT VENT (2-PIPE) ONLY                |                       | NON-DIRECT<br>VENT (1-PIPE)<br>ONLY | NUMBER OF 90° ELBOWS |              |              |              |              |              |
|-----------------------------------|---------------------|------------------------------------------|-----------------------|-------------------------------------|----------------------|--------------|--------------|--------------|--------------|--------------|
|                                   |                     | TERMINATION<br>TYPE                      | PIPE DIA<br>IN. (mm)* | PIPE DIA<br>IN. (mm)*               | 1                    | 2            | 3            | 4            | 5            | 6            |
| 9001 to 10,000†<br>(2743 to 3048) | 40,000              | 2 Pipe or 2-in.<br>(51 mm)               | 1-1/2 (38)            | 1-1/2 (38)                          | 42<br>(12.8)         | 37<br>(11.3) | 32<br>(9.8)  | 27<br>(8.2)  | 25<br>(7.6)  | 20<br>(6.1)  |
|                                   |                     | Concentric                               | 2 (51)                | 2 (51)                              | 57<br>(17.4)         | 55<br>(16.8) | 53<br>(16.2) | 51<br>(15.5) | 49<br>(14.9) | 47<br>(14.3) |
|                                   | 60,000              | 2 Pipe or 2-in.<br>(51 mm)<br>Concentric | 2 (51)                | 2 (51)                              | 45<br>(13.7)         | 40<br>(12.2) | 38<br>(11.6) | 33<br>(10.1) | 31<br>(9.4)  | 29<br>(8.8)  |
|                                   | 80,000              | 2 Pipe or 2-in.<br>(51 mm)               | 2 (51)                | 2 (51)                              | 30<br>(9.1)          | 25<br>(7.6)  | 14<br>(4.3)  | 9<br>(2.7)   | 7<br>(2.1)   | NA           |
|                                   |                     | Concentric                               | 2-1/2 (64)            | 2-1/2 (64)                          | 57<br>(17.4)         | 55<br>(16.8) | 53<br>(16.2) | 51<br>(15.5) | 49<br>(14.9) | 47<br>(14.3) |
|                                   | 100,000             | 2 Pipe or 3-in.<br>(76 mm)               | 2-1/2 (64)            | 2-1/2 (64)                          | 21<br>(6.4)          | 13<br>(4.0)  | 5<br>(1.5)   | NA           | NA           | NA           |
|                                   |                     | Concentric                               | 3 (76)                | 3 (76)                              | 54<br>(16.5)         | 49<br>(14.9) | 44<br>(13.4) | 39<br>(11.9) | 34<br>(10.4) | 29<br>(8.8)  |
|                                   | 120,000             | 2 Pipe or 3-in.<br>(76 mm)               | NA                    | 3 (76)†                             | 39<br>(11.9)         | 37<br>(11.3) | 35<br>(10.7) | 33<br>(10.1) | 31<br>(9.4)  | 29<br>(8.8)  |
|                                   |                     | Concentric                               | 4 (102)† no<br>disk   | 4 (102)† no disk                    | 10<br>(3.0)          | 5<br>(1.5)   | NA           | NA           | NA           | NA           |
|                                   | 140,000             | NA                                       |                       |                                     |                      |              |              |              |              |              |

\* Disk usage-Unless otherwise specified, use perforated disk assembly (factory-supplied in loose parts bag).

# If one disk is stated, separate 2 halves of perforated disk assembly and use shouldered disk half. When using shouldered disk half, install screen side toward inlet box.

† Wide radius elbow.

‡ Vent sizing for Canadian installations over 4500 ft. (1370 M) above sea level are subject to acceptance by the local authorities having jurisdiction. NA-Not Allowed; pressure switch will not make.

### 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. Wide 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. (1.5 M) for all applications.
6. Use 3-in. (76 mm) diameter vent termination kit for installations requiring 4-in (102 mm) diameter pipe.

## VENT LENGTH FOR OUTLET RESTRICTOR USAGE (60,000 BTU MODEL ONLY) - FT. (M)

| ALTITUDE – FT. (M)         | UNIT SIZE | DIRECT VENT<br>(2-PIPE) | NON-DIRECT<br>VENT<br>(1-PIPE ONLY) | NO. OF 90° ELBOWS |          |          |         |   |
|----------------------------|-----------|-------------------------|-------------------------------------|-------------------|----------|----------|---------|---|
|                            |           | PIPE DIA.<br>(IN / mm)  | PIPE DIA.<br>(IN / mm)              | 1                 | 2        | 3        | 4       | 5 |
| 0 – 2000 (0 – 610)         | 60,000    | 2-in. (51)              | 2-in. (51)                          | 28 (8.5)          | 20 (6)   | 15 (4.2) | 10 (3)  |   |
| 2001 – 3000 (610 – 914)*   |           | 2-in. (51)              | 2-in. (51)                          | 24 (7.3)          | 17 (5.1) | 12 (3.6) | 7 (2.1) |   |
| 3001 – 4000 (914 – 1219)   |           | 2-in. (51)              | 2-in. (51)                          | 21 (6.4)          | 13 (3.9) | 8 (2.4)  |         |   |
| 4001 – 5000 (1219 – 1524)  |           | 2-in. (51)              | 2-in. (51)                          | 17 (5.1)          | 10 (3)   | 5 (1.5)  |         |   |
| 5001 – 6000 (1524 – 1829)  |           | 2-in. (51)              | 2-in. (51)                          | 14 (4.2)          | 6 (1.8)  |          |         |   |
| 6001 – 7000 (1829 – 2134)  |           | 2-in. (51)              | 2-in. (51)                          | 10 (3)            |          |          |         |   |
| 7001 – 8000 (2134 – 2438)  |           | 2-in. (51)              | 2-in. (51)                          | 6 (1.8)           |          |          |         |   |
| 8001 – 9000 (2438 – 2743)  |           | 2-in. (51)              | 2-in. (51)                          |                   |          |          |         |   |
| 9001 – 10000 (2743 – 3048) |           | 2-in. (51)              | 2-in. (51)                          |                   |          |          |         |   |

