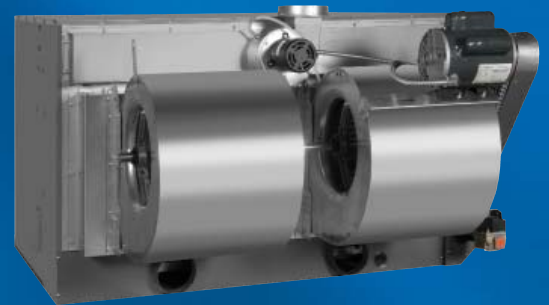


# BSF/BSC SERIES

## Tubular Separated Combustion Unit Heaters



**Industry Leading 83%\* Efficient**

### STANDARD FEATURES

- Separated Combustion
- 20 Gauge Aluminized Steel Tubular Heat Exchanger
- 83% Thermal Efficiency
- 115/1/60 Supply Voltage
- Power Vented
- 20 Gauge Steel Cabinetry with Baked Enamel Finish
- Direct-Spark Ignition System
- Rear Burner Access for Ease of Service
- Individually Adjustable and Removable Horizontal Louvers
- 10 Year Heat Exchanger, Flue Collector and Burner Warranty

### OPTIONAL FEATURES

- Stainless Steel Heat Exchanger
- Stainless Steel Burners and Flue Collector
- Supply Voltages: 208 & 230/1/60 and 208, 230, 460, 575/3/60
- Premium Efficiency Blower Motors in ODP & TE Types
- Two Stage and Various Electronic Modulation Gas Controls
- Discharge Nozzles (30°, 60° & 90°)
- Combustion Air Inlet Kits (Concentric)



Intertek

\*Units operate with efficiencies up to 83% depending on unit size and application.



# BSF/BSC SERIES

The Beacon/Morris "BSF" Propeller and "BSC" Blower Series gas-fired unit heater offers a highly efficient, extremely durable alternative to traditional clam shell designs in a separated combustion configuration. These type units combine the latest tubular heat exchanger and in-shot burner technology with the quality and reliability you have come to know from Beacon/Morris. Units are available in sizes 100 to 400 MBH.

Standard energy saving features like the direct spark ignition and power venting reduce standby losses and offer improved seasonal efficiencies. The "BSF/BSC" are certified by ETL as providing 83% thermal (combustion) efficiency.

## TUBULAR HEAT EXCHANGER

The Beacon/Morris tubular heat exchanger has been designed to provide maximum and uniform heat transfer. The low pressure drop associated with this design enables heated air to be evenly distributed to the conditioned space. This curved, non-welded serpentine design experiences less thermally induced stress making it highly durable for significantly longer service life.

All standard Beacon/Morris tubular heat exchangers are constructed of heavy duty 20-gauge aluminized steel with an optional 409 stainless steel heat exchanger available for applications in mildly corrosive environments.

## SEPARATED COMBUSTION

The "BSF/BSC" separated combustion configuration allows application flexibility in areas where dust, dirt, humidity or mildly

corrosive conditions are prevalent. A unique power-venting system draws clean combustion inlet air from the outside while exhausting flue gases through the outlet discharge. All critical components including the burner, pilot ignition system and flue are safely enclosed within the unit protected from potentially corrosive elements.

## DIRECT SPARK IGNITION SYSTEM

Beacon/Morris "BSF/BSC" units utilize a direct spark pilotless ignition of the burner, providing fast heat delivery. This highly reliable and efficient ignition system incorporates an integrated electronic control board to regulate the system sequence of operation, including an onboard LED indicator for simple troubleshooting.

## VENTING

The Beacon/Morris "BSF/BSC" unit heaters are ETL certified in accordance with categories I and III venting requirements. This certification allows units to be vented both vertically and horizontally using either single wall or double wall venting materials. This venting flexibility of the "BSF/BSC" unit heaters make installation easier and more cost effective by allowing the installer to utilize existing venting components.

## CONTROL ACCESSIBILITY

Designed with the service person in mind, every component of the Beacon/Morris "BSF/BSC" Series is easily accessible. Ignition and fan controls are located in one centrally located control panel. The access door provides control isolation as well as a pleasing exterior appearance.

