

About



Power Plant Equipment Company manufactures the brand name "Blue Valley" deaerators, boiler feed systems, blow-down heat recovery systems, blow-down receivers, sample coolers and other custom boiler room products.

The Blue Valley brand has been used worldwide since 1976. Many of our customers include several utility plant design consulting engineers as well as many national industrial plants, universities and hospitals.

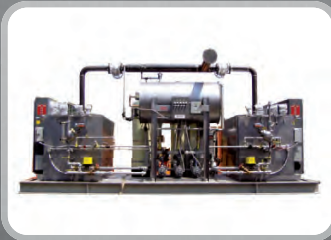
We strive for prompt response, accurate shipment dates, superior designs and above all, a quality standard better than others. Please consider PPE manufactured products for your next project.



Manufacturers of Boiler Room Equipment & Custom Fabrication

CUSTOM FABRICATION

Power Plant Equipment's custom fabrication capabilities include the design, fabrication, piping, wiring, painting and testing of deaerator systems, feedwater tanks, blow-down equipment and mechanical equipment skid packages. We can provide packaged systems with pumps, heat exchangers, boilers and other miscellaneous equipment for cost effective, convenient installations.



BLOW-DOWN EQUIPMENT



Contact us:

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913-592-4111

Or visit us online:

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BLOW-DOWN EQUIPMENT

FEATURES

VESSELS ARE CODE STAMPED ASME 150 PSIG Sec VIII.

BLOW-DOWN INLET enters vessel tangentially against 270° stainless steel wear-plate to prevent erosion of vessel walls.

CHEVRON BAFFLE PLATE at flash steam outlet prevents re-entrainment of water droplets.

PRIMED AND FINISH COATED EXTERIOR with high temperature paint.

OPTION FOR BOILER TDS MONITOR AND CONTROL VALVE to regulate continuous blow-down flow-rate.

ADVANTAGES

Blow-down equipment is an essential part of an efficient, well designed boiler room. When hot water is released to a lower pressure, part of it re-evaporates to form what is called flash steam. This steam, however low in pressure, contains a substantial amount of energy in the form of latent heat. Flash steam forms because the sensible heat of water at high pressures is greater than that of water at low pressures.

As a result, this difference in heat works to boil a portion of the condensate in the blow-down vessel. The amount of flash depends on the temperature and pressure of the liquid being reduced. In many circumstances this water is at or near saturation yielding high flash rates. A boiler room taking advantage of this principle results in reduced boiler loads and substantial savings in energy costs.

Bottom Blow-down with Automatic After-cooler

Bottom blow-down packages are for times of intermittent blow-down from the boiler. The purpose of this is to remove the sediment and deposits from the bottom of the boiler. While necessary, most cities have regulations on the temperature of the drain water being disposed of and limit this temperature to 140°F. During the blow-down process the high temperature, high pressure water is reduced to 0 PSIG

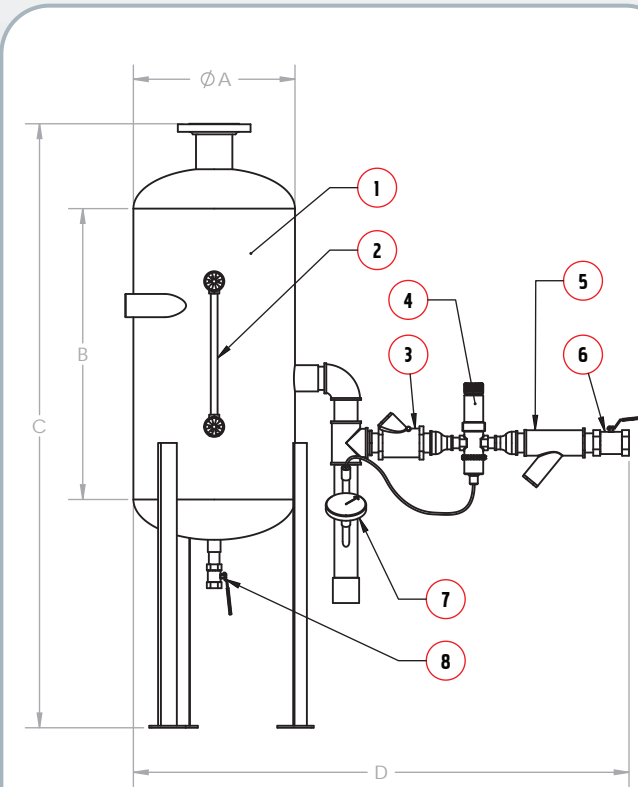
releasing the flash steam. The condensate then needs to be cooled to 140°F before going to the drain. This is accomplished by mixing with cool water usually around 60°F. A temperature regulating valve is used to accomplish this with the temperature probe downstream of the mixing point.

Blow-down Heat Recovery Packages

In most steam boilers there must be a continuous blow-down of the boiler water from 4-6" below the steam drum water level. This is where the totally dissolved solid (TDS) levels are at a high concentration. The purpose of this continuous blow-down is to maintain the TDS levels to an acceptable level to prevent scale and sludge build up in the boiler. By extracting the useable heat from this high temperature water substantial amounts of energy can be saved during the life of the boiler.

