

Indirect Fired Heating Systems

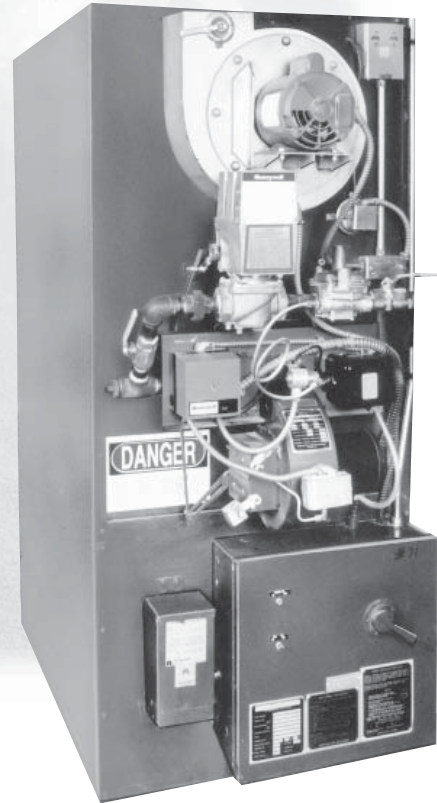
Technical Guide for:

- **IF** Indoor Installations
- **IFW** Outdoor Installations

Applied Air

Keeps You

Warm



Applied Air



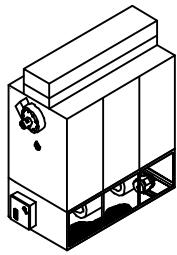
Applied Air

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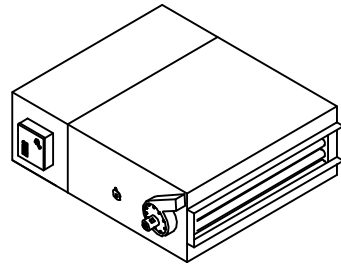
Basic Types of Units

Models IF, IFW Schematic Component Diagrams

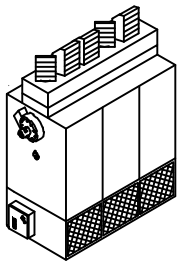
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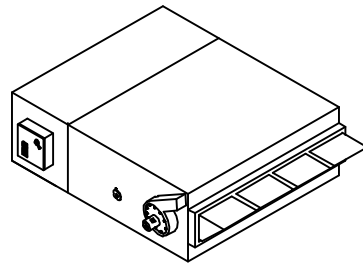
Style V floor-mounted vertical unit for duct installation.



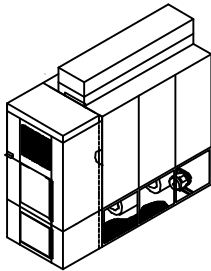
Style H indoor horizontal suspended unit for duct installation.



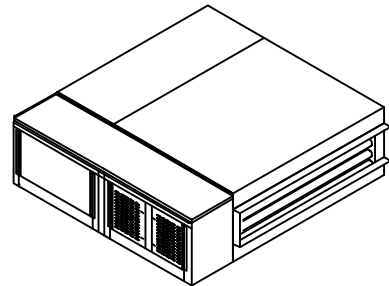
Style VH indoor floor-mounted with optional adjustable discharge nozzles and screened inlets.



Style HH indoor horizontal suspended unit with optional discharge nozzles.



Style VW outdoor pad mounted vertical unit for duct installation.



Style HW outdoor pad mounted horizontal unit for duct installation.

- (A) The Applied Air IF Series is available in a complete range of sizes from 350,000 to 6,000,000 BTU output. IF units are assembled, wired and flame-tested before shipment.
- (B) Accessories such as filters banks, dampers, service platforms, discharge heads, vibration feet and hangers are available as optional items for special applications or installations. Power driven exhausters are standard equipment on all models.

Air Delivery Table

| Models IF & IFW | | | Total External Static Pressure (W.C.) | | | | | | | |
|-----------------|---------------|--------|---------------------------------------|-------|-------|-------|--------|--------|--------|----|
| Model | Blowers | SCFM | 1/4" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" |
| | | | HP | HP | HP | HP | HP | HP | HP | HP |
| 35-40 | (2) 12" x 9" | 3500 | 1 1/2 | 1 1/2 | 2 | — | — | — | — | — |
| | | 4000 | 1 1/2 | 2 | 3 | 3 | — | — | — | — |
| | | 4500 | 2 | 3 | 3 | 3 | 5 | — | — | — |
| | | 5000 | 3 | 3 | 3 | 5 | 5 | 5 | — | — |
| | | 5500 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 5 |
| 55/35-40 | (2) 12" x 12" | 5000 | 2 | 2 | 3 | 3 | — | — | — | — |
| | | 5500 | 2 | 2 | 3 | 3 | 5 | — | — | — |
| | | 6000 | 3 | 3 | 5 | 5 | 5 | 5 | — | — |
| | | 6500 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | — |
| | | 7000 | 5 | 5 | 5 | 5 | — | — | — | — |
| 75/35-40 | (2) 15" x 15" | 7000 | 2 | 3 | 3 | — | — | — | — | — |
| | | 7500 | 3 | 3 | 5 | 5 | — | — | — | — |
| | | 8000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 8500 | 5 | 5 | 5 | 5 | 7 1/2 | — | — | — |
| | | 9000 | 5 | 5 | 5 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 9500 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 10,000 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | 10 | — |
| 45-55 | (2) 12" x 12" | 5000 | 2 | 2 | 3 | 3 | — | — | — | — |
| | | 5500 | 2 | 2 | 3 | 3 | 5 | — | — | — |
| | | 6000 | 3 | 3 | 5 | 5 | 5 | 5 | — | — |
| | | 6500 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | — |
| | | 7000 | 5 | 5 | 5 | 5 | — | — | — | — |
| 75/45-55 | (2) 15" x 15" | 7000 | 2 | 3 | 3 | — | — | — | — | — |
| | | 7500 | 3 | 3 | 5 | 5 | — | — | — | — |
| | | 8000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 8500 | 5 | 5 | 5 | 5 | 7 1/2 | — | — | — |
| | | 9000 | 5 | 5 | 5 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 9500 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 10,000 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | 10 | — |
| 100/45-55 | (2) 18" x 18" | 9000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 9500 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 10,000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 10,500 | 5 | 5 | 5 | 7 1/2 | 7 1/2 | — | — | — |
| | | 11,000 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 11,500 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 12,000 | 5 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — |
| | | 12,500 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — |
| | | 13,000 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — | — |
| 65-75 | (2) 15" x 15" | 7000 | 2 | 3 | 3 | — | — | — | — | — |
| | | 7500 | 3 | 3 | 5 | 5 | — | — | — | — |
| | | 8000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 8500 | 5 | 5 | 5 | 5 | 7 1/2 | — | — | — |
| | | 9000 | 5 | 5 | 5 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 9500 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 10,000 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | 10 | — |

NOTES:

- Horsepower selections are based on system external static pressure. To determine total external static pressure, add all applicable accessory pressure drops listed below:
 - A. Fresh Air Inlet Hood & Birdscreen 0.13" W.C.
 - B. Motor Operated Dampers 0.13" W.C.
 - C. V-Bank Filter Section 0.25" W.C.
 - D. Discharge Nozzles 0.25" W.C.
- Select unit size and motor horsepower from table above.
- Contact factory for applications not shown.

EXPLANATION OF MODEL NUMBERS

DASH MODEL NUMBERS - A dash in the model number indicates the BTU range on the heat exchanger. Example: Model 35-40 has a heat exchanger rating of 350,000-400,000 BTU output.

SLASH MODEL NUMBERS - A slash in the model number indicates the use of a larger blower section with a smaller heat exchanger, normally used for low temperature rise applications. Example: Model 75/35-40 has a 75 size blower section, which offers airflow up to 10,000 CFM, with a heat exchanger rating of 350,000-400,000 BTU output.

Air Delivery Table

| Models IF & IFW | | | Total External Static Pressure (W.C.) | | | | | | | |
|-----------------|---------------|--------|---------------------------------------|-------|-------|-------|--------|--------|--------|----|
| Model | Blowers | SCFM | 1/4" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" |
| | | | HP | HP | HP | HP | HP | HP | HP | HP |
| 100/65-75 | (2) 18" x 18" | 9000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 9500 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 10,000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 10,500 | 5 | 5 | 5 | 7 1/2 | 7 1/2 | — | — | — |
| | | 11,000 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 11,500 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 12,000 | 5 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — |
| | | 12,500 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — |
| | | 13,000 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | 10 | — |
| 175/65-75 | (3) 18" x 13" | 13,000 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 14,000 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 15,000 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — | — |
| | | 16,000 | 7 1/2 | 10 | 10 | 10 | 10 | 15 | 15 | 15 |
| | | 17,000 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 |
| | | 18,000 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 20 |
| | | 19,000 | 10 | 15 | 15 | 15 | 15 | 15 | 20 | 20 |
| | | 20,000 | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 |
| | | 21,000 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 25 |
| | | 23,000 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 25 |
| 85-100 | (2) 18" x 18" | 9000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 9500 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 10,000 | 3 | 5 | 5 | 5 | — | — | — | — |
| | | 10,500 | 5 | 5 | 5 | 7 1/2 | 7 1/2 | — | — | — |
| | | 11,000 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 11,500 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | — | — |
| | | 12,000 | 5 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — |
| | | 12,500 | 7 1/2 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — |
| | | 13,000 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | 10 | — |
| 175/85-100 | (3) 18" x 13" | 13,000 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 14,000 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 15,000 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — | — |
| | | 16,000 | 7 1/2 | 10 | 10 | 10 | 10 | 15 | 15 | 15 |
| | | 17,000 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 |
| | | 18,000 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 20 |
| | | 19,000 | 10 | 15 | 15 | 15 | 15 | 15 | 20 | 20 |
| | | 20,000 | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 |
| | | 21,000 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 25 |
| | | 23,000 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 25 |
| 250/85-100 | (3) 18" x 18" | 21,000 | 10 | 15 | 15 | 15 | 20 | 20 | 20 | 20 |
| | | 23,000 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 25 |
| | | 25,000 | 15 | 20 | 20 | 20 | 25 | 25 | 25 | 25 |
| | | 27,000 | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 |
| | | 29,000 | 25 | 25 | 30 | 30 | 30 | 40 | 40 | 40 |
| | | 31,000 | 30 | 30 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | 33,000 | 40 | 40 | 40 | 40 | 40 | 40 | — | — |

NOTES:

- Horsepower selections are based on system external static pressure. To determine total external static pressure, add all applicable accessory pressure drops listed below:
 - Fresh Air Inlet Hood & Birdscreen 0.13" W.C.
 - Motor Operated Dampers 0.13" W.C.
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Air Delivery Table

| Models IF & IFW | | | Total External Static Pressure (W.C.) | | | | | | | |
|-----------------|---------------|--------|---------------------------------------|-------|-------|-------|--------|--------|--------|----|
| Model | Blowers | SCFM | 1/4" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" |
| | | | HP | HP | HP | HP | HP | HP | HP | HP |
| 125-175 | (3) 18" x 13" | 13,000 | 5 | 5 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 14,000 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | 7 1/2 | — | — | — |
| | | 15,000 | 7 1/2 | 7 1/2 | 10 | 10 | 10 | 10 | — | — |
| | | 16,000 | 7 1/2 | 10 | 10 | 10 | 10 | 15 | 15 | 15 |
| | | 17,000 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 |
| | | 18,000 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 20 |
| | | 19,000 | 10 | 15 | 15 | 15 | 15 | 15 | 20 | 20 |
| | | 20,000 | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 20 |
| | | 21,000 | 15 | 15 | 20 | 20 | 20 | 20 | 20 | 25 |
| | | 23,000 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 25 |
| 250/125-175 | (3) 18" x 18" | 21,000 | 10 | 15 | 15 | 15 | 20 | 20 | 20 | 20 |
| | | 23,000 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 25 |
| | | 25,000 | 15 | 20 | 20 | 20 | 25 | 25 | 25 | 25 |
| | | 27,000 | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 |
| | | 29,000 | 25 | 25 | 30 | 30 | 30 | 40 | 40 | 40 |
| | | 31,000 | 30 | 30 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | 33,000 | 40 | 40 | 40 | 40 | 40 | 40 | — | — |
| 300/125-175 | (3) 20" x 20" | 29,000 | 15 | 15 | 20 | 20 | 25 | 25 | 25 | 25 |
| | | 31,000 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 30 |
| | | 33,000 | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 |
| | | 35,000 | 20 | 25 | 25 | 25 | 30 | 30 | 40 | 40 |
| | | 37,000 | 25 | 30 | 30 | 30 | 40 | 40 | 40 | 50 |
| | | 39,000 | 30 | 30 | 30 | 40 | 40 | 40 | — | — |
| 200-250 | (3) 18" x 18" | 21,000 | 10 | 15 | 15 | 15 | 20 | 20 | 20 | 20 |
| | | 23,000 | 15 | 15 | 15 | 20 | 20 | 20 | 20 | 25 |
| | | 25,000 | 15 | 20 | 20 | 20 | 25 | 25 | 25 | 25 |
| | | 27,000 | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 |
| | | 29,000 | 25 | 25 | 30 | 30 | 30 | 40 | 40 | 40 |
| | | 31,000 | 30 | 30 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | 33,000 | 40 | 40 | 40 | 40 | 40 | 40 | — | — |
| 300/200-250 | (3) 20" x 20" | 29,000 | 15 | 15 | 20 | 20 | 25 | 25 | 25 | 25 |
| | | 31,000 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 30 |
| | | 33,000 | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 |
| | | 35,000 | 20 | 25 | 25 | 25 | 30 | 30 | 40 | 40 |
| | | 37,000 | 25 | 30 | 30 | 30 | 40 | 40 | 40 | 50 |
| | | 39,000 | 30 | 30 | 30 | 40 | 40 | 40 | — | — |
| 400/200-250 | (3) 22" x 22" | 35,000 | 20 | 20 | 20 | 25 | 25 | 25 | 30 | 30 |
| | | 37,000 | 20 | 20 | 25 | 25 | 30 | 30 | 30 | 40 |
| | | 39,000 | 20 | 25 | 25 | 30 | 30 | 30 | 40 | 40 |
| | | 41,000 | 25 | 25 | 30 | 30 | 40 | 40 | 40 | 40 |
| | | 43,000 | 30 | 30 | 30 | 40 | 40 | 40 | 40 | 50 |
| | | 45,000 | 30 | 40 | 40 | 40 | 40 | 50 | 50 | 50 |
| | | 47,000 | 40 | 40 | 40 | 40 | 50 | 50 | 50 | 50 |
| | | 49,000 | 40 | 40 | 50 | 50 | 50 | 50 | 60 | 60 |
| | | 51,000 | 50 | 50 | 50 | 50 | 60 | 60 | 60 | 60 |
| | | 53,000 | 50 | 50 | 60 | 60 | 60 | 75 | 75 | 75 |

NOTES:

- Horsepower selections are based on system external static pressure. To determine total external static pressure, add all applicable accessory pressure drops listed below:
 - Fresh Air Inlet Hood & Birdscreen 0.13" W.C.
 - Motor Operated Dampers 0.13" W.C.
 - V-Bank Filter Section 0.25" W.C.
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Air Delivery Table

| Models IF & IFW | | | Total External Static Pressure (W.C.) | | | | | | | |
|-----------------|-----------------------|--------|---------------------------------------|------|------|----|--------|--------|--------|----|
| Model | Blowers | SCFM | 1/4" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" |
| | | | HP | HP | HP | HP | HP | HP | HP | HP |
| 275-300 | (3) 20" x 20" | 29,000 | 15 | 15 | 20 | 20 | 25 | 25 | 25 | 25 |
| | | 31,000 | 20 | 20 | 20 | 25 | 25 | 25 | 25 | 30 |
| | | 33,000 | 20 | 20 | 25 | 25 | 25 | 30 | 30 | 30 |
| | | 35,000 | 20 | 25 | 25 | 25 | 30 | 30 | 40 | 40 |
| | | 37,000 | 25 | 30 | 30 | 30 | 40 | 40 | 40 | 50 |
| | | 39,000 | 30 | 30 | 30 | 40 | 40 | 40 | — | — |
| 400/275-300 | (3) 22" x 22" | 35,000 | 20 | 20 | 20 | 25 | 25 | 25 | 30 | 30 |
| | | 37,000 | 20 | 20 | 25 | 25 | 30 | 30 | 30 | 40 |
| | | 39,000 | 20 | 25 | 25 | 30 | 30 | 30 | 40 | 40 |
| | | 41,000 | 25 | 25 | 30 | 30 | 40 | 40 | 40 | 40 |
| | | 43,000 | 30 | 30 | 30 | 40 | 40 | 40 | 40 | 50 |
| | | 45,000 | 30 | 40 | 40 | 40 | 40 | 50 | 50 | 50 |
| | | 47,000 | 40 | 40 | 40 | 40 | 50 | 50 | 50 | 50 |
| | | 49,000 | 40 | 40 | 50 | 50 | 50 | 50 | 60 | 60 |
| | | 51,000 | 50 | 50 | 50 | 50 | 60 | 60 | 60 | 60 |
| 53,000 | 50 | 50 | 60 | 60 | 60 | 75 | 75 | 75 | | |
| 600/275-300 | (3) 27 1/2" x 27 1/2" | 55,000 | 25 | 25 | 30 | 30 | 40 | 40 | — | — |
| | | 58,000 | 25 | 30 | 40 | 40 | 40 | 40 | — | — |
| | | 61,000 | 30 | 40 | 40 | 40 | 50 | 50 | — | — |
| | | 64,000 | 30 | 40 | 40 | 50 | 50 | 50 | 50 | — |
| | | 67,000 | 40 | 50 | 50 | 50 | 50 | 60 | 60 | 60 |
| | | 70,000 | 40 | 50 | 50 | 60 | 60 | 60 | 60 | 60 |
| | | 73,000 | 50 | 50 | 60 | 60 | 75 | 75 | 75 | 75 |
| | | 76,000 | 50 | 60 | 60 | 60 | 75 | 75 | 75 | 75 |
| | | 79,000 | 60 | 75 | 75 | 75 | 75 | 75 | 75 | — |
| | | 81,000 | 60 | 75 | 75 | 75 | 75 | 75 | — | — |
| 325-400 | 3) 22" x 22" | 35,000 | 20 | 20 | 20 | 25 | 25 | 25 | 30 | 30 |
| | | 37,000 | 20 | 20 | 25 | 25 | 30 | 30 | 30 | 40 |
| | | 39,000 | 20 | 25 | 25 | 30 | 30 | 30 | 40 | 40 |
| | | 41,000 | 25 | 25 | 30 | 30 | 40 | 40 | 40 | 40 |
| | | 43,000 | 30 | 30 | 30 | 40 | 40 | 40 | 40 | 50 |
| | | 45,000 | 30 | 40 | 40 | 40 | 40 | 50 | 50 | 50 |
| | | 47,000 | 40 | 40 | 40 | 40 | 50 | 50 | 50 | 50 |
| | | 49,000 | 40 | 40 | 50 | 50 | 50 | 50 | 60 | 60 |
| | | 51,000 | 50 | 50 | 50 | 50 | 60 | 60 | 60 | 60 |
| | | 53,000 | 50 | 50 | 60 | 60 | 60 | 75 | 75 | 75 |
| 600/325-400 | (3) 27 1/2" x 27 1/2" | 55,000 | 25 | 25 | 30 | 30 | 40 | 40 | — | — |
| | | 58,000 | 25 | 30 | 40 | 40 | 40 | 40 | — | — |
| | | 61,000 | 30 | 40 | 40 | 40 | 50 | 50 | — | — |
| | | 64,000 | 30 | 40 | 40 | 50 | 50 | 50 | 50 | — |
| | | 67,000 | 40 | 50 | 50 | 50 | 50 | 60 | 60 | 60 |
| | | 70,000 | 40 | 50 | 50 | 60 | 60 | 60 | 60 | 60 |
| | | 73,000 | 50 | 50 | 60 | 60 | 75 | 75 | 75 | 75 |
| | | 76,000 | 50 | 60 | 60 | 60 | 75 | 75 | 75 | 75 |
| | | 79,000 | 60 | 75 | 75 | 75 | 75 | 75 | 75 | — |
| | | 81,000 | 60 | 75 | 75 | 75 | 75 | 75 | — | — |

NOTES:

- Horsepower selections are based on system external static pressure. To determine total external static pressure, add all applicable accessory pressure drops listed below:
 - A. Fresh Air Inlet Hood & Birdscreen 0.13" W.C.
 - B. Motor Operated Dampers 0.13" W.C.
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|-----------------|-----------------------|--------|---------------------------------------|------|------|-----|--------|--------|--------|-----|
| Model | Blowers | SCFM | 1/4" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 1 3/4" | 2" |
| | | | HP | HP | HP | HP | HP | HP | HP | HP |
| 600S/325-400 | (3) 30" x 30" | 73,000 | 40 | 40 | 40 | 50 | 50 | 60 | 60 | — |
| | | 76,000 | 40 | 50 | 50 | 50 | 60 | 60 | 75 | 75 |
| | | 79,000 | 50 | 50 | 50 | 60 | 60 | 75 | 75 | 75 |
| | | 82,000 | 50 | 50 | 60 | 60 | 75 | 75 | 75 | 100 |
| | | 85,000 | 50 | 60 | 60 | 75 | 75 | 100 | 100 | 100 |
| | | 88,000 | 60 | 60 | 75 | 75 | 100 | 100 | 100 | 100 |
| | | 91,000 | 60 | 75 | 75 | 75 | 100 | 100 | 100 | 100 |
| | | 94,000 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 |
| 500-600 | (3) 27 1/2" x 27 1/2" | 55,000 | 25 | 25 | 30 | 30 | 40 | 40 | — | — |
| | | 58,000 | 25 | 30 | 40 | 40 | 40 | 40 | — | — |
| | | 61,000 | 30 | 40 | 40 | 40 | 50 | 50 | — | — |
| | | 64,000 | 30 | 40 | 40 | 50 | 50 | 50 | 50 | — |
| | | 67,000 | 40 | 50 | 50 | 50 | 50 | 60 | 60 | 60 |
| | | 70,000 | 40 | 50 | 50 | 60 | 60 | 60 | 60 | 60 |
| | | 73,000 | 50 | 50 | 60 | 60 | 75 | 75 | 75 | 75 |
| | | 76,000 | 50 | 60 | 60 | 60 | 75 | 75 | 75 | 75 |
| | | 79,000 | 60 | 75 | 75 | 75 | 75 | 75 | 75 | — |
| | | 81,000 | 60 | 75 | 75 | 75 | 75 | 75 | — | — |
| 600S/500-600 | (3) 30" x 30" | 73,000 | 40 | 40 | 40 | 50 | 50 | 60 | 60 | — |
| | | 76,000 | 40 | 50 | 50 | 50 | 60 | 60 | 75 | 75 |
| | | 79,000 | 50 | 50 | 50 | 60 | 60 | 75 | 75 | 75 |
| | | 82,000 | 50 | 50 | 60 | 60 | 75 | 75 | 75 | 100 |
| | | 85,000 | 50 | 60 | 60 | 75 | 75 | 100 | 100 | 100 |
| | | 88,000 | 60 | 60 | 75 | 75 | 100 | 100 | 100 | 100 |
| | | 91,000 | 60 | 75 | 75 | 75 | 100 | 100 | 100 | 100 |
| | | 94,000 | 75 | 75 | 75 | 100 | 100 | 100 | 100 | 100 |

NOTES:

- Horsepower selections are based on system external static pressure. To determine total external static pressure, add all applicable accessory pressure drops listed below:
 - Fresh Air Inlet Hood & Birdscreen 0.13" W.C.
 - Motor Operated Dampers 0.13" W.C.
 - V-Bank Filter Section 0.25" W.C.
 - Discharge Nozzles 0.25" W.C.
- Select unit size and motor horsepower from table above.
- Contact factory for applications not shown.

