

# TUBULAR GAS-FIRED UNIT HEATERS

 **Beacon/Morris**



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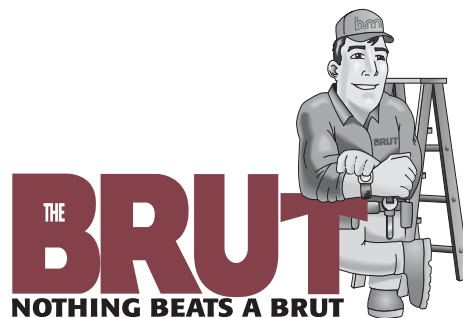


### Three Low Profile Tubular Heat Exchanger Models To Choose From

- BRU – ETL Certified for Residential Garage Installations
- BTU – Light Commercial, Industrial
- BST – ETL Certified for Industrial, Commercial and Residential Garage applications

### Standard Features

- 5 Sizes to choose from: 30,000 – 90,000
- ETL Certified for Residential Garage Installations
- Inshot Burner Design
- 10 Year Warranty



Visit [www.beacon-morris.com](http://www.beacon-morris.com) to view and order homeowner friendly brochures.

## Models BTU and BRU Gas-Fired Unit Heaters

The Beacon/Morris Model "BTU" and "BRU" gas-fired unit heaters offer a highly efficient, extremely durable alternative to the traditional clam shell design. These propeller type units combine the latest tubular heat exchanger and inshot burner technology with the quality and reliability you have come to know from Beacon/Morris. Model "BTU" units are certified by ETL for use in commercial and industrial applications. Sizes are available in 30 to 400 MBH. Model "BRU" unit is certified by ETL for commercial, industrial and residential garage applications. Sizes are offered from 30-90 MBH.

### Residential Garage Certified

The Beacon/Morris Model "BRU" unit heater conforms with the latest ETL certification standards for installations in residential garages. Design certification and our low profile design makes the Model "BRU" unit ideal for multiple types of applications.

### High Efficiency

Standard energy saving features like the direct spark ignition and power venting reduces standby losses and offers improved seasonal efficiencies. Both Models are certified by ETL as providing over 80% 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 Beacon/Morris tubular heat exchangers are constructed of heavy duty 20-gauge aluminized steel. Optional 409 stainless steel is available (sizes 100-400 only).

### Direct Spark Ignition System

Beacon/Morris Model "BTU" and "BRU" 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.



Model "BTU-75"

(Model "BRU" unit includes OSHA type fan guard)

### Venting

Beacon/Morris Model "BTU" and "BRU" 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 makes the 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 Gas-Fired Unit Heater is easily accessible. Ignition and fan controls are located in one centrally located control panel. The removable access door provides control isolation as well as a pleasing exterior appearance.

### 10-Year Warranty

Beacon/Morris warrants the heat exchanger, flue collector and burners of both the Model "BTU" and "BRU" to be free from defects in materials and workmanship for a period of 10 years from the date of manufacture.

### Standard Features

- Residential garage certification (Model "BRU" only)
- Inshot burner design
- Direct spark ignition
- Individually adjustable and removable louvers
- 20-gauge steel jacket with baked enamel finish.
- 120/1/60 supply voltage
- Easy access control panel
- Power vented
- Single stage combination gas valve
- 120/24 volt control transformer
- 115/1/60 volt fan motor with internal overload protection
- Right hand control access. Field convertible to left hand access (low profile sizes 30-90 MBH only).



Model "BTU-150"

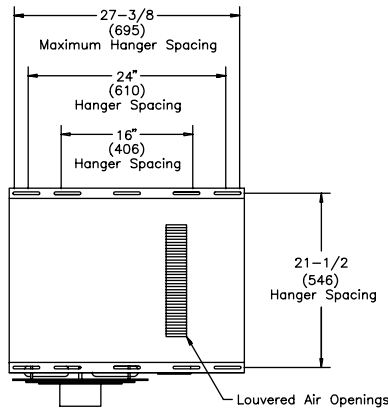
# Models BTU and BRU Low Profile Performance & Dimensional Data



Unit Size	30	45	60	75	90
<b>PERFORMANCE DATA†</b>					
Input - BTU/Hr. (kW)	30,000 (8.8)	45,000 (13.2)	60,000 (17.6)	75,000 (22.0)	90,000 (26.4)
Output - BTU/Hr. (kW)	24,300 (7.1)	36,450 (10.7)	48,600 (14.2)	60,750 (17.8)	72,900 (21.4)
Thermal Efficiency (%)	81	81	81	81	81
Free Air Delivery - CFM (cu. m/s)	500 (0.236)	750 (0.355)	1,000 (0.473)	1,250 (0.591)	1,400 (0.70)
Air Temperature Rise - Deg. F (Deg. C)	45 (25)	45 (25)	45 (25)	45 (25)	45 (25)
Full Load Amps at 120V	3.0	3.0	3.7	3.7	4.8
<b>MOTOR DATA:</b> Nominal HP					
Actual (kW)	1/20 (.04)	1/20 (.04)	1/20 (.04)	1/20 (.04)	1/20 (.04)
Motor Type	SP	SP	SP	SP	SP
R.P.M.	1650	1650	1050	1050	1050
Motor Amps @ 115V	1.9	1.9	2.6	2.6	2.6
<b>DIMENSIONAL DATA - inches (mm)</b>					
"A" Jacket Height	12 (305)	12 (305)	17-3/4 (451)	17-3/4 (451)	17-3/4 (451)
"B" Overall Height	13 (330)	13 (330)	18-3/4 (476)	18-3/4 (476)	18-3/4 (476)
"C" Overall Depth	25-1/2 (648)	25-1/2 (648)	26-3/4 (679)	26-3/4 (679)	26-3/4 (679)
"D" Centerline Height of Flue	7-1/4 (184)	7-1/4 (184)	10-1/2 (267)	10-1/2 (267)	10-1/2 (267)
"E" Centerline Electric Connection	10-1/4 (260)	10-1/4 (260)	16 (406)	16 (406)	16 (406)
"F" Discharge Opening Height	10-1/2 (267)	10-1/2 (267)	16-1/4 (413)	16-1/4 (413)	16-1/4 (413)
"G" Fan Diameter-in	10	10	16	16	16
Unit Weight - lbs. (kgs)	62 (28)	68 (31)	87 (39)	93 (42)	95 (43)
Shipping Weight - lbs. (kgs)	72 (33)	78 (35)	102 (46)	108 (49)	110 (50)

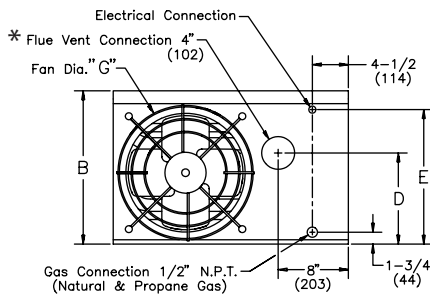
† Ratings shown are for unit installations at elevations between 0 and 2,000 ft (0 to 610m). For unit installations in U.S.A. above 2,000 ft. (610m), the unit input must be derated 4% for each 1,000 ft. (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition 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.



