

## Performance –

Fill in and send to Kansas City Deaerator or request a detailed specification sheet. Add additional thermal cases as needed.

PROJECT	
DEAERATOR	
Quantity	
Capacity	
DESIGN	
ASME SEC. VIII, DIV.1	
Design Pressure	
Full Vacuum Design	
Design Temperature	
Corrosion Allowance	

OPERATING CONDITIONS	
Operating Pressure	
FEEDWATER INLET	
% Makeup	
MU Temperature	
%Condensate	
Cond. Temperature	
STORAGE CAPACITY	
Minutes at Overflow	
Callon at Overflow	

SPECIAL REQUIREMENTS	
Post Weld Heat Treatment	
Minimum Radiography	
WFMP Testing	
HEI	
BF PUMPS	
Quantity	
Capacity	
TDH	



Standard Deaerating Units

# KANSAS CITY DEAERATOR

## HS-Horizontal Spray Deaerator

### Principles of Operation

Kansas City Deaerator Spray deaerators provide an economical alternative to tray type units. The units feature a simple, trouble-free, quiet design and are designed for constant loads.

Incoming undeaerated water enters the Deaerator through spring-loaded, stainless steel spray valves. These variable orifice valves produce a fine spray in a uniform pattern from 5% to 200% of design.

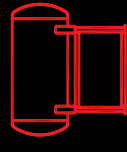
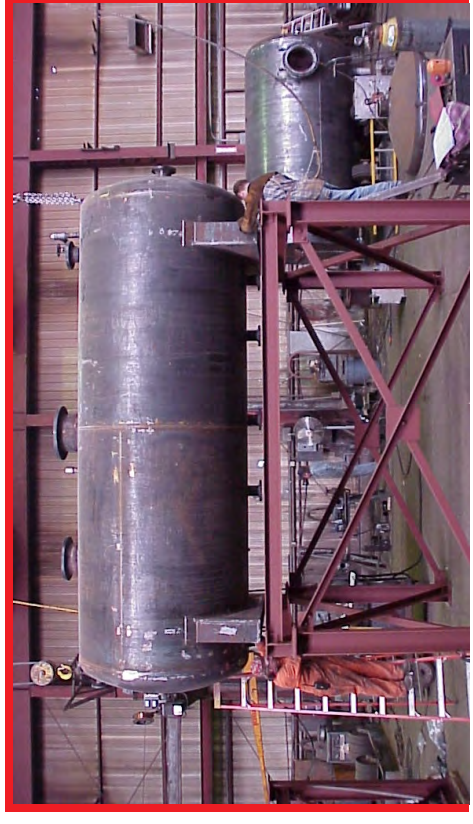
The fine droplets of water maximize the surface area in contact with steam, raising the temperature to within a few degrees of saturation temperature and instantly releasing the majority of the corrosive, non-condensable gases. The preheated and partially deaerated water is channeled through a collection basin downcomer, through a tortuous path second stage deoxygenator. Here the hottest, purest steam vigorously scrubs the water to heat it to the saturation temperature and strips the last traces of dissolved gases.

The steam and non-condensables flow upward into the stainless steel vent condensing area where the steam is condensed with the inlet water and the gases are released to atmosphere through the vent outlet. The deaerated water then falls to the storage area.

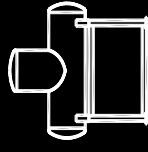
### FEATURES

- Spray Model (HS) Deaerator
- Certified ASME construction
- Low Cost
- 10 minute storage
- Capacities up to 350,000 #/hr
- Options:
  - a. Accessory Package
  - b. Accessory Piping
  - c. BF Pump Package
  - d. Heat Exchange Institute (HEI) design
- with "pre-engineered" economy
- Low profile for restrictive headroom requirements
- Removes oxygen to 0.005 cc/liter (7ppb) assembly

