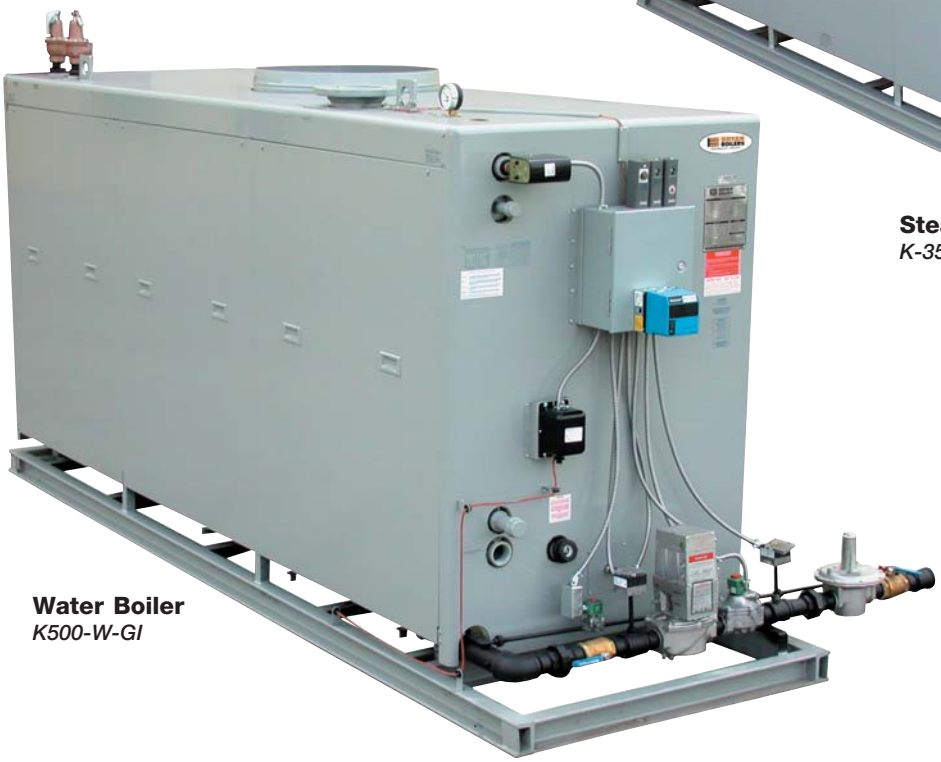
Form No. 4950
(1/03)

Bryan "Flexible Water Tube"

K Series
Steam & Water Boilers

3,500,000 to 6,500,000 BTUH
Atmospheric gas fired

Steam Boiler
K-350-S150-GI



Water Boiler
K500-W-GI

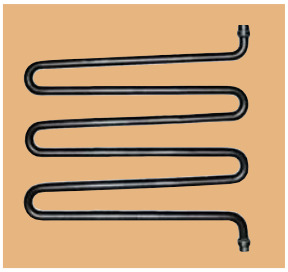
BRYAN BOILERS

Originators of the "Flexible Water Tube" design

High efficiency hot water and steam boilers for commercial and industrial applications

Bryan flexible water tube boilers are ideally suited for both hot water and steam space heating systems as well as either high or low pressure process steam. In a range of sizes from 3,500,000 to 6,500,000 BTUH input, Bryan K series flexible tube boilers are ideal for many commercial, institutional and industrial applications. These include healthcare facilities; schools; apartments; churches; office buildings; correctional facilities; airports; sewage treatment plants; golf, tennis and fitness clubs. Hospitals, dairies, restaurants, laundries, dry cleaners, food processing, tire recapping and metal plating are just a few of the many applications.

All Bryan boilers are built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code.



Efficient "Flexible Water Tube" design

The Bryan bent water tube provides rapid internal circulation — for maximum heat transfer and operating efficiency.

Easily replaceable tubes

Tubes are easily removable and replaceable without welding or rolling. Requires little service space.