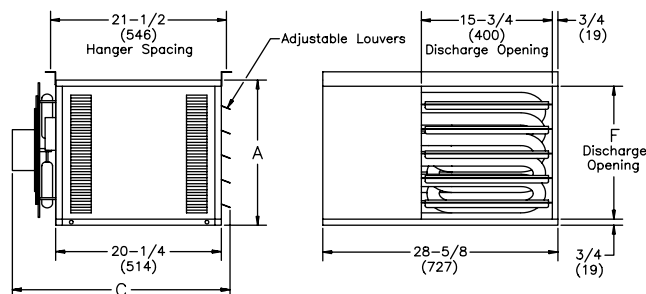
Top View

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Rear View

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Side View

Front View

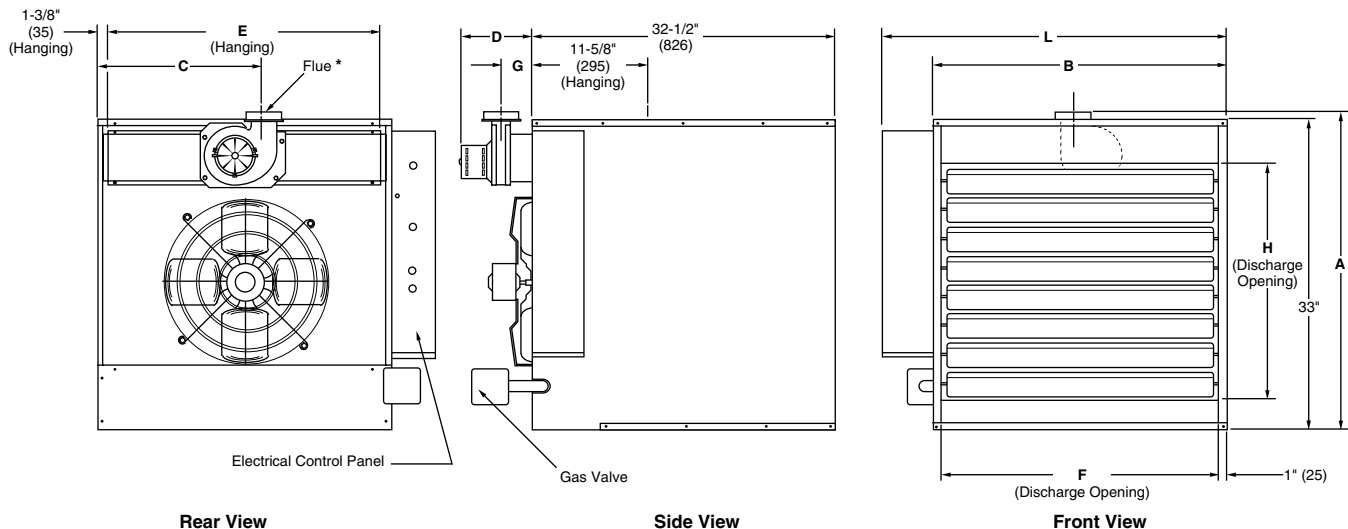
DIMENSIONS .XXX STANDARD UNITS  
DIMENSIONS IN PARENTHESIS (XXX) MILLIMETERS

# Model BTU Performance & Dimensional Data

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
(kW)	(29.3)	(36.6)	(43.9)	(51.2)	(58.6)	(73.2)	(87.8)	(102.5)	(117.1)
Output - BTU/Hr.	81,000	101,250	121,500	141,750	162,000	202,500	243,000	283,500	324,000
(kW)	(23.7)	(29.6)	(35.6)	(41.5)	(47.5)	(59.3)	(71.2)	(83.0)	(95.0)
Thermal Efficiency (%)	81	81	81	81	81	81	81	81	81
Free Air Delivery - CFM	1,600	2,200	2,400	2,850	3,200	3,450	5,000	5,600	5,800
(cu. m/s)	(0.756)	(1.039)	(1.133)	(1.346)	(1.511)	(1.629)	(2.361)	(2.644)	(2.738)
Air Temperature Rise - Deg. F	47	42	47	46	47	54	45	47	51
(Deg. C)	(26)	(23)	(26)	(26)	(26)	(30)	(24)	(26)	(28)
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> : Nominal HP (Qty.)									
	1/10	1/4	1/4	1/3	1/3	1/3	(2) 1/4	(2) 1/3	(2) 1/3
Actual kW	(.08)	(.19)	(.19)	(.25)	(.25)	(.25)	(2)(.19)	(2)(.25)	(2)(.25)
Motor Type	SP	PSC	PSC	PSC	PSC	PSC	PSC	PSC	PSC
R.P.M.	1,050	1,140	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	5.8	9.4	11.6	11.6
<b>DIMENSIONAL DATA - inches (mm)</b>									
"A" Overall Height to Top of Flue	33-3/4 (857)	33-3/4 (857)	33-3/4 (857)	33-3/4 (857)	33-3/4 (857)	33-3/4 (857)	34 (864)	34 (864)	34 (864)
"B" Jacket Width of Unit	20-3/4 (527)	20-3/4 (527)	20-3/4 (527)	20-3/4 (527)	20-3/4 (527)	20-3/4 (527)	50-3/4 (1289)	50-3/4 (1289)	50-3/4 (1289)
"C" Width to Centerline Flue	13-3/8 (340)	13-3/8 (340)	13-3/8 (340)	19-3/8 (492)	19-3/8 (492)	19-3/8 (492)	28-3/8 (721)	28-3/8 (721)	28-3/8 (721)
"D" Depth to Rear of Housing	11 (279)	11 (279)	11 (279)	11 (279)	11 (279)	11 (279)	12-1/4 (311)	12-1/4 (311)	12-1/4 (311)
"E" Hanging Distance Width	18-5/8 (473)	18-5/8 (473)	18-5/8 (473)	30-5/8 (778)	30-5/8 (778)	30-5/8 (778)	48-5/8 (1235)	48-5/8 (1235)	48-5/8 (1235)
"F" Discharge Opening Width	18-3/4 (476)	18-3/4 (476)	18-3/4 (476)	30-3/4 (781)	30-3/4 (781)	30-3/4 (781)	48-3/4 (1238)	48-3/4 (1238)	48-3/4 (1238)
"G" Depth to Centerline Flue	4-3/4 (121)	4-3/4 (121)	4-3/4 (121)	4-3/4 (121)	4-3/4 (121)	4-3/4 (121)	5-1/8 (130)	5-1/8 (130)	5-1/8 (130)
"H" Discharge Opening Height	24-1/2 (622)	24-1/2 (622)	24-1/2 (622)	24-1/2 (622)	24-1/2 (622)	24-1/2 (622)	24-1/2 (622)	24-1/2 (622)	24-1/2 (622)
"L" Overall Unit Width	25-1/4 (641)	25-1/4 (641)	25-1/4 (641)	37-1/4 (946)	37-1/4 (946)	37-1/4 (946)	55-1/4 (1403)	55-1/4 (1403)	55-1/4 (1403)
*Flue Size Diameter - in.	5	5	5	5	5	5	6	6	6
(Dia.-mm)	(127)	(127)	(127)	(127)	(127)	(127)	(152)	(152)	(152)
Fan Diameter - in. (Qty.)	16	16	16	18	18	18	(2) 16	(2) 18	(2) 18
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
Approximate Unit Weight - lbs.	133	145	155	191	201	211	307	321	335
(kg)	(60)	(66)	(70)	(87)	(91)	(96)	(139)	(145)	(152)
Approximate Ship Weight - lbs.	173	185	195	241	251	261	367	381	395
(kg)	(78)	(84)	(88)	(109)	(114)	(118)	(166)	(173)	(179)