\*Canada

‡ Discard outlet restrictor if vent lengths or elbows exceed the above table Discard restrictor if using 1 1/2-in. (38mm) diameter pipe. Refer to installation instructions for outlet restrictor installation guidelines.

350AAV

# **MAXIMUM ALLOWABLE EXPOSED VENT PIPE LENGTH (FT./M) WITH AND WITHOUT INSULATION IN WINTER DESIGN TEMPERATURE AMBIENT\***

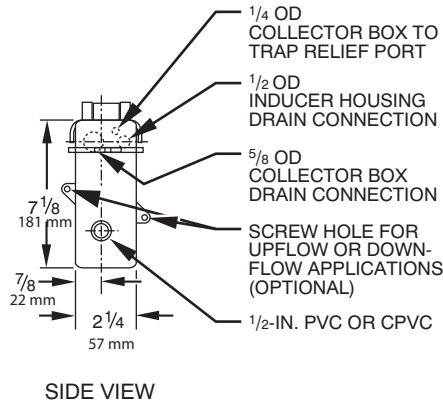
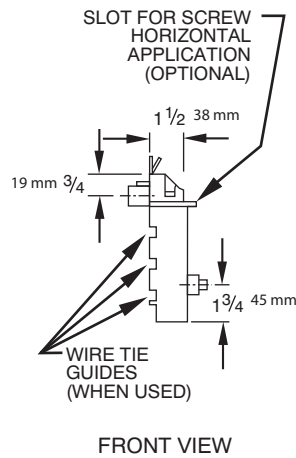
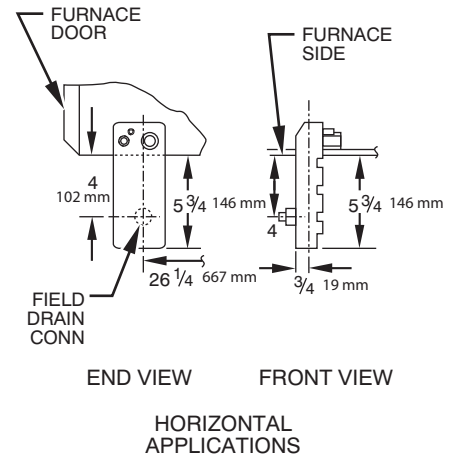
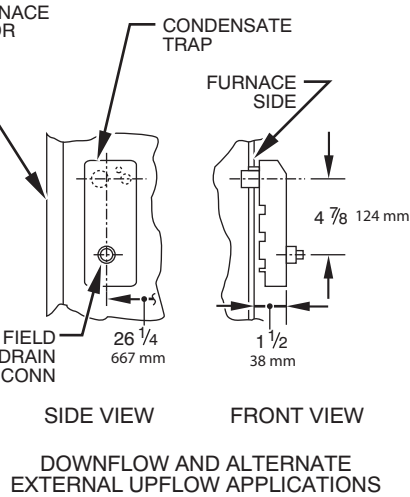
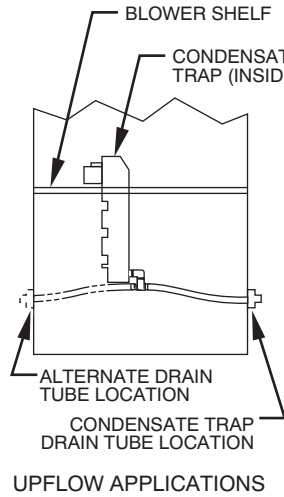
| FURNACE SIZE | WINTER DESIGN TEMPERATURE °F (°C) | MAX PIPE DIAMETER IN (mm) | WITHOUT INSULATION FT. (M) | WITH 3/8-IN. (10 mm) OR THICKER INSULATION† FT. (M) |
|--------------|-----------------------------------|---------------------------|----------------------------|-----------------------------------------------------|
| <b>040</b>   | 20 (-7)                           | 1.5 (38)                  | 51 (16)                    | 70 (21)                                             |
|              | 0 (-18)                           | 1.5 (38)                  | 28 (9)                     | 70 (21)                                             |
|              | -20 (-29)                         | 1.5 (38)                  | 16 (5)                     | 70 (21)                                             |
|              | 20 (-7)                           | 2 (51)                    | 45 (14)                    | 70 (21)                                             |
|              | 0 (-18)                           | 2 (51)                    | 22 (7)                     | 70 (21)                                             |
|              | -20 (-29)                         | 2 (51)                    | 10 (3)                     | 58 (18)                                             |
| <b>060</b>   | 20 (-7)                           | 2 (51)                    | 65 (20)                    | 70 (21)                                             |
|              | 0 (-18)                           | 2 (51)                    | 35 (11)                    | 70 (21)                                             |
|              | -20 (-29)                         | 2 (51)                    | 20 (6)                     | 70 (21)                                             |
| <b>080</b>   | 20 (-7)                           | 2 (51)                    | 55 (17)                    | 55 (17)                                             |
|              | 0 (-18)                           | 2 (51)                    | 48 (15)                    | 55 (17)                                             |
|              | -20 (-29)                         | 2 (51)                    | 30 (9)                     | 55 (17)                                             |
|              | 20 (-7)                           | 2.5 (64)                  | 70 (21)                    | 70 (21)                                             |
|              | 0 (-18)                           | 2.5 (64)                  | 47 (14)                    | 70 (21)                                             |
|              | -20 (-29)                         | 2.5 (64)                  | 28 (9)                     | 70 (21)                                             |
| <b>100</b>   | 20 (-7)                           | 2.5 (64)                  | 40 (12)                    | 40 (12)                                             |
|              | 0 (-18)                           | 2.5 (64)                  | 40 (12)                    | 40 (12)                                             |
|              | -20 (-29)                         | 2.5 (64)                  | 38 (12)                    | 40 (12)                                             |
|              | 20 (-7)                           | 3 (76)                    | 70 (21)                    | 70 (21)                                             |
|              | 0 (-18)                           | 3 (76)                    | 50 (15)                    | 70 (21)                                             |
|              | -20 (-29)                         | 3 (76)                    | 28 (9)                     | 70 (21)                                             |
| <b>120</b>   | 20 (-7)                           | 3 (76)                    | 70 (21)                    | 70 (21)                                             |
|              | 0 (-18)                           | 3 (76)                    | 61 (19)                    | 70 (21)                                             |
|              | -20 (-29)                         | 3 (76)                    | 37 (11)                    | 70 (21)                                             |
|              | 20 (-7)                           | 4 (102)                   | 70 (21)                    | 70 (21)                                             |
|              | 0 (-18)                           | 4 (102)                   | 48 (15)                    | 70 (21)                                             |
|              | -20 (-29)                         | 4 (102)                   | 23 (7)                     | 70 (21)                                             |
| <b>140</b>   | 20 (-7)                           | 3 (76)                    | 60 (18)                    | 60 (18)                                             |
|              | 0 (-18)                           | 3 (76)                    | 60 (18)                    | 60 (18)                                             |
|              | -20 (-29)                         | 3 (76)                    | 44 (13)                    | 60 (18)                                             |
|              | 20 (-7)                           | 4 (102)                   | 70 (21)                    | 70 (21)                                             |
|              | 0 (-18)                           | 4 (102)                   | 57 (17)                    | 70 (21)                                             |
|              | -20 (-29)                         | 4 (102)                   | 30 (9)                     | 70 (21)                                             |

