



# Jet Spray

.005 cc/Liter Pressurized Deaerator



Pressurized and Atmospheric Deaerators

**Spray Type Deaerator  
Pressurized .005 cc/liter**

COUNTER FLOW TRAY design provides guaranteed removal of all dissolved oxygen in excess of .005 cc/liter from 5% to 100% of deaerator capacity.

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# Jet Spray Deaerator

## Pressurized .005 cc/liter

### When to use

100% Makeup 0% condensate	Yes
30% Makeup 70% condensate	
High Pressure condensate returns	
100% Turndown	
Load Swings	

\*Requires surge tank



### FEATURES

**UNIQUE JET SPRAY** scrubber design guarantees removal of all dissolved oxygen in excess of .005 cc/liter (7 ppb).

#### **ELECTRONIC INSTRUMENTATION FOR MODULATING LEVEL CONTROL**

includes a HART compatible differential pressure transmitter, PID controller, and motorized control valve.

**MULTIPLE CONFIGURATIONS:** vertical or horizontal vessels provide maximum flexibility using minimum footprint.

**ONLY STAINLESS STEEL** components come in contact with undeaerated water. Spray nozzle, scrubbing section and internal vent condenser are all stainless steel.

A.S.M.E. Code and National Board stamped receivers at 50 psi is standard. Standard vessel options include stress relieving, non-destructive testing and full vacuum.

#### **CUSTOM ENGINEERED PACKAGED SYSTEM**

includes boiler feedwater pumps and quality components to insure reliable service.

#### **Testing Requirements**

This system requires steady state conditions per the ABMA testing procedure.

## ADVANTAGES

The Jet Spray deaerator provides excellent performance utilizing the high velocity incoming steam to atomize makeup water and pumped returns. Stainless steel internal components provide reliable performance for many years. This superior spray-type design directs the cleanest incoming steam to scrub out the last traces of oxygen from the cleanest water.

**GUARANTEED PERFORMANCE** .005 cc/liter per ABMA testing procedures.

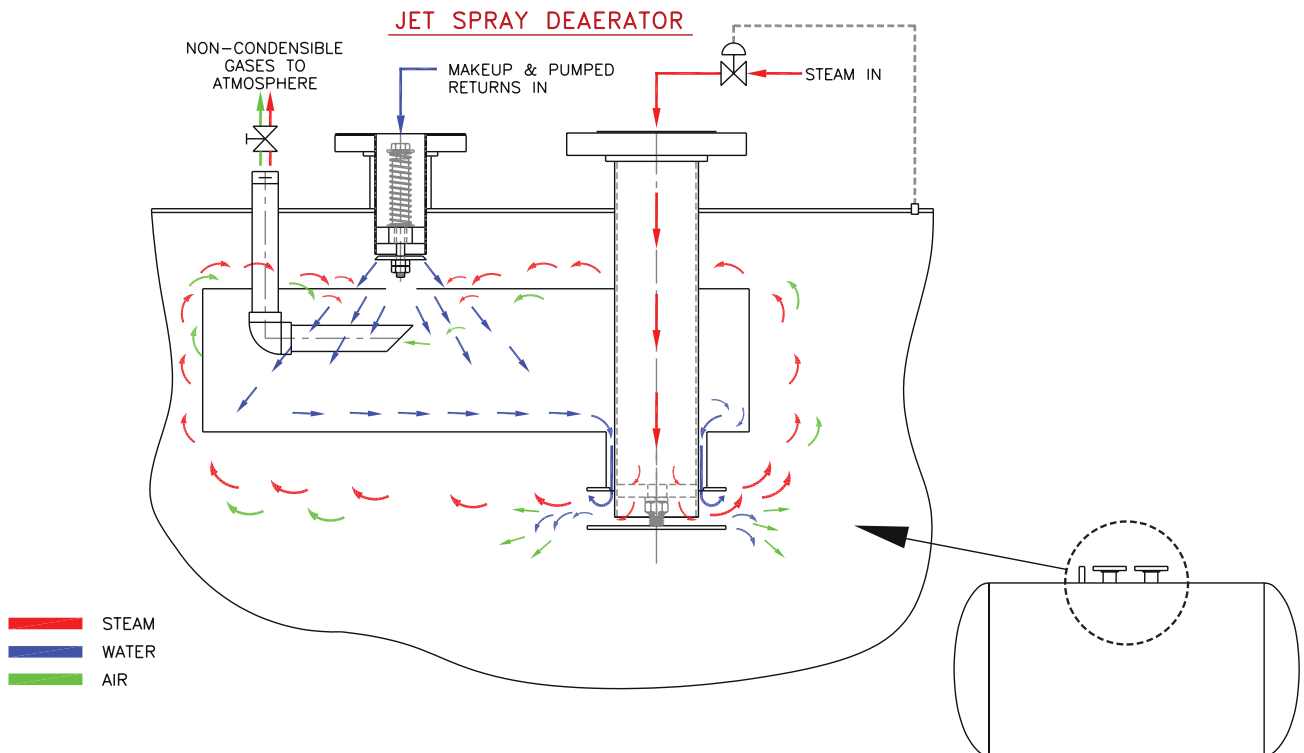
Standard sizes ranging from 6,900 lbs/hr to 300,000 lbs/hr

