

# Packaged Steam Boilers - Optional Equipment

## Feed Mechanisms

All boilers require some type of feed mechanism.

### Solenoid Feed

Specify a solenoid feed if condensate is not required to be returned to the boiler and mains water pressure is always no less than 10 psig higher than maximum boiler operating pressure. The solenoid is activated by the level controller.

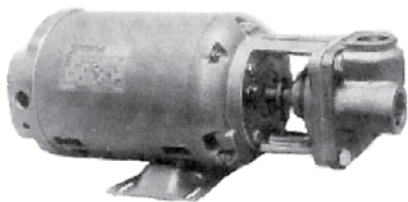
**TABLE 1 - Solenoid Feed Mechanisms**

Inlet Size (NPT)	Solenoid Feed 50 PSIG	
	50 PSIG	Catalog No. 125 PSIG
1/2	SF050-050	SF050-125
3/4	SF075-050	SF075-125
1	SF100-050	SF100-125
1 1/4	SF125-050	SF125-125
1 1/2	SF150-050	SF150-125
2	SF200-050	SF200-125

### Pump Feed

Specify a pump feed if condensate is not required to be returned to the boiler and mains water pressure is not 10 psig or more above maximum boiler operating pressure. Note that the pump motor is normally powered from a separate source.

Suction side piping is 1" NPT for BFP240 and smaller and 1 1/4" for BFP345 and larger. Discharge piping is 1" NPT.



### To Order Specify

Quantity, catalog number, boiler kW rating, operating pressure, and motor voltage (if applicable).

**TABLE 2 - Boiler Feed Pumps: 0 - 150 psig**

Boiler kW	Motor			Catalog Number
	HP	Voltage	PH	
0-60	1/3	120/240	1	BFP060
60-150	1/2	120/240	1	BFP150
150-240	3/4	120/240	1	BFP240
240-345	1 1/2	Specify	3	BFP345
345-540	3	Specify	3	BFP540
540-990	5	Specify	3	BFP990

**Note:**

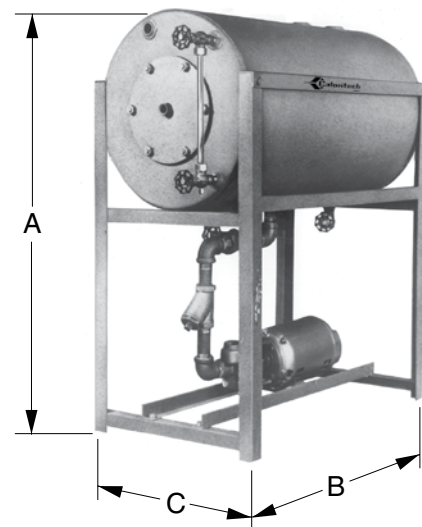
Over 1000 kw or 150 psig, consult factory

## Condensate Receiver Package

For closed systems, when condensate is to be returned to the boiler, a condensate return system is required. The system is packaged as one assembly made up of a feed pump selected from Table 2, a receiver tank, stand, makeup water inlet with float control, condensate inlet, vent, drain valve, strainer, sight glass assembly, and shut off valve.

**TABLE 3 - Condensate Receiver Package Dimensions**

Catalog Number	A		B		C	
	in	mm	in	mm	in	mm
CRP060	24	610	37	890	16 1/2	420
CRP150	24	610	35	890	16 1/12	420
CRP240	30	760	37	940	20 1/2	520
CRP345	42	1065	37	940	20 1/2	520
CRP540	48	1220	37	940	20 1/2	520
CRP780	48	1220	37	940	20 1/2	520
CRP990	60	1525	49	1245	27 1/4	690



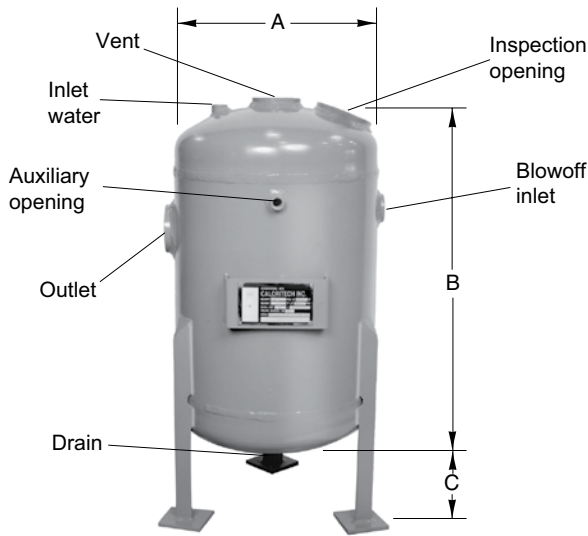
**TABLE 4 - Condensate Receiver Package: 0 - 150 psig**

Boiler kW	Tank Size		Motor H.P.	Catalog Number	Weight	
	Gal.	ℓ			lbs	kg
0-60	14	62	1/3	CRP060	125	55
60-150	14	62	1/2	CRP150	130	60
150-240	26	118	3/4	CRP240	160	75
240-345	36	165	1 1/2	CRP345	200	90
345-540	43	195	3	CRP540	240	110
540-780	43	195	5	CRP780	250	115
780-990	86	390	5	CRP990	325	150

Optional Equipment

## Blow Off Tanks

When the boiler pressure exceeds 15 psig (103 KPA), most jurisdictions prohibit the blow off from the boiler from being directly discharged into the sewer system. Registered blow off tanks for installation between the boiler and drain are listed in Table 6. Units are supplied with pressure gauge and drain valve.