† Published ratings are shown for elevations up to 2,000 feet (610m) above sea level. For higher elevations derate 4% for each 1,000 feet (305m) above sea level. In Canada, derate 10% for altitudes 2,000 to 4,500 feet (610 to 1372m).

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



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DIMENSIONS XXX STANDARD UNITS  
DIMENSIONS IN PARENTHESIS (XXX) MILLIMETERS

# Models BTU & BRU

## Model Number Description

<b>Digit</b>	T	X	X	X	1	2	3	4	5	6	7	8	9	10	11	12	13	+
<b>Item</b>	Prefix				UT	CA			FT	FM	GT	AL	GC	SV	MT	AS		

(Internal use Only)

### 1, 2 - Unit Type [UT]

**BTU** - Tubular Propeller (Capacity 030-400)

**BRU** - Residential Propeller (Capacity 030-090 only)

### 3, 4, 5 - Capacity [CA]

<b>030</b> - 30,000 BTU/HR	150 - 150,000 BTU/HR
<b>045</b> - 45,000 BTU/HR	175 - 175,000 BTU/HR
<b>060</b> - 60,000 BTU/HR	200 - 200,000 BTU/HR
<b>075</b> - 75,000 BTU/HR	250 - 250,000 BTU/HR
<b>090</b> - 90,000 BTU/HR	300 - 300,000 BTU/HR
<b>100</b> - 100,000 BTU/HR	350 - 350,000 BTU/HR
<b>125</b> - 125,000 BTU/HR	400 - 400,000 BTU/HR

### 6 - Furnace Type [FT]

A - Right Hand Access

### 7 - Furnace Material [FM]\*

1 - Standard (Aluminized) Steel

2 - 409 Stainless Steel (Capacities [CA 100 through 400] only)

\*Heat Exchanger Tube Material Only

### 8 - Gas Type [GT]

N - Natural Gas

P - Propane (LP) Gas

### 9 - Altitude [AL]

P - Canadian High Altitude 2,000–4,500 ft.

S - 0–4,999 ft.

T - 5,000–11,999 ft.

Note: Installations over 2,000 ft. require gas input deration in the field.

Refer to unit installation instructions.

### 10 - Gas Control [GC]

1 - Single Stage Direct Spark

2 - Two Stage Direct Spark  
(Capacities [CA-100 through 400] only).

### 11 - Supply Voltage [SV]\*

1 - 115/1/60

5 - 230/3/60

2 - 208/1/60

6 - 460/3/60

3 - 230/1/60

7 - 575/3/60

4 - 208/3/60

Z - Other

\*Note: Supply Voltage [SV] 2-7 include field mounted step down transformer.

### 12 - Motor Type [MT]

1 - Open Drip Proof (Standard)

2 - Totally Enclosed (Capacities [CA-060 through 400] only)

### 13 - Accessories [AS]

All Field Installed Accessories are to be entered as a separate line item using new catalog number which places "AS" as a prefix. i.e: A7 becomes AS-A7.

#### FACTORY INSTALLED

**M6** - OSHA Type Fan Guard (Capacities [CA-100 through 400] only)

Note: OSHA fan guard is standard equipment on BRU models.

#### FIELD INSTALLED (AS-\_\_\_\_)

**A7** - Pressure Regulator 1/2-2 psi

**G1** - 1-Stage 87F w/Subbase Kit

**G2** - 1-Stage T87F w/TG503A Guard Kit

**G3** - 1-Stage T834H Thermostat/Fan Switch

**G5** - 2-Stage T874F Thermostat w/Subbase

**G6** - Locking Thermostat Cover

**G7** - 1-Stage T87F

**G8** - 1-Stage T6169C Line Voltage

**G9** - 1-Stage T822D Thermostat

**M2-1** - Vent Cap 4" (030-090 Units)

**M2-2** - Vent Cap 5" (100-250 Units)

**M2-3** - Vent Cap 6" (300-400 Units)

**P5** - 24V SPST Relay-Specify Purpose

**X2** - 30 Degree Downturn Nozzle (Capacities [CA-100 through 400] only)

**X3** - 60 Degree Downturn Nozzle (Capacities [CA-100 through 400] only)

**X4** - 90 Degree Downturn Nozzle (Capacities [CA-100 through 400] only)

**X5** - Vertical Louver Kit (Capacities [CA-100 through 400] only)

# Model BST

## Separated Combustion Gas-Fired Unit Heaters

The Beacon Morris Model “BST” is the latest addition to our line of tubular style unit heaters. The Model “BST” unit conforms with the latest ETL standards and offers thermal efficiencies of 81%.

