

Bryan Electric BH Series Steam & Water Boilers

196,000 to 9,800,000 BTUH
60 to 3,000 KW



Steam Boiler
240BHS4T8



Water Boiler
390BHW4T7

B™ **BRYAN BOILERS**



Bryan electric hot water or steam boilers...

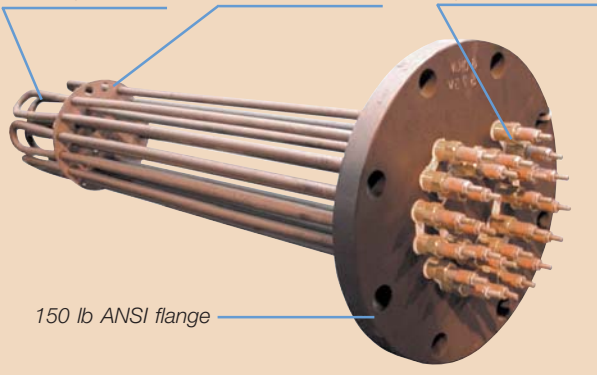
For commercial, institutional and industrial applications

Electric Element Bundle

Each element replaceable with hand tools. Incoloy sheathed, 75 watts/sq in

Spacing disc for support and proper circulation around individual elements

Removable threaded fittings for ease of individual element replacement



150 lb ANSI flange

Bryan Series BH electric hot water** or steam boilers are compact, completely packaged and wired units with automatic controls 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

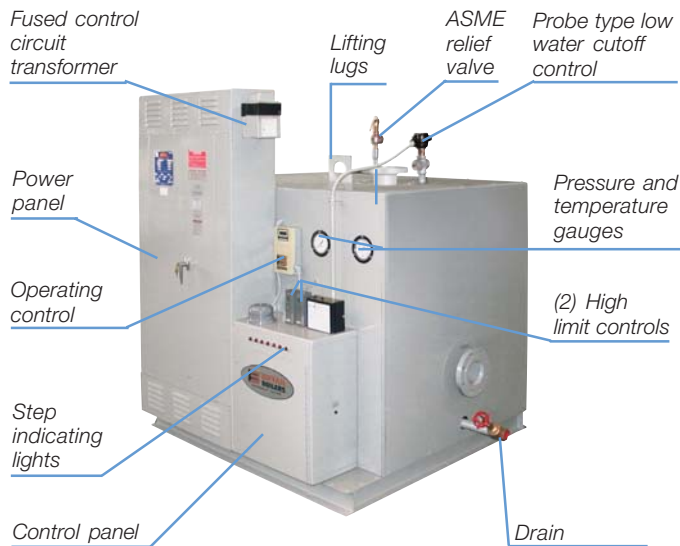
Vessel is designed for proper circulation around individual elements to maximize heat transfer. High velocities, i.e. heat pump applications, are handled with very little pressure drop when using a horizontal tank for the pressure vessel. Supply and return nozzle sizes can be made larger to accommodate 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
60BH	196	6	207 (93)	900 (408)	1,000 (454)	780BH	2,548	78	2,691 (1,221)	3,600 (1,633)	4,000 (1,814)
75BH	245	7.5	259 (117)	900 (408)	1,000 (454)	840BH	2,744	84	2,898 (1,315)	3,700 (1,678)	4,100 (1,860)
90BH	294	9	311 (141)	1,000 (454)	1,100 (499)	900BH	2,940	90	3,105 (1,408)	3,850 (1,746)	4,200 (1,905)
105BH	343	10.5	362 (164)	1,000 (454)	1,300 (590)	960BH	3,136	96	3,312 (1,502)	4,000 (1,814)	4,400 (1,996)
120BH	392	12	414 (187)	1,000 (454)	1,300 (590)	1020BH	3,332	102	3,519 (1,596)	4,500 (2,041)	5,000 (2,268)
135BH	441	13.5	466 (211)	1,200 (544)	1,400 (635)	1080BH	3,528	108	3,726 (1,690)	4,500 (2,041)	5,100 (2,313)
150BH	490	15	518 (234)	1,200 (544)	1,400 (635)	1140BH	3,724	114	3,933 (1,784)	5,000 (2,268)	5,500 (2,495)
165BH	539	16.5	569 (258)	1,300 (590)	1,500 (680)	1200BH	3,920	120	4,140 (1,878)	5,250 (2,381)	5,700 (2,586)
180BH	588	18	621 (281)	1,300 (590)	1,500 (680)	1260BH	4,116	126	4,347 (1,972)	5,500 (2,495)	6,000 (2,722)
195BH	637	19.5	673 (305)	1,400 (635)	1,700 (771)	1320BH	4,312	132	4,554 (2,066)	5,600 (2,540)	6,100 (2,767)
210BH	686	21	725 (328)	1,400 (635)	1,700 (771)	1380BH	4,508	138	4,761 (2,160)	5,700 (2,586)	6,300 (2,858)
225BH	735	22.5	776 (352)	1,500 (680)	1,800 (816)	1440BH	4,704	144	4,968 (2,253)	5,800 (2,611)	6,400 (2,903)
240BH	784	24	828 (375)	1,600 (726)	1,900 (862)	1530BH	4,999	153	5,279 (2,394)	6,000 (2,722)	6,600 (2,994)
270BH	882	27	932 (422)	1,600 (726)	2,000 (907)	1620BH	5,293	162	5,589 (2,535)	6,200 (2,812)	6,800 (3,084)
300BH	980	30	1,035 (469)	1,700 (771)	2,200 (998)	1710BH	5,587	171	5,900 (2,676)	6,400 (2,903)	7,000 (3,175)
330BH	1,078	33	1,139 (516)	1,800 (816)	2,300 (1,043)	1800BH	5,881	180	6,210 (2,817)	6,600 (2,994)	7,200 (3,266)
360BH	1,176	36	1,242 (563)	1,800 (816)	2,400 (1,089)	1920BH	6,273	192	6,624 (3,005)	6,800 (3,084)	7,400 (3,357)
390BH	1,274	39	1,346 (610)	2,000 (907)	2,500 (1,134)	2040BH	6,665	204	7,038 (3,192)	7,000 (3,175)	7,600 (3,447)
420BH	1,372	42	1,449 (657)	2,000 (907)	2,600 (1,179)	2160BH	7,057	216	7,452 (3,380)	7,200 (3,266)	7,800 (3,538)
450BH	1,470	45	1,553 (704)	2,100 (953)	2,700 (1,225)	2280BH	7,449	228	7,866 (3,568)	7,400 (3,357)	8,100 (3,764)
480BH	1,568	48	1,656 (751)	2,150 (975)	2,800 (1,270)	2400BH	7,841	240	8,280 (3,756)	7,600 (3,447)	8,300 (3,765)
510BH	1,666	51	1,760 (798)	2,500 (1,134)	2,900 (1,315)	2520BH	8,233	252	8,694 (3,944)	7,800 (3,538)	8,600 (3,901)
540BH	1,764	54	1,863 (845)	2,500 (1,134)	3,000 (1,361)	2640BH	8,625	264	9,108 (4,131)	8,000 (3,629)	8,800 (3,992)
600BH	1,960	60	2,070 (939)	3,000 (1,361)	3,500 (1,588)	2880BH	9,409	288	9,936 (4,507)	8,400 (3,810)	9,200 (4,173)
660BH	2,156	66	2,277 (1,033)	3,350 (1,520)	3,600 (1,633)	3000BH	9,801	300	10,350 (4,695)	8,600 (3,901)	9,400 (4,264)
720BH	2,352	72	2,484 (1,127)	3,500 (1,588)	3,800 (1,724)						

