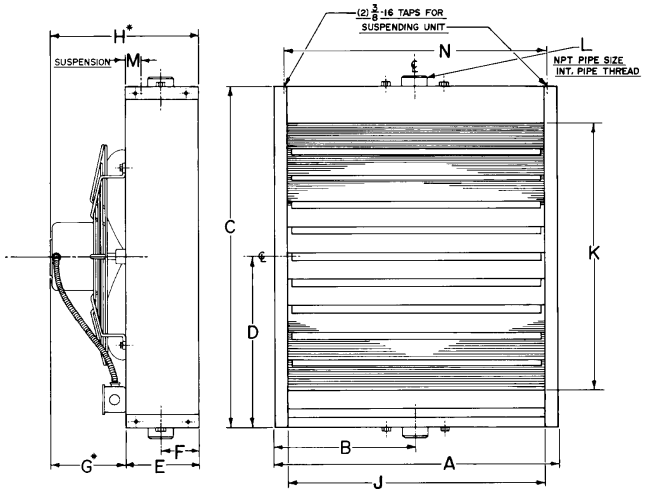
Horizontal Unit Heaters – Submittal

BSD-5R

Dimensional Data

Steam and Hotwater Coil



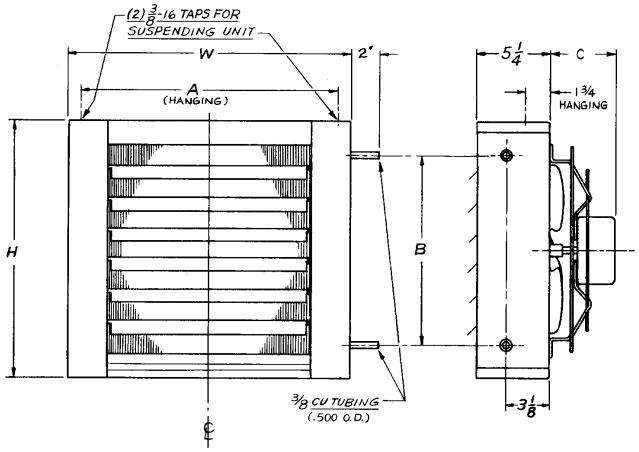
MODELS HB-18 THRU 360

MODEL	A	B	C	D	E	F	G*	H*	J	K	L	M	N	NO. OF LOUVERS	NOM. FAN DIAM.	APPROX. SHIP WT.
HB-18	14 5/8	7 5/16	15	7 1/2	6 1/8	2 15/16	3	9 1/8	12 1/4	9 1/2	1 1/4	2 1/4	12 7/8	4	9	26
HB-24 HB-36	14 5/8	7 5/16	18	9	6 1/8	2 15/16	3	9 1/8	12 1/4	12 1/2	1 1/4	2 1/4	12 7/8	5	10	30
HB-48 HB-60	17 1/8	8 9/16	20 1/2	10 1/4	5 7/8	2 15/16	5 1/16	10 15/16	14 3/4	15	1 1/4	1 3/4	15 3/8	6	12	41
HB-72	18 3/8	9 3/16	21 3/4	10 7/8	6	2 15/16	5 1/16	11 1/16	16	16 1/4	1 1/4	1 3/4	16 5/8	6	14	44
HB-84	20 7/8	10 9/16	24 1/4	12 1/8	6 1/8	2 15/16	5 11/16	11 13/16	18 1/2	18 3/4	1 1/4	1 3/4	19 1/8	8	14	47
HB-96 HB-108	19 5/8	9 13/16	24	12	6 5/16	3 3/16	7 1/2	13 13/16	17 1/4	17 1/2	1 1/2	1 3/4	17 7/8	8	16	49
HB-120	20 7/8	10 7/16	25 1/4	12 5/8	6 5/16	3 3/16	7 1/2	13 13/16	18 1/2	18 3/4	1 1/2	1 3/4	19 1/8	8	18	55
HB-132 HB-144 HB-156	23 3/8	11 11/16	27 3/4	13 7/8	6 5/16	3 3/16	7 5/8	14	21	21 1/4	1 1/2	1 3/4	21 5/8	8	18	74
HB-180 HB-204	24 5/8	12 5/16	29	14 1/2	6 3/8	3 3/16	7 5/8	14	22 1/4	22 1/2	1 1/2	1 3/4	22 7/8	9	18	90
HB-240 HB-280	27 7/8	13 15/16	30 1/4	15 1/8	8 1/8	3 3/16	11	19 1/8	25 1/2	23 3/4	2	1 3/4	26 1/8	10	20	130
HB-300 HB-360	33 3/8	16 11/16	37 3/4	18 7/8	9	3 3/16	11	20	31	31 1/4	2	1 3/4	31 5/8	13	24	166

