



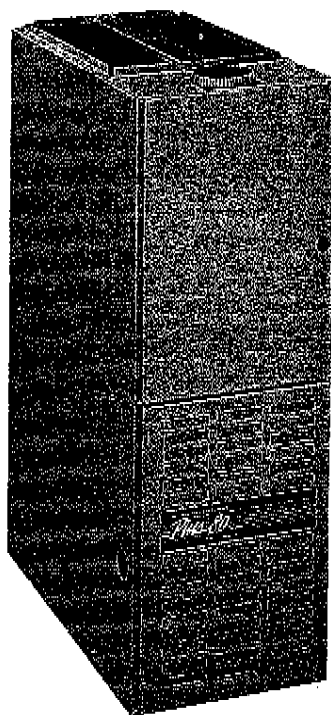
**Payne**  
Air Conditioning

Indianapolis, IN

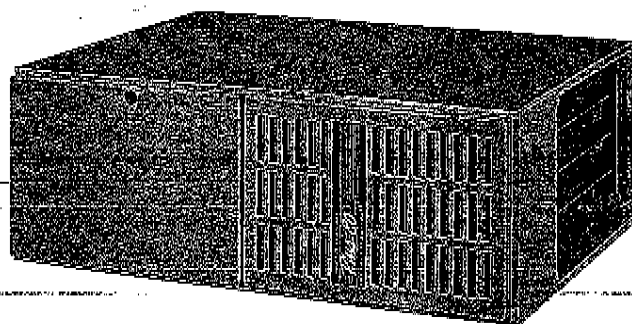
# DELUXE MID-EFFICIENCY DOWNFLOW/HORIZONTAL INDUCED-COMBUSTION FURNACE

**MODEL 331AAV**

Size 085  
Series A



**DOWNFLOW**



**HORIZONTAL**

With a unique approach to induced-combustion design, a 40-in. tall cabinet, a 4-pass heat exchanger, an inshot burner system, and its safety features, this furnace is without peer. The model 331AAV Deluxe Downflow/Horizontal Furnace achieves 1 of the higher Annual Fuel Utilization Efficiency (AFUE) ratings available in a noncondensing, induced-combustion furnace. Its ease and economy of installation, ease of serviceability, economical initial cost, and short payback time put it in a class well ahead of the competition. The model 331AAV Gas Furnace has the kind of overall performance needed in today's homes.

## FEATURES

**EFFICIENCY**—The 331AAV Deluxe Induced-Combustion Gas Furnace provides the efficiency customers want with 80.0% AFUE.

**HOT SURFACE IGNITION**—This field-proven ignition system will save energy and improve reliability.

**ALUMINIZED HEAT EXCHANGER**—The patented 4-pass heat exchanger is made of aluminized steel and backed by a 20-year Limited Warranty.

**INTELLIGENT CONTROL**—The 331AAV Furnace has an intelligent control board that monitors the operation of the furnace. This control board also has a component-test feature that enables the servicing person to verify operation of the control itself, high and low inducer, hot surface ignitor, low, medium, and high-speed blower operation, and humidifier. The board features a 3-amp fuse that protects the transformer and control. We guarantee the reliability of the control with a 3-year Limited Warranty.

**40-IN. HEIGHT**—The 331AAV induced-combustion furnace with a 40-in. cabinet height simplifies installation in attics, closets and crawl spaces, especially with a high-efficiency cooling coil.

**MULTIPOISED DOWNFLOW OR HORIZONTAL**—Our furnace can be used in a downflow, horizontal-left, or horizontal-right configuration.

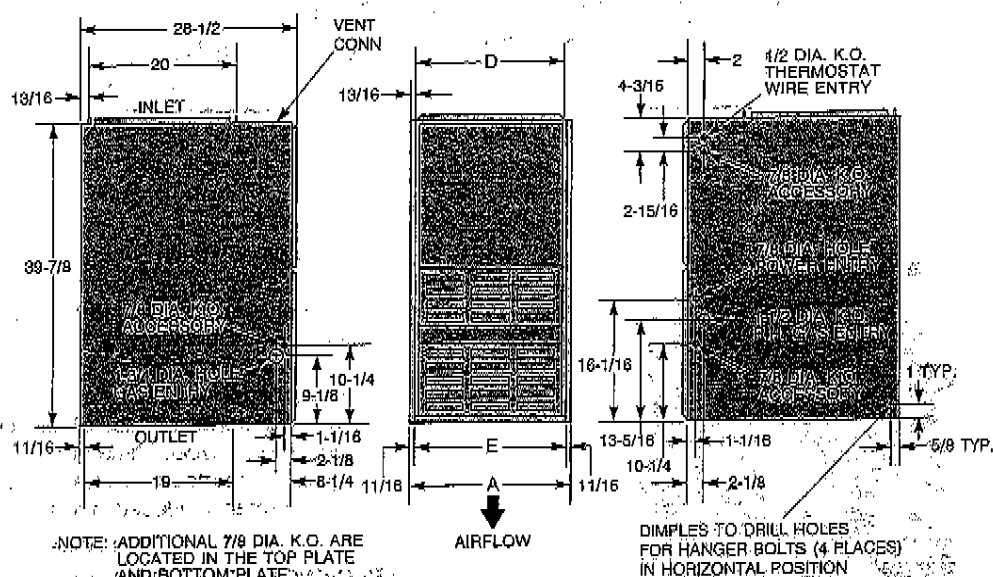
**PREPAINTED CABINET**—The 331AAV uses prepainted sheet metal for the cabinet. This is the same high-quality finish found on refrigerators and other appliances today. We ensure its durability by using a galvanized steel substrate to provide superior rust protection.

