About PPE

POWER PLANT EQUIPMENT

Power Plant Equipment Company manufactures the brand name "Blue Valley" deaerators, boiler feed systems, blowdown heat recovery systems, blowdown 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.

PPE POWER PLANT EQUIPMENT

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, blowdown 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.






Contact us:

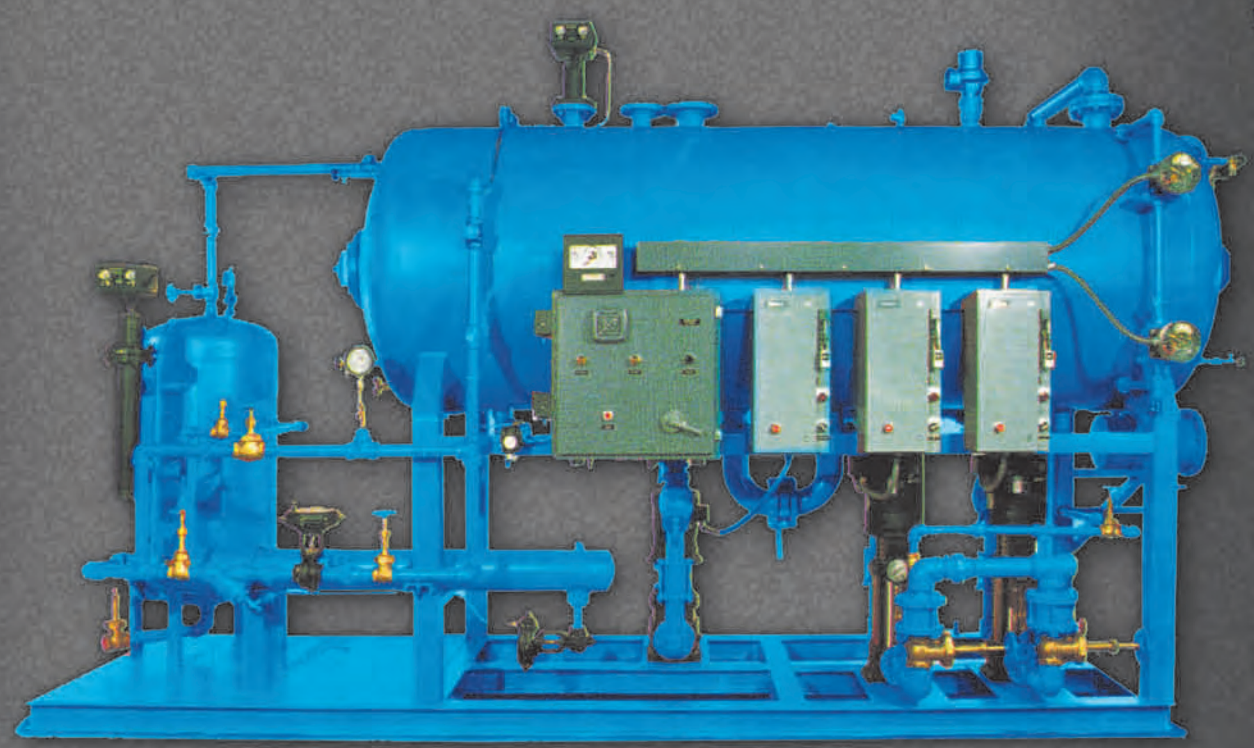
14400 College Blvd. ■ Lenexa, KS 66215

913-592-4111

Or visit us online:

www.powerplantequip.com

RECYCLE DEAERATOR



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RECYCLE DEAERATOR

FEATURES

INTERNAL COMPONENTS in contact with undeaerated water including the spray nozzles, spiral nozzles and vent condenser are constructed of corrosion resistant stainless steel.

ASME CODE STAMPED AND NANTIONAL BOARD APPROVED vessel for 50 psig design pressure.

CONTINUOUS SCRUBBING RECYCLE SYSTEM provides for a near complete removal of all oxygen and other non-condensibles at all loads from 0 to 100%.

DUAL COMPARTMENT VESSEL with a primary deaeration section and a final polishing section. It also includes an external parallel valve for emergency service in the event of a pump failure.

MODULATING MAKE-UP WATER SYSTEM with controller and control valve provides stable pressure environment and water flow.

FACTORY ASSEMBLED DEAERATOR packaged systems with support stand, pumps, controls, and other specified accessories are standard.

CUSTOM DESIGNED blowdown heat recovery packages and larger deaerator storage compartments available as optional features.

