

**Bryan Electric**  
**BH Series**  
**Steam & Water Boilers**

**196,000 to 7,840,000 BTUH**  
**60 to 2,400 KW**



**Steam Boiler**  
**240BHS4T8**



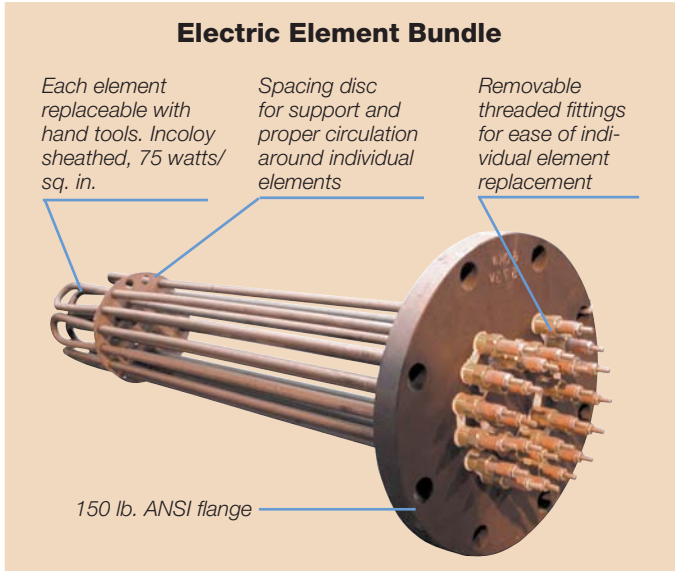
**Water Boiler**  
**390BHW4T7**

**B BRYAN® BOILERS**



# Bryan electric hot water or steam boilers...

## For commercial, institutional and industrial applications



Bryan Series BH Electric hot water\*\* or steam boilers are compact, completely packaged and wired units with automatic controls and featuring long life Incoloy sheathed elements. Applications include hot water heating, steam heating, process heating, and supplemental heat for heat pump type equipment.

All Bryan Boilers are built in accordance with the requirements of the ASME boiler and pressure vessel code and are UL listed. Water boilers are 150 psig MAWP and steam boilers either 15 psig or 150 psig. Higher pressures are available.

### Efficiency

Bryan Electric Boilers are nearly 95% efficient at all load levels. Varying loads do not effect the efficiency since the resistive type heating elements are immersed and designed to heat the water directly. With a modulating step control only the elements that are required to heat the water to the desired temperature/pressure will be energized in order to encourage a balanced load during operation.

### Replaceable Hairpins

Each element hairpin is field replaceable with no welding, soldering, or brazing required. Each hairpin, as standard for all Bryan Electric Boilers, is Incoloy sheathed and industrial size 0.430" diameter. Elements are designed for 75 watts/sq. inch for long life (optional 50 W/D available). Elements are individually installed in a standard ANSI 150 lb. blind flange.

### Steam Disengaging Area

Steam release area is near the middle of the horizontal vessel for maximum steam disengaging area for dry steam and stable water level.

### Water Boiler Design

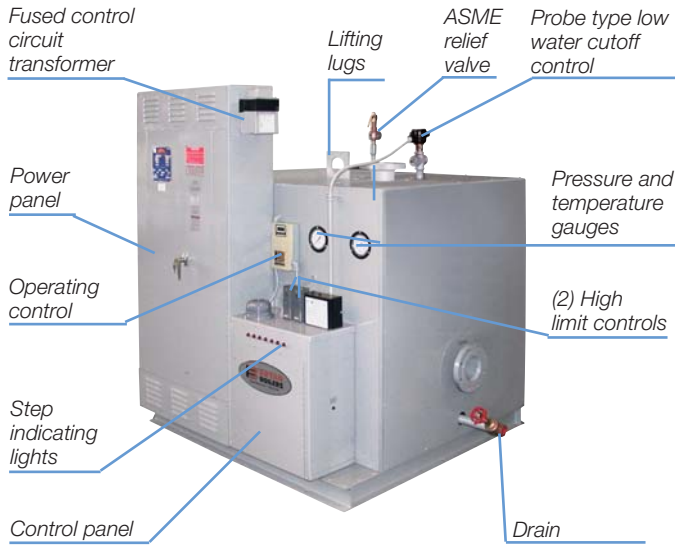
Vessel is designed for proper circulation around individual elements to maximize heat transfer. High velocities, i.e. heat pump applications, are handled with very little pressure drop when using a horizontal tank for the pressure vessel. Supply and return nozzle sizes can be made larger to accommodate the flow requirements. Pressure drop is minimal through the boiler and no dangers are involved with low flow conditions.