No "Thermal Shock"

The flexibility of the bent water tube design eliminates all possible damage from "Thermal Shock" and from stresses caused by poor or unequal internal circulation. This is particularly important with forced hot water heating systems designed for higher temperatures and greater temperature drops.

Steam Boilers:

Steam release area

Large, full-size steam drum provides for dry steam and stable water level.

High or low pressure construction

Boiler is constructed as standard for 15 psi or 150 psi maximum working pressure. Also available for higher pressures to 300 psi.

Water Boilers:

High or low pressure construction

Boiler is constructed as standard for 160 psi maximum working pressure at 230°F operating temperature and 250°F design temperature. Also available for higher pressures to 250 psi, at 285°F operating temperature and 300°F design temperature.

Natural internal circulation

The water tube design and the large downcomer legs provide adequate internal circulation without concern over exterior pumping conditions. Low pressure drop through boiler.

Compact — minimum floor space

Requires less floor space than most boilers, and tubes can be removed and replaced from one side, further minimizing space needs.

Shipped completely assembled and wired. Units can also be shipped "Knocked Down" for on-site assembly.

Bryan K Series Boiler Specifications

BOILER MODEL	INPUT MBH (KW)	NOMINAL OUTPUT		STEAM OUTPUT LBS/HR*	HEATING SURFACE SQ. FT. (M^2)	APPROX. SHIP WT. LBS. (KG)
		MBH (KW)	BHP			
K-350	3,500 (1,025.5)	2,800 (840.4)	84	2,886	424 (39.4)	5,800 (2,636)
K-400	4,000 (1,172.0)	3,200 (937.6)	96	3,298	480 (44.6)	6,410 (2,912)
K-450	4,500 (1,318.5)	3,600 (1,054.8)	108	3,710	540 (50.2)	7,020 (3,188)
K-500	5,000 (1,465.0)	4,000 (1,172.0)	120	4,122	600 (55.7)	7,630 (3,466)
K-550	5,500 (1,611.5)	4,400 (1,289.2)	131	4,535	661 (61.4)	8,420 (3,825)
K-600	6,000 (1,758.0)	4,800 (1,406.4)	143	4,947	717 (66.6)	8,850 (4,020)
K-650	6,500 (1,904.5)	5,200 (1,523.6)	155	5,359	777 (72.2)	9,460 (4,298)

NOTES: * Lbs. steam per hour from and at 212°F.

Design and construction features that assure reliable performance

BRYAN BOILERS
The only boilers with full non-prorated
25 Year Warranty
Protection Against Thermal Shock

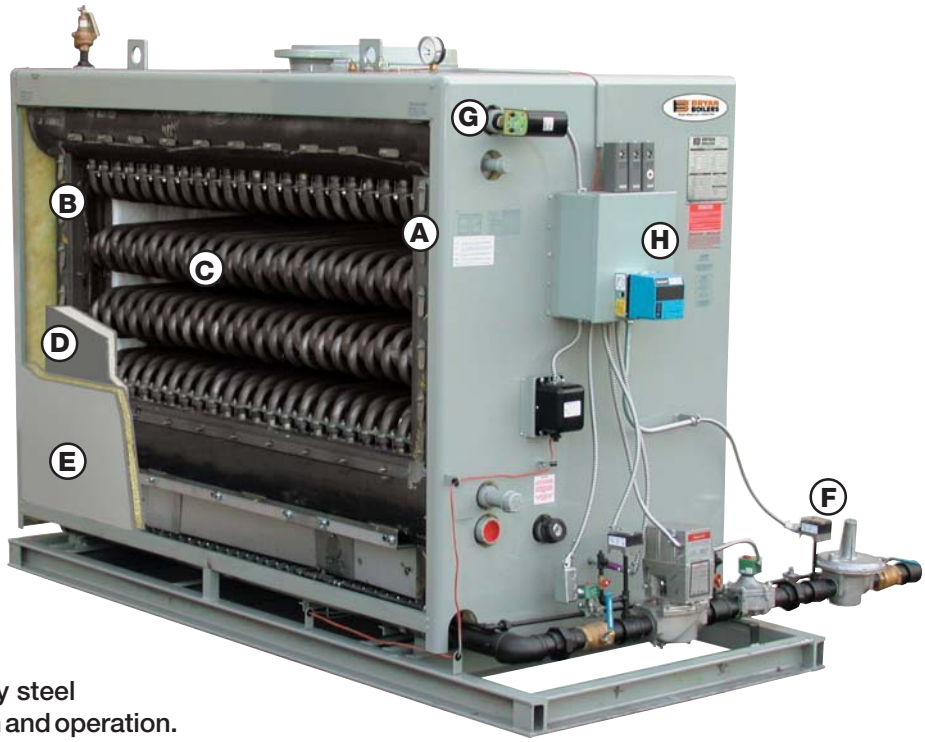
A. Heavy steel boiler frame, built and stamped in accordance with the ASME boiler code. Hot water boilers constructed as standard for operating pressures to 160 psi. Also available for higher operating pressures. Steam boilers constructed as standard for operating pressures of 15 psi or 150 psi. Also available for higher operating pressures. Large steam release area for dry steam.