**CUSTOM ENGINEERED PACKAGED SYSTEM** results in a small foot print, minimal onsite installation costs, and a single source of responsibility for all major components.

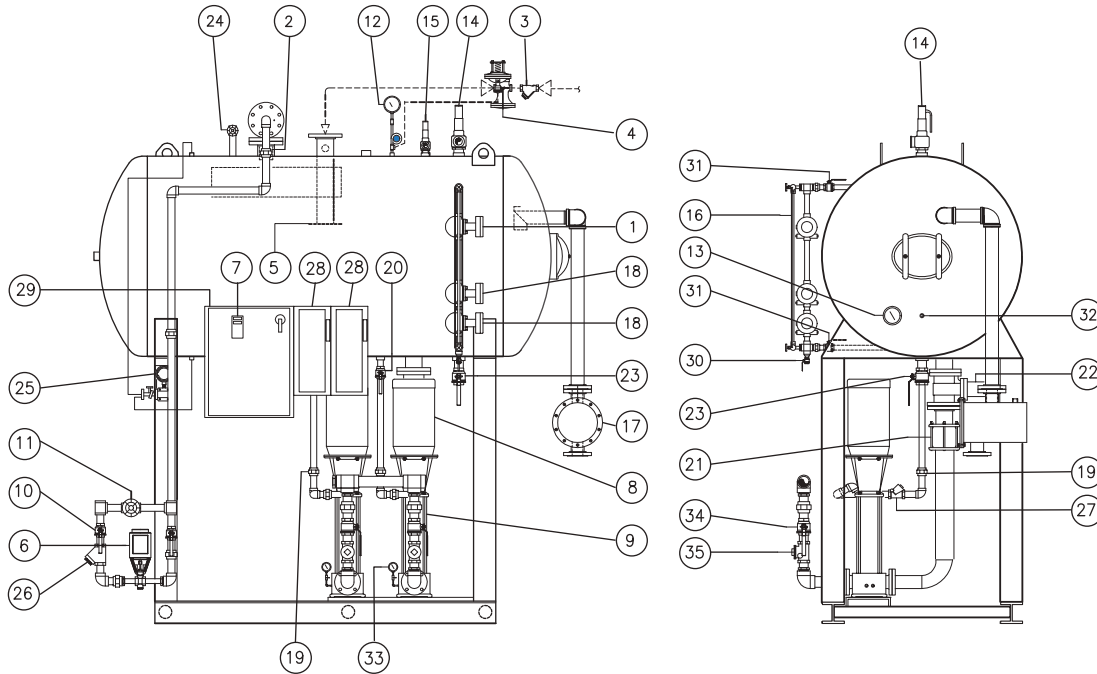
## OPERATION

**WATER FLOW-** Incoming undeaerated water and pumped returns enter the deaerator through a spring-loaded stainless steel nozzle which directs the flow in conical sheets into the steam atmosphere of the direct contact vent condenser. At this point, the water temperature is raised to within a few degrees of steam temperature and most of the corrosive, non-condensable gases are removed. The water is directed by a stainless steel tray section into the Jet Spray atomizing valve. Here a high velocity of incoming pure steam atomizes the water into minute particles. This violent scrubbing action removes the last traces of dissolved gases. The hot, deaerated water then falls to the storage compartment for boiler use.

**STEAM FLOW-** Steam initially enters the deaerator through a special stainless steel Jet Spray atomizing valve. This valve is designed to fully atomize and provide complete deaeration under all load conditions. This design insures that the purest steam comes in contact with the purest water. Once this high velocity steam mechanically shakes out the last traces of non-condensable gases from the water, it flows upward into the preheated area where it meets the incoming makeup water and pumped returns. This water continually condenses the steam which preheats and releases the non-condensable gases into the internal vent condenser where they are metered harmlessly to the atmosphere. This action causes more steam to be drawn into the system to complete the cycle.