## Bryan BH Series Boiler Specifications

Model	Nom. Output		Steam Output*	Approx. Shipping Weight			Model	Nom. Output		Steam Output*	Approx. Shipping Weight						
Input KW	MBH	BHP	lbs/hr (kg/hr)	Water lbs (kg)	Steam lbs (kg)	Input KW	MBH	BHP	lbs/hr (kg/hr)	Water lbs (kg)	Steam lbs (kg)	Input KW	MBH	BHP	lbs/hr (kg/hr)	Water lbs (kg)	Steam lbs (kg)
60BH	196	6	207 (93)	900 (408)	1,000 (454)	660BH	2,156	66	2,277 (1,033)	3,350 (1,520)	3,600 (1,633)						
75BH	245	7.5	259 (117)	900 (408)	1,000 (454)	720BH	2,352	72	2,484 (1,127)	3,500 (1,588)	3,800 (1,724)						
90BH	294	9	311 (141)	1,000 (454)	1,100 (499)	780BH	2,548	78	2,691 (1,221)	3,600 (1,633)	4,000 (1,814)						
105BH	343	10.5	362 (164)	1,000 (454)	1,300 (590)	840BH	2,744	84	2,898 (1,315)	3,700 (1,678)	4,100 (1,860)						
120BH	392	12	414 (187)	1,000 (454)	1,300 (590)	900BH	2,940	90	3,105 (1,408)	3,850 (1,746)	4,200 (1,905)						
135BH	441	13.5	466 (211)	1,200 (544)	1,400 (635)	960BH	3,136	96	3,312 (1,502)	4,000 (1,814)	4,400 (1,996)						
150BH	490	15	518 (234)	1,200 (544)	1,400 (635)	1020BH	3,332	102	3,519 (1,596)	4,500 (2,041)	5,000 (2,268)						
165BH	539	16.5	569 (258)	1,300 (590)	1,500 (680)	1080BH	3,528	108	3,726 (1,690)	4,500 (2,041)	5,100 (2,313)						
180BH	588	18	621 (281)	1,300 (590)	1,500 (680)	1140BH	3,724	114	3,933 (1,784)	5,000 (2,268)	5,500 (2,495)						
195BH	637	19.5	673 (305)	1,400 (635)	1,700 (771)	1200BH	3,920	120	4,140 (1,878)	5,250 (2,381)	5,700 (2,586)						
210BH	686	21	725 (328)	1,400 (635)	1,700 (771)	1260BH	4,116	126	4,347 (1,972)	5,500 (2,495)	6,000 (2,722)						
225BH	735	22.5	776 (352)	1,500 (680)	1,800 (816)	1320BH	4,312	132	4,554 (2,066)	5,600 (2,540)	6,100 (2,767)						
240BH	784	24	828 (375)	1,600 (726)	1,900 (862)	1380BH	4,508	138	4,761 (2,160)	5,700 (2,586)	6,300 (2,858)						
270BH	882	27	932 (422)	1,600 (726)	2,000 (907)	1440BH	4,704	144	4,968 (2,253)	5,800 (2,361)	6,400 (2,903)						
300BH	980	30	1,035 (469)	1,700 (771)	2,200 (998)	1530BH	4,999	153	5,279 (2,394)	6,000 (2,722)	6,600 (2,994)						
330BH	1,078	33	1,139 (516)	1,800 (816)	2,300 (1,043)	1620BH	5,293	162	5,589 (2,535)	6,200 (2,812)	6,800 (3,084)						
360BH	1,176	36	1,242 (563)	1,800 (816)	2,400 (1,089)	1710BH	5,587	171	5,900 (2,676)	6,400 (2,903)	7,000 (3,175)						
390BH	1,274	39	1,346 (610)	2,000 (907)	2,500 (1,134)	1800BH	5,881	180	6,210 (2,817)	6,600 (2,994)	7,200 (3,266)						
420BH	1,372	42	1,449 (657)	2,000 (907)	2,600 (1,179)	1920BH	6,273	192	6,624 (3,005)	6,800 (3,084)	7,400 (3,357)						
450BH	1,470	45	1,553 (704)	2,100 (953)	2,700 (1,225)	2040BH	6,665	204	7,038 (3,192)	7,000 (3,175)	7,600 (3,447)						
480BH	1,568	48	1,656 (751)	2,150 (975)	2,800 (1,270)	2160BH	7,057	216	7,452 (3,380)	7,200 (3,266)	7,800 (3,538)						
510BH	1,666	51	1,760 (798)	2,500 (1,134)	2,900 (1,315)	2280BH	7,449	228	7,866 (3,568)	7,400 (3,357)	8,100 (3,764)						
540BH	1,764	54	1,863 (845)	2,500 (1,134)	3,000 (1,361)	2400BH	7,841	240	8,280 (3,756)	7,600 (3,447)	8,300 (3,765)						
600BH	1,960	60	2,070 (939)	3,000 (1,361)	3,500 (1,588)												