The separated combustion design allows this unit to be installed in environments where conventional gas fired unit heaters are not recommended. The Model “BST” is ETL approved for applications in industrial, commercial and residential garage applications. Four sizes are available ranging from 30 to 75 MBH.

The low profile design allows for the unit to be installed in applications where low ceilings or unit appearance is a concern.

Combustion and exhaust air must be piped horizontally through a side wall or vertically through the rooftop via our factory supplied ETL approved concentric vent kit. The concentric vent kit utilizes one 6" side wall or rooftop penetration for both the combustion and exhaust air. **ETL approvals require one concentric vent kit per unit.**

The Model “BST” utilizes the same tubular type heat exchanger and inshot burners as our Models “BTU” and “BRU”. The 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.

Designed with the service person in mind, the Beacon Morris Model “BST” controls are easily accessible and located in one centrally located control panel. The removable access door isolates the control cabinet as well as providing a pleasing exterior appearance.

### Warranty

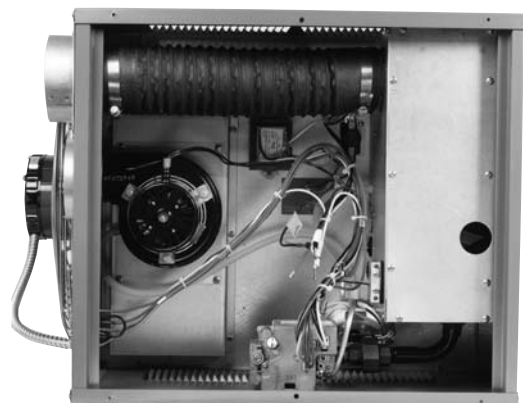
Beacon Morris warranties the heat exchanger, flue collector and burners to be free from defects in materials and workmanship for a period of 5 years from the date of manufacture.

### Standard Features

- Separated combustion design
- Residential garage certification
- Inshot burner design
- Direct spark ignition
- Individually adjustable and removable louvers
- 20-gauge steel jacket with baked enamel finish
- 120/1/60 supply voltage
- Easy access control panel
- Power vented
- Single stage combination gas valve
- 120/24 volt control transformer
- 115/1/60 volt fan motor with internal overload protection



Model BST

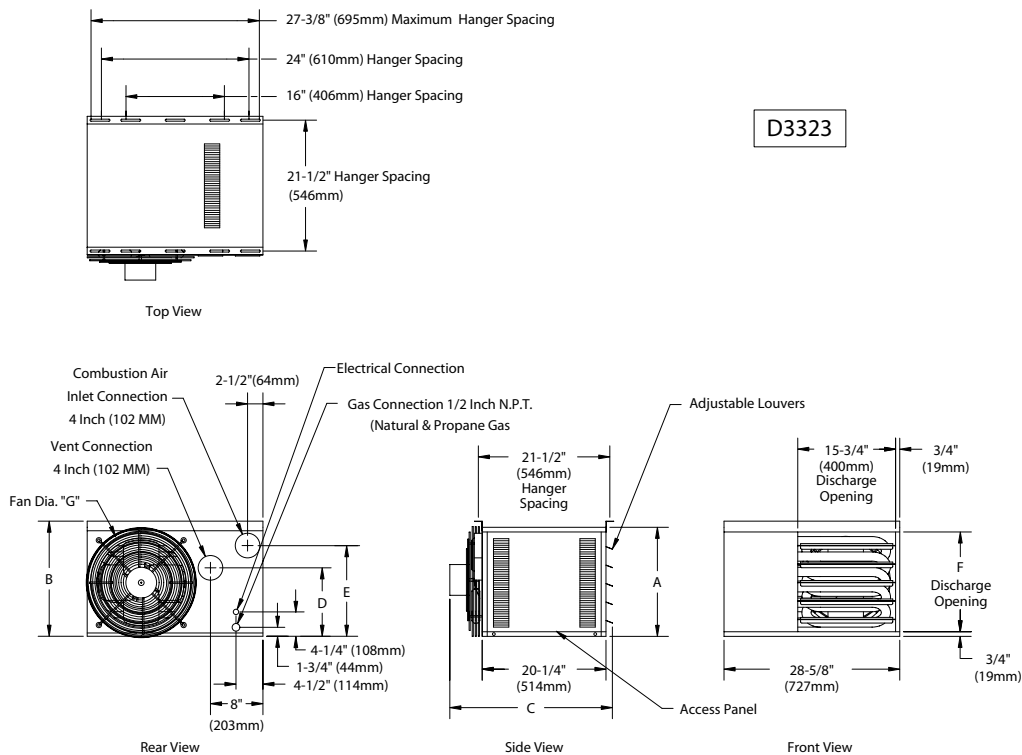


Model BST

# Model BST Performance & Dimensional Data

Model BST Unit Size	030	045	060	075
<b>PERFORMANCE DATA†</b>				
Input - BTU/Hr. (kW)	30,000 (8.8)	45,000 (13.2)	60,000 (17.6)	75,000 (22.0)
Output - BTU/Hr. (kW)	24,300 (7.1)	36,450 (10.7)	48,600 (14.2)	60,750 (17.8)
Thermal Efficiency (%)	81	81	81	81
Free Air Delivery - CFM (cu. m/s)	500 (0.236)	750 (0.355)	1,000 (0.473)	1,250 (0.591)
Air Temperature Rise - Deg. F (Deg. C)	45 (25)	45 (25)	45 (25)	45 (25)
Full Load Amps at 120V	3.0	3.0	3.7	3.7
<b>MOTOR DATA:</b>				
Nominal HP (Qty.)	1/20	1/20	1/20	1/20
Actual kW	(.04)	(.04)	(.04)	(.04)
Motor Type	SP	SP	SP	SP
R.P.M.	1,650	1,650	1,050	1,050
Amps @ 115V	1.9	1.9	2.6	2.6
<b>DIMENSIONAL DATA - inches (mm)</b>				
"A" Jacket Height	12 (305)	12 (305)	17-3/4 (451)	17-3/4 (451)
"B" Overall Height	13 (330)	13 (330)	18-3/4 (476)	18-3/4 (476)
"C" Overall Depth	25-1/2 (648)	25-1/2 (648)	26-3/4 (679)	26-3/4 (679)
"D" Centerline Height of Flue	7-1/4 (184)	7-1/4 (184)	10 (254)	10 (254)
"E" Centerline Height of Combustion Air Inlet	9 (229)	9 (229)	14-3/4 (375)	14-3/4 (375)
"F" Discharge Opening Width	10-1/2 (267)	10-1/2 (267)	16-1/4 (413)	16-1/4 (413)
"G" Fan Diameter - in. (Qty.)	10	10	16	16
Approximate Unit Weight - lbs. (kg)	62 (28)	68 (31)	87 (39)	93 (42)
Approximate Ship Weight - lbs. (kg)	72 (33)	78 (35)	102 (46)	108 (49)

† Ratings shown are for unit installations between 0 and 2,000 ft. (0 to 610m). For installations in U.S.A. above 2,000 feet (610m) the unit input must be derated 4% for each 1,000 feet (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 2,000 to 4,500 feet (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.