EXPLANATION OF MODEL NUMBERS

DASH MODEL NUMBERS - A dash in the model number indicates the BTU range on the heat exchanger. Example: Model 35-40 has a heat exchanger rating of 350,000-400,000 BTU output.

SLASH MODEL NUMBERS - A slash in the model number indicates the use of a larger blower section with a smaller heat exchanger, normally used for low temperature rise applications. Example: Model 75/35-40 has a 75 size blower section, which offers airflow up to 10,000 CFM, with a heat exchanger rating of 350,000-400,000 BTU output.

Engineering Data

| Capacity and Internal Data | | | | | | |
|-------------------------------------|---|---------|---------|-----------|-----------|-----------|
| | Model Size | 35 | 40 | 45 | 50 | 55 |
| SIZE & CAPACITY | Input B.T.U./Hour | 437,500 | 500,000 | 562,500 | 625,000 | 687,500 |
| | Output B.T.U./Hour(B) | 350,000 | 400,000 | 450,000 | 500,000 | 550,000 |
| FIRING RATE & MANIFOLD SIZE | Natural Gas 1,000 B.T.U./C.F. | 438 | 500 | 563 | 625 | 688 |
| | Nat. Gas Std. Pipe Size (8 to 14" W.C.) | 1" | 1" | 1" | 1" | 1" |
| EQUIPMENT & HEAT EXCHANGER DATA | Discharge Heads Amt./Size | 2/15 | 2/15 | 3/15 | 3/15 | 3/15 |
| | Throw W/90° Nozzles (Feet) | 78 | 96 | 88 | 98 | 107 |
| | Throw W/45° Nozzles (Feet) | 87 | 116 | 100 | 100 | 120 |
| | Combustion Air Required (C.F.M.) | 110 | 130 | 145 | 160 | 180 |
| | Exhauster Model | 12 | 12 | 12 | 12 | 12 |
| | Exhauster H.P. | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 |
| | Recommended Min. Stack Size – Dia. | 8" | 8" | 8" | 8" | 8" |
| INTERNAL DATA OF HEAT EXCHANGER (A) | Primary Heating Surface – Sq. Feet | 41 | 41 | 50 | 50 | 50 |
| | Secondary Htg. Surface (Tubes & Headers) – Sq. Feet | 30 | 30 | 36 | 36 | 36 |
| | Primary Combustion Volume – Cu. Feet | 19 | 19 | 24 | 24 | 24 |
| | Secondary Combustion Volume – Cu. Feet | 3 | 3 | 4 | 4 | 4 |
| | Total Combustion Chamber Volume – Cu. Feet | 22 | 22 | 28 | 28 | 28 |
| | Model Size | 65 | 75 | 85 | 100 | 125 |
| SIZE & CAPACITY | Input B.T.U./Hour | 812,500 | 937,500 | 1,062,500 | 1,250,000 | 1,562,500 |
| | Output B.T.U./Hour(B) | 650,000 | 750,000 | 850,000 | 1,000,000 | 1,250,000 |
| FIRING RATE & MANIFOLD SIZE | Natural Gas 1,000 B.T.U./C.F. | 813 | 938 | 1,063 | 1,250 | 1,563 |
| | Nat. Gas Std. Pipe Size (8 to 14" W.C.) | 1 1/4" | 1 1/4" | 1 1/2" | 1 1/2" | 1 1/2" |
| EQUIPMENT & HEAT EXCHANGER DATA | Discharge Heads Amt./Size | 4 /15 | 4/15 | 4 /15 | 4 /15 | 4/18 |
| | Throw W/90° Nozzles (Feet) | 95 | 110 | 124 | 147 | 153 |
| | Throw W/45° Nozzles (Feet) | 106 | 123 | 140 | 165 | 171 |
| | Combustion Air Required (C.F.M.) | 210 | 240 | 275 | 325 | 400 |
| | Exhauster Model | 14 | 14 | 14 | 14 | 18 |
| | Exhauster H.P. | 1/2 | 1/2 | 1/2 | 1/2 | 2 |
| | Recommended Min. Stack Size – Dia. | 10" | 10" | 10" | 10" | 12" |
| INTERNAL DATA OF HEAT EXCHANGER (A) | Primary Heating Surface – Sq. Feet | 41 | 41 | 86 | 86 | 127 |
| | Secondary Htg. Surface (Tubes & Headers) – Sq. Feet | 58 | 58 | 85 | 85 | 120 |
| | Primary Combustion Volume – Cu. Feet | 34 | 34 | 48 | 48 | 88 |
| | Secondary Combustion Volume – Cu. Feet | 5 | 5 | 7 | 7 | 9 |
| | Total Combustion Chamber Volume – Cu. Feet | 39 | 39 | 55 | 55 | 97 |

(A) Standard construction - 400 series stainless steel primary and mild steel secondary. All stainless steel heat exchangers available for outside air and other special applications

Optional construction - 400 series stainless steel primary and secondary. Recommended when 30% or more winter outside air is introduced, or temperature rise at minimum firing rate is below 10° F.

(B) Based on 80% operating efficiency.

Engineering Data

| Capacity and Internal Data | | | | | | |
|-------------------------------------|---|-----------|-----------|-----------|-----------|-----------|
| | Model Size | 150 | 175 | 200 | 250 | 275 (C) |
| SIZE & CAPACITY | Input B.T.U./Hour | 1,875,000 | 2,187,500 | 2,500,000 | 3,125,000 | 3,437,500 |
| | Output B.T.U./Hour(B) | 1,500,000 | 1,750,000 | 2,000,000 | 2,500,000 | 2,750,000 |
| FIRING RATE & MANIFOLD SIZE | Natural Gas 1,000 B.T.U./C.F. | 1,875 | 2,188 | 2,500 | 3,125 | 3,438 |
| | Nat. Gas Std. Pipe Size (8 to 14" W.C.) | 2" | 2" | 2" | 2 1/2" | 2 1/2" |
| EQUIPMENT & HEAT EXCHANGER DATA | Discharge Heads Amt./Size | 4/18 | 4/18 | 5/18 | 5/18 | 6/18 |
| | Throw W/90° Nozzles (Feet) | 183 | 215 | 195 | 230 | 235 |
| | Throw W/45° Nozzles (Feet) | 205 | 238 | 218 | 248 | 262 |
| | Combustion Air Required (C.F.M.) | 480 | 560 | 650 | 800 | 880 |
| | Exhauster Model | 18 | 18 | 18 | 21 | 21 |
| | Exhauster H.P. | 2 | 2 | 2 | 5 | 5 |
| | Recommended Min. Stack Size - Dia. | 12" | 12" | 14" | 16" | 16" |
| INTERNAL DATA OF HEAT EXCHANGER (A) | Primary Heating Surface – Sq. Feet | 127 | 127 | 165 | 165 | 186 |
| | Secondary Htg. Surface (Tubes & Headers) – Sq. Feet | 120 | 120 | 166 | 166 | 228 |
| | Primary Combustion Volume – Cu. Feet | 88 | 88 | 124 | 124 | 165 |
| | Secondary Combustion Volume – Cu. Feet | 9 | 9 | 14 | 14 | 24 |
| | Total Combustion Chamber Volume – Cu. Feet | 97 | 97 | 138 | 138 | 189 |

| | Model Size | 300 (C) | 325 (C) | 350 (C) | 400 (C) | 500 (C) | 600 (C) |
|-------------------------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|
| SIZE & CAPACITY | Input B.T.U./Hour | 3,760,000 | 4,060,000 | 4,375,000 | 5,000,000 | 6,250,000 | 7,500,000 |
| | Output B.T.U./Hour(B) | 3,000,000 | 3,250,000 | 3,500,000 | 4,000,000 | 5,000,000 | 6,000,000 |
| FIRING RATE & MANIFOLD SIZE | Natural Gas 1,000 B.T.U./C.F. | 3,760 | 4,060 | 4,375 | 5,000 | 6,250 | 7,500 |
| | Nat. Gas Std. Pipe Size (8 to 14" W.C.) | 2 1/2" | 2 1/2" | 3" | 3" | (CF) | (CF) |
| EQUIPMENT & HEAT EXCHANGER DATA | Discharge Heads Amt./Size | 6/18 | 7/18 | 7/18 | 7/18 | 12/18 (D) | 12/18 (D) |
| | Throw W/90° Nozzles (Feet) | 250 | 260 | 244 | 269 | 296 | 354 |
| | Throw W/45° Nozzles (Feet) | 280 | 290 | 274 | 298 | 334 | 398 |
| | Combustion Air Required (C.F.M.) | 960 | 1,040 | 1,120 | 1,300 | 1,600 | 1,920 |
| | Exhauster Model | 21 | 21 | 21 | 21 | 21 | 21 |
| | Exhauster H.P. | 5 | 5 | 5 | 5 | 5 | 5 |
| | Recommended Min. Stack Size – Dia. | 16" | 16" | 16" | 16" | 18" | 18" |
| INTERNAL DATA OF HEAT EXCHANGER (A) | Primary Heating Surface – Sq. Feet | 186 | 264 | 264 | 264 | 450 | 450 |
| | Secondary Htg. Surface (Tubes & Headers) – Sq. Feet | 228 | 283 | 283 | 283 | 436 | 436 |
| | Primary Combustion Volume – Cu. Feet | 165 | 242 | 242 | 242 | 585 | 585 |
| | Secondary Combustion Volume – Cu. Feet | 24 | 28 | 28 | 28 | 39 | 39 |
| | Total Combustion Chamber Volume – Cu. Feet | 189 | 270 | 270 | 270 | 624 | 624 |

(A) Standard construction - 400 series stainless steel primary and mild steel secondary.

Optional construction - 400 series stainless steel primary and secondary.

Recommended when 30% or more winter outside air is introduced, or temperature rise at minimum firing rate is below 10° F.

(B) Based on 80% operating efficiency.