* APPLIES TO STANDARD MOTOR. WHEN SPECIAL MOTORS ARE REQUESTED, DIMENSIONS WILL VARY ACCORDING TO THE DIMENSIONS OF THE SUBSTITUTED MOTOR.

NOTES: 1. Motors on Models HB-240 thru 360 are "Shelf-Mounted".
2. Guard shown above does not apply to these models. Contact the factory if a guard is required on these models.
3. Notes 1 and 2 apply to all 3 phase and explosion proof motors.

Serpentine Hotwater Coil



MODELS HB-108A THRU 136A

MODEL NO.	H	W	A	B	C	NO. LOUVERS	NOM. FAN DIAM.	APPROX. SHIP WT.
HB-108A	16	18	16 7/32	11 1/4	2 1/2	5	8	22
HB-118A	16	18	16 7/32	11 1/4	2 1/2	5	10	24
HB-125A	16	18	16 7/32	11 1/4	3 1/2	5	10	25
HB-136A	18 1/2	20 1/2	18 23/32	13 3/4	5 1/8	6	12	31

Beacon/Morris

A MESTEK COMPANY

Sales Office 260 North Elm Street
Westfield, Massachusetts 01085
Dial (413) 562-5423 Fax (413) 572-3764
www.beacon-morris.com

PROJECT:
LOCATION:
ARCHITECT:
ENGINEER:
CONTRACTOR:
PO NUMBER:
DATE:

Hot Water Performance Data

Model No.	Output BTU/ HR*	GPM	Final Air °F	Prssr. Drop FT./H_2O	Motor HP	RPM	Nominal CFM	Outlet FPM	Nom. Amps @ 115VAC	Sound Rating
HB-108A	8,030	.80	91	.80	9 Watt	1550	245	250	.53	II
	6,800		90			1350	210	215	.53	I
HB-118A	18,400	1.9	94	2.2	9 Watt	1550	500	500	.53	II
	15,650		96			1350	420	420	.53	I
HB-125A	24,800	2.5	102	2.2	16 Watt	1550	580	590	1.1	II
	21,230		106			1350	460	450	1.1	I
HB-136A	35,900	3.6	99	3.0	1/20	1000	850	550	1.4	II
	32,300		100			900	750	480	1.4	I
HB-18	13,050	1.3	95	.005	9 Watt	1550	395	395	.53	II
	11,725		99			1350	350	350	.53	I
HB-24	17,400	1.8	96	.014	9 Watt	1550	450	450	.53	II
	15,600		98			1350	380	380	.53	I
HB-36	26,100	2.7	103	.09	16 Watt	1550	550	550	1.1	II
	23,500		103			1350	480	480	1.1	I
HB-48	34,800	3.5	103	.12	1/20	1000	750	550	1.4†	II
	31,300		111			900	630	460	1.4†	I
HB-60	43,600	4.4	105	.17	1/20	1000	900	650	1.4†	II
	39,200		112			900	700	510	1.4†	I
HB-72	52,300	5.3	104	.23	1/20	1000	1100	800	1.4†	II
	47,000		106			900	950	700	1.4†	I
HB-84	61,000	6.1	100	.24	1/12	1000	1400	900	2.2†	III
	54,900		106			900	1100	750	2.2†	II
HB-96	69,700	7.0	106	.29	1/12	1000	1400	930	2.2†	III
	62,700		113			900	1100	800	2.2†	II
HB-108	78,400	7.9	100	.36	1/12	1000	1800	1000	2.2†	III
	70,500		103			900	1500	900	2.2†	II
HB-120	87,100	8.8	102	.39	1/12	1000	1900	900	2.2†	III
	78,400		105			900	1600	800	2.2†	II
HB-132	95,800	9.6	104	.41	1/3	1140	2000	950	4.5	IV
	—		—			—	—	—	—	—
HB-144	104,000	10.4	104	.43	1/3	1140	2200	1000	4.5	IV
	—		—			—	—	—	—	—
HB-156	113,000	11.3	100	.53	1/3	1140	2600	1150	4.5	IV
	—		—			—	—	—	—	—
HB-180	118,000	11.8	110	.60	1/3	1140	2200	800	4.5	III
	—		—			—	—	—	—	—
HB-204	148,100	14.9	107	.79	1/3	1140	2900	1000	4.5	IV
	—		—			—	—	—	—	—
HB-240	174,000	17.4	106	1.06	1/3	1140	3500	900	4.5	IV
	—		—			—	—	—	—	—
HB-280	209,100	21.0	106	1.33	1/3	1140	4200	980	7.0	IV
	—		—			—	—	—	—	—
HB-300	230,000	23.0	102	2.1	1/3	1140	5000	700	7.0	IV
	—		—			—	—	—	—	—
HB-360	261,300	26.2	103	2.1	1/2	1140	5500	1000	9.0	IV
	—		—			—	—	—	—	—

Performance based on 200° EWT, 60° E.A.T., 20° TD.
*** For the lower output, an optional Speed Controller must be ordered.**
† Stated AMP is average. AMP draw varies by manufacturer ±.2 AMPS.

Steam Performance Data

Model No.	Output BTU/ HR*	Cond. lbs./hr.	Sq. Ft. E.D.R.	Final Air °F	Motor HP	RPM	Nominal CFM	Outlet FPM	Nom. Amps @ 115VAC	Nom. Fan Diam. (Inches)
HB-18	18,000	18.0	75	102	9 Watt	1550	395	395	.53	9
	16,200	16.2	68	105		1350	330	330	.53	9
HB-24	24,000	24.5	100	109	9 Watt	1550	450	450	.53	10
	21,600	22.0	90	112		1350	380	380	.53	10
HB-36	36,000	37.0	150	119	16 Watt	1550	550	550	1.1	10
	32,400	33.0	135	120		1350	480	480	1.1	10
HB-48	48,000	49.0	200	119	1/20	1000	750	550	1.4†	12
	43,200	44.0	180	123		900	630	460	1.4†	12
HB-60	60,000	61.0	250	121	1/20	1000	900	650	1.4†	12
	54,000	55.0	225	131		900	700	510	1.4†	12
HB-72	72,000	73.0	300	120	1/20	1000	1100	800	1.4†	14
	64,800	66.0	270	123		900	950	700	1.4†	14
HB-84	84,000	85.0	350	115	1/12	1000	1400	900	2.2†	14
	75,600	76.0	315	123		900	1100	750	2.2†	14
HB-96	96,000	97.0	400	123	1/12	1000	1400	930	2.2†	16
	86,400	88.0	360	132		900	1100	800	2.2†	16
HB-108	108,000	110.0	450	115	1/12	1000	1800	1000	2.2†	16
	97,200	98.0	405	120		900	1500	900	2.2†	16
HB-120	120,000	122.0	500	118	1/12	1000	1900	900	2.2†	18
	108,000	110.0	450	122		900	1600	800	2.2†	18
HB-132	132,000	134.0	550	121	1/3	1140	2000	950	4.5	18
	—	—	—	—		—	—	—	—	—
HB-144	144,000	146.0	600	120	1/3	1140	2200	1000	4.5	18
	—	—	—	—		—	—	—	—	—
HB-156	156,000	160.0	650	115	1/3	1140	2600	1150	4.5	18
	—	—	—	—		—	—	—	—	—
HB-180	180,000	190.0	770	135	1/3	1140	2200	800	4.5	18
	—	—	—	—		—	—	—	—	—
HB-204	204,000	208.0	850	124	1/3	1140	2900	1000	4.5	18
	—	—	—	—		—	—	—	—	—
HB-240	240,000	244.0	1000	123	1/3	1140	3500	900	4.5	20
	—	—	—	—		—	—	—	—	—
HB-280	280,000	280.0	1100	121	1/3	1140	4200	980	7.0	20
	—	—	—	—		—	—	—	—	—
HB-300	300,000	310.0	1250	117	1/3	1140	5000	700	7.0	24
	—	—	—	—		—	—	—	—	—
HB-360	360,000	366.0	1500	120	1/2	1140	5500	1000	9.0	24
	—	—	—	—		—	—	—	—	—