\* Pipe length (ft) specified for maximum pipe lengths located in unconditioned spaces. Pipes located in unconditioned space cannot exceed total allowable pipe length as specified in "Maximum Allowable Pipe Length" tables.

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

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# CONDENSATE TRAP

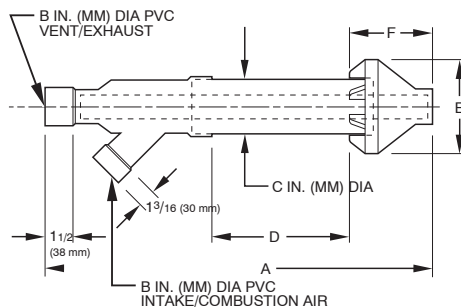


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## ACCESSORIES

### CONCENTRIC VENT FOR DIRECT VENT (2-PIPE) APPLICATION (ALL MODEL SIZES)



| PART NO.     | A*              | B         | C              | D†              | E              | F              |
|--------------|-----------------|-----------|----------------|-----------------|----------------|----------------|
| KGAVT0701CVT | 33-3/8<br>(848) | 2<br>(51) | 3-1/2<br>(89)  | 16-5/8<br>(422) | 6-1/4<br>(159) | 5-3/4<br>(146) |
| KGAVT0801CVT | 38-7/8<br>(987) | 3<br>(76) | 4-1/2<br>(114) | 21-1/8<br>(537) | 7-3/8<br>(187) | 6-1/2<br>(165) |

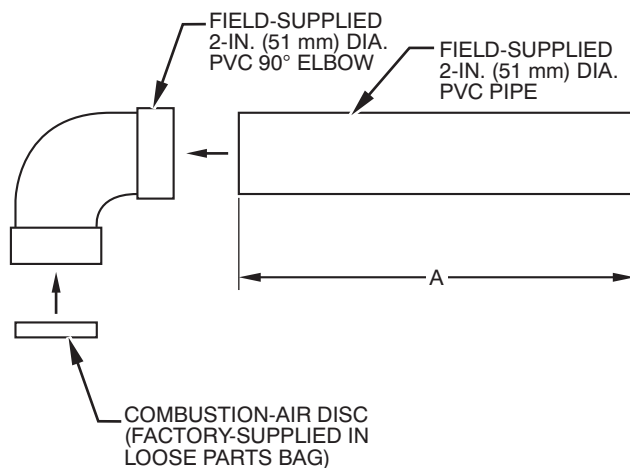
A97110

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

† Dimension D may be lengthened to 60 in. (1524 mm) maximum. Dimension D may also be shortened by cutting the pipes provided in the kit to 12 in. (305 mm) minimum.

NOTE: See furnace Installation Instructions when venting multiple furnaces near each other.