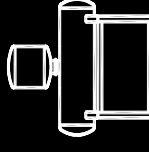
Standard HS Spray Deaerator



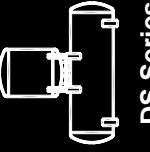
**HS Series**  
Up to 350,000 #/hr  
Low Headroom



**TC Series**  
Tray Unit  
Up to 250,000 #/hr  
Meets HEI



**BDS Series**  
Tray Unit  
Up to 250,000 #/hr  
Meets HEI



**DS Series**  
Tray Unit  
Up to 800,000 #/hr  
Meets HEI



**VS & VT Series**  
Tray Unit  
Up to 800,000 #/hr  
Minimal Plan Area  
Meets HEI



**HH Series**  
Tray Unit  
Up to 16,000,000 #/hr  
Tray Unit-Meets HEI

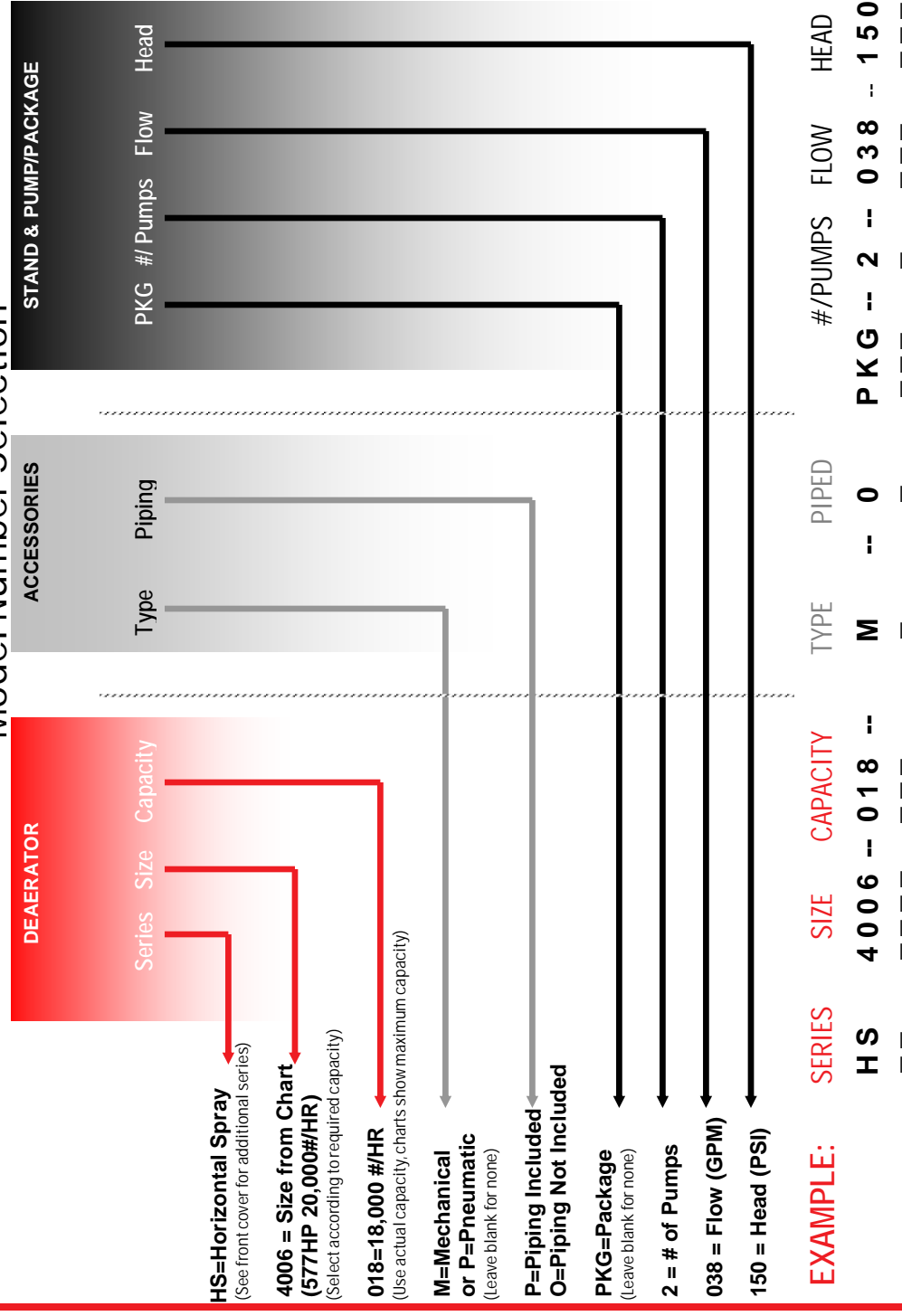
## Accessories –

Select package or individual items

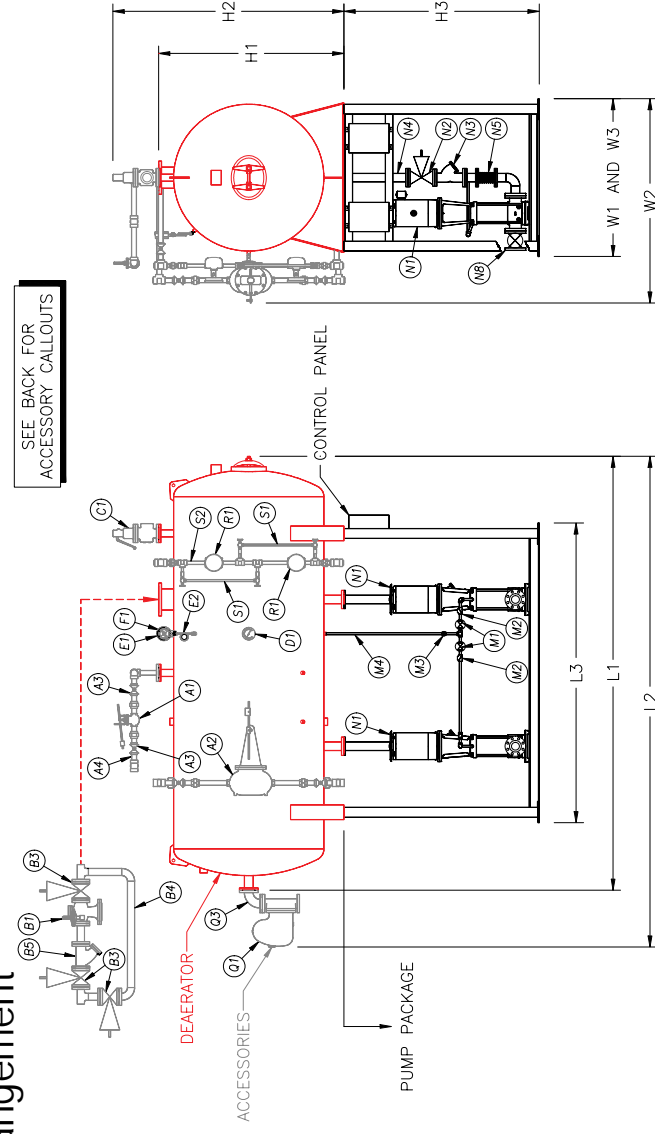
ITEM	DESCRIPTION	ACC PKG	PUMP PKG	SELECT
A	WATER INLET			
A1	Inlet Valve			
	Mechanical	STD	STD	
	Pneumatic	OPT	OPT	
A2	Level Controller	STD	STD	
	Level Transmitter	OPT	OPT	