PPE's blow-down heat recovery packages are so effective at saving money, they usually pay for themselves within the first year of operation. They operate on a two step energy saving principle. In the first stage the boiler blow-down water is fed to a flash vessel where pressure is reduced to deaerator pressure (usually 5 PSIG). Since the sensible heat of the water at the high pressure is greater than the sensible heat of the lower pressure, some of the water flashes. This flash steam can then be piped back to a deaerator or low pressure heating coils. The remaining liquid condensate is gravitated through a heat exchanger where it is cooled by the boiler makeup water. Pre-heating this boiler feed-water saves a substantial amount of fuel that is normally needed by the boiler and at the same time cools the blow-down condensate to a level acceptable to dispose of down city sewers.

Bottom Blow-down with Automatic After-cooler

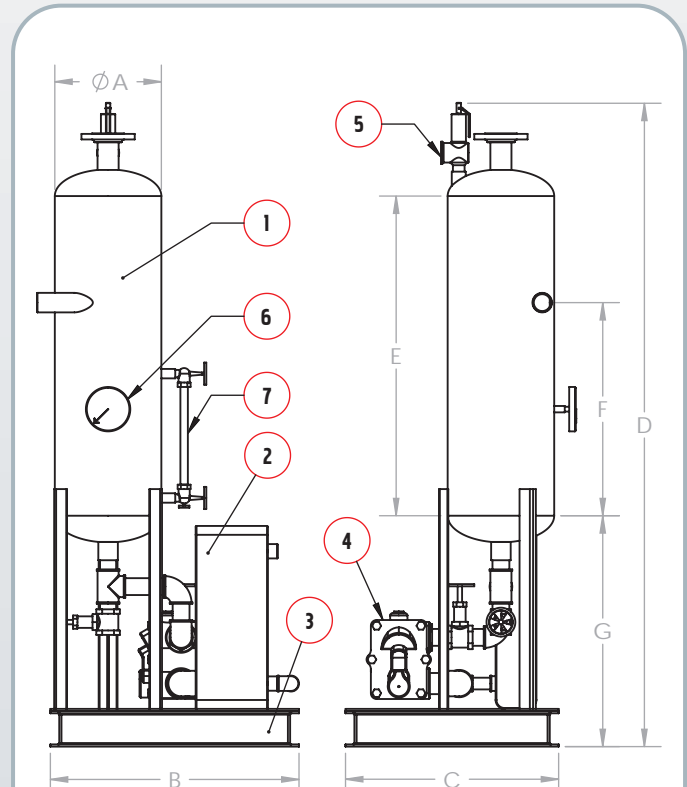


1. Flash Vessel 150 PSIG ASME w/ S.S. Wearplate 270°
2. Safety Type Sight Glass Assembly
3. Swing Check Valve
4. Temperature Regulating Valve
5. Wye Strainer
6. Coolant Water Isolation Valve
7. 3" Temperature Gauge
8. Vessel Isolation Valve

Product Measurements *

Model	A	B	C	D
BBD6	6	18	48	44
BBD12	8	24	54	46
BBD18	10	30	60	48
BBD35	14	42	76	52
BBD55	18	54	88	56
BBD85	22	66	100	60
BBD120	26	78	116	64
BBD155	30	90	128	68

Blow-down Heat Recovery Unit



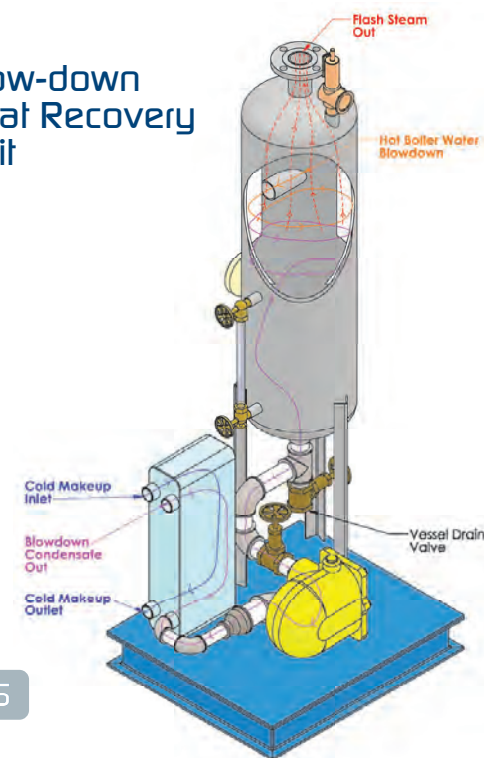
1. Flash Vessel 150 PSIG ASME w/ S.S. Wearplate 270°
2. Brazed Plate Heat Exchanger
3. 4" Channel Base Platform with 3/16" Deck
4. Steam Trap
5. Sec VIII Sentinel Warning Valve (optional)
6. Thermometer (optional)
7. Safety Type Sight Glass Assembly (optional)

Product Measurements *

Model	A	B	C	D	E	F	G
BBH5	6	22	20	63	18	9	28
BBH10	8	26	22	68	24	12	28
BBH20	12	30	28	81	36	18	28
BBH25	12	30	28	81	36	18	28
BBH40	16	38	34	93	48	24	28
BBH50	18	42	36	98	54	27	28
BBH75	22	52	40	110	66	33	28
BBH100	24	62	42	116	72	36	28

* All dimensions are in inches and subject to change to suit specified conditions. Larger sizes are available. Please call PPE.

Blow-down Heat Recovery Unit



CUT-AWAY VIEWS