DIMENSIONS .XXX STANDARD UNITS  
DIMENSIONS IN PARENTHESIS (XXX) MILLIMETERS

# Model BST

## Model Number Description

<b>Digit</b>	T	X	X	X	1	2	3	4	5	6	7	8	9	10	11	12	13	+
<b>Item</b>	Prefix				UT	CA			FT	FM	GT	AL	GC	SV	MT	AS		

(Internal use Only)

### 1, 2 - Unit Type [UT]

**BST** - Separated Combustion Residential Propeller

### 3, 4, 5 - Capacity [CA]

**030** - 30,000 BTU/HR

**045** - 45,000 BTU/HR

**060** - 60,000 BTU/HR

**075** - 75,000 BTU/HR

### 6 - Furnace Type [FT]

**A** - Right Hand Access

### 7 - Furnace Material [FM]\*

**1** - Standard (Aluminized) Steel

*\*Heat Exchanger Tube Material Only*

### 8 - Gas Type [GT]

**N** - Natural Gas

**P** - Propane (LP) Gas

### 9 - Altitude [AL]

**P** - Canadian High Altitude 2,000–4,500 ft.

**S** - 0–4,999 ft.

**T** - 5,000–11,999 ft.

*Note: Installations over 2,000 ft. require gas input deration in the field.*

*Refer to unit installation instructions.*

### 10 - Gas Control [GC]

**1** - Single Stage Direct Spark

### 11 - Supply Voltage [SV]\*

**1** - 115/1/60                      **5** - 230/3/60

**2** - 208/1/60                      **6** - 460/3/60

**3** - 230/1/60                      **7** - 575/3/60

**4** - 208/3/60                      **Z** - Other

*\*Note: Supply Voltage [SV] 2-7 include field mounted step down transformer.*

### 12 - Motor Type [MT]

**1** - Open Drip Proof (Standard)

**2** - Totally Enclosed (Capacities [CA-060 and 075] only)

### 13 - Accessories [AS]

**All Field Installed Accessories are to be entered as a separate line item using new catalog number which places "AS" as a prefix. i.e: A7 becomes AS-A7.**

#### FIELD INSTALLED (AS-\_\_\_\_ )

**A7** - Pressure Regulator 1/2-2 psi

**G1** - 1-Stage 87F w/Subbase Kit

**G2** - 1-Stage T87F w/TG503A Guard Kit

**G3** - 1-Stage T834H Thermostat/Fan Switch

**G5** - 2-Stage T874F Thermostat w/Subbase

**G6** - Locking Thermostat Cover

**G7** - 1-Stage T87F

**G8** - 1-Stage T6169C Line Voltage

**G9** - 1-Stage T822D Thermostat

**P5** - 24V SPST Relay-Specify Purpose

**X6** - Horizontal/Vertical Concentric Vent Kit (ONE REQUIRED PER UNIT)

# Accessories [AS]

## FACTORY INSTALLED

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### M6- OSHA TYPE FAN GUARD

**Model BTU**

**Factory Installed**

Available on model BTU only, standard on models BRU and BST. Required for installations that must conform with OSHA standards. Also known as fingerproof fan guards.

## FIELD INSTALLED

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### A7- PRESSURE REGULATOR 1/2-2 PSI

**All Models & Sizes**

**Field Installed**

Required where main line pressure exceeds 14" W.C. (psig), must specify incoming pressure when ordered. One regulator per unit required, shipped separately.

### G1- ONE STAGE T87F THERMOSTAT WITH SUBBASE

**All Models and Sizes**

**Field Installed**

Single stage heating thermostat. Subbase includes fan switching relay. Standard round styling suitable for any decor. 50-100°F range.

### G2- ONE STAGE T87F THERMOSTAT WITH TG503A GUARD

**All Models and Sizes**

**Field Installed**

Same features as "G1" except a tamper proof guard is included.

### G3- ONE STAGE T843H THERMOSTAT WITH FAN SWITCH

**All Models and Sizes**

**Field Installed**

Single stage heating thermostat with fan switch. Manufactured exclusively for Beacon-Morris with the "Beacon Morris" logo embossed on the face plate. 55-95°F range.

[3-1/2" W x 4-3/4" H x 1-3/8" D]

### G5- TWO STAGE T874F THERMOSTAT WITH SUBBASE

**All Models and Sizes**

**Field Installed**

Two stage heating and two stage cooling with system and fan switching and built in 12°F heating/cooling differential. Includes fan and relay. 42-88°F range.

[5-5/8" W x 3-1/2" H x 2-1/8" D]

### G6- LOCKING THERMOSTAT COVER

**All Models and Sizes**

**Field Installed**

Universal locking thermostat cover for use with all thermostats listed.

### G7- ONE STAGE T87F THERMOSTAT

**All Models and Sizes**

**Field Installed**

Single stage heating thermostat only. 24 volt operation. 50-100°F range.

### G8- ONE STAGE T6169C LINE VOLTAGE STAT

**All Models and Sizes**

**Field Installed**

Single stage heating thermostat only. 115 volt operation.

### G9- ONE STAGE T822D THERMOSTAT

**All Models and Sizes**

**Field Installed**

Single stage heating only thermostat with subbase. 24 volt operation.

### M2-1, 2, 3 - VENT CAP

**Models BTU, BRU**

**Field Installed**

4, 5 or 6 inch vent cap for use with models BTU, BRU. Must indicate unit size when ordered.

### P5 - 24 VOLT RELAY

**All Models and Sizes**

**Field Installed**

Specify purpose. 24 volt SPST relay.