# Components and Sizing



- |                                  |   |                                      |
|----------------------------------|---|--------------------------------------|
| 1 High Water Alarm Switch        | 13 Temperature Gauge w/thermowell<br>(50 DEGREE - 500 DEGREE F) | 24 Vent Gate Valve                   |
| 2 Make-up Nozzle                 | 14 Safety Relief Valve (Set at 50#)                             | 25 Level Transmitter                 |
| 3 Y-Strainer                     | 15 Sentinel Relief Valve (Set at 20#)                           | 26 Make-up Y-Strainer                |
| 4 Pressure Control Valve         | 16 Sight Glass Assembly   | 27 Recirculation Check Valve         |
| 5 Steam Nozzle                   | 17 Overflow Trap  | 28 Starter                           |
| 6 Make-up Control Valve          | 18 Low Water Alarm & Cut Off Switch                             | 29 Control Panel (NEMA 1)            |
| 7 Level Controller               | 19 Recirculation Orifice Union                                  | 30 Water Column Drain Ball Valve     |
| 8 Boiler Feed Pump Motor         | 20 Recirculation Ball Valve                                     | 31 Water Column Isolation Ball Valve |
| 9 Boiler Feed Pump               | 21 Suction Coupling   | 32 Chemical Feed Quill               |
| 10 Make-up Ball Valve            | 22 Suction Gate Valve   | 33 Discharge Pressure Gauge (0-400#) |
| 11 Make-up Globe Valve           | 23 Drain Ball Valve   | 34 Discharge Ball Valve              |
| 12 Pressure Gauge (0-15#) w/cock |   | 35 Discharge Check Valve             |

MODEL NUMBER	RATED CAPACITY		RECEIVER SIZE TANK Diameter x Overall Length	SYSTEM CAP. TO OVERFLOW		APPROX OVERALL DIMENSIONS, in.			APPROX WEIGHT, lbs		APPROX SHIPPING WEIGHT **
	LBS/HR	HP		GALS	MIN.	HEIGHT*	L	W**	SHIPPING	OPERATING	FLOODED
1JS5	3,450	100	36" x 5' 5"	155	21	92	65	48	1400	2700	3500
2JS5	6,900	200	36" x 5' 5"	155	11.1	92	65	48	1400	2700	3500
3JS5	10,350	300	48" x 5' 10"	285	13.9	102	65	60	2000	4400	6000
4JS5	13,800	400	48" x 5' 10"	285	10.3	102	65	60	2000	4400	6000
6JS5	20,700	600	48" x 7' 10"	413	10	102	94	60	24000	5500	7560
8JS5	27,600	800	54" x 9' 11"	697	12.6	108	119	66	3100	8400	11800
10JS5	34,500	1,000	54" x 9' 11"	697	10.1	108	119	66	3100	8400	11800
12JS5	41,400	1,200	60" x 10' 4"	866	10.4	112	124	72	3600	10800	15000
15JS5	51,750	1,500	60" x 12' 4"	1060	10.3	112	148	72	3850	12650	17650
18JS5	62,100	1,800	60" x 14' 4"	1254	10.1	112	172	72	4100	14500	20300
21JS5	72,450	2,100	66" x 14' 4"	1450	10	112	172	78	4800	16800	24500
24JS5	82,800	2,400	66" x 16' 4"	1658	10.1	118	196	78	5300	19200	27900
30JS5	100,000	3,000	72" x 16' 4"	2010	10	124	199	84	6000	22500	29600
36JS5	125,000	3,600	72" x 18' 7"	2518	10.1	124	223	84	6550	25200	33100
45JS5	150,000	4,500	84" x 16' 11"	2990	10	136	203	96	8100	32300	41000
60JS5	200,000	6,000	84" x 18' 11"	4000	10	136	227	96	9000	40600	51400
75JS5	250,000	7,500	96" x 19' 3"	5046	10.1	148	231	108	10200	52200	66000
90JS5	300,000	9,000	96" x 23' 3"	6170	10.3	148	279	108	12100	63600	80500

• Consult Factory for systems over 300,000 lbs./hr. • Weights do not include pumps or optional equipment \* Includes 48" Stand \*\* Includes Control Panel

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