B. Water leg downcomers to insure rapid internal circulation and temperature equalization.

C. Bryan flexible water tubes, easily replaceable, requiring no welding or rolling. Tubes installed from one side.

D. Boiler tube access panel bolted tightly and sealed to boiler frame. Constructed of 2" insul-wool high temperature insulation in steel framework. Tubes installed from one side for easy accessible service and inspection.

E. Boiler jacket, heavy gauge zinc coated, with attractive enamel finish. Boiler jacket insulated with 1½" fiberglass to insure cool jacket.



F. Atmospheric gas burner controls — alloy steel atmospheric burner. Quiet electric ignition and operation. No moving parts or complicated adjustments.

G. All controls, gauges, relief valve(s) are factory installed and wired and easily accessible for servicing.

H. Control panel: all controls installed and connected to terminal strip.

Bryan K Series Boilers Standard and Optional Equipment

STANDARD EQUIPMENT FURNISHED

Water Boiler

Combination thermometer and altitude gauge, ASME Code rated boiler relief valve, water temperature control (240°F max std.), high limit control, probe LWCO.

Steam Boiler

Combination low water cutoff and pump control, auxiliary low water cutoff with manual reset, high limit pressure control, ASME-rated safety valve, water glass set.

Atmospheric equipment

Electronic combustion safety control, automatic operating gas valve, safety gas valve, pilot solenoid valve, electric ignition assembly, main manual gas shut-off valve, pilot shut-off valve, pilot and main gas pressure regulators, barometric draft controller, all controls installed and wired standard voltage 120/1/60.

OPTIONAL EQUIPMENT, EXTRA COST:

1. Manual reset high limit control
2. Manual reset low water cutoff
3. Auxiliary low water cutoff (water)
4. Combination low water cutoff and feeder
5. Alarm bells or horns
6. UL, CSD-1, FM, IRI or other insurance approved control systems
7. Low fire start, Hi-Lo or modulation fire control
8. Indicating lights, as desired
9. Lead-lag systems for two or more boilers with or without outdoor reset control
10. Heat exchanger coils for domestic water

OPTIONAL CONSTRUCTION:

Steam boiler

Optional construction to ASME Power Boiler Code requirements for pressure exceeding 150 psi to maximum of 300 psi design pressure.

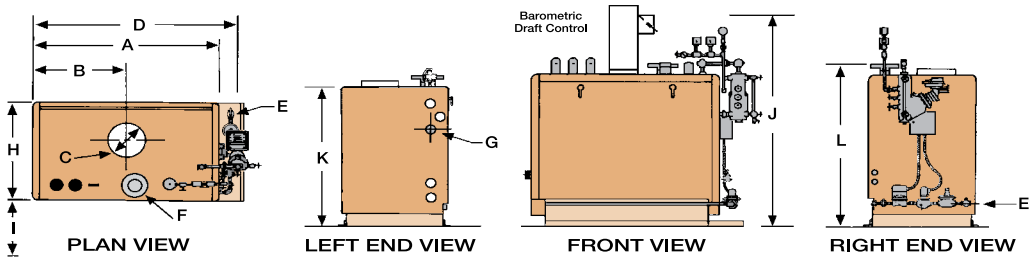
Hot water boiler

Optional construction to ASME Power Boiler Code requirements for temperatures exceeding 240° F and/or pressure exceeding 160 psi to maximum of 285° F operating and 300° F design temperature and 250 psi.