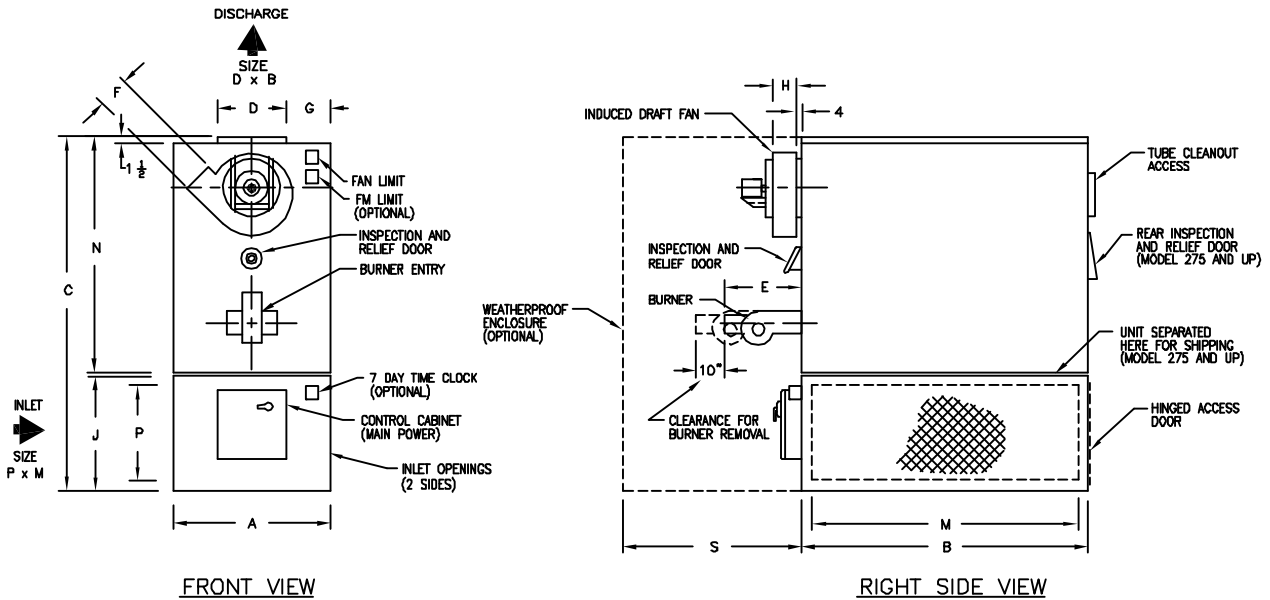
(C) Model 275-600 shipped in two pieces. Special shipping permits and heights required. Consult factory.

(D) When all 90° nozzles are furnished (optional extra). 18" extensions for 6 are included.

Dimensions

Models IF, IFW Vertical Units

C000458



| IF/IFW Model | Approximate Weight | | Dimensions | | | | | | | | | | | | |
|--------------|--------------------|---------|------------|-----|---------------------------------|-----|-----|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-----|---------------------------------|--------------------------------|-----|
| | Indoor | Outdoor | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "J" | "M" | "N" | "P" | "S" |
| 35-40 | 1400 | 1750 | 32 | 48 | 74 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 7 | 6 ³ / ₈ | 26 ¹ / ₈ | 44 | 48 ¹ / ₂ | 22 | 36 |
| 55/40 | 1600 | 1950 | 36 | 60 | 74 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 56 | 48 ¹ / ₂ | 22 | 36 |
| 75/40 | 2000 | 2350 | 36 | 80 | 74 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 76 | 48 ¹ / ₂ | 22 | 36 |
| 45-55 | 1700 | 2100 | 36 | 60 | 82 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 56 | 56 ¹ / ₂ | 22 | 36 |
| 75/55 | 2100 | 2500 | 36 | 80 | 82 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 76 | 56 ¹ / ₂ | 22 | 36 |
| 100/55 | 2300 | 2700 | 48 | 90 | 86 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 15 | 6 ³ / ₈ | 30 ¹ / ₈ | 86 | 56 ¹ / ₂ | 26 | 48 |
| 65-75 | 2100 | 2575 | 36 | 80 | 82 ⁵ / ₈ | 18 | 17 | 7 | 9 | 7 ³ / ₈ | 26 ¹ / ₈ | 76 | 56 ¹ / ₂ | 22 | 36 |
| 100/75 | 2400 | 2875 | 48 | 90 | 86 ⁵ / ₈ | 18 | 17 | 7 | 15 | 7 ³ / ₈ | 30 ¹ / ₈ | 86 | 56 ¹ / ₂ | 26 | 48 |
| 175/75 | 3800 | 4275 | 54 | 100 | 86 ⁵ / ₈ | 18 | 17 | 7 | 18 | 7 ³ / ₈ | 30 ¹ / ₈ | 96 | 56 ¹ / ₂ | 26 | 48 |
| 85-100 | 2500 | 3025 | 48 | 90 | 99 ⁵ / ₈ | 18 | 17 | 7 | 15 | 7 ³ / ₈ | 30 ¹ / ₈ | 86 | 69 ¹ / ₂ | 26 | 48 |
| 175/100 | 4000 | 4525 | 54 | 100 | 99 ⁵ / ₈ | 18 | 17 | 7 | 18 | 7 ³ / ₈ | 30 ¹ / ₈ | 96 | 69 ¹ / ₂ | 26 | 48 |
| 250/100 | 4500 | 5025 | 60 | 120 | 99 ⁵ / ₈ | 18 | 17 | 7 | 21 | 7 ³ / ₈ | 30 ¹ / ₈ | 116 | 69 ¹ / ₂ | 26 | 48 |
| 125-175 | 4100 | 4675 | 54 | 100 | 103 ⁵ / ₈ | 24 | 21 | 9 | 15 | 9 ³ / ₈ | 30 ¹ / ₈ | 96 | 73 ¹ / ₂ | 26 | 48 |
| 250/175 | 4600 | 5175 | 60 | 120 | 103 ⁵ / ₈ | 24 | 21 | 9 | 18 | 9 ³ / ₈ | 30 ¹ / ₈ | 116 | 73 ¹ / ₂ | 26 | 48 |
| 300/175 | 6000 | 6575 | 65 | 140 | 106 ¹ / ₈ | 24 | 21 | 9 | 20 ¹ / ₂ | 9 ³ / ₈ | 32 ⁵ / ₈ | 136 | 73 ¹ / ₂ | 28 ¹ / ₂ | 48 |
| 200 | 4600 | 5250 | 60 | 120 | 103 ⁵ / ₈ | 30 | 21 | 9 | 15 | 9 ³ / ₈ | 30 ¹ / ₈ | 116 | 73 ¹ / ₂ | 26 | 48 |
| 300/200 | 6000 | 6650 | 65 | 140 | 106 ¹ / ₈ | 30 | 21 | 9 | 17 ¹ / ₂ | 9 ³ / ₈ | 32 ⁵ / ₈ | 136 | 73 ¹ / ₂ | 28 ¹ / ₂ | 48 |
| 400/200 | 6650 | 7300 | 70 | 160 | 110 ⁵ / ₈ | 30 | 21 | 9 | 20 | 9 ³ / ₈ | 37 ¹ / ₈ | 154 | 73 ¹ / ₂ | 31 | 48 |
| 250 | 4600 | 5250 | 60 | 120 | 103 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 15 | 11 ¹ / ₈ | 30 ¹ / ₈ | 116 | 73 ¹ / ₂ | 26 | 48 |
| 300/250 | 6000 | 6650 | 65 | 140 | 106 ¹ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 17 ¹ / ₂ | 11 ¹ / ₈ | 32 ⁵ / ₈ | 136 | 73 ¹ / ₂ | 28 ¹ / ₂ | 48 |
| 400/250 | 6650 | 7300 | 70 | 160 | 110 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 20 | 11 ¹ / ₈ | 37 ¹ / ₈ | 154 | 73 ¹ / ₂ | 31 | 48 |
| 275-300 | 6100 | 7500 | 65 | 140 | 118 ¹ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 17 ¹ / ₂ | 11 ¹ / ₈ | 32 ⁵ / ₈ | 136 | 85 ¹ / ₂ | 28 ¹ / ₂ | 48 |
| 400/300 | 6800 | 8200 | 70 | 160 | 122 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 20 | 11 ¹ / ₈ | 37 ¹ / ₈ | 154 | 85 ¹ / ₂ | 31 | 48 |
| 600/300 | 9000 | 10,400 | 80 | 180 | 141 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 25 | 11 ¹ / ₈ | 56 ¹ / ₈ | 174 | 85 ¹ / ₂ | 50 | 48 |
| 325-400 | 7000 | 8700 | 70 | 160 | 138 ⁵ / ₈ | 30 | 32 | 10 ⁵ / ₈ | 20 | 11 ¹ / ₈ | 37 ¹ / ₈ | 154 | 101 ¹ / ₂ | 31 | 48 |
| 600/400 | 9500 | 11,200 | 80 | 180 | 157 ⁵ / ₈ | 30 | 32 | 10 ⁵ / ₈ | 25 | 11 ¹ / ₈ | 56 ¹ / ₈ | 174 | 101 ¹ / ₂ | 50 | 48 |
| 500-600 | 10,500 | 12,500 | 80 | 180 | 198 ⁵ / ₈ | 48 | 32 | 10 ⁵ / ₈ | 16 | 11 ¹ / ₈ | 56 ¹ / ₈ | 174 | 142 ¹ / ₂ | 50 | 48 |
| 600S/600 | 12,500 | 14,500 | 85 | 200 | 198 ⁵ / ₈ | 48 | 32 | 10 ⁵ / ₈ | 18 ¹ / ₂ | 11 ¹ / ₈ | 56 ¹ / ₈ | 194 | 142 ¹ / ₂ | 50 | 48 |

NOTE: All dimensions in inches subject to manufacturing tolerances.

EXPLANATION OF MODEL NUMBERS

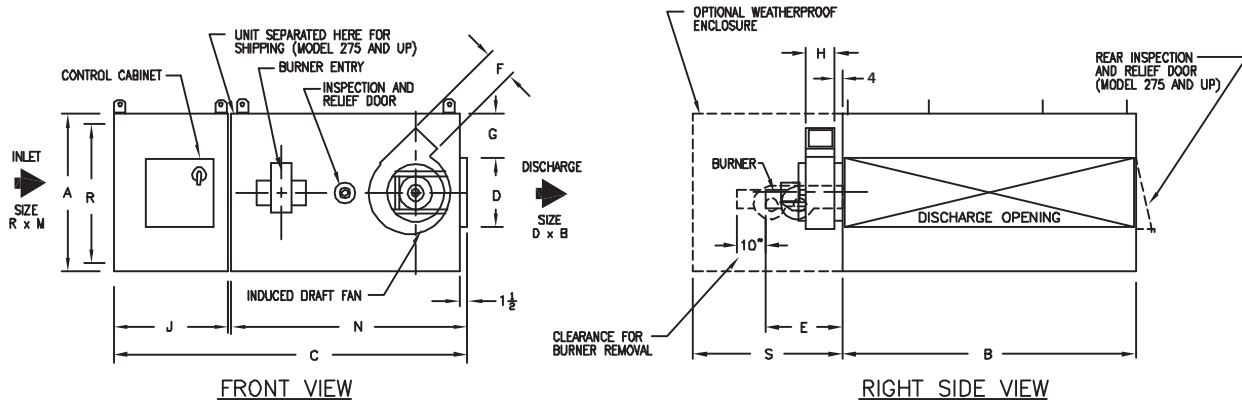
DASH MODEL NUMBERS - A Dash in the model number indicates the BTU range on the heat exchanger. Example: Model 35-40 has a heat exchanger rating of 350,000-400,000 BTU output.

SLASH MODEL NUMBERS - A Slash in the model number indicates the use of a larger blower section with a smaller heat exchanger, normally used for low temperature rise applications. Example: Model 75/35-40 has a 75 size blower section, which offers airflow up to 10,000 CFM, with a heat exchanger rating of 350,000-400,000 BTU output.