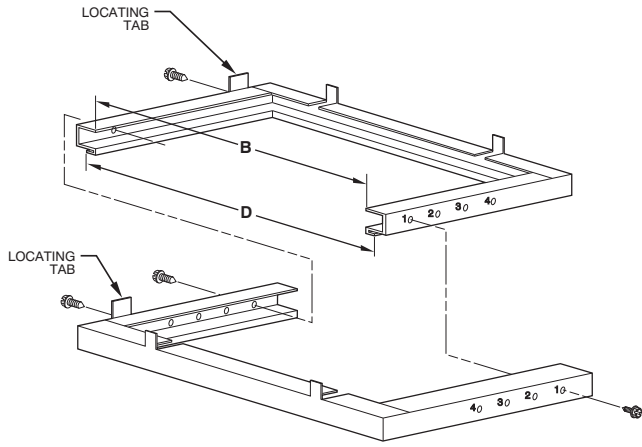
### ACCESSORY DOWNFLOW SUBBASE



| CASING WIDTH<br>IN (mm) | A<br>IN (mm)               |
|-------------------------|----------------------------|
| 17-1/2<br>(445)         | 8-1/2 ± 1/2<br>(216 ± 13)  |
| 21<br>(533)             | 10-1/2 ± 1/2<br>(267 ± 13) |
| 24-1/2<br>(622)         | 12 ± 1/2<br>(305 ± 13)     |

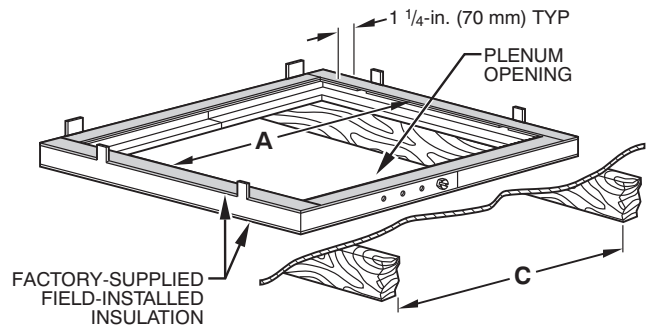
A96211

## ACCESSORY DOWNFLOW SUBBASE



Disassembled

A88207



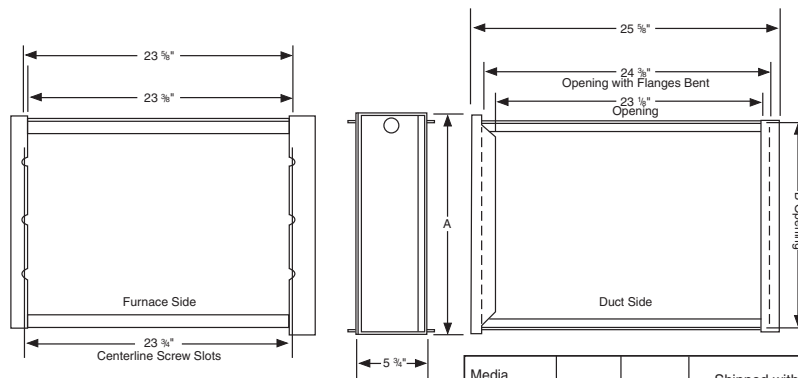
Assembled

A97427

| FURNACE CASING WIDTH IN (mm) | FURNACE IN DOWNFLOW APPLICATION                         | PLENUM OPENING* IN (mm) |             | FLOOR OPENING IN (mm) |                 | HOLE NO. FOR WIDTH ADJUSTMENT |
|------------------------------|---------------------------------------------------------|-------------------------|-------------|-----------------------|-----------------|-------------------------------|
|                              |                                                         | A                       | B           | C                     | D               |                               |
| 17-1/2 (445 mm)              | Furnace with or without Cased Coil Assembly or Coil Box | 15-1/8 (384 mm)         | 19 (483 mm) | 16-3/4 (426 mm)       | 20-3/8 (518 mm) | 3                             |
| 21 (533 mm)                  | Furnace with or without Cased Coil Assembly or Coil Box | 18-5/8 (473 mm)         | 19 (483 mm) | 20-1/4 (514 mm)       | 20-3/8 (518 mm) | 2                             |
| 24-1/2 (622 mm)              | Furnace with or without Cased Coil Assembly or Coil Box | 22-1/8 (562 mm)         | 19 (483 mm) | 23-3/4 (603 mm)       | 20-3/8 (518 mm) | 1                             |

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

## MEDIA FILTER CABINET



| Media Filter Cabinet | A   | B   | Shipped with sizes                                     |
|----------------------|-----|-----|--------------------------------------------------------|
| 16"                  | 17" | 16" | 024040, 036040, 024060, 036060, 048060, 036080, 048080 |
| 20"                  | 21" | 20" | 060080, 048100, 060100                                 |
| 24"                  | 25" | 24" | 060120, 060140                                         |