A3	Inlet Valve Bypass Valves	OPT	STD	
A4	Inlet Valve Bypass Piping	OPT	STD	
A5	Inlet Valve Bypass Strainer	OPT	STD	
B	STEAM CONTROL			
B1	Steam PRV	OPT	OPT	
	Self Contained	OPT	OPT	
	Pneumatic	OPT	OPT	
B2	Steam PRV Controller	OPT	OPT	
B3	Steam PRV Bypass Valves	OPT	OPT	
B4	Steam PRV Bypass Piping	OPT	OPT	
B5	Steam PRV Bypass Strainer	OPT	OPT	
C	RELIEF VALVE			
C1	Relief Valve			
	Sentinel	STD	STD	
	Full	OPT	OPT	
C2	Relief Valve Exhaust Piping	OPT	OPT	
D	THERMOMETER			
D1	(2) 5" Thermometer w/ss wells	STD	STD	
E	PRESSURE GAUGE			
E1	(1) 4-1/2" Pressure Gauge	STD	STD	
E2	Siphon & Cock	STD	STD	
E3	Pressure Transmitter	OPT	OPT	
F	VENT			
F1	Vent Valve	STD	STD	
F2	Vent Orifice w/Flange	OPT	OPT	
F3	Vent Bypass Valves	OPT	OPT	
F4	Vent Bypass Piping	OPT	OPT	
H	VACUUM BREAKER			
H1	Vacuum Breaker	STD	STD	