Dimensions

Models IF, IFW Horizontal Units

C000458



| IF/IFW Model | Approximate Weight | | Dimensions | | | | | | | | | | | | |
|--------------|--------------------|---------|------------|-----|---------------------------------|-----|-----|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-----|---------------------------------|-----|-----|
| | Indoor | Outdoor | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "J" | "M" | "N" | "R" | "S" |
| 35-40 | 1400 | 1750 | 32 | 48 | 74 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 7 | 6 ³ / ₈ | 26 ¹ / ₈ | 44 | 48 ¹ / ₂ | 28 | 36 |
| 55/40 | 1600 | 1950 | 36 | 60 | 74 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 56 | 48 ¹ / ₂ | 32 | 36 |
| 75/40 | 2000 | 2350 | 36 | 80 | 74 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 76 | 48 ¹ / ₂ | 32 | 36 |
| 45-55 | 1700 | 2100 | 36 | 60 | 82 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 56 | 56 ¹ / ₂ | 32 | 36 |
| 75/55 | 2100 | 2500 | 36 | 80 | 82 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 9 | 6 ³ / ₈ | 26 ¹ / ₈ | 76 | 56 ¹ / ₂ | 32 | 36 |
| 100/55 | 2300 | 2700 | 48 | 90 | 86 ⁵ / ₈ | 18 | 17 | 6 ¹ / ₄ | 15 | 6 ³ / ₈ | 30 ¹ / ₈ | 86 | 56 ¹ / ₂ | 44 | 48 |
| 65-75 | 2100 | 2575 | 36 | 80 | 82 ⁵ / ₈ | 18 | 17 | 7 | 9 | 7 ³ / ₈ | 26 ¹ / ₈ | 76 | 56 ¹ / ₂ | 32 | 36 |
| 100/75 | 2400 | 2875 | 48 | 90 | 86 ⁵ / ₈ | 18 | 17 | 7 | 15 | 7 ³ / ₈ | 30 ¹ / ₈ | 86 | 56 ¹ / ₂ | 44 | 48 |
| 175/75 | 3800 | 4275 | 54 | 100 | 86 ⁵ / ₈ | 18 | 17 | 7 | 18 | 7 ³ / ₈ | 30 ¹ / ₈ | 96 | 56 ¹ / ₂ | 50 | 48 |
| 85-100 | 2500 | 3025 | 48 | 90 | 99 ⁵ / ₈ | 18 | 17 | 7 | 15 | 7 ³ / ₈ | 30 ¹ / ₈ | 86 | 69 ¹ / ₂ | 44 | 48 |
| 175/100 | 4000 | 4525 | 54 | 100 | 99 ⁵ / ₈ | 18 | 17 | 7 | 18 | 7 ³ / ₈ | 30 ¹ / ₈ | 96 | 69 ¹ / ₂ | 50 | 48 |
| 250/100 | 4500 | 5025 | 60 | 120 | 99 ⁵ / ₈ | 18 | 17 | 7 | 21 | 7 ³ / ₈ | 30 ¹ / ₈ | 116 | 69 ¹ / ₂ | 56 | 48 |
| 125-175 | 4100 | 4675 | 54 | 100 | 103 ⁵ / ₈ | 24 | 21 | 9 | 15 | 9 ³ / ₈ | 30 ¹ / ₈ | 96 | 73 ¹ / ₂ | 50 | 48 |
| 250/175 | 4600 | 5175 | 60 | 120 | 103 ⁵ / ₈ | 24 | 21 | 9 | 18 | 9 ³ / ₈ | 30 ¹ / ₈ | 116 | 73 ¹ / ₂ | 56 | 48 |
| 300/175 | 6000 | 6575 | 65 | 140 | 106 ¹ / ₈ | 24 | 21 | 9 | 20 ¹ / ₂ | 9 ³ / ₈ | 32 ⁵ / ₈ | 136 | 73 ¹ / ₂ | 61 | 48 |
| 200 | 4600 | 5250 | 60 | 120 | 103 ⁵ / ₈ | 30 | 21 | 9 | 15 | 9 ³ / ₈ | 30 ¹ / ₈ | 116 | 73 ¹ / ₂ | 56 | 48 |
| 300/200 | 6000 | 6650 | 65 | 140 | 106 ¹ / ₈ | 30 | 21 | 9 | 17 ¹ / ₂ | 9 ³ / ₈ | 32 ⁵ / ₈ | 136 | 73 ¹ / ₂ | 61 | 48 |
| 400/200 | 6650 | 7300 | 70 | 160 | 110 ⁵ / ₈ | 30 | 21 | 9 | 20 | 9 ³ / ₈ | 37 ¹ / ₈ | 154 | 73 ¹ / ₂ | 64 | 48 |
| 250 | 4600 | 5250 | 60 | 120 | 103 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 15 | 11 ¹ / ₈ | 30 ¹ / ₈ | 116 | 73 ¹ / ₂ | 56 | 48 |
| 300/250 | 6000 | 6650 | 65 | 140 | 106 ¹ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 17 ¹ / ₂ | 11 ¹ / ₈ | 32 ⁵ / ₈ | 136 | 73 ¹ / ₂ | 61 | 48 |
| 400/250 | 6650 | 7300 | 70 | 160 | 110 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 20 | 11 ¹ / ₈ | 37 ¹ / ₈ | 154 | 73 ¹ / ₂ | 64 | 48 |
| 275-300 | 6100 | 7500 | 65 | 140 | 118 ¹ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 17 ¹ / ₂ | 11 ¹ / ₈ | 32 ⁵ / ₈ | 136 | 85 ¹ / ₂ | 61 | 48 |
| 400/300 | 6800 | 8200 | 70 | 160 | 122 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 20 | 11 ¹ / ₈ | 37 ¹ / ₈ | 154 | 85 ¹ / ₂ | 64 | 48 |
| 600/300 | 9000 | 10,400 | 80 | 180 | 141 ⁵ / ₈ | 30 | 26 | 10 ⁵ / ₈ | 25 | 11 ¹ / ₈ | 56 ¹ / ₈ | 174 | 85 ¹ / ₂ | 74 | 48 |
| 325-400 | 7000 | 8700 | 70 | 160 | 138 ⁵ / ₈ | 30 | 32 | 10 ⁵ / ₈ | 20 | 11 ¹ / ₈ | 37 ¹ / ₈ | 154 | 101 ¹ / ₂ | 64 | 48 |
| 600/400 | 9500 | 11,200 | 80 | 180 | 157 ⁵ / ₈ | 30 | 32 | 10 ⁵ / ₈ | 25 | 11 ¹ / ₈ | 56 ¹ / ₈ | 174 | 101 ¹ / ₂ | 74 | 48 |
| 500-600 | 10,500 | 12,500 | 80 | 180 | 198 ⁵ / ₈ | 48 | 32 | 10 ⁵ / ₈ | 16 | 11 ¹ / ₈ | 56 ¹ / ₈ | 174 | 142 ¹ / ₂ | 74 | 48 |
| 600S/600 | 12,500 | 14,500 | 85 | 200 | 198 ⁵ / ₈ | 48 | 32 | 10 ⁵ / ₈ | 18 ¹ / ₂ | 11 ¹ / ₈ | 56 ¹ / ₈ | 194 | 142 ¹ / ₂ | 79 | 48 |

NOTE: All dimensions in inches subject to manufacturing tolerances.

EXPLANATION OF MODEL NUMBERS

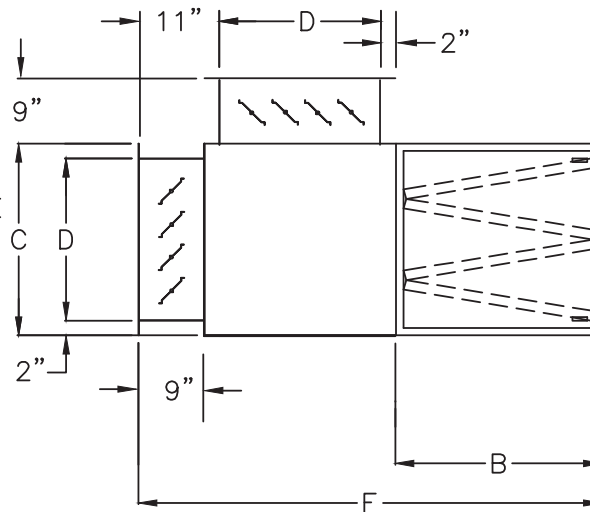
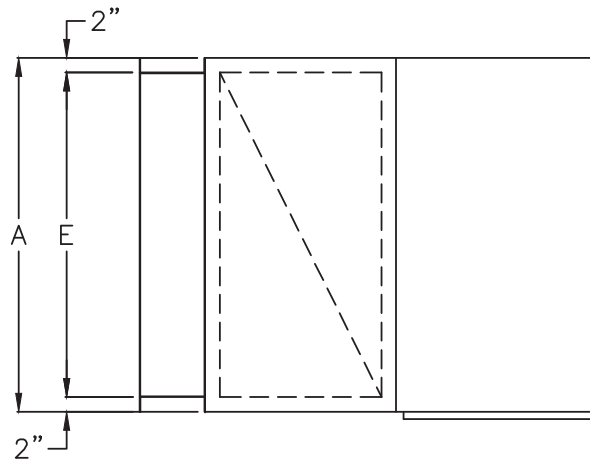
DASH MODEL NUMBERS - A Dash in the model number indicates the BTU range on the heat exchanger. Example: Model 35-40 has a heat exchanger rating of 350,000-400,000 BTU output.

SLASH MODEL NUMBERS - A Slash in the model number indicates the use of a larger blower section with a smaller heat exchanger, normally used for low temperature rise applications. Example: Model 75/35-40 has a 75 size blower section, which offers airflow up to 10,000 CFM, with a heat exchanger rating of 350,000-400,000 BTU output.

Dimensions

Model IF, IFW Side V-Bank Filter with Mixing Box

C000510A



1. ACCESS DOOR CAN BE AT EITHER END BUT NOT BOTH (SPECIFY)



| Model | A | B | C | D | E | F | Number & Size of Filters | Approximate Weight | |
|---------|-----|----|--------------------------------|--------------------------------|-----|--------------------------------|--------------------------|--------------------|-----------------------|
| | | | | | | | | V-Bank | V-Bank/Mixing Section |
| 35-40 | 48 | 28 | 26 | 22 | 44 | 63 | (6) 16 x 25 x 2 | 187 | 524 |
| 45-55 | 60 | 24 | 26 | 22 | 56 | 59 | (9) 20 x 20 x 2 | 211 | 582 |
| 65-75 | 80 | 24 | 26 | 22 | 76 | 59 | (12) 20 x 20 x 2 | 262 | 763 |
| 85-100 | 90 | 24 | 30 | 26 | 86 | 63 | (16) 20 x 20 x 2 | 321 | 872 |
| 125-175 | 100 | 44 | 30 | 26 | 96 | 83 | (30) 20 x 20 x 2 | 492 | 1221 |
| 200-250 | 120 | 44 | 30 | 26 | 116 | 83 | (36) 20 x 20 x 2 | 682 | 1515 |
| 275-300 | 140 | 44 | 32 ¹ / ₂ | 28 ¹ / ₂ | 136 | 85 ¹ / ₂ | (49) 20 x 20 x 2 | 853 | 1937 |
| 325-400 | 160 | 44 | 37 | 33 | 156 | 90 | (64) 20 x 20 x 2 | 1057 | 2601 |
| 500-600 | 180 | 44 | 56 | 52 | 176 | 109 | (90) 20 x 20 x 2 | 1336 | 3702 |

NOTES:

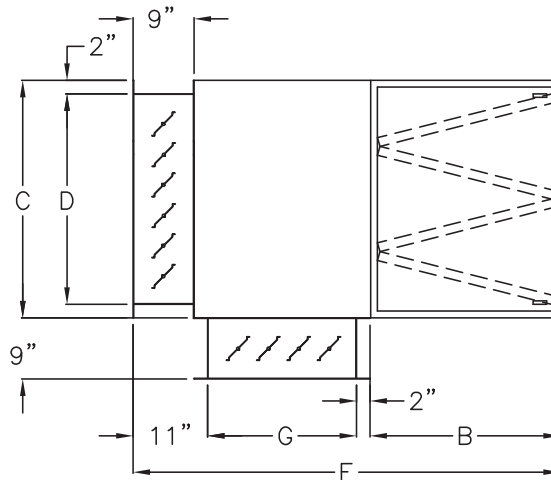
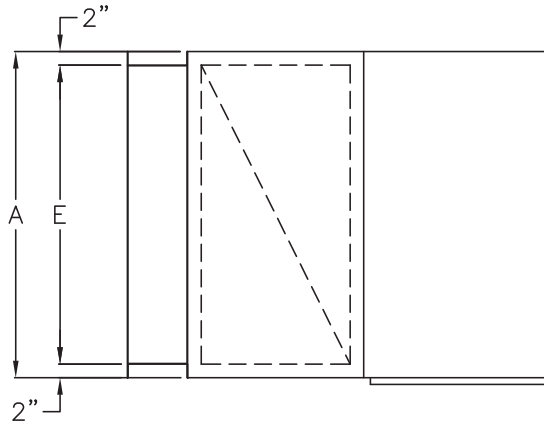
1. All dimensions in inches subject to manufacturing tolerances.
2. Use dimension "B" for V-bank filter section only.
3. Dampers may be shipped loose, to meet shipping restrictions; field adaptation and mounting by others.
4. Damper blade dividers furnished as required.