A05218

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# 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                          |
| 024040    | 1 side or bottom                | High<br>Med-Low<br>Low             | 1075<br>850<br>740                | 1040<br>825<br>700           | 995<br>780<br>650            | 945<br>740<br>620            | 895<br>685<br>565            | 840<br>635<br>515            | 760<br>560<br>455            | 670<br>480<br>385            |
| 036040    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 1470<br>1315<br>1125<br>930       | 1415<br>1280<br>1110<br>925  | 1400<br>1235<br>1085<br>910  | 1285<br>1180<br>1045<br>850  | 1215<br>1115<br>990<br>830   | 1120<br>1035<br>915<br>770   | 995<br>930<br>830<br>705     | 890<br>825<br>740<br>635     |
| 024060    | 1 side or bottom                | High<br>Med-Low<br>Low             | 1100<br>890<br>745                | 1065<br>865<br>710           | 1005<br>810<br>670           | 945<br>765<br>625            | 900<br>705<br>565            | 805<br>620<br>505            | 730<br>540<br>425            | 610<br>475<br>360            |
| 036060    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 1430<br>1270<br>1070<br>915       | 1375<br>1260<br>1055<br>895  | 1325<br>1215<br>1045<br>885  | 1275<br>1160<br>1015<br>865  | 1200<br>1105<br>975<br>840   | 1135<br>1035<br>920<br>800   | 1040<br>950<br>850<br>720    | 935<br>850<br>750<br>650     |
| 048060    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 1700<br>1500<br>1325<br>1205      | 1695<br>1465<br>1295<br>1170 | 1640<br>1435<br>1265<br>1145 | 1580<br>1385<br>1230<br>1110 | 1545<br>1355<br>1190<br>1080 | 1450<br>1300<br>1150<br>1035 | 1380<br>1250<br>1105<br>990  | 1310<br>1185<br>1050<br>950  |
| 036080    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 1535<br>1395<br>1200<br>1040      | 1470<br>1350<br>1175<br>1020 | 1405<br>1300<br>1125<br>990  | 1330<br>1225<br>1065<br>960  | 1245<br>1155<br>1030<br>910  | 1160<br>1080<br>970<br>860   | 1065<br>985<br>890<br>785    | 935<br>880<br>780<br>680     |
| 048080    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 1750<br>1495<br>1310<br>1135      | 1685<br>1455<br>1260<br>1105 | 1635<br>1405<br>1225<br>1075 | 1575<br>1355<br>1170<br>1040 | 1525<br>1305<br>1125<br>995  | 1445<br>1250<br>1095<br>995  | 1380<br>1185<br>1040<br>910  | 1310<br>1120<br>980<br>860   |
| 060080    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 2200<br>2100<br>1815<br>1560      | 2175<br>2025<br>1760<br>1555 | 2085<br>1945<br>1720<br>1515 | 2025<br>1865<br>1670<br>1460 | 1925<br>1785<br>1620<br>1435 | 1820<br>1700<br>1550<br>1390 | 1735<br>1620<br>1480<br>1340 | 1635<br>1540<br>1405<br>1270 |
|           | both sides or 1 side and bottom | High<br>Med-High                   | 2360<br>1965                      | 2280<br>1925                 | 2210<br>1870                 | 2130<br>1830                 | 2035<br>1760                 | 1960<br>1710                 | 1875<br>1670                 | 1790<br>1575                 |
| 048100    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 1740<br>1500<br>1340<br>1195      | 1705<br>1470<br>1315<br>1175 | 1660<br>1445<br>1300<br>1165 | 1615<br>1410<br>1270<br>1130 | 1570<br>1375<br>1235<br>1100 | 1500<br>1330<br>1200<br>1070 | 1425<br>1280<br>1140<br>1030 | 1355<br>1210<br>1095<br>975  |
| 060100    | 1 side or bottom                | High<br>Med-High<br>Med-Low<br>Low | 2250<br>2020<br>1725<br>1490      | 2175<br>1950<br>1690<br>1480 | 2090<br>1900<br>1660<br>1460 | 2020<br>1840<br>1630<br>1440 | 1930<br>1790<br>1575<br>1380 | 1855<br>1710<br>1520<br>1340 | 1760<br>1640<br>1460<br>1295 | 1670<br>1545<br>1370<br>1230 |
|           | both sides or 1 side and bottom | High<br>Med-High                   | 2360<br>1960                      | 2315<br>1940                 | 2265<br>1930                 | 2200<br>1900                 | 2130<br>1850                 | 2055<br>1800                 | 1965<br>1740                 | 1890<br>1660                 |
| 060120    | bottom only                     | High<br>Med-High<br>Med-Low<br>Low | 2350<br>2100<br>1770<br>1545      | 2250<br>2015<br>1720<br>1520 | 2160<br>1955<br>1675<br>1465 | 2070<br>1875<br>1620<br>1415 | 2000<br>1810<br>1575<br>1365 | 1885<br>1710<br>1515<br>1325 | 1790<br>1650<br>1450<br>1265 | 1635<br>1540<br>1365<br>1185 |
|           | both sides or 1 side and bottom | High<br>Med-High                   | 2435<br>2040                      | 2360<br>2000                 | 2285<br>1950                 | 2220<br>1905                 | 2130<br>1835                 | 2050<br>1790                 | 1965<br>1725                 | 1875<br>1650                 |
|           | 1 side only                     | High<br>Med-High                   | 2255<br>1985                      | 2190<br>1930                 | 2115<br>1890                 | 2045<br>1840                 | 1965<br>1780                 | 1890<br>1720                 | 1800<br>1645                 | 1710<br>1560                 |
| 060140    | bottom only                     | High<br>Med-High<br>Med-Low<br>Low | 2285<br>2020<br>1675<br>1460      | 2210<br>1970<br>1650<br>1445 | 2140<br>1920<br>1620<br>1430 | 2065<br>1870<br>1590<br>1400 | 1990<br>1805<br>1560<br>1370 | 1910<br>1730<br>1510<br>1320 | 1830<br>1660<br>1450<br>1275 | 1745<br>1590<br>1390<br>1230 |
|           | both sides or 1 side and bottom | High<br>Med-High                   | 2310<br>1975                      | 2255<br>1945                 | 2185<br>1900                 | 2120<br>1860                 | 2045<br>1835                 | 1965<br>1775                 | 1880<br>1720                 | 1800<br>1640                 |
|           | 1 side only                     | High<br>Med-High                   | 2140<br>1930                      | 2080<br>1850                 | 2025<br>1800                 | 1945<br>1740                 | 1875<br>1725                 | 1795<br>1660                 | 1725<br>1580                 | 1625<br>1495                 |

\* A filter is required for each return-air supply.