NOTES: \* Lbs. steam per hour from and at 212°F. \*\* Not intended for use as a principal heating source for living space of any individual residence.

## Water boiler trim and controls



### Standard Equipment Supplied: HOT WATER DESIGN BOILERS:

#### Model "W" (150# ASME Design)

Temperature and pressure gauge, Operating immersion aquastat, 2 high limit aquastats, Low water cutoff, Relief valve, Metal jacket with 4" fiberglass, 75 W/D Incoloy sheathed elements with pressure connector power lugs. Separate power panel and control panel, On/Off control switch, 120 volt control transformer (fused), Magnetic contactors with 120 volt coil, Individual circuit Class JKS fusing, step indicating lamps, First on/first off progressive step controller, National Board Inspection and UL Label.

#### Power Circuit Design:

All Bryan BH Series boilers feature copper bus bar distribution, wherein the fuse clip for each branch circuit and the main power lugs are all bolted directly to a bus bar. The bus bar can carry the full load current of the boiler, withstanding the largest available fault current from the entering power system. Use of the bus bar protects all current-carrying parts and prevents damage to the boiler.

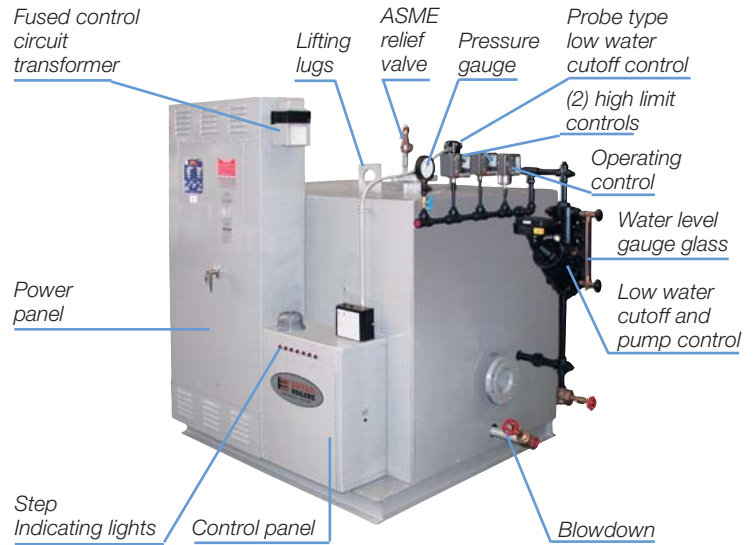
#### Optional Equipment Available:

Power panel door electric interlock. Preheat switch. Flow switch. Manual reset controls. Manual blowdown valve. Automatic blowdown with 24 hour time clock. Alarms. Indicating lights. Larger connection for heat pump applications.

#### Other Designs Available:

- 1) BE – Economical Electric Boilers (Form 3600)
- 2) WT – Indirect Hot Water Supply Heaters (Form 4800)