Dimensions

Model IF, IFW Base V-Bank Filter with Mixing Box

C000511A

MODEL IF, IFW BASE V-BANK FILTER WITH MIXING BOX



1. ACCESS DOOR CAN BE AT EITHER END BUT NOT BOTH (SPECIFY)
2. ONE DAMPER CAN BE LOCATED IN EITHER TOP OR BOTTOM LOCATION (SPECIFY CHOICE)

| Model | A | B | C | D | E | F | G | Number & Size of Filters | Approximate Weight | |
|---------|-----|----|----|----|-----|--------|--------|--------------------------|--------------------|-----------------------|
| | | | | | | | | | V-Bank | V-Bank/Mixing Section |
| 35-40 | 48 | 24 | 32 | 28 | 44 | 59 | 22 | (9) 16 x 20 x 2 | 192 | 628 |
| 45-55 | 60 | 24 | 36 | 32 | 56 | 59 | 22 | (9) 20 x 20 x 2 | 241 | 773 |
| 65-75 | 80 | 24 | 36 | 32 | 76 | 59 | 22 | (12) 20 x 20 x 2 | 276 | 925 |
| 85-100 | 90 | 24 | 48 | 44 | 86 | 63 | 26 | (16) 20 x 20 x 2 | 362 | 1202 |
| 125-175 | 100 | 24 | 54 | 50 | 96 | 63 | 26 | (30) 20 x 20 x 2 | 517 | 1603 |
| 200-250 | 120 | 24 | 60 | 56 | 116 | 63 | 26 | (36) 20 x 20 x 2 | 583 | 1986 |
| 275-300 | 140 | 24 | 65 | 61 | 136 | 65 1/2 | 28 1/2 | (49) 20 x 20 x 2 | 779 | 2342 |
| 325-400 | 160 | 24 | 70 | 66 | 156 | 70 | 33 | (64) 20 x 20 x 2 | 1016 | 3057 |
| 500-600 | 180 | 31 | 80 | 76 | 176 | 96 | 52 | (90) 20 x 25 x 2 | 1636 | 4441 |

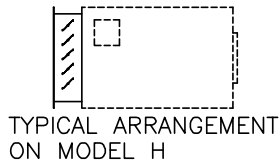
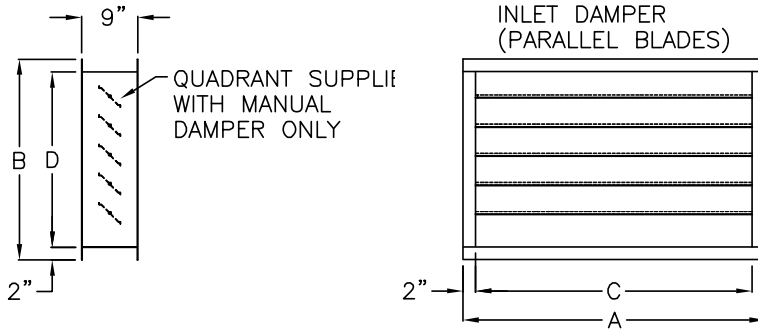
NOTES:

1. All dimensions in inches subject to manufacturing tolerances.
2. Use dimension "B" for V-bank filter section only.
3. Dampers may be shipped loose, to meet shipping restriction; field adaptation and mounting by others.
4. Damper blade dividers furnished as required.

Dimensions

Model IF, IFW Base Inlet Damper

C000512



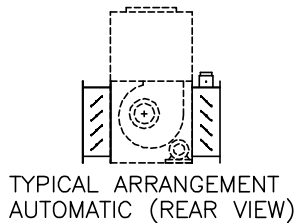
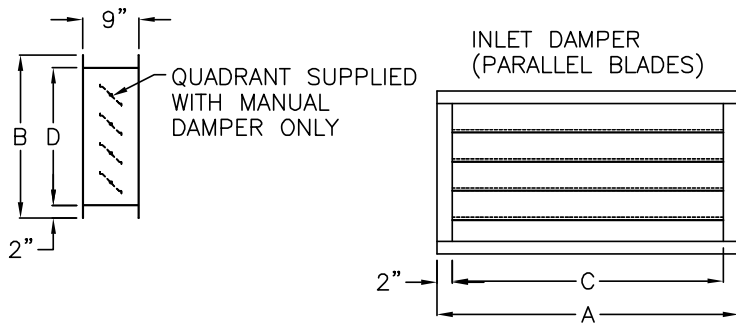
| Model | A | B | C | D | Approximate Weight |
|---------|-----|----|-----|----|--------------------|
| 35-40 | 48 | 32 | 44 | 28 | 128 |
| 45-55 | 60 | 36 | 56 | 32 | 161 |
| 65-75 | 80 | 36 | 76 | 32 | 194 |
| 85-100 | 90 | 48 | 86 | 44 | 251 |
| 125-175 | 100 | 54 | 96 | 50 | 328 |
| 200-250 | 120 | 60 | 116 | 56 | 426 |
| 275-300 | 140 | 65 | 132 | 61 | 535 |
| 325-400 | 160 | 70 | 154 | 66 | 606 |
| 500-600 | 180 | 80 | 174 | 74 | 953 |

NOTES

1. All dimensions in inches subject to manufacturing tolerances.
2. Dampers may be shipped loose, to meet shipping restrictions; field adaptation and mounting by others.
3. Blade dividers furnished as required.

Model IF, IFW Side Inlet Damper

C000512



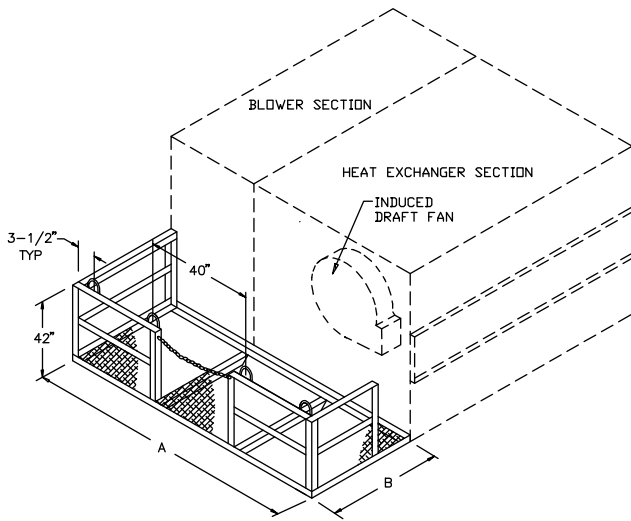
| Model | A | B | C | D | Approximate Weight |
|---------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|--------------------|
| 35-40 | 48 | 26 | 43 ¹ / ₈ | 22 | 110 |
| 45-55 | 60 | 26 | 55 ⁵ / ₈ | 22 | 122 |
| 65-75 | 80 ¹ / ₄ | 26 | 75 ¹ / ₄ | 22 | 150 |
| 85-100 | 90 | 30 | 86 | 26 | 173 |
| 125-175 | 100 ¹ / ₈ | 30 | 95 ³ / ₄ | 26 | 257 |
| 200-250 | 120 | 30 | 115 ⁵ / ₈ | 26 | 304 |
| 275-300 | 140 | 32 ¹ / ₂ | 135 ¹ / ₂ | 28 | 367 |
| 325-400 | 159 ¹ / ₈ | 37 | 151 ⁷ / ₈ | 32 ¹ / ₄ | 487 |
| 500-600 | 180 | 56 | 173 ¹ / ₂ | 51 | 727 |

NOTES

1. All dimensions in inches subject to manufacturing tolerances.
2. Dampers may be shipped loose, to meet shipping restrictions; field adaptation and mounting by others.
3. Blade dividers furnished as required.

Dimensions

Model IF Service Platform



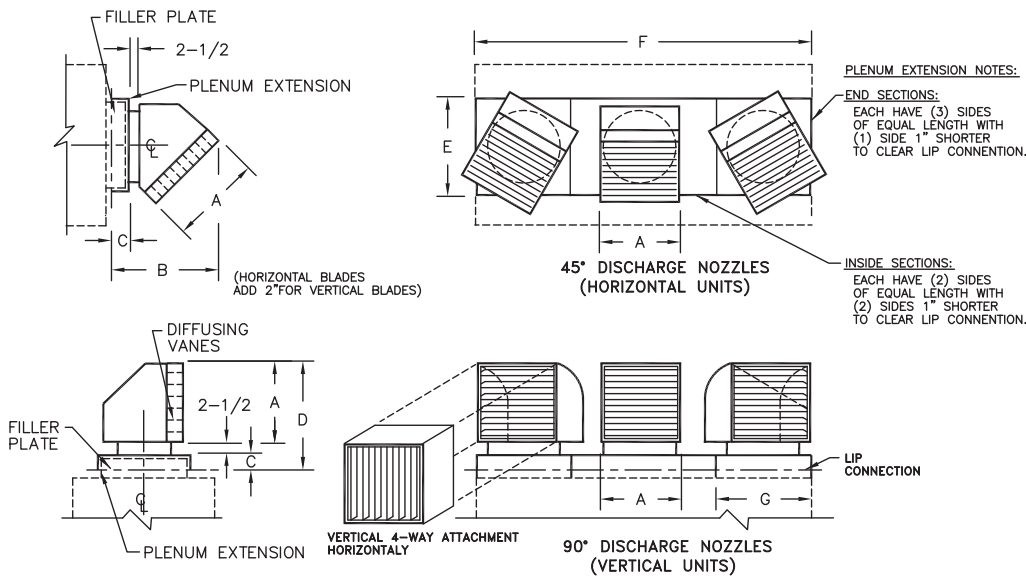
| Model | A | B | Approximate Weight |
|---------|-----|----|--------------------|
| 35-40 | 73 | 48 | 185 |
| 45-55 | 81 | 48 | 248 |
| 65-75 | 81 | 48 | 248 |
| 85-100 | 92 | 48 | 265 |
| 125-175 | 102 | 48 | 326 |
| 200-250 | 102 | 48 | 326 |

NOTES

1. All dimensions in inches subject to manufacturing tolerances.
2. Contact factory for dimensional details on units larger than 250 or models with optional V-bank or V-bank/mixing section.