### X2 - 30 DEGREE NOZZLE

**Model BTU**

**Sizes 100-400**

**Field Installed**

Directs the discharge air at a 30 degree angle. Air can be directed up to 60 degrees by adjusting the horizontal louvers. Louvers are supplied with the unit heater and must be reinstalled in the nozzle discharge.

### X3 - 60 DEGREE NOZZLE

**Model BTU**

**Sizes 100-400**

**Field Installed**

Directs the discharge air at a 60 degree angle. Air can be directed up 90 degrees by adjusting the horizontal louvers. Louvers are supplied with the unit heater and must be reinstalled in the nozzle discharge.

### X4 - 90 DEGREE NOZZLE

**Model BTU**

**Sizes 100-400**

**Field Installed**

Directs the discharge air at a 90 degree angle. Louvers are supplied with the unit heater and must be reinstalled in the nozzle discharge.

### X6 - CONCENTRIC VENT KIT

**Model BST**

**All Sizes**

**Field Installed**

Allows for one 6 inch vent/combustion air opening through a structure. One kit permits for either horizontal or vertical applications. **One kit per unit required.**

# Heat Throw Data

## STANDARD UNIT HEATER APPLICATIONS



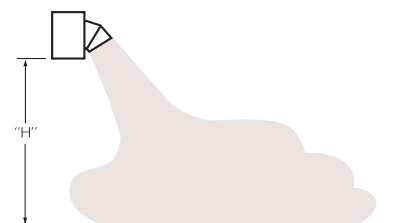
Distance From Floor to Bottom of Unit "H" ft. (m)	UNIT SIZE BTU/Hr (kW)												
	30,000 (8.8)	45,000 (13.2)	60,000 (17.6)	75,000 (22.0)	100,000 (29.3)	125,000 (36.6)	150,000 (43.9)	175,000 (51.2)	200,000 (58.6)	250,000 (73.2)	300,000 (87.8)	350,000 (102.5)	400,000 (117.1)
	Approximate Distance of Heat Throw - Feet (Meters)												
8 (2.4)	33 (10.1)	33 (10.1)	33 (10.1)	40 (12.2)	60 (18.3)	65 (19.8)	70 (21.3)	75 (22.9)	80 (24.4)	90 (27.4)	105 (32.0)	110 (33.5)	120 (36.6)
10 (3.0)	28 (8.5)	28 (8.5)	28 (8.5)	35 (10.7)	54 (16.5)	56 (17.1)	60 (18.3)	64 (19.5)	68 (20.7)	78 (23.8)	90 (27.4)	95 (29.0)	100 (30.5)
12 (3.7)	NR	NR	NR	NR	44 (13.4)	46 (14.0)	49 (14.9)	57 (17.4)	61 (18.6)	68 (20.7)	80 (24.4)	84 (25.6)	90 (27.4)
15 (4.6)	NR	NR	NR	NR	NR	NR	45 (13.7)	49 (14.9)	52 (15.8)	60 (18.3)	70 (21.3)	74 (22.6)	80 (24.4)
20 (6.1)	NR	NR	NR	NR	NR	NR	NR	NR	46 (14.0)	54 (16.5)	63 (19.2)	66 (20.1)	70 (21.3)

### 30° NOZZLE (Model "BTU" only)



Distance From Floor to Bottom of Unit "H" ft. (m)	UNIT SIZE BTU/Hr (kW)									
	100,000 (29.3)	125,000 (36.6)	150,000 (43.9)	175,000 (51.2)	225,000 (65.9)	250,000 (73.2)	300,000 (87.8)	350,000 (102.5)	400,000 (117.1)	
	Approximate Distance of Heat Throw - Feet (Meters)									
8 (2.4)	65 (19.8)	70 (21.3)	75 (22.9)	80 (24.4)	85 (25.9)	95 (29.0)	115 (35.1)	120 (36.6)	125 (38.1)	
10 (3.0)	57 (17.4)	60 (18.3)	64 (19.5)	68 (20.7)	72 (21.9)	86 (26.2)	99 (30.2)	105 (32.0)	110 (33.5)	
12 (3.7)	50 (15.2)	54 (16.5)	57 (17.4)	60 (18.3)	64 (19.5)	77 (23.5)	88 (26.8)	94 (28.7)	100 (30.5)	
15 (4.6)	NR	45 (13.7)	48 (14.6)	50 (15.2)	53 (16.2)	64 (19.5)	74 (22.6)	79 (24.1)	84 (25.6)	
20 (6.1)	NR	NR	NR	44 (13.4)	47 (14.3)	58 (17.7)	66 (20.1)	71 (21.6)	75 (22.9)	

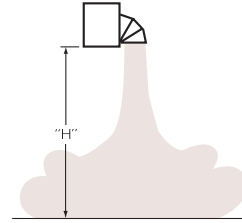
### 60° NOZZLE (Model "BTU" only)



Distance From Floor to Bottom of Unit "H" ft. (m)	UNIT SIZE BTU/Hr (kW)									
	100,000 (29.3)	125,000 (36.6)	150,000 (43.9)	175,000 (51.2)	200,000 (58.6)	250,000 (73.2)	300,000 (87.8)	350,000 (102.5)	400,000 (117.1)	
	Approximate Distance of Heat Throw - Feet (Meters)									
8 (2.4)	75 (22.9)	80 (24.4)	85 (25.9)	90 (27.4)	95 (29.0)	110 (33.5)	125 (38.1)	130 (39.6)	138 (42.1)	
10 (3.0)	65 (19.8)	70 (21.3)	75 (22.9)	79 (24.1)	83 (25.3)	95 (29.0)	109 (33.2)	115 (35.1)	120 (36.6)	
12 (3.7)	60 (18.3)	64 (19.5)	68 (20.7)	72 (21.9)	76 (23.2)	84 (25.6)	100 (30.5)	103 (31.4)	108 (32.9)	
15 (4.6)	50 (15.2)	54 (16.5)	56 (17.1)	61 (18.6)	65 (19.8)	71 (21.6)	85 (25.9)	88 (26.8)	94 (28.7)	
20 (6.1)	NR	49 (14.9)	52 (15.8)	55 (16.8)	59 (18.0)	65 (19.8)	77 (23.5)	81 (24.7)	85 (25.9)	