| BSF & BSC                             |                |         |         |          |          |            |             |            |            |
|---------------------------------------|----------------|---------|---------|----------|----------|------------|-------------|------------|------------|
| Unit Size                             | 100            | 125     | 150     | 175      | 200      | 250        | 300         | 350        | 400        |
| <b>PERFORMANCE DATA†</b>              |                |         |         |          |          |            |             |            |            |
| Input - BTU/Hr.                       | 100,000        | 125,000 | 150,000 | 175,000  | 200,000  | 250,000    | 300,000     | 350,000    | 400,000    |
| Output - BTU/Hr.                      | 83,000         | 103,750 | 124,500 | 145,250  | 166,000  | 207,500    | 249,000(SF) | 290,500    | 332,000    |
| *Flue Size Diameter - in              | 5              | 5       | 5       | 5        | 5        | 5          | 6           | 6          | 6          |
| Gas Inlet, Natural Gas - in           | 1/2            | 1/2     | 1/2     | 1/2      | 1/2      | 3/4        | 3/4         | 3/4        | 3/4        |
| Gas Inlet, LP Gas - in                | 1/2            | 1/2     | 1/2     | 1/2      | 1/2      | 1/2 OR 3/4 | 1/2 OR 3/4  | 1/2 OR 3/4 | 1/2 OR 3/4 |
| <b>BSF PERFORMANCE DATA</b>           |                |         |         |          |          |            |             |            |            |
| Free Air Delivery - CFM               | 1,600          | 2,200   | 2,400   | 2,850    | 3,200    | 3,450      | 5,000       | 5,600      | 5,800      |
| Air Temperature Rise - Deg. F         | 47             | 42      | 47      | 46       | 47       | 54         | 45          | 47         | 51         |
| Full Load Amps at 120V                | 5.3            | 5.8     | 5.8     | 8.0      | 8.0      | 8.0        | 11.3        | 13.5       | 13.5       |
| <b>MOTOR DATA:</b>                    | Motor HP (Qty) | 1/10    | 1/4     | 1/4      | 1/3      | 1/3        | 1/4 (2)     | 1/3 (2)    | 1/3 (2)    |
|                                       | Motor Type**   | SP      | PSC     | PSC      | PSC      | PSC        | PSC         | PSC        | PSC        |
|                                       | RPM            | 1,050   | 1,140   | 1,140    | 1,140    | 1,140      | 1,140       | 1,140      | 1,140      |
|                                       | Amps @ 115V    | 4.2     | 4.7     | 4.7      | 5.8      | 5.8        | 9.4         | 11.6       | 11.6       |
| <b>DIMENSIONAL DATA - inches (mm)</b> |                |         |         |          |          |            |             |            |            |
| Overall Unit Depth                    | 43-1/2         | 43-1/2  | 43-1/2  | 43-1/2   | 43-1/2   | 43-1/2     | 44-3/4      | 44-3/4     | 44-3/4     |
| Overall Unit Width                    | 25-1/4         | 25-1/4  | 25-1/4  | 37-1/4   | 37-1/4   | 37-1/4     | 55-1/4      | 55-1/4     | 55-1/4     |
| Overall Unit Height                   | 33-3/4         | 33-3/4  | 33-3/4  | 33-3/4   | 33-3/4   | 33-3/4     | 34          | 34         | 34         |
| <b>BSC PERFORMANCE DATA</b>           |                |         |         |          |          |            |             |            |            |
| Free Air Delivery - CFM               | 1,181          | 1,476   | 1,771   | 2,067    | 2,362    | 2,953      | 3,501       | 4,134      | 4,724      |
| Air Temperature Rise - Deg. F         | 65             | 65      | 65      | 65       | 65       | 65         | 65          | 65         | 65         |
| Outlet Velocity - FPM                 | 370            | 463     | 555     | 395      | 451      | 564        | 422         | 498        | 570        |
| <b>MOTOR DATA:</b>                    | Motor HP       | 1/4     | 1/2     | 1/2      | 3/4      | 3/4        | 1           | 1-1/2      | 1-1/2      |
|                                       | Motor Type**   | SPH     | SPH     | SPH      | SPH      | SPH        | Cap. Start  | Cap. Start | Cap. Start |
|                                       | RPM            | 1,725   | 1,725   | 1,725    | 1,725    | 1,725      | 1,725       | 1,725      | 1,725      |
|                                       | Amps @ 115V    | 5.2     | 8.3     | 8.3      | 11.6     | 11.6       | 13.0        | 18.0       | 18.0       |
| <b>DIMENSIONAL DATA - inches (mm)</b> |                |         |         |          |          |            |             |            |            |
| Overall Unit Depth                    | 52-3/4         | 53-3/16 | 53-7/32 | 59-11/16 | 59-11/16 | 59-11/16   | 56-7/16     | 59-11/16   | 59-11/16   |
| Overall Unit Width                    | 25-1/4         | 25-1/4  | 25-1/4  | 37-1/4   | 37-1/4   | 37-1/4     | 55-1/4      | 55-1/4     | 55-1/4     |
| Overall Unit Height                   | 33-3/4         | 33-3/4  | 33-3/4  | 33-3/4   | 33-3/4   | 33-3/4     | 34          | 34         | 34         |

† Ratings shown are for unit installations at elevations between 0 and 2,000 ft (0 to 610m). For unit installations in U.S.A. above 2,000 ft. (610m), the unit input must be derated 4% for each 1,000 ft. (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (N.F.P.A. No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 ft. (610m) are to be ignored. At altitudes of 2,000 ft. to 4,500 ft. (610 to 1372m), the unit must be derated to 90% of the normal altitude rating, and be so marked in accordance with the ETL certification.

\* Flue collar is factory supplied with unit; to be field installed per included instructions.

\*\* LEGEND: SP = Shaded Pole PSC = Permanent Split Capacitor SPH = Split Phase CAP. START = Capacitor Start



**Beacon/Morris**  
GAS-FIRED UNIT HEATERS

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