## To Order Specify

Quantity, catalog number, boiler kW rating, and operating pressure.

**TABLE 5 - Blow Off Tank Dimensions**

Catalog Number	A		B		C	
	in	mm	in	mm	in	mm
BOT210	18	457	30	762	6	152
BOT428	24	610	39	991	6	152
BOT855	30	762	46	1168	6	152
BOT2000	36	914	44	1118	6	152

**TABLE 6 - Blow Off Tanks**

Boiler kW	Tank Volume		Tank Diameter		Connections (NPT)					Catalog Number	Weight	
	Imp. Gal.	Litres	in	mm	Vent	Inlet Water	Blowoff Inlet	Outlet	Drain		lbs	kg
0-210	22	100	18	457	3	3/4	1 1/2	3	1 1/2	BOT210	250	115
210-428	50	225	24	610	3	3/4	1 1/2	3	1 1/2	BOT428	428	205
428-855	94	425	30	762	4	3/4	2	4	1 1/2	BOT855	650	295
855-2000	125	565	36	914	4	3/4	2	4	1 1/2	BOT2000	775	350

## Other Optional Equipment

1. Feed mechanism - choose from solenoid feed, pump feed or receiver feed package (see above)
2. Steam outlet globe valve
3. Auxiliary low water cutoff
4. Manual reset low water cutoff
5. Timed auto blowdown system
6. Timed surface blowdown system
7. Vacuum breaker
8. Manual surface blowdown metering valve
9. Steam superheater
10. High pressure alarm
11. Low pressure alarm
12. Audible alarm with silence
13. Pilot lights for each stage
14. Manual off/auto staging switch
15. Voltmeter with 3 position selector switch
16. Ammeter with 3 position selector switch
17. kW hour meter
18. Main disconnect (unfused) switch
19. Main automatic breaker
20. Safety door interlock switch
21. Proportional controller (standard over 95 amps)
22. Electronic sequencer (standard over 95 amps)
23. Motor starter with overloads
24. Ground fault indicator
25. Dual energy interface
26. Epoxy sealed elements
27. HRC power fusing

## Optional Equipment

# Packaged Steam Boilers - Specifications

## 1.0 Scope

Supply an electrically heated steam boiler complete with standard equipment and options as indicated in the following specification.

## 2.0 General

**2.1** The boiler shall be the electric resistance type VSB/VHSB/HSB as manufactured by CCI Thermal Technologies Inc.

**2.2** The boiler shall be constructed to the latest edition of the ASME code with the design registered in \_\_\_\_\_.

## 3.0 Capacity

**3.1** The minimum boiler output shall be \_\_\_\_\_ lbs/hr of steam from and at 100°C (212°F).

**3.2** The boiler shall be rated at \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ kW, \_\_\_\_\_ HZ.

**3.3** The boiler vessel shall be designed for an operating pressure of \_\_\_\_\_ psig (kPa) maximum.

## 4.0 Controls

**4.1** The boiler shall be fully equipped with all electrical and mechanical controls so that it is complete and ready to operate.

**4.2** Standard mechanical components provided shall include a pressure gauge with isolating stopcock, sight glass assembly, check valved on inlet, blowdown valve(s) as required, pressure controller(s), high pressure controller, and pressure relief valve(s).

**4.3** Standard electrical components provided shall include a control circuit ON/OFF switch, fused control transformer, fused magnetic contactors derated to a maximum of 90% of their rated capacity, electronic low water controller, electronic feed water controller, pilot lights for "Power ON", "Heat ON", "Lower Water", and "High Pressure", and connection lugs for incoming power supply.

**4.4** In addition to the standard components itemized in articles 4.2 and 4.3, the boiler shall come equipped with the following optional features: (specify - see pages E19 and E20 for options)

## 5.0 Flange Heaters

**5.1** The boiler shall be equipped with flanged immersion heaters as manufactured by CCI Thermal Technologies Inc.

**5.2** The flange heaters shall be Incoloy® sheathed and of low watt density.

**5.3 (For VSB Only)** The flange heaters shall be mounted vertically through the top of the vessel so as to minimize the build-up of solids on the heating elements.

## 6.0 Enclosure

**6.1** The steam boiler shall be equipped with a full structural steel base supporting the vessel, control panel and sheet metal enclosure.

**6.2** The entire enclosure shall be finished with a baked on epoxy finish (ASA-61 gray).

**6.3** The boiler dimensions shall be approximately \_\_\_\_\_ high x \_\_\_\_\_ wide x \_\_\_\_\_ deep.