• For horizontal and downflow applications, use “1 side or bottom” or “bottom only” as airflow reference.

\* – Airflow shown is for bottom only return –air supply width 3/4” (19 mm) washable filter(s). A filter is required for each return –air supply.

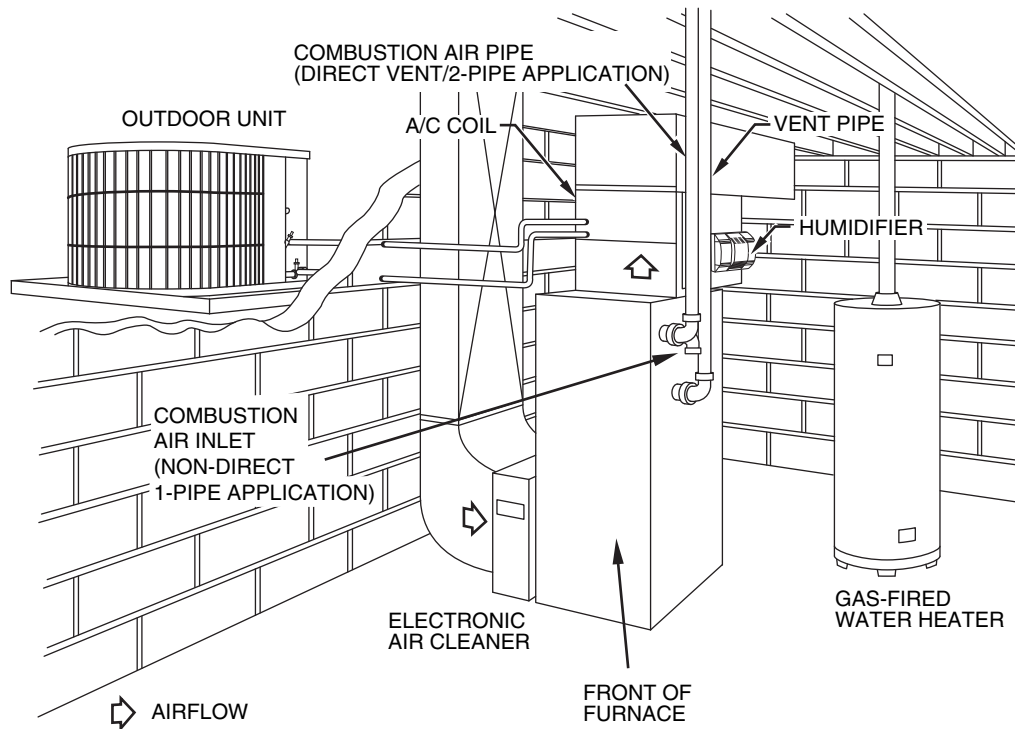
– For air delivery above 1800 CFM, see Air Delivery table for other options.

– An airflow reduction of up to 7% may occur when using the factory –specified 4 5/16 –in. (110 mm) wide, high efficiency media filter.

– For best furnace efficiency when using the 4 5/16 –in. (110 mm) wide media filter, adjust the blower speed tap to near the mid –point of the rise range.

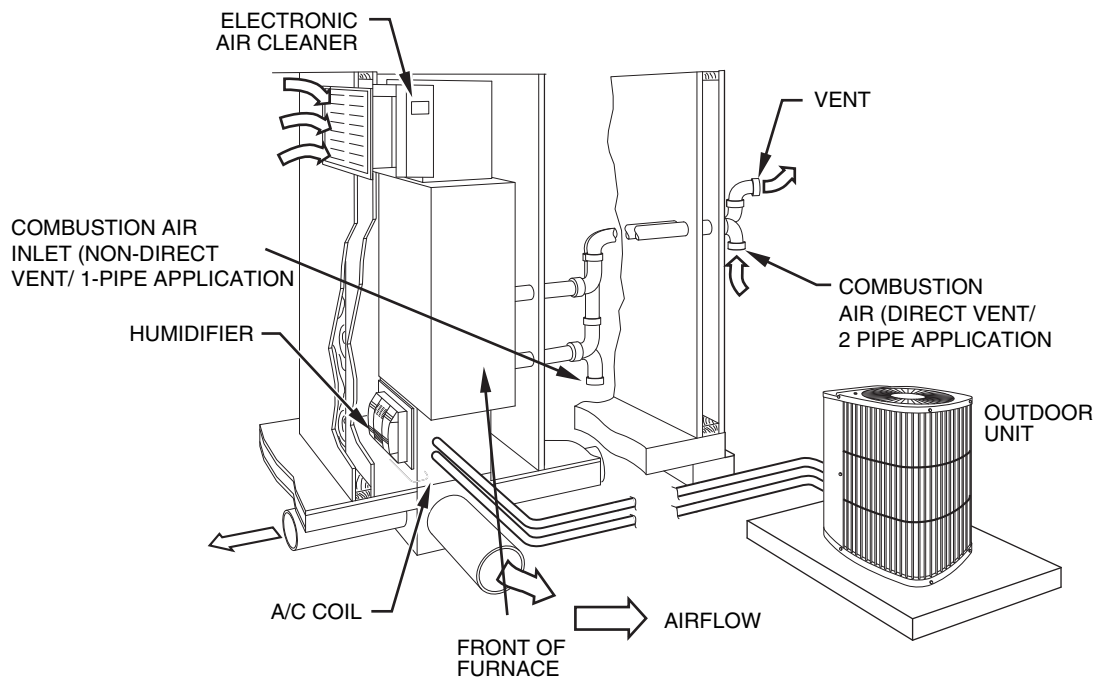
– For horizontal and downflow applications, use “1 side or bottom” or “bottom only” as an airflow reference.