ADVANTAGES

The constant recycling of deaerated water at flow rates greater than full deaerator capacity rating flows through the scrubber/polisher section and continues to heat the water and remove as much of the dissolved oxygen and other noncondensibles as mechanically possible below .005 cc/liter regardless of the deaerator loading. Most deaerator designs are once through and do not deaerate effectively at loads below 5%. The recycle also insures water temperatures closest to steam saturation temperature.

This compact design requires an overall vessel height lower than most tray and spray tower designs. The low profile also allows for larger shop assembled deaerator packages to be shipped as a single piece unit without special permits or reassembly in the field.

The recycle spray design along with the high quality modulating steam valves provides for a very stable deaerator internal pressure and as much minimizes potential for destructive cavitation and water hammer.

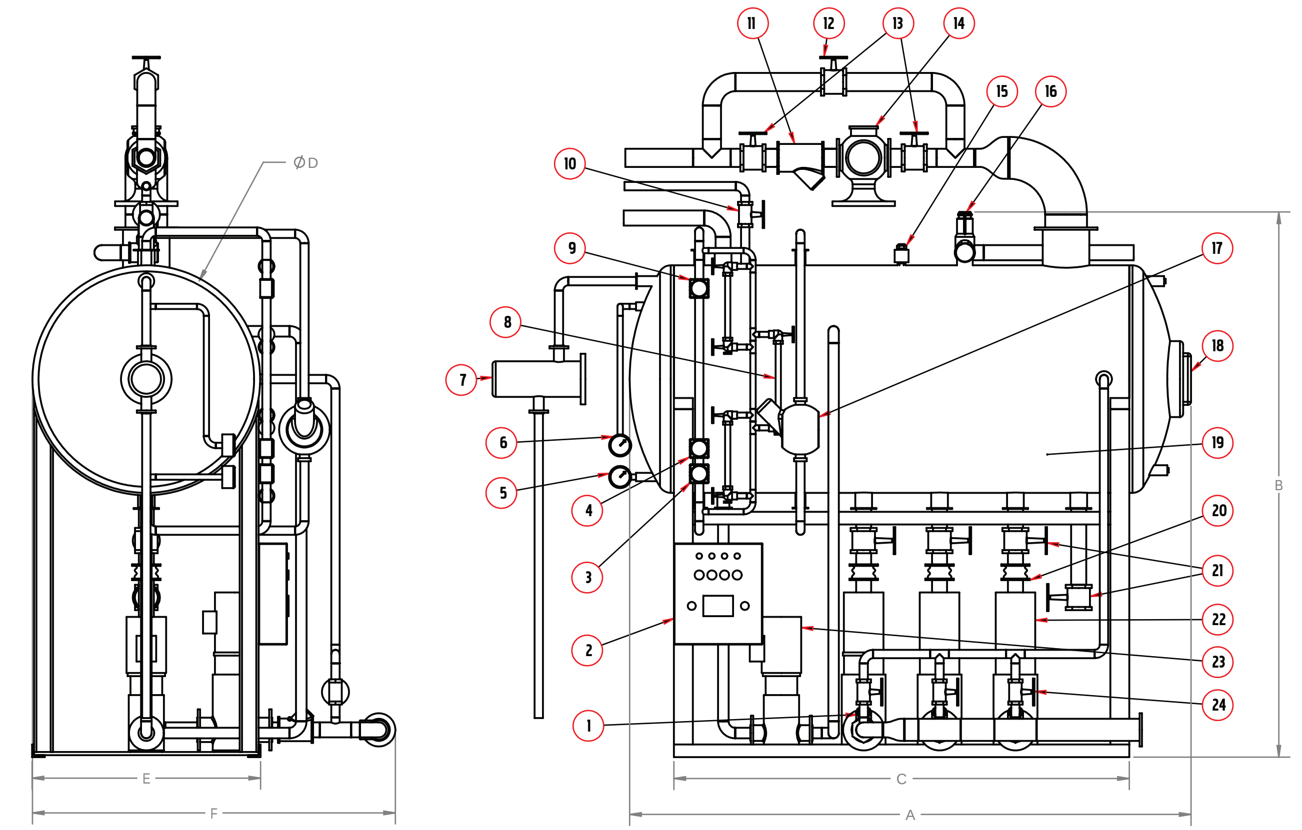
Maintenance and replacement parts cost are low.

Custom engineered packaged deaerator systems with low headroom and low NPSH pumps. Selection of quality components insures reliable service and there is a single source of responsibility for all major components.