When ordering, please specify:

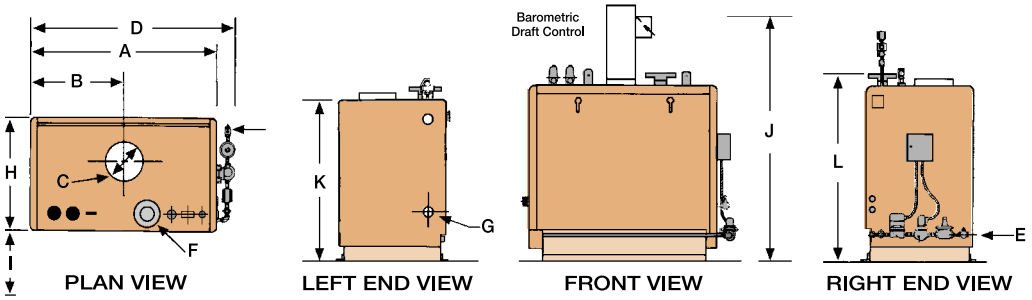
1. Boiler size
2. Supply and return temperatures required
3. Boiler relief valve setting
4. Type of fuel: natural or LP
5. If gas, type, BTU content, specific gravity and pressure available
6. Optional extra equipment or construction
7. Special approvals required (UL, CSD-1, FM, or IRI)
8. Altitude

Bryan K Series Steam & Hot Water Boilers



STEAM BOILER DIMENSIONS—inches (cm)

BOILER MODEL	A Length Over Jacket	B Flue Location	C Flue Size	D Overall Length	E* Gas Train Connection	F Supply Nozzle 15#	F Supply Nozzle 150#	G Feed Connect.	H Width Outside Jacket	I Min. Tube Removal Clearance	J Height Over Barometric	K Height Over Jacket	L Floor to Flow Nozzle
K-350-S	107 1/4 (272.42)	54 1/8 (137.48)	20 (50.80)	123 1/4 (313.06)	2 1/2 NPT (6.35)	6FLG (15.24)	4 FLG (10.16)	2 NPT (5.08)	54 (137.16)	32 (81.28)	106 3/4 (271.15)	83 3/4 (212.71)	88 1/4 (224.16)
K-400-S	117 (297.13)	59 (149.86)	24 (60.96)	133 (337.82)	2 1/2 NPT (6.35)	8 FLG (20.32)	6 FLG (15.24)	2 NPT (5.08)	54 (137.16)	32 (81.28)	110 3/4 (281.31)	83 3/4 (212.71)	88 1/4 (224.16)
K-450-S	129 3/4 (329.57)	65 3/8 (166.05)	24 (60.96)	145 3/4 (370.21)	2 NPT (5.08)	8 FLG (20.34)	6 FLG (15.24)	2 NPT (5.08)	54 (137.16)	32 (81.28)	110 3/4 (281.31)	83 3/4 (212.71)	88 1/4 (224.16)
K-500-S	142 1/2 (361.95)	71 3/4 (182.25)	24 (60.96)	158 1/2 (402.59)	2 NPT (5.08)	8 FLG (20.32)	6 FLG (15.24)	2 NPT (5.08)	54 (137.16)	32 (81.28)	110 3/4 (281.31)	83 3/4 (212.71)	88 1/4 (224.16)
K-550-S	155 1/2 (394.97)	78 1/4 (198.76)	24 (60.96)	171 1/2 (435.61)	2 1/2 NPT (6.35)	10 FLG (25.40)	6 FLG (15.24)	2 NPT (5.08)	54 (137.16)	32 (81.28)	110 3/4 (281.31)	83 3/4 (212.71)	88 1/4 (224.16)
K-600-S	165 (419.10)	83 (210.82)	24 (60.96)	181 (459.74)	2 1/2 NPT (6.35)	10 FLG (25.40)	6 FLG (15.24)	2 NPT (5.08)	54 (137.16)	32 (81.28)	110 3/4 (281.31)	83 3/4 (212.71)	88 1/4 (224.16)
K-650-S	178 (452.12)	89 1/2 (277.33)	24 (60.96)	194 (492.76)	2 1/2 NPT (6.35)	10 FLG (25.40)	6 FLG (15.24)	2 NPT (5.08)	54 (137.16)	32 (81.28)	110 3/4 (281.31)	83 3/4 (212.71)	88 1/4 (224.16)