## Steam boiler trim and controls



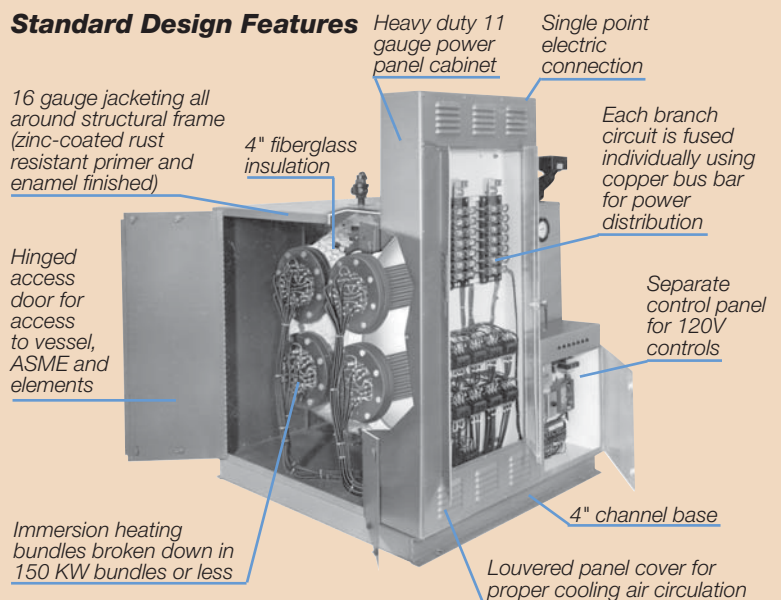
### Standard Equipment Supplied: STEAM DESIGN BOILERS:

#### Model "S" (15# ASME Design)

#### Model "Q" (150# ASME Design)

Steam pressure gauge w/gauge clock, Operating pressure control, 2 high limit pressure controls, Combination low water cutoff and pump control, Auxiliary low water cutoff, Relief valve, Water glass set, Metal jacket with 4" fiberglass, 75 W/D Incoloy sheathed elements with pressure connector power lugs. Separate power panel and control panel, On/off control switch, 120 volt control transformer (fused), Magnetic contactors with 120 volt coil, Individual circuit Class JKS fusing, Step indicating lamps, First on/ first off progressive step controller, National Board Inspection and UL Label.

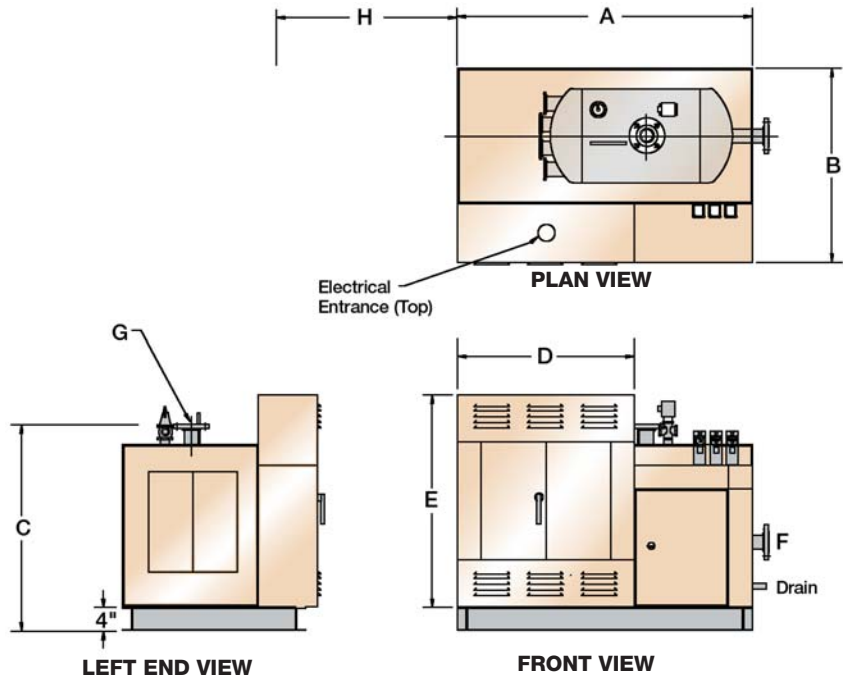
### Standard Design Features



# Bryan BH Series Steam & Hot Water Boilers

POWER PANEL SIZING CHART — in (cm)			
Three Phase Voltage		D	E
208,240	380,480,575		
60-90 KW	60-180 KW	30 (76)	36 (91)
105-180 KW	195-360 KW	30 (76)	48 (122)
195-240 KW	390-480 KW	30 (76)	66 (168)
270-330 KW	510-720 KW	36 (91)	72 (183)
360-480 KW	780-1140 KW	60 (152)	82 (208)
—	1200-1440 KW	60 (152)	90 (229)
—	1530-1920 KW	60 (152)	96 (244)
—	2040KW	72 (183)	96 (244)

NOTE: Units larger than 2040 KW require two power panels.