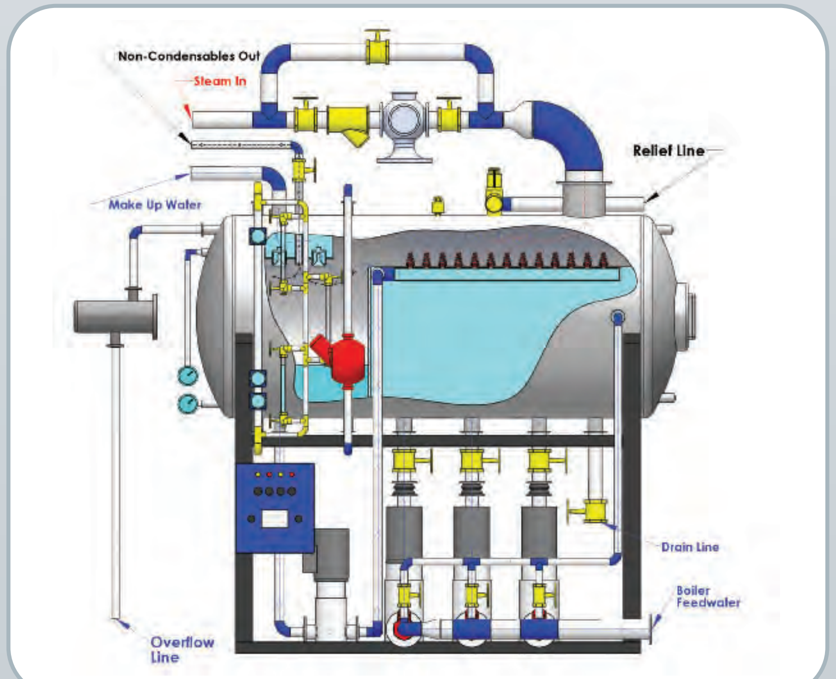
OPERATION

Makeup water enters the deaerator through stainless steel spring-loaded spray nozzles and sprays into the stainless steel internal vent condenser which is located above spray chamber. This incoming water is heated instantly by direct contact with steam. Pumped condensate return also enters the spray nozzle chamber. High pressure condensate returns enter the deaerator vessel below the water level bypassing the first stage deaeration. The liberated air and other non-condensibles exit thru the continuous vent valve located at the top of the internal vent condenser.

The partially deaerated water is then pumped from the first stage section into the second stage polishing section where it passes through a series of stainless steel spiral full-cone spray nozzles. The last traces of oxygen are removed and the water is heated to near saturation steam temperature. The pumped water flow rate thru these nozzles is 120% of the rated deaerator capacity. This excess flow cascades over the vessel internal baffle wall where it is re-circulated back thru the polishing spray nozzles. Complete deaeration is guaranteed at all loads from 0% to 100% and thermal stratification is eliminated.



1. Check Valve
2. Electrical Control Panel
3. Low Water Pump Cut-Off
4. Low Water Level Alarm
5. Temperature Gauge
6. Pressure Gauge
7. Overflow Trap
8. Safety Type Full Length Sight Glass Assembly
9. High Water Level Alarm
10. Continuous Vent Valve
11. Steam Y-Strainer
12. Steam Bypass Globe Valve
13. PRV Isolation Valve
14. Pressure Reducing Valve
15. Thermostatic Vent
16. Pressure Relief Valve
17. Level Controller
18. Access Manway 12 x 16
19. ASME Code Tank Section VIII
20. Flexible Coupling
21. Tank Isolation Valve
22. Boiler Feed Pump
23. Spray Recycle Pump
24. Pump Isolation Valve



Cut-Away View

Product Measurements

Model	Rate Capacity (lbs/hr)	Capacity (hp)	6 min Storage A	B	C	D	E	F	10 min Storage A	B	C	D	E	F
RSP5	5,000	145	54	96	42	24	24	40	58	102	44	30	30	43
RSP10	10,000	290	67	102	53	30	30	43	75	102	61	30	30	43
RSP20	20,000	580	90	108	75	36	36	46	108	114	92	42	42	49
RSP30	30,000	870	97	114	81	42	42	49	101	138	81	54	54	60
RSP40	40,000	1,159	101	120	83	48	48	54	131	138	111	54	54	60
RSP50	50,000	1,449	101	138	81	54	54	60	134	144	112	60	60	66
RSP75	75,000	2,174	146	138	126	54	54	60	163	150	140	66	66	72
RSP100	100,000	2,899	158	144	136	60	60	66	182	168	157	72	72	78
RSP125	125,000	3,623	163	150	140	66	66	72	169	180	141	84	84	90
RSP150	150,000	4,348	193	150	170	66	66	72	200	180	172	84	84	90
RSP200	200,000	5,797	216	168	191	72	72	78	262	180	234	84	84	90
RSP250	250,000	7,246	200	180	172	84	84	90	251	204	220	96	96	102