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.

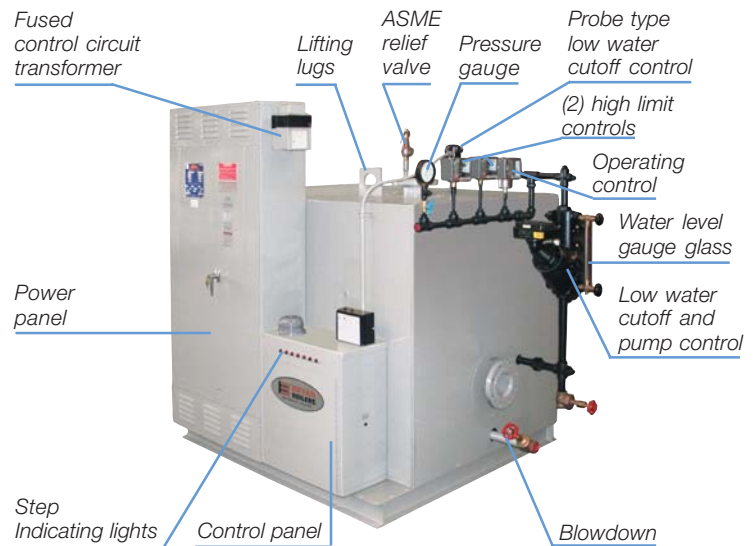
Optional Equipment Available:

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)
- 3) Energy Selector Boiler – Electric plus gas, oil or gas/oil. A boiler with multiple energy source choice (Form 3500)

Steam boiler trim and controls



Standard Equipment Supplied:

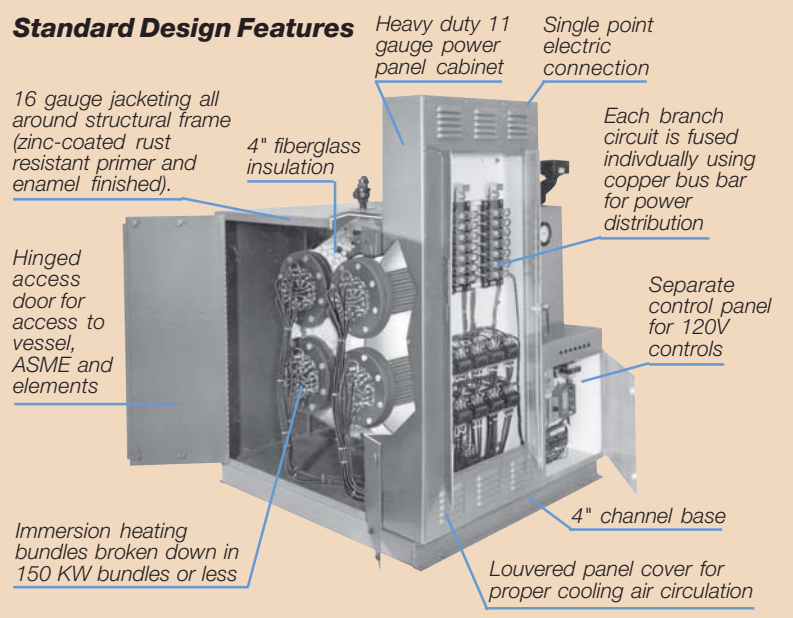
STEAM DESIGN BOILERS:

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.

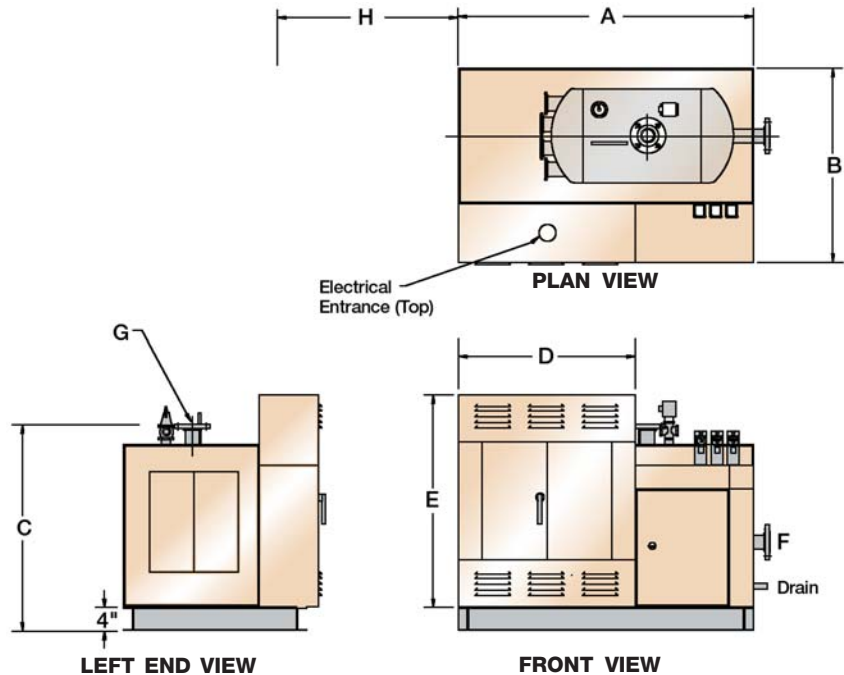
Standard Design Features



Bryan BH Series Steam & Hot Water Boilers

POWER PANEL SIZING CHART — in (cm)			
Three Phase Voltage		D	E
208,240	380,480,575		
60-90KW	60-180KW	30(76)	36(91)
105-180KW	195-360KW	30(76)	48(122)
195-240KW	390-480KW	30(76)	66(168)
270-330KW	510-750KW	36(91)	72(183)
360-480KW	780-1140KW	60(152)	82(208)
—	1200-1440KW	60(152)	90(229)
—	1500-1920KW	60(152)	96(244)
—	1950-2100KW	72(183)	96(244)

Units larger than 2100 KW require two 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)
960-1050	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)
1260-1350	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)
1380-1500	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)
1530-1650	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)
1920-2100	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)

Specifications subject to change without notice. Consult factory to consult on other boiler options.



Bryan Steam LLC — Since 1916
 783 N. Chili Ave., Peru, Indiana 46970 U.S.A.
 Phone: 765-473-6651 • Internet: www.bryanboilers.com
 Fax: 765-473-3074 • E-mail: bryanboilers@iquest.net

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