**PATENTED DRAFT SAFEGUARD**—Our induced-combustion furnace has a patented draft safeguard switch. The safeguard switch will stop furnace operation if the vent system becomes blocked or is not operating properly (Category I installations). An exclusive with the 331AAV Furnace.

**EASY INSTALLATION**—The model 331AAV has many features that make installation easier; left or right gas and electrical connections, Molex blower speed selector, matching coil sizes, accessory low-voltage connections, and many more.

**QUIET OPERATION**—A soft mount inducer assembly and 2-stage slow opening gas valve reduces sound level. The 2-speed operation capability minimizes furnace and air noise for total home comfort.

**VENTING**—For installation flexibility, these furnaces can be vented Category I (vertical) or with a minor field modification kit Category III (horizontal) using high temperature plastic pipe.

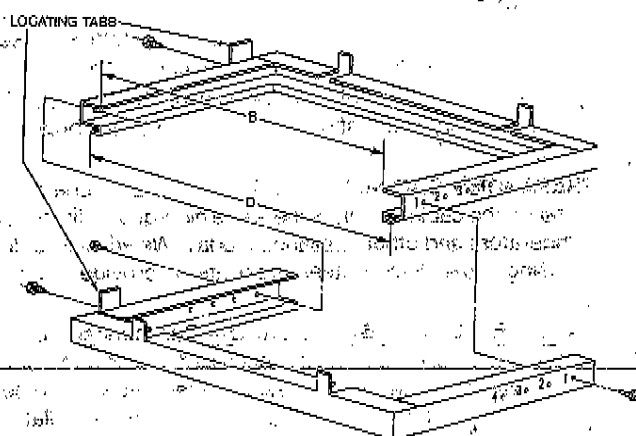


A88324

## DIMENSIONS (In.)

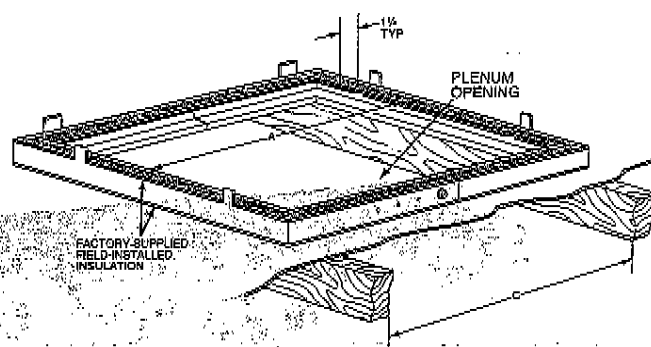
| SIZE   | A      | D      | E  | VENT CONN | SHIP.WT |
|--------|--------|--------|----|-----------|---------|
| 036084 | 17-1/2 | 15-7/8 | 16 | 4         | 154     |
| 048084 | 17-1/2 | 15-7/8 | 16 | 4         | 154     |

## ACCESSORY DOWNFLOW SUBBASE



A88207

Disassembled



A88206

Assembled

## DIMENSIONAL DATA

| FURNACE WIDTH | PLENUM OPENING* |    | FRAMED FLOOR HOLE |        | HOLE NO. FOR WIDTH ADJUSTMENT |
|---------------|-----------------|----|-------------------|--------|-------------------------------|
|               | A               | B  | C                 | D      |                               |
| 14-3/16       | 11-13/16        | 19 | 13-7/16           | 20-3/8 | 4                             |
| 17-1/2        | 15-1/8          | 19 | 16-3/4            | 20-3/8 | 3                             |
| 21            | 18-5/8          | 19 | 20-1/4            | 20-3/8 | 2                             |
| 24-1/2        | 22-1/8          | 19 | 23-3/4            | 20-3/8 | 1                             |