# Heat Throw Data

## 90° NOZZLE Approximate Distance of Heat Throw (Feet) (Model "BTU" only)



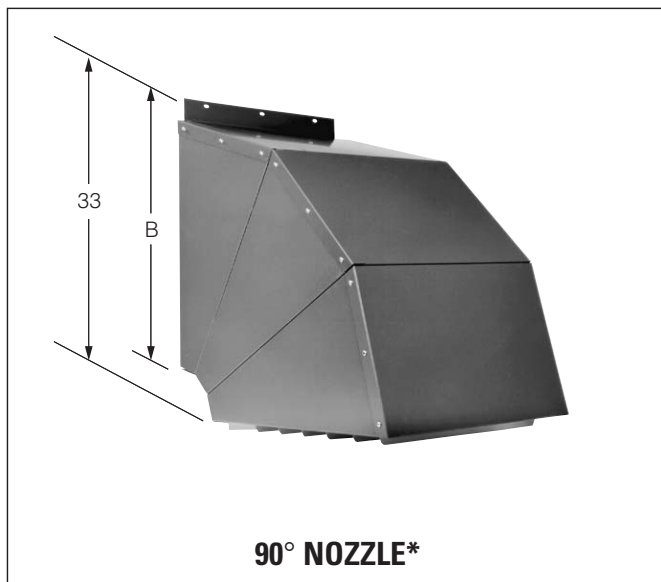
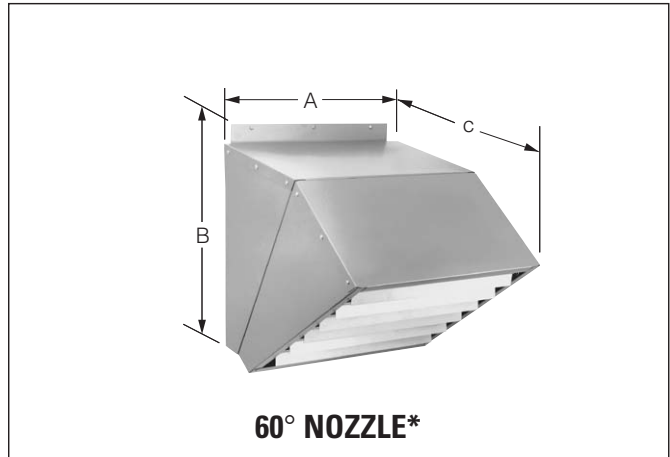
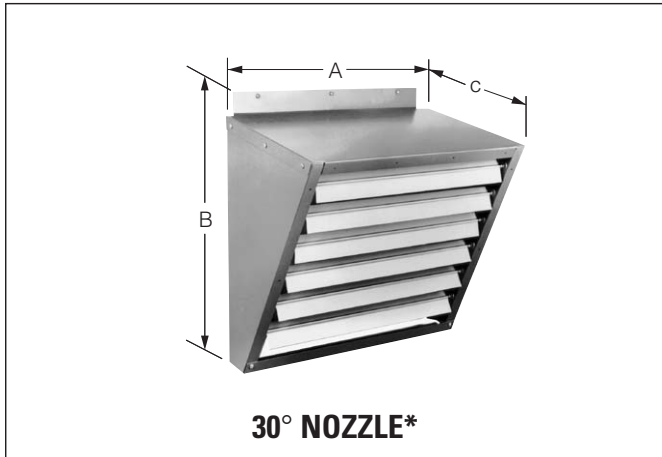
UNIT SIZE	DISTANCE FROM FLOOR TO BOTTOM OF UNIT "H"									
	10 ft. (3.0 m)	15 ft. (4.6 m)		20 ft. (6.1 m)		25 ft. (7.6 m)		30 ft. (9.1 m)		
100	NR	30 (9.1)	x (7.6)	25 (7.6)	NR		NR		NR	
125	NR	35 (10.7)	x (9.1)	30 (9.1)	NR		NR		NR	
150	NR	40 (12.2)	x (10.7)	35 (10.7)	NR		NR		NR	
175	NR	45 (13.7)	x (12.2)	40 (12.2)	NR		NR		NR	
200	NR	50 (15.2)	x (12.2)	40 (12.2)	40 (12.2)	x (10.7)	35 (10.7)	NR		NR
250	NR	60 (18.3)	x (13.7)	45 (13.7)	56 (17.1)	x (12.2)	40 (12.2)	50 (15.2)	x (10.7)	35 (10.7)
300	NR	70 (21.3)	x (13.7)	45 (13.7)	65 (19.8)	x (12.2)	40 (12.2)	60 (18.3)	x (10.7)	35 (10.7)
350	NR	80 (24.4)	x (15.2)	50 (15.2)	70 (21.3)	x (13.7)	45 (13.7)	65 (19.8)	x (12.2)	40 (12.2)
400	NR	100 (30.5)	x (15.2)	50 (15.2)	80 (24.4)	x (13.7)	45 (13.7)	75 (22.9)	x (12.2)	40 (12.2)

### NOTES:

1. All throw data figures are approximations. Allowances should be made for optimum performance, altitude, etc.
2. N.R. - Units not recommended at these mounting heights.
3. Nozzles are not supplied for unit heaters below size 100.
4. Nozzles are available for the "BTU" unit only.
5. 30°, 60° and 90° nozzles are shipped unassembled.

# Nozzle Dimensions

(Model "BTU" only)



\*30°, 60° and 90° Nozzles are field assembled.

## NOZZLE DIMENSIONAL DATA CHART

SYMBOL	NOZZLE TYPE	100, 125, 150	175, 200, 250	300, 350, 400
WIDTH A in. (mm)	30 DEG.	20-3/4 (527)	32-3/4 (832)	50-3/4 (1289)
	60 DEG.	20-3/4 (527)	32-3/4 (832)	50-3/4 (1289)
	90 DEG.	20-3/4 (527)	32-3/4 (832)	50-3/4 (1289)
HEIGHT B in. (mm)	30 DEG.	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)
	60 DEG.	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)
	90 DEG.	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)
FURTHEST DEPTH C in. (mm)	30 DEG.	15 (381)	15 (381)	15 (381)
	60 DEG.	25-1/2 (648)	25-1/2 (648)	25-1/2 (648)
	90 DEG.	28-1/4 (718)	28-1/4 (718)	28-1/4 (718)

## Models BTU and BRU Warranty

### LIMITED WARRANTY

#### Beacon-Morris Gas-Fired Unit Heaters – Model “BTU” and “BRU”

##### 1. BEACON-MORRIS GAS-FIRED TUBULAR UNIT HEATER - MODEL “BTU” and “BRU”

Beacon-Morris (“the Manufacturer”) warrants to the original owner at original installation site that the above models of Beacon-Morris Gas-Fired Heaters (“the Product”) will be free from defects in material or workmanship for one (1) year from the date of shipment from the factory, or one and one-half (1-1/2) years from the date of manufacture, whichever occurs first. Beacon-Morris further warrants that the complete heat exchanger, draft hood assembly, and burners will be free from defects in material or workmanship for a period of ten (10) years from the date of manufacture. If upon examination by the Manufacturer the Product is shown to have a defect in material or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that part of the Product which is shown to be defective.