Performance based on 2# steam pressure at heater with air entering @ 60°F.
Maximum working pressure 150 PSI, 366°F
*** For the lower output, an optional Speed Controller must be ordered.**
† Stated AMP is average. AMP draw varies by manufacturer ±.2 AMPS.

Steam and Hotwater Coil Specifications

GENERAL

Furnish and install where indicated or scheduled on plans, Beacon Model HB horizontal steam/hot water unit heaters. Unit shall be equipped as specified herein. All units shall be installed in a neat and workmanlike manner in accordance with this specification and the manufacturer's installation instructions.

CASING

Casings shall be 20 gauge die-formed steel. Casing substrates shall be prepared for finishing with a hot wash, iron phosphatizing, clear rinse, chromic acid rinse and oven drying. Paint finish shall be lead-free, chromate free, alkyd melamine resin base and applied with an electrostatic two-pass system. Finish shall be baked at 350°F.

COIL MODELS 18 - 360

Coil elements and headers shall be of heavy wall drawn seamless copper tubing. Element tubes shall be brazed into extruded header junctions. Pipe connection saddles shall be of cast bronze. Aluminum fins shall have drawn collars to assure permanent bond with expanded element tubes and exact spacing. All Element Assemblies are submersion tested at factory at 250 P.S.I., and are rated at 150 pounds of saturated steam pressure at 366°F, under maximum load conditions. We recommend operating pressure of 75 P.S.I. at 320°F for long life.

MOTORS

Motors shall be totally enclosed fan cooled, resilient mounted with class "B" windings. All motors shall be designed for horizontal mounting. Motors under 1/3 H.P. are totally enclosed, frame mounted, 115/1/60 with thermal overload protection and permanently lubricated sleeve bearings with optional solid state speed controller available. 1/3 H.P. (115/1/60) motors are open frame construction, with optional solid state speed controller available. 1/3 H.P. (115/1/60) motors are open frame construction, with thermal overload protection and ball bearings. 1/3 H.P. at (230V) and all 1/2 H.P. motors are open frame construction, with thermal overload protection and ball bearings. 1/3 and 1/2 H.P. motors are available in single and 3 phase in open frame construction or explosion-proof housings, all the above are available as options.

EXPLOSION PROOF MOTORS

An enclosed motor whose enclosure is designed and constructed to withstand an explosion of a specified gas or vapor which may occur within the motor and to prevent the ignition of this gas or vapor surrounding the machine.

Beacon motors comply with the National Electrical Code classification as follows:

Class I, Group C; all 1/20 H.P. units
Class I, Group D; all sizes
Class II, Group E; all sizes
Class II, Group F; all sizes
Class II, Group G; all sizes

Explosion proof equipment is not generally available for Class I, Group A and B and it is necessary to isolate motors from the hazardous area. All explosion proof motors are shelf mounted.