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

## SPECIFICATIONS

| SIZE                                                   | 036085                     | 048085        |
|--------------------------------------------------------|----------------------------|---------------|
| <b>RATINGS AND PERFORMANCE</b>                         |                            |               |
| Input Btu/h* High/Low                                  | 84,000/54,000              | 84,000/54,000 |
| Output Capacity† High/Low                              | 67,000/43,000              | 67,000/43,000 |
| AFUE%‡ Nonweatherized ICS‡                             | 80.0                       | 80.0          |
| Certified Temperature Rise Range °F                    | 25—55/40—70                | 30—60/15—45   |
| Certified External Static Pressure Heat/Cool           | 0.15/0.50                  | 0.15/0.50     |
| Airflow Cfm Heating High/Low                           | 1165/965                   | 1355/1170     |
| Cooling                                                | 1395                       | 1580          |
| <b>ELECTRICAL</b>                                      |                            |               |
| Unit Volts—Hertz—Phase                                 | 115—60—1                   |               |
| Operating Voltage Range Min—Max                        | 104—127                    |               |
| Maximum Unit Ampacity                                  | 9.2                        | 10.2          |
| Maximum Wire Length Ft                                 | 30                         | 28            |
| Minimum Wire Size                                      | 14                         |               |
| Maximum Fuse Size                                      | 15                         |               |
| Transformer (24v)                                      | 40VA                       |               |
| External Control Heating                               | 19VA                       |               |
| Power Available Cooling                                | 35VA                       |               |
| Air Conditioning Blower Relay                          | Standard                   |               |
| <b>CONTROLS</b>                                        |                            |               |
| Limit Control                                          | SPST                       |               |
| Heating Blower Control                                 | Solid-State Time Operation |               |
| Burners (Monoport)                                     | 4                          | 4             |
| Gas Connection Size                                    | 1/2-in. NPT                |               |
| <b>GAS CONTROLS</b>                                    |                            |               |
| 2-Stage Gas Valve (Redundant)                          | White-Rodgers              |               |
| Min Inlet Pressure (in. wc)                            | 4.5 (Natural Gas)          |               |
| Max Inlet Pressure (in. wc)                            | 13.6                       |               |
| Main Burner Ignitor                                    | Hot Surface                |               |
| <b>BLOWER DATA</b>                                     |                            |               |
| Direct-Drive Motor HP—Type                             | 1/3—PSC                    | 1/2—PSC       |
| Motor Full Load Amps                                   | 5.8                        | 7.9           |
| RPM (Nominal)—Speeds                                   | 1075-4                     | 1075-4        |
| Blower Wheel Diameter x Width                          | 10 x 7                     | 10 x 8        |
| Filter Size—Permanent Washable                         | (2) 14 x 20 x 1            |               |
| <b>FACTORY-AUTHORIZED DEALER-INSTALLED ACCESSORIES</b> |                            |               |
| Accessory Downflow Subbase                             | KGASB0101ALL               |               |
| High Altitude Pressure Switch Kit (5,500 ft and above) | KGAHA5601PSW               |               |
| Category III Vent Conversion Kit                       | KGASW01012SP               |               |
| Gas Conversion Kit—Natural-to-Propane                  | KGANP24012SP               |               |
| Gas Conversion Kit—Propane-to-Natural                  | KGAPN20012SP               |               |
| Duct-Flange Kit                                        | KGARF0110ALL               |               |

\* Gas inputs shown are for elevations up to 2000 ft. For elevations above 2000 ft, input should be reduced at the rate of 4% for each 1000 ft above sea level.

Refer to National Fuel Gas Code Table F4.

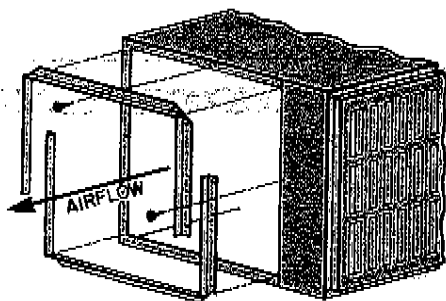
† Tentative capacity in accordance with U.S. Government DOE test procedures.

‡ Isolated Combustion System (ICS)



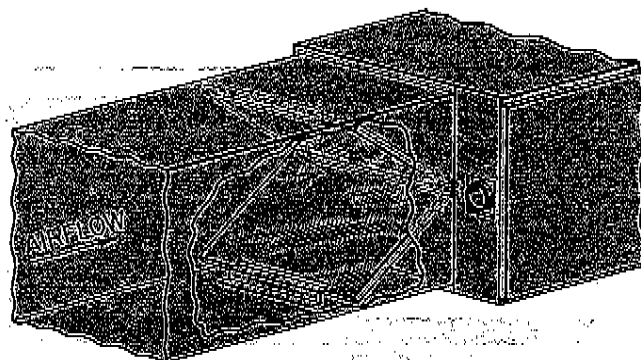
MEETS DOE RESIDENTIAL CONSERVATION SERVICES PROGRAM STANDARDS.