##### 2. This limited warranty does not apply:

- (a) if the Product has been subjected to misuse or neglect, has been accidentally or intentionally damaged, has not been installed, maintained or operated in accordance with the furnished written instructions, or has been altered or modified in any way by any unauthorized person.
- (b) to any expenses, including labor or material, incurred during removal or reinstallation of the Product.
- (c) to any damage due to corrosion by chemicals, including halogenated hydrocarbons, precipitated in the air.
- (d) to any workmanship of the installer of the Product.

##### 3. This limited warranty is conditional upon:

- (a) advising the installing contractor, who will in turn notify the distributor or manufacturer.
- (b) shipment to the Manufacturer of that part of the Product thought to be defective. Goods can only be returned with prior written approval of the Manufacturer. All returns must be freight prepaid.
- (c) determination in the reasonable opinion of the Manufacturer that there exists a defect in material or workmanship.

##### 4. Repair or replacement of any part under this Limited Warranty shall not extend the duration of the warranty with respect to such repaired or replaced part beyond the stated warranty period.

##### 5. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS LIMITED WARRANTY. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE IN ANY WAY FOR ANY CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY AMOUNTS IN EXCESS OF THE SELLING PRICE OF THE PRODUCT OR ANY PARTS THEREOF FOUND TO BE DEFECTIVE. THIS LIMITED WARRANTY GIVES THE ORIGINAL OWNER OF THE PRODUCT SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY BY EACH JURISDICTION.

## Model BST Warranty

### LIMITED WARRANTY

#### Beacon-Morris Gas-Fired Unit Heaters – Model “BST”

##### 1. BEACON-MORRIS GAS-FIRED SEPARATED COMBUSTION TUBULAR UNIT HEATER - MODEL “BST”

Beacon-Morris (“the Manufacturer”) warrants to the original owner at original installation site that the above model of Beacon-Morris Gas-Fired Heaters (“the Product”) will be free from defects in material or workmanship for one (1) year from the date of shipment from the factory, or one and one-half (1-1/2) years from the date of manufacture, whichever occurs first. Beacon-Morris further warrants that the complete heat exchanger, draft hood assembly, and burners will be free from defects in material or workmanship for a period of five (5) years from the date of manufacture. If upon examination by the Manufacturer the Product is shown to have a defect in material or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that part of the Product which is shown to be defective.

##### 2. This limited warranty does not apply:

- (a) if the Product has been subjected to misuse or neglect, has been accidentally or intentionally damaged, has not been installed, maintained or operated in accordance with the furnished written instructions, or has been altered or modified in any way by any unauthorized person.
- (b) to any expenses, including labor or material, incurred during removal or reinstallation of the Product.
- (c) to any damage due to corrosion by chemicals, including halogenated hydrocarbons, precipitated in the air.
- (d) to any workmanship of the installer of the Product.

##### 3. This limited warranty is conditional upon:

- (a) advising the installing contractor, who will in turn notify the distributor or manufacturer.
- (b) shipment to the Manufacturer of that part of the Product thought to be defective. Goods can only be returned with prior written approval of the Manufacturer. All returns must be freight prepaid.
- (c) determination in the reasonable opinion of the Manufacturer that there exists a defect in material or workmanship.

##### 4. Repair or replacement of any part under this Limited Warranty shall not extend the duration of the warranty with respect to such repaired or replaced part beyond the stated warranty period.

##### 5. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS LIMITED WARRANTY. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE IN ANY WAY FOR ANY CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY AMOUNTS IN EXCESS OF THE SELLING PRICE OF THE PRODUCT OR ANY PARTS THEREOF FOUND TO BE DEFECTIVE. THIS LIMITED WARRANTY GIVES THE ORIGINAL OWNER OF THE PRODUCT SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY BY EACH JURISDICTION.

## Typical Standard Specification

Furnish and install, where indicated or scheduled on plans, gas-fired unit heaters manufactured by Beacon-Morris equipment. All heaters are to have a minimum thermal efficiency of 80%. The heat exchanger consists of aluminized steel tubes not lighter than 20-gauge. Burners are to be of the "inshot" design. A direct spark ignition system with integrated control and combination gas valve shall be utilized. Flame rectification shall be independent of the spark igniter allowing true indication of complete ignition of the burner. Most cabinetry and trim pieces shall be fabricated of 20-gauge material and finished with a baked gray enamel.

Separated combustion style units must utilize clean air from the outside of the structure for combustion purposes. A concentric type adapter must be used at the point of building termination. This adapter will allow for the outside air to enter and combustion flue gases exit through one six inch opening.

All line voltage wiring shall be completely enclosed in flexible conduit. Heaters shall be equipped with a 120/24 volt transformer; factory wiring shall permit the use of propeller fan for continuous air circulation when combined with manufacturers (optional) 24 volt summer/winter single stage thermostat. The control transformer, power venter relay and pressure switch shall be factory mounted in a main control panel located on the side of the unit; all wiring information will be indicated on the inside control panel door.

Units equipped with a low voltage automatic reset high temperature control, wired to de-energize the main gas valve and maintain fan operation until the high temperature control resets. Units will be equipped with 120/1/60 volt motors which include internal automatic reset thermal overload protection. Fans will be steel hubbed with aluminum blades and have complete fan guard protection. Units with inputs greater than 250,000 BTU's shall be equipped with dual motors and blades for optimum air distribution. Adjustable and individually removable horizontal louver blades shall be provided for directing air flow.

All units and component assemblies shall be warranted for a period of one year from the date of shipment from the factory or 18 months from the date of manufacture, whichever occurs first. All burners, heat exchangers, and flue collectors shall carry a ten year (Models "BTU" and "BRU") or five year (Model "BST") non-prorated limited warranty on materials and workmanship (subject to appropriate disclaimers).

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FAX: (413) 572-3764



5211 CREEKBANK ROAD  
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 A MESTEK COMPANY  
[www.beacon-morris.com](http://www.beacon-morris.com)

*In the interest of product improvement, we reserve the right to make changes without notice.*