FANS

Fans shall be of aluminum blade, steel hub type designed and balanced to assure maximum air delivery, low motor horsepower requirements and quiet operation. Blades are spark proof.

FAN GUARDS

Fan guards shall be welded steel, zinc plated or painted.

AIR DEFLECTION LOUVERS

Units shall be equipped with horizontal, individually adjustable louvers. Vertical louvers for four-way air control shall be available as an optional extra.

Serpentine Coil Specifications

GENERAL

Furnish and install, where indicated or scheduled on plans, Beacon Model HBA horizontal hot water unit heaters. Unit shall be equipped as specified herein. All units shall be installed in a neat and workmanlike manner in accordance with this specification and the manufacturer's installation instructions.

CASING

Casings shall be 20 gauge die-formed steel. Casing substrates shall be prepared for finishing with a hot wash, iron phosphatizing, clear rinse, chromic acid rinse and oven drying. Paint finish shall be lead-free, chromate free, alkyd melamine resin base and applied with an electrostatic two-pass system. Finish shall be baked at 350°F.

COIL MODELS HB108A - HB136A

Coil is a serpentine design with seamless copper tubing. Aluminum fins shall have drawn collars to assure permanent bond with expanded tubes. Tubing connection shall be 3/8" copper tubing, type "M" (.500 O.D.). Coils shall be factory *tested* at 250 P.S.I.

MOTORS

Motors shall be totally enclosed fan cooled, resilient mounted with class "B" windings. All motors shall be designed for horizontal mounting.

FANS

Fans shall be of aluminum blade type, designed and balanced to assure maximum air delivery, low motor horsepower requirements and quiet operation.

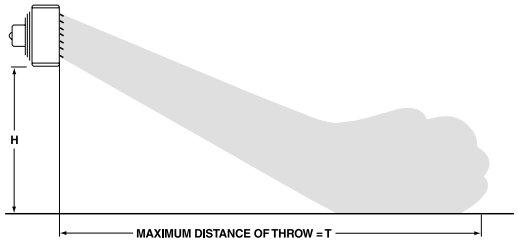
FAN GUARDS

Fan guards shall be welded steel, zinc plated or painted.

AIR DEFLECTION LOUVERS

Units shall be equipped with horizontal, individually adjustable louvers.

Mounting Heights and Throws



MODEL NO.	MAXIMUM MOUNTING HT.	APPROX. MAX. THROW	MODEL NO.	MAXIMUM MOUNTING HT.	APPROX. MAX. THROW
HB-108A	8	20	HB-108	11	40
HB-118A	8	25	HB-120	12	40
HB-125A	9	29	HB-132	13	54
HB-136A	9	29	HB-144	13	55
HB-18	8	20	HB-156	13	55
HB-24	8	24	HB-180	13	53
HB-36	9	28	HB-204	13	55
HB-48	9	30	HB-240	14	57
HB-60	10	30	HB-280	14	57
HB-72	10	29	HB-300	15	58
HB-84	10	30	HB-360	15	60
HB-96	11	38			

The following table is based on 60° entering air and either 2 lb. steam or 200° T.D. The data is based on the higher speed CFM throughout and velocity. Care should be exercised in locating adjacent unit heaters and allowance should be made for obstructions in the air pattern and conflicting air currents from other air moving devices.