Model IF Discharge Nozzle

C000476



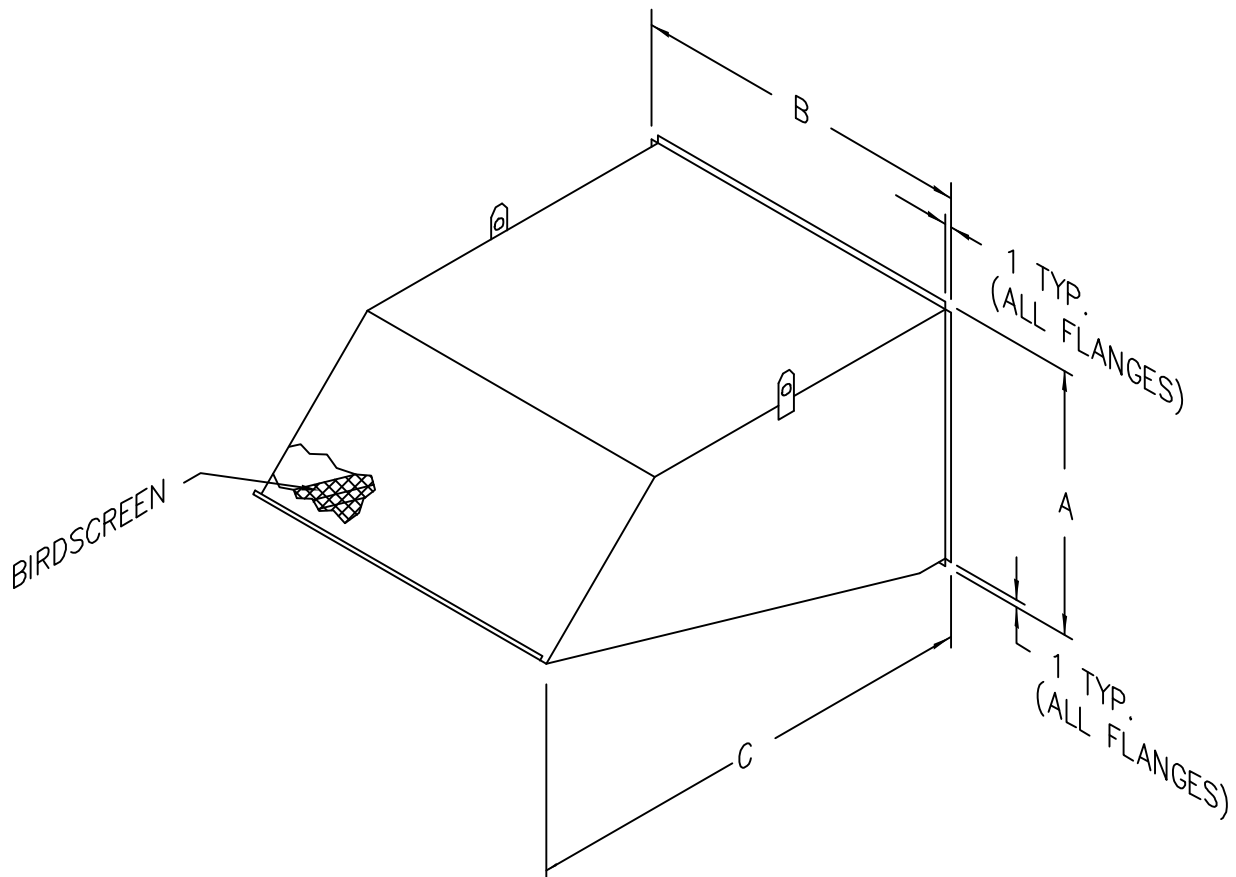
NOTES

1. Nozzles 360° rotatable.
2. Diffusing vanes are adjustable.
3. Nozzles supplied as optional.
4. All dimensions in inches subject to manufacturing tolerances.
5. Nozzles and one piece filler plate (Model 35-55) or plenum extensions (Model 65-400) shipped separately for field adaptation by others.
6. Overall height of nozzles and extensions or filler plate furnished for remote mounting is (1) inch plus "B" or "D" dimension.
7. For slash units (400/200, etc.) consult factory.

| Model | A | B | C | D | E | F | G | Number of Nozzles and Size | Approximate Weight |
|---------|-----------------|----|----|--------------------------------|----|-----|--------------------------------|----------------------------|--------------------|
| 35-40 | 15 | 25 | 6 | 23 ¹ / ₂ | 18 | 48 | — | 2 EA. — 15" | 79 |
| 45-55 | 15 | 25 | 6 | 23 ¹ / ₂ | 18 | 60 | — | 3 EA. — 15" | 113 |
| 65-75 | 15 | 25 | 6 | 23 ¹ / ₂ | 18 | 80 | 22 ¹ / ₂ | 4 EA. — 15" | 189 |
| 85-100 | 15 | 25 | 6 | 23 ¹ / ₂ | 18 | 90 | 22 ¹ / ₂ | 4 EA. — 15" | 189 |
| 125-175 | 18 | 31 | 10 | 30 ¹ / ₂ | 24 | 100 | 25 | 4 EA. — 18" | 276 |
| 200-250 | 18 | 31 | 10 | 30 ¹ / ₂ | 30 | 120 | 24 | 5 EA. — 18" | 364 |
| 275-300 | 18 | 31 | 10 | 30 ¹ / ₂ | 30 | 140 | 23 ³ / ₈ | 6 EA. — 18" | 436 |
| 325-400 | 18 | 31 | 10 | 30 ¹ / ₂ | 30 | 160 | 22 ⁷ / ₈ | 7 EA. — 18" | 503 |
| 500-600 | Consult Factory | | | | | | | | |

Model IFW Intake Hood

C000515



| Model | A | B | C | Approximate Weight |
|---------|----|-----|------------------|--------------------|
| 35-40 | 32 | 48 | $25\frac{7}{8}$ | 85 |
| 45-55 | 36 | 60 | $24\frac{1}{8}$ | 98 |
| 65-75 | 36 | 80 | $25\frac{7}{8}$ | 110 |
| 85-100 | 48 | 90 | $28\frac{1}{2}$ | 179 |
| 125-175 | 54 | 100 | $46\frac{3}{4}$ | 296 |
| 200-250 | 60 | 120 | $55\frac{3}{4}$ | 402 |
| 275-300 | 65 | 140 | $54\frac{3}{4}$ | 492 |
| 325-400 | 70 | 160 | 66 | 763 |
| 500-600 | 80 | 180 | $107\frac{5}{8}$ | 1405 |

NOTES

1. All dimensions in inches subject to manufacturing tolerances.
2. Hoods may be shipped loose, to meet shipping restrictions; field adaptation and mounting by others.

Electrical Data

| Amp Draw Table | | | | | | | | | |
|---|-----------|------------------|-------|-------|------|-------|------|-------|------|
| Item A | | | | | | | | | |
| SOURCE | AMPS (2) | MOTOR HORSEPOWER | | | | | | | |
| | | 1 1/2 | 2 | 3 | 5 | 7 1/2 | 10 | 15 | 20 |
| Blower Motor | 208V 3 PH | 6.6 | 7.5 | 10.6 | 16.7 | 24.2 | 30.8 | 46.2 | 59.4 |
| | 230V 3 PH | 6.0 | 6.8 | 9.6 | 15.3 | 22.0 | 28.8 | 42.0 | 54.0 |
| | 460V 3 PH | 3.0 | 3.4 | 4.8 | 7.6 | 11.0 | 14.4 | 21.0 | 27.0 |
| | 575V 3 PH | 2.4 | 2.7 | 3.9 | 6.1 | 9.0 | 11.5 | 17.0 | 22.0 |
| SOURCE | AMPS (2) | MOTOR HORSEPOWER | | | | | | | |
| | | 25 | 30 | 40 | 50 | 60 | 75 | 100 | |
| Blower Motor | 208V 3 PH | 74.8 | 88.0 | NA | NA | NA | NA | NA | NA |
| | 230V 3 PH | 68.0 | 80.0 | 104 | 130 | 154 | NA | NA | |
| | 460V 3 PH | 34.0 | 40.0 | 52.0 | 65.0 | 77.0 | 96.0 | 124 | |
| | 575V 3 PH | 27.0 | 32.0 | 41.0 | 52.0 | 62.0 | 77.0 | 99.0 | |
| Item B | | | | | | | | | |
| SOURCE | AMPS (3) | BURNER SIZE | | | | | | | |
| | | 35 | 40 | 45 | 50 | 55 | 65 | 75 | |
| Burner Motor HP (4) | | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/3 | 1/3 | |
| Induced Draft Fan Motor HP | | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/2 | 1/2 | |
| Amp Draw for Burner Motor, Induced Draft Motor, and Control Transformer | 208V 3 PH | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 9.6 | 9.6 | |
| | 230V 3 PH | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 8.7 | 8.7 | |
| | 460V 3 PH | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 4.3 | 4.3 | |
| | 575V 3 PH | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 3.5 | 3.5 | |
| SOURCE | AMPS (3) | BURNER SIZE | | | | | | | |
| | | 85 | 100 | 125 | 150 | 175 | 200 | 250 | |
| Burner Motor HP (4) | | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 3/4 | 1 1/2 | |
| Induced Draft Fan Motor HP | | 1/2 | 1/2 | 2 | 2 | 2 | 2 | 5 | |
| Amp Draw for Burner Motor, Induced Draft Motor, and Control Transformer | 208V 3 PH | 9.6 | 9.6 | 12.3 | 12.3 | 12.3 | 13.4 | 25.7 | |
| | 230V 3 PH | 8.7 | 8.7 | 11.1 | 11.1 | 11.1 | 12.2 | 23.5 | |
| | 460V 3 PH | 4.3 | 4.3 | 5.6 | 5.6 | 5.6 | 6.1 | 11.7 | |
| | 575V 3 PH | 3.5 | 3.5 | 4.4 | 4.4 | 4.4 | 4.9 | 9.4 | |
| SOURCE | AMPS (3) | BURNER SIZE | | | | | | | |
| | | 275 | 300 | 325 | 350 | 400 | 500 | 600 | |
| Burner Motor HP (4) | | 1 1/2 | 1 1/2 | 1 1/2 | 3 | 3 | 5 | 5 | |
| Induced Draft Fan Motor HP | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| Amp Draw for Burner Motor, Induced Draft Motor, and Control Transformer | 208V 3 PH | 25.7 | 25.7 | 25.7 | 29.7 | 29.7 | 35.8 | 35.8 | |
| | 230V 3 PH | 23.5 | 23.5 | 23.5 | 27.1 | 27.1 | 32.8 | 32.8 | |
| | 460V 3 PH | 11.7 | 11.7 | 11.7 | 13.5 | 13.5 | 16.3 | 16.3 | |
| | 575V 3 PH | 9.4 | 9.4 | 9.4 | 10.9 | 10.9 | 13.1 | 13.1 | |

NOTES: 1) NA = Not Available

- 2) Motor amps are based on 2011 edition of NEC.
- 3) Control circuit amps are based on standard controls.
- 4) Standard PowerFlame gas burner.