## TYPICAL INSTALLATIONS



**Basement - Upflow Application**

A05064

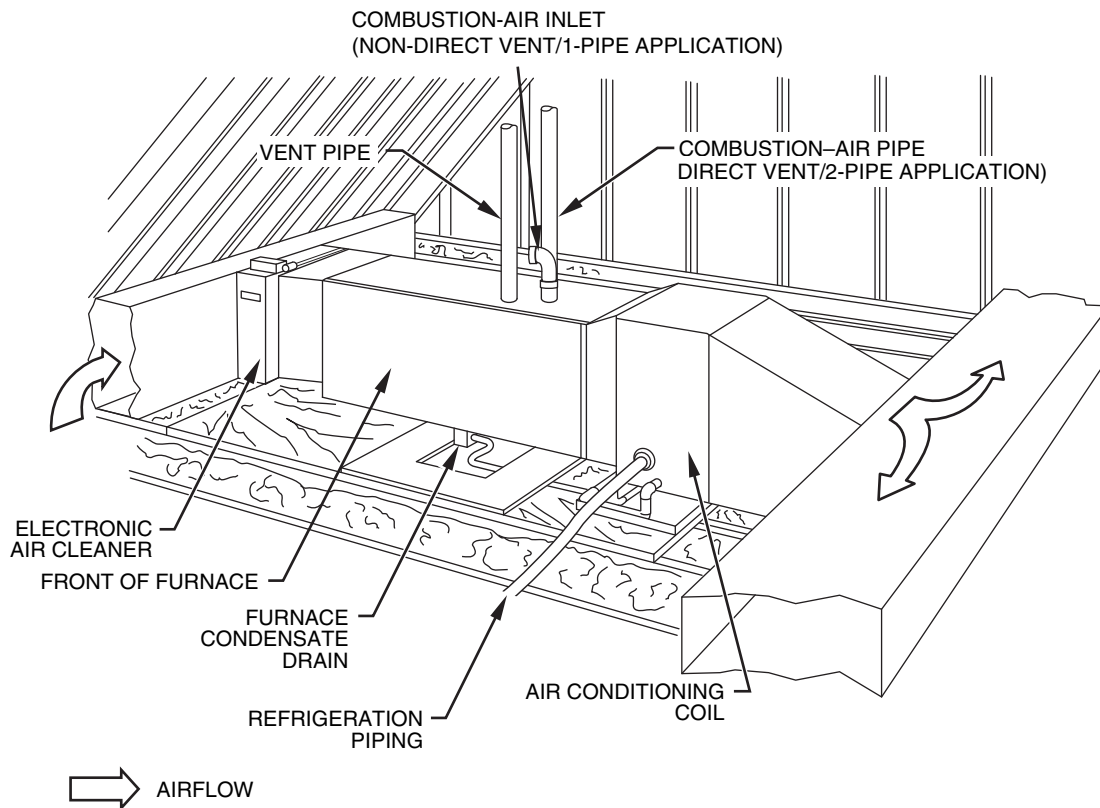


**Closet- Downflow Application**

A05065

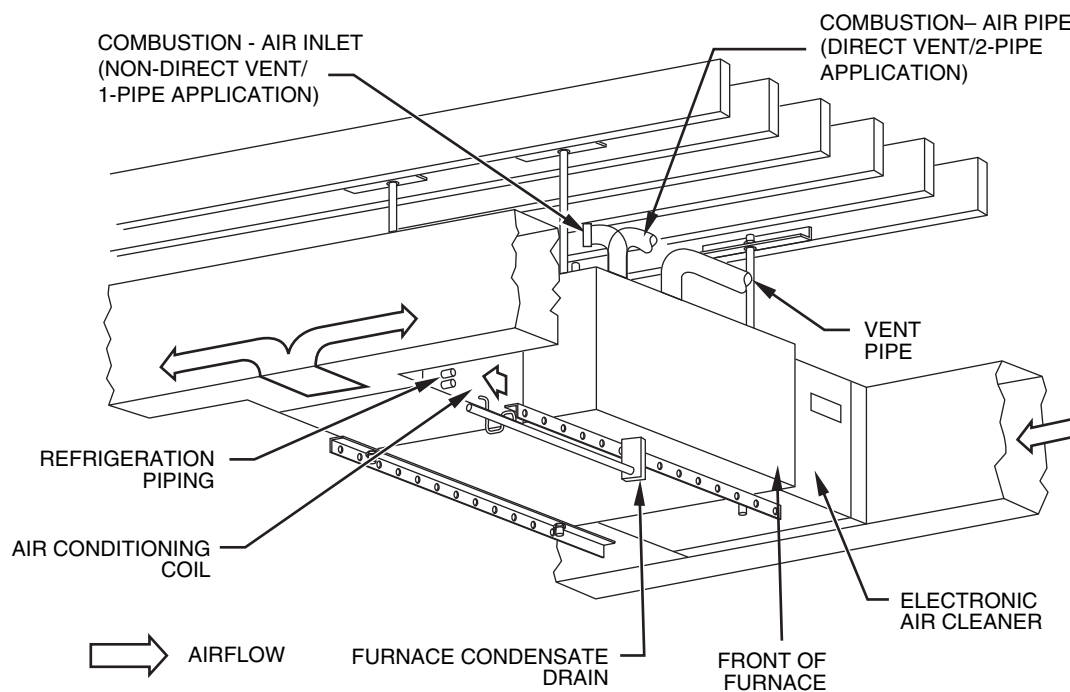
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## TYPICAL INSTALLATIONS (CONTINUED)