WATER BOILER DIMENSIONS—inches (cm)

BOILER MODEL	A Length Over Jacket	B Flue Location	C Flue Size	D Overall Length	E* Gas Train Connection	F Supply Nozzle	G Return Nozzle	H Width Outside Jacket	I Min. Tube Removal Clearance	J Height Over Barometric	K Height Over Jacket	L Floor to Flow Nozzle
K-350-W	107 1/4 (272.42)	54 1/8 (137.48)	24 (60.96)	123 1/4 (313.06)	2 1/2 NPT (6.35)	4 FLG (10.16)	4 FLG (10.16)	48 1/4 (122.56)	32 (81.28)	97 1/2 (247.65)	70 1/2 (179.07)	73 1/2 (186.89)
K-400-W	117 (297.13)	59 (149.86)	24 (60.96)	133 (337.82)	2 1/2 NPT (6.35)	6 FLG (15.24)	6 FLG (15.24)	48 1/4 (122.56)	32 (81.28)	97 1/2 (247.65)	70 1/2 (179.07)	73 1/2 (186.89)
K-450-W	129 3/4 (329.57)	65 3/8 (166.05)	26 (66.04)	145 3/4 (370.21)	2 NPT (5.08)	6 FLG (15.24)	6 FLG (15.24)	48 1/4 (122.56)	32 (81.28)	99 1/2 (252.73)	70 1/2 (179.07)	73 1/2 (186.89)
K-500-W	142 1/2 (361.95)	71 3/4 (182.25)	28 (71.12)	158 1/2 (402.59)	2 NPT (5.08)	6 FLG (15.24)	6 FLG (15.24)	48 1/4 (122.56)	32 (81.28)	101 1/2 (257.81)	70 1/2 (179.07)	73 1/2 (186.89)
K-550-W	155 1/2 (394.97)	78 1/4 (198.76)	30 (76.20)	171 1/2 (435.61)	2 1/2 NPT (6.35)	6 FLG (15.24)	6 FLG (15.24)	48 1/4 (122.56)	32 (81.28)	103 1/2 (262.89)	70 1/2 (179.07)	73 1/2 (186.89)
K-600-W	165 (419.10)	83 (210.82)	30 (76.20)	181 (459.74)	2 1/2 NPT (6.35)	6 FLG (15.24)	6 FLG (15.24)	48 1/4 (122.56)	32 (81.28)	103 1/2 (262.89)	70 1/2 (179.07)	73 1/2 (186.89)
K-650-W	178 (452.12)	89 1/2 (277.33)	30 (76.20)	194 (492.76)	2 1/2 NPT (6.35)	6 FLG (15.24)	6 FLG (15.24)	48 1/4 (122.56)	32 (81.28)	103 1/2 (262.89)	70 1/2 (179.07)	73 1/2 (186.89)

NOTE: * Gas train and control location dimensinos will vary depending on job specifications and conditions.
Dimensions and specifications are subject to change without notice. Consult factory for certified dimensions.

BRYAN BOILERS

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Form No. 4950

Printed in USA
13-4428