Input KW	MODELS "W" WATER Dimensions in (cm)					MODELS "S" 15# STEAM Dimensions in (cm)					MODELS "Q" 150# STEAM Dimensions in (cm)					Element Removal Clearance H
	Length	Width	Height	Inlet	Outlet	Length	Width	Height	Inlet	Outlet	Length	Width	Height	Inlet	Outlet	
	A	B	C	F	G	A	B	C	F	G	A	B	C	F	G	
60-75	50 (127)	33 (84)	35 (89)	2 (5)	2 (5)	50 (127)	41 (104)	43 (109)	2 (5)	3 (8)	50 (127)	33 (84)	35 (89)	1 (3)	2 (5)	30 (76)
90-120	50 (127)	33 (84)	35 (89)	2 (5)	2 (5)	50 (127)	41 (104)	43 (109)	2 (5)	3 (8)	50 (127)	41 (104)	43 (109)	1 (3)	2 (5)	30 (76)
135-150	50 (127)	41 (104)	43 (109)	2 (5)	2 (5)	56 (142)	47 (119)	49 (124)	3 (8)	4 (10)	50 (127)	41 (104)	43 (109)	1 (3)	3 (8)	30 (76)
165-240	56 (142)	47 (119)	49 (124)	3 (8)	3 (8)	56 (142)	47 (119)	49 (127)	3 (8)	4 (10)	80 (203)	41 (104)	43 (109)	1 (3)	3 (8)	30 (76)
270-360	56 (142)	47 (119)	49 (124)	3 (8)	3 (8)	60 (152)	59 (150)	61 (155)	4 (10)	6 (15)	80 (203)	41 (104)	43 (109)	1 (3)	3 (8)	30 (76)
390-480	56 (142)	53 (135)	55 (140)	4 (10)	4 (10)	60 (152)	65 (165)	67 (170)	4 (10)	6 (15)	60 (152)	65 (165)	67 (170)	2 (4)	3 (8)	30 (76)
510-600	80 (203)	47 (119)	49 (124)	6 (15)	6 (15)	84 (213)	53 (135)	55 (140)	4 (10)	6 (15)	84 (213)	53 (135)	55 (140)	2 (4)	4 (10)	55 (140)
660-750	84 (213)	53 (150)	55 (140)	6 (15)	6 (15)	84 (229)	53 (180)	55 (170)	4 (15)	6 (20)	84 (229)	53 (180)	55 (170)	2 (4)	4 (10)	55 (140)
780-900	84 (213)	59 (150)	55 (140)	6 (15)	6 (15)	90 (229)	71 (180)	67 (170)	6 (15)	8 (20)	90 (229)	71 (180)	67 (170)	2 (4)	4 (10)	55 (140)
960-1020	90 (229)	65 (165)	61 (155)	6 (15)	6 (15)	90 (229)	71 (180)	67 (170)	6 (15)	8 (20)	90 (229)	71 (180)	67 (170)	2 (4)	6 (15)	55 (140)
1080-1200	90 (229)	71 (180)	67 (170)	6 (15)	6 (15)	94 (239)	77 (196)	73 (185)	6 (15)	8 (20)	94 (239)	77 (196)	73 (185)	2 (4)	6 (15)	55 (140)
1260-1320	90 (229)	71 (180)	67 (170)	6 (15)	6 (15)	94 (239)	77 (196)	73 (185)	6 (15)	8 (20)	94 (239)	77 (196)	73 (185)	2 (4)	6 (15)	55 (140)
1380-1440	90 (229)	71 (180)	67 (170)	6 (15)	6 (15)	98 (249)	83 (211)	79 (201)	6 (15)	8 (20)	98 (249)	83 (211)	79 (201)	2 (4)	6 (15)	55 (140)
1530-1620	90 (229)	71 (180)	67 (170)	6 (15)	6 (15)	98 (249)	83 (211)	79 (201)	6 (15)	8 (20)	98 (249)	83 (211)	79 (201)	2 (4)	6 (15)	55 (140)
1710-1800	94 (239)	77 (196)	73 (185)	6 (15)	6 (15)	98 (249)	83 (211)	79 (201)	6 (15)	8 (20)	98 (249)	83 (211)	79 (201)	2 (4)	6 (15)	55 (140)
1920-2040	94 (239)	77 (196)	73 (185)	8 (20)	8 (20)	102 (259)	95 (241)	91 (231)	6 (15)	8 (20)	102 (259)	95 (241)	91 (231)	2 (5)	6 (15)	55 (140)

NOTE: Units larger than 2040 KW require two power panels.  
Specifications subject to change without notice. Consult factory for information on other boiler options.



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