**Attic - Horizontal Application**

A05066



**Crawlspace- Horizontal Application**

A05067

## GUIDE SPECIFICATIONS

Legacy Plus 90

Single-Stage / Deluxe Gas Furnace

350AAV

### GENERAL

#### System Description

Furnish a \_\_\_\_\_ (4-way multipoise) fixed capacity gas-fired condensing furnace for use with natural gas or propane (factory authorized conversion kit required for propane); furnish cold air return plenum; furnish side (external) filter rack.

#### Quality Assurance

Unit will be designed, tested and constructed to the current ANSI Z21.47/CSA 2.3 design standard for gas-fired central furnaces. Unit will be 3rd party certified by CSA to the current ANSI Z21.47/CSA 2.3 design standard for gas-fired central furnaces. Unit will carry the CSA Blue Star® and Blue Flame® labels.

Unit efficiency testing will be performed per the current DOE test procedure as listed in the Federal Register.

Unit will be certified for capacity and efficiency and listed in the latest GAMA Consumer's Directory of Certified Efficiency Ratings.

Unit will carry the current Federal Trade Commission Energy Guide efficiency label.

#### Delivery, Storage, and Handling

Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

**Warranty** (for inclusion by specifying engineer) U.S. and Canada only. Warranty certificate available upon request.

### PRODUCTS

#### Equipment

Components shall include: slow-opening gas valve to reduce ignition noise, regulate gas flow, with electric switch gas shut-off; flame proving sensor, hot surface igniter, pressure switch assembly verifies inducer operation; flame rollout switch, drain tubing and installed condensate drain trap, blower and inducer assembly, 40va transformer; low-voltage (heating) (heating/ cooling) thermostat.

#### Blower Wheel and Blower Motor

Galvanized blower wheel shall be centrifugal type, statically and dynamically balanced. Blower motor of PSC type shall be permanently lubricated with sealed bearings, of \_\_\_\_\_ hp, and shall be multiple-speed direct drive. Blower motor shall be soft mounted to the blower scroll to reduce vibration transmission.

#### Filters

Furnace shall have reusable-type filters. Filter shall be \_\_\_\_\_ in. (mm) x \_\_\_\_\_ in. (mm). A high efficiency media filter is available as an option. \_\_\_\_\_ Media Filter.

### Casing

Casing shall be of .030 in. thickness minimum, pre-painted galvanized steel.

### Inducer Motor

Inducer motor shall be soft mounted to reduce vibration transmission.

### Primary Heat Exchangers

Primary Heat exchangers shall be 3-Pass 20 gauge corrosion resistant aluminized steel of fold-and-crimp sectional design, which operates under negative pressure.

### Secondary Heat Exchangers

Secondary Heat exchangers shall be of a flow-through design having a patented interior laminate coating of polypropylene for greater corrosion resistance with fold-and-crimp design, which operates under negative pressure.

### Controls

Controls shall include a microprocessor based integrated electronic control board with at least 11 service troubleshooting codes displayed via diagnostic flashing LED light on the control, has ability to store fault codes, when activated a self-test feature checks all major functions of the furnace within one minute, and a replaceable automotive-type circuit protection fuse. Multiple operational settings available including separate blower speeds. Cooling airflow will be selectable between 350 or 400 CFM per ton of air conditioning. Features will also include temporary reduced airflow in the cooling mode for improved dehumidification when a Thermostat™ is selected as the thermostat.

### Operating Characteristics

Heating Capacity shall be \_\_\_\_\_ Btuh input; \_\_\_\_\_ Btuh output capacity.

Fuel Gas Efficiency shall be 93% AFUE. Air delivery shall be \_\_\_\_\_ cfm minimum at 0.50 in. wg. external static pressure. Dimensions shall be: depth \_\_\_\_\_ in. (mm); width \_\_\_\_\_ in. (mm); height \_\_\_\_\_ in. (mm)(casing only). Height shall be \_\_\_\_\_ in.(mm) with A/C coil and \_\_\_\_\_ in. (mm) overall with plenum.

### Electrical Requirements

Electrical supply shall be 115 volts, 60 Hz, single-phase (nominal). Minimum wire size shall be \_\_\_\_\_ AWG; maximum fuse size or HACR-type, designated circuit breaker shall be \_\_\_\_\_ Amps.

### Special Features

Refer to section of the product data sheet identifying accessories and descriptions for specific features and available enhancements.

350AAV