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



**Duct Flanges  
(Accessory)**

A82172



**Filter Retainers  
(Field Supplied)**

A82173

**AIR DELIVERY—CFM (With Filter)**

| FURNACE<br>SIZE | BLOWER<br>MOTOR HP | SPEED    | EXTERNAL STATIC PRESSURE (IN. WC) |      |      |      |      |      |      |      |
|-----------------|--------------------|----------|-----------------------------------|------|------|------|------|------|------|------|
|                 |                    |          | 0.1                               | 0.2  | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  | 0.8  |
| 036085          | 1/3 PSC            | High     | —                                 | 1575 | 1515 | 1455 | 1395 | 1325 | 1230 | 1120 |
|                 |                    | Med-High | —                                 | 1380 | 1340 | 1285 | 1230 | 1165 | 1095 | 1005 |
|                 |                    | Med-Low  | 1185                              | 1145 | 1130 | 1090 | 1055 | 1005 | 940  | 870  |
|                 |                    | Low      | 965                               | 955  | 940  | 910  | 885  | 840  | 785  | 705  |
| 048085          | 1/2 PSC            | High     | 1855                              | 1765 | 1710 | 1665 | 1580 | 1570 | 1410 | 1310 |
|                 |                    | Med-High | 1595                              | 1570 | 1530 | 1485 | 1410 | 1355 | 1280 | 1200 |
|                 |                    | Med-Low  | 1355                              | 1345 | 1305 | 1270 | 1220 | 1170 | 1110 | 1025 |
|                 |                    | Low      | 1170                              | 1170 | 1140 | 1110 | 1075 | 1025 | 965  | 890  |

—Indicates unstable operating conditions.

**MINIMUM CLEARANCES (In. From Combustible Materials)**

| DOWNFLOW                    | 085 |   |
|-----------------------------|-----|---|
| Sides—Single-Wall Vent      | 0   | 0 |
| Type B-1 Double-Wall Vent   | 0   | 0 |
| Special Gas Vents*—Diameter | 3   | 4 |
| Clearance                   | 0   | 3 |
| Back                        | 0   | 0 |
| Top                         | 1   | 1 |
| Front—Single-Wall Vent      | 6   | 6 |
| Type B-1 Double-Wall Vent   | 3   | 3 |
| Special Gas Vents*—Diameter | 3   | 4 |
| Clearance                   | 5   | 9 |
| Vent—Single-Wall            | 6   | 6 |
| Type B-Double-Wall Vent     | 1   | 1 |
| Special Gas Vents*—Diameter | 3   | 4 |
| Clearance                   | 5   | 9 |

**NOTES:**

1. Provide 30-in. front clearance for servicing. An open door in front of the furnace can meet this requirement.
2. A minimum clearance of 3 in. must be provided in front of the furnace for combustion air and proper operation.

| HORIZONTAL (In Alcove/Attic) | 085 |    |
|------------------------------|-----|----|
| Sides*                       | 0   | 0  |
| Back                         | 0   | 0  |
| Top—Single-Wall              | 1   | 1  |
| Type B-1 Double-Wall Vent    | 1   | 1  |
| Special Gas Vents†—Diameter  | 3   | 4  |
| Clearance                    | 5   | 9  |
| Front                        | 18  | 18 |
| Vent—Single-Wall             | 6   | 6  |
| Type B-1 Double-Wall         | 1   | 1  |
| Special Gas Vents†—Diameter  | 3   | 4  |
| Clearance                    | 0   | 0  |
| HORIZONTAL (In Closet)       |     |    |
| Sides*                       | 1   | 1  |
| Back                         | 3   | 3  |
| Top—Single-Wall              | 2   | 2  |
| Type B-1 Double-Wall Vent    | 2   | 2  |
| Special Gas Vents†—Diameter  | 3   | 4  |
| Clearance                    | 2   | 3  |
| Front—Single-Wall            | 6   | 6  |
| Type B-1 Double-Wall Vent    | 3   | 3  |
| Special Gas Vents†—Diameter  | 3   | 4  |
| Clearance                    | 5   | 9  |
| Vent—Single-Wall             | 6   | 6  |
| Type B-1 Double-Wall Vent    | 1   | 1  |
| Special Gas Vents†—Diameter  | 3   | 4  |
| Clearance                    | 5   | 9  |

\*Indicates supply or return sides when furnace is in the horizontal position.

†Listed for Category III appliances (high temperature plastic pipe)



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE  
WITH INSTALLATION INSTRUCTIONS