Steps to Size Optional Disconnect Switch:

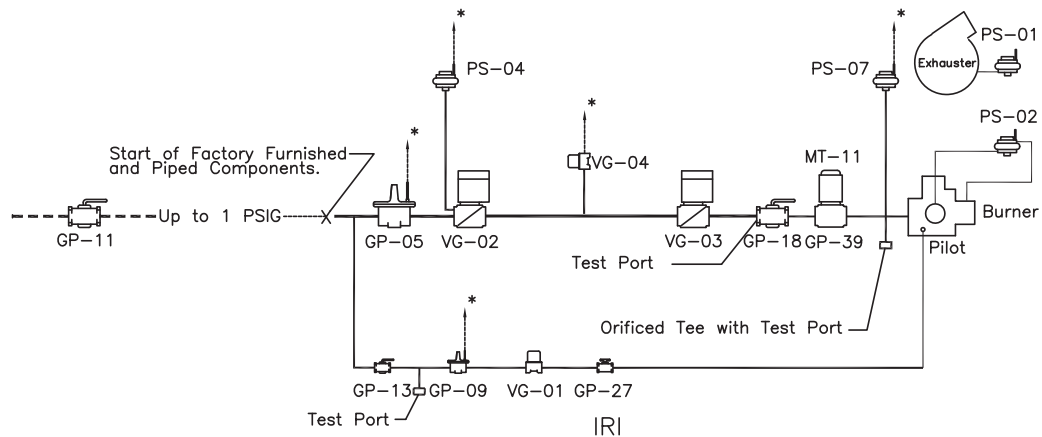
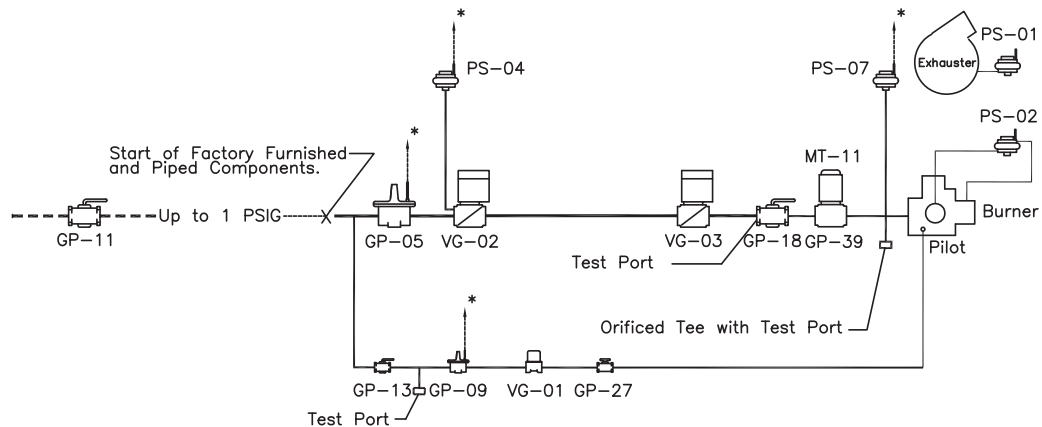
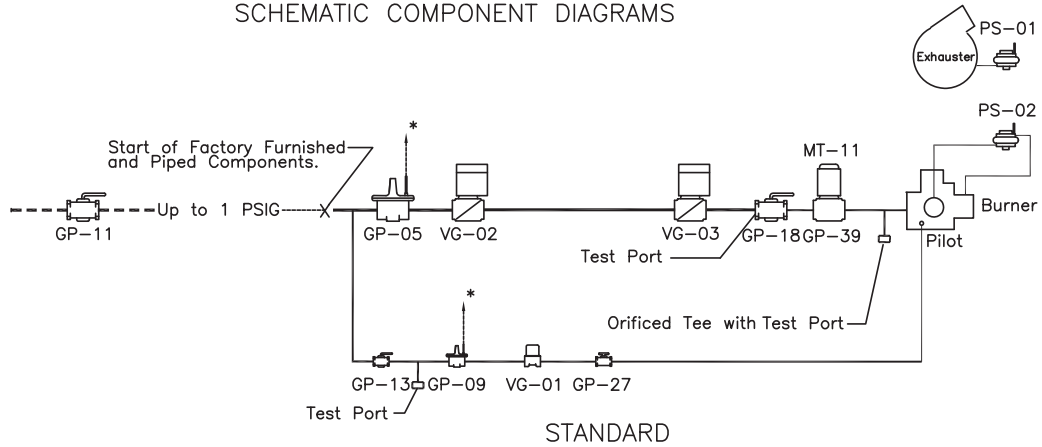
1. Find Blower Motor HP from tables on pages 5 -9.
2. Find amp draw for Blower Motor HP from chart in Item A above.
3. Determine proper burner size required.
4. Find amps for Burner Motor, Induced Draft Motor, and Control Transformer from chart in Item B above.
5. Add amps from steps 2, and 4, then multiply by 1.25.

Gas Piping Layout

Schematic Component Diagrams

C000513B

SCHEMATIC COMPONENT DIAGRAMS



COMPONENT IDENTIFICATION

GP-05 MAIN GAS PRESSURE REGULATOR
 GP-09 PILOT GAS PRESSURE REGULATOR
 GP-11 MAIN GAS SHUT-OFF VALVE
 GP-13 PILOT GAS SHUT-OFF VALVE
 GP-18 AUXILIARY GAS SHUT-OFF VALVE
 GP-27 ORIFICED NEEDLE VALVE
 GP-39 BUTTERFLY VALVE
 (MODULATING BURNERS ONLY)
 MT-11 BUTTERFLY VALVE OPERATOR
 (MODULATING BURNERS ONLY)

PS-01 DRAFT PROVING SWITCH
 PS-02 BURNER AIR FLOW SWITCH
 PS-04 LOW GAS PRESSURE SWITCH
 PS-07 HIGH GAS PRESSURE SWITCH
 VG-01 PILOT GAS VALVE
 VG-02 MAIN GAS VALVE
 VG-03 AUXILIARY GAS VALVE
 VG-04 N/O VENT VALVE

NOTES:

1. Vent limiting devices provided wherever possible, when venting is required * the venting to outside is by others on indoor units and furnished by factory on outdoor units.
2. Models through 750 MBH output require 6" W.C. minimum inlet pressure. Larger models require 8" W.C. minimum inlet pressure. Contact factory for inlet pressures below these minimums.
3. Standard manifold meets FM requirements for units less than or equal to 2000 MBH output for ETL listed units.
4. Standard manifold meets IRI requirements for ETL listed units.

Guide Specifications



Applied Air

Base Bid Applied Air Model (IF) (IFW) _____
Indirect Fired heating and make-up air unit(s) designed for (indoor) (outdoor) application. The unit shall be factory fabricated, assembled, wired and tested prior to shipment in accordance with the specification and equipment schedule. The unit will include all components herein and as shown on the drawings. Alternate equipment, equal in design, construction, performance and capacity to unit(s) specified, must be shown with price deduct/add, if any. Approval of alternate equipment will be subject to review of shop drawings. The unit shall be capable of delivering _____ SCFM at _____ ESP using a _____ horsepower (ODP) (TEFC) motor operating on 208/230/460/3/60. The unit shall be ETL listed.

CASING

The unit casing shall consist of 18 gauge galvanized steel panels over a structural steel framework to ensure rigidity. Cabinet construction shall allow unit(s) to be mounted in the (vertical) (horizontal) arrangement with no external framework. The casing enclosing the heat exchanger shall be of double wall construction with a galvanized steel inner wall serving as a radiation shield. Radiation and transmission losses shall not exceed 2% of the rated output. This section shall be insulated with 1", 1 1/2 lb. density insulation.

Hinged access doors with cadmium plated piano type hinges shall be supplied to allow physical entry to all sections requiring inspections and periodic maintenance. Access doors shall be complete with 1" thick insulation, interior metal liner, captive screws, fasteners, and handles.

IFW MODELS ONLY

The unit shall have a weatherproof enclosure to protect the gas burner, direct drive induced draft fan, and controls. The enclosure will be complete with hinged access doors, captive screws, fasteners and handles. The weatherproof enclosure will have louvered panels to provide outside air required for proper combustion and cooling. Flue products will be vented outside of enclosure.

BLOWER SECTION

Each unit shall be supplied with multiple centrifugal forward curve, DWDI blowers rated in accordance with AMCA standards. The blowers are to be mounted on a heavy duty, turned and ground and polished solid steel shaft designed for a maximum operating speed not to exceed 75% of its first critical speed.

The bearings are to be of the heavy-duty industrial pre-lubricated, self aligning type. Models 125 and larger will include a double row spherical roller bearing on drive side for maximum bearing life.

Drives shall have a capacity 25% greater than the motor horsepower. Blower and motor sheaves shall be laser aligned to provide maximum belt and sheave life. The motor sheave shall be of the adjustable pitch type for motors up to 7 1/2 H.P.

The fan motor shall be mounted on an adjustable base and wired in flexible conduit to the control panel in the factory. All units with three or more bearings will be laser aligned in the factory to provide minimum vibration and maximum bearing life. All models 125 and larger shall be vibration balanced as a complete assembly in the factory.

INDIRECT GAS FIRED SECTION

The entire primary heat transfer surface and header shall be of 400 series stainless steel; the secondary heat transfer surface shall be (mild steel) (400 series stainless steel). The heat exchanger design shall permit unrestricted lateral and peripheral expansion during the heating and cooling cycle. The flue gas travel shall be of four-pass design, with no internal baffles. The surface temperature of the heat exchanger shall not exceed 75% of its scaling temperature when operating at rated capacity. The heat exchanger shall be rated at a minimum of 80% efficiency at rated output. A pressure relief door complete with an observation window to view the flame shall be provided.

DIRECT DRIVE INDUCED DRAFT FAN

An integrally mounted, heavy duty, non-clogging radial blade induced draft fan complete with direct drive motor shall be provided. The induced draft fan shall be adequately sized to insure proper draft conditions when operating at rated capacity and equipped with a manual damper complete with locking quadrant to ensure proper draft and extended heat exchanger performance.

BURNER

The gas burner shall be of the power type, complete with integral combustion air blower and motor, combustion air proving switch, and removable pilot assembly. The combustion air damper shall be interlocked with the gas control valve to insure a proper gas/air mixture throughout the complete range of operation. Burner and controls shall be capable of delivering _____ MBH output firing on (natural gas) (propane) at an inlet pressure of _____ (inches water column) (PSIG) and in accordance with (manufacturer's standard) (FM) (IRI) requirements. Burner and controls shall be arranged for (On-Off) (High/Low/Off) (Full Modulation with low fire start and a _____ turndown ratio). The factory wired and piped valve train shall be mounted inside the unit weatherproof enclosure (on IFW models) and be complete with:

- low pressure appliance regulator
- motorized gas control valve
- main manual test firing shut-off valve
- pilot manual shut-off valve
- pilot pressure regulator
- pilot automatic shut-off valve
- pilot manual test firing shut-off valve

Guide Specifications



Applied Air

ELECTRICAL CONTROLS

A NEMA 1 control panel complete with hinged access door shall be mounted inside the weatherproof enclosure (on IFW models). All control components are to be labeled and individually wired to a numbered terminal strip to aid in servicing. All wiring shall be color coded and number tagged at each end to match the control diagram supplied. Full operating and maintenance instructions shall accompany each unit. All wiring between the controls and valves shall be run in flexible conduit. All electrical components shall bear the U.L. label. The control system shall include but not be limited to the following components required for automatic operation:

- control circuit transformer
- fan motor starters, overloads and sub-circuit fuses
- control circuit fuses
- control relays
- electronic flame relay complete with alarm contacts
- induced draft fan air proving differential switch
- high limit switch
- automatic/manual fan switch
- heavy duty ignition transformer

OPTIONAL EQUIPMENT & CONTROLS

1. Motorized inlet air shut-off damper with heavy gauge galvanized steel frame. Blades shall be die formed, triple V-groove 16 gauge galvanized steel, maximum 6" wide. Axles shall be $\frac{1}{2}$ " plated steel.
2. V-Bank filter section with nominal 2" thick (throwaway) (pleated) (cleanable) filters.
3. Combination filter/mixing section with nominal 2" thick (throwaway) (pleated) (cleanable) filters and motorized mixing dampers with a heavy gauge galvanized steel frame. Blades shall be die formed, triple V-groove 16 gauge galvanized steel, maximum 6" wide. Axles shall be $\frac{1}{2}$ " plated steel. The damper motor and linkage shall be mounted inside the unit casing.
4. Closure panels
5. Screened inlet section
6. 90° Discharge nozzles for vertical models
7. 45° Discharge nozzles for horizontal models
8. Inlet hood and birdscreen
9. Insulated (blower section) (filter section) (filter/mixing section)
10. Structural base frame for horizontal units
11. Service platform with guardrails for horizontal units
12. Extended lube lines
13. Internal blower/motor isolation
14. High Efficiency blower motor
15. Mild weather shutdown ductstat
16. Clogged filter switch and indicating light.
17. Disconnect switch
18. Painted galvanized casing
19. High gas pressure regulator (shipped loose for inlet pressures over 1 PSIG.
20. Circuit analyzer
21. Remote control panel.
22. Night set back thermostat
23. 7 day time clock
24. Timed freeze protection
25. On-Off night setback thermostat
26. Smoke detector



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