Horizontal Unit Heaters
Motor Characteristics

TOTALLY ENCLOSED MOTOR TYPE

HB Unit Model No.	AMP	MCA	HP	RPM
115/1/60/S				
18, 24, 108A, 118A	0.53	0.7	9W*	1550
136A	1.4	1.8	1/20*	1000
36, 125A	1.1	1.4	16W*	1550
48, 60, 72	1.4	1.8	1/20*	1000
84, 96 108, 120	2.2	2.8	1/12*	1000
132	4.5	5.6	1/3	1140
180	4.5	5.6	1/3	1140
144, 156, 204	4.5	5.6	1/3	1140
240	4.5	5.6	1/3	1140
280, 300	7.0	8.8	1/3	1140
360	9.0	11.3	1/2	1140
230/1/60/SP				
18, 24, 108A, 118A	.027	0.3	9W	1550
136A	0.7	0.9	1/20	1000
36, 125A	0.55	0.7	16W	1550
48, 60, 72	0.7	0.9	1/20	1000
84, 96 108, 120	1.1	1.4	1/12	1000
132	2.3	2.9	1/3	1140
180	2.3	2.9	1/3	1140
144, 156, 204	2.3	2.9	1/3	1140
240	2.3	2.9	1/3	1140
280, 300	3.5	4.8	1/3	1140
360	4.5	5.6	1/2	1140
208-230/460/3/60/TH				
48, 60, 72	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140
84, 96 108, 120	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140
132	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140
180	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140
144, 156, 204	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140
240	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140
280, 300	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140
360	2.6-2.6/1.3	3.3-3.3/1.6	1/2**	1140

EXPLOSION PROOF WITH THERMAL OVERLOAD MOTOR TYPE

HB Unit Model No.	AMP	MCA	HP	RPM
115/1/60/E				
48	3.0	3.8	1/8	1140
60	3.0	3.8	1/8	1140
72	3.0	3.8	1/8	1140
84	3.0	3.8	1/8	1140
96	3.0	3.8	1/8	1140
108	3.0	3.8	1/8	1140
120	3.0	3.8	1/8	1140
132	4.0	5.0	1/6	1140
180	4.0	5.0	1/6	1140
144	5.6	7.0	1/4	1140
156	5.6	7.0	1/4	1140
204	5.6	7.0	1/4	1140
240	8.6/4.3	10.8/5.4	1/3***	1140
280	8.6/4.3	10.8/5.4	1/3***	1140
300	8.6/4.3	10.8/5.4	1/3***	1140
360	9.4/4.7	11.8/5.9	1/2***	1140
230/460/3/60/TE				
180	2.2/1.1	2.8/1.4	1/3	1140
144	2.2/1.1	2.8/1.4	1/3	1140
156	2.2/1.1	2.8/1.4	1/3	1140
204	2.2/1.1	2.8/1.4	1/3	1140
240	2.2/1.1	2.8/1.4	1/3	1140
280	2.2/1.1	2.8/1.4	1/3	1140
300	2.2/1.1	2.8/1.4	1/3	1140
360	2.2/1.1	2.8/1.4	1/3	1140

Models 280 through 360 Standard Motors are drip proof (115/1/60).

*Optional variable speed switch is available.

**These motors are without thermal overload protection

***These motors are 115/230 volts.

NOTE 1: All motors are constant speed and operate at top speed as indicated in motor data. Models 18 through 120, including 108A, 118A, 125A and 136A can be run at reduced speed with addition of optional variable speed switch. This switch is factory-calibrated for low and high speed ratings, with intermediate speeds infinitely controllable. Models 132 through 360 operate at constant speed as indicated in motor data. All 1/4 H.P. motors are P.S.C.

NOTE 2: Motors under 1/3 H.P. are totally enclosed, frame mounted, 115/1/60 with thermal overload protection and permanently lubricated sleeve bearings with optional speed controller available. 1/3 H.P. (115/1/60) motors are open frame constant speed with thermal over-load protection and ball bearings. 1/3 H.P. (230V) and 1/2 H.P. (230V) motors are open frame constant speed with thermal overload protection and ball bearings.

NOTE 3: 1/3 and 1/2 H.P. motors are available as 230V single and 3 phase in open frame and explosion-proof housings, all available as options. 1/3 and 1/2 H.P. motors operate at single speed only.

NOTE 4: Stated AMP draw is Full Load Amp (FLA). AMP draw varies by motor manufacturer ± .2 AMPS. Verify FLA per unit motor data plate.

CAUTION: Select appropriate AMP and MCA for the multiple voltage motors. For example, the AMP and MCA for Models 360 with a 460 volt Totally Enclosed motor is 1.3 and 1.6 respectively.