ITEM	DESCRIPTION	ACC PKG	PUMP PKG	SELECT
M	BFP RECIRC			
M1	BFP Recirc Shutoff	NA	OPT	
M2	BFP Recirc Check	NA	OPT	
M3	BFP Recirc Orifice	NA	OPT	
	BFP Recirc ARC Valve	NA	OPT	
M4	BFP Recirc Piping	NA	OPT	
M5	BFP Recirc Pressure Gauge	NA	OPT	
N	BFP SUCTION			
N1	BF Pumps			
	(2) 100% Capacity	NA	STD	
	(3) 50% Capacity	NA	OPT	
	Motors			
	ODP	NA	STD	
	TEFC	NA	OPT	
N2	BFP Suction Isolation Valve	NA	OPT	
N3	BFP Suction Strainer	NA	STD	
N4	BFP Suction Piping	NA	STD	
N5	BFP Suction Expansion Joint	NA	STD	
	BFP Discharge Pressure			
N6	Gauge	NA	OPT	
N7	BFP Discharge Check Valve	NA	OPT	
N8	BFP Discharge Isolation Valve	NA	OPT	
O	CHEMICAL FEED			
O	Chemical Feed Quill		OPT	OPT
Q	OVERFLOW			
Q1	Overflow Valve/Trap	STD	STD	
Q3	Overflow Piping	OPT	STD	
R	LEVEL SWITCH			
R1	Level Switches			
	High & Low (TWO)	STD	STD	
	High High (ADDITIONAL)	OPT	OPT	
R2	Level Switch Bridle Piping	OPT	STD	
S	GAUGE GLASS			
S1	Gauge Glass			
	Red Line Pyrex	STD	STD	
	Reflex	OPT	OPT	
	Magnetic	OPT	OPT	
S2	Gauge Glass Bridle	OPT	STD	

Model Number Selection



Typical Arrangement



SELECTION CHART

DA MODEL	Boiler Capacity (HP)	Rated Capacity (#/HR)	Storage to Overflow (Gallons)	Storage Capacity (Minutes)	Vessel Dimension (L1 x W1 x H1)	Water Inlet "A" (in)	Steam Inlet "B" (in)	Empty Weight (lbs)	Operate Weight (lbs)	Flooded Weight (lbs)	Total Accessory (L2 x W2 x H2)	Pump Package (L3 x W3 x H3)
HS3004-004	116	4,000	153	18	5'8"x3'5" x 4'2"	2.5	2	1,400	2,700	3,500	6'10"x5'0" x 5'0"	4'3"x3'5" x 5'0"
HS3004-007	211	7,300	153	10	5'8"x3'5" x 4'2"	2.5	2	1,400	2,700	3,500	6'10"x5'0" x 5'0"	4'3"x3'5" x 5'0"
HS4004-012	348	12,000	296	12	6'0"x4'5" x 5'2"	2.5	3	2,000	4,400	6,000	7'6"x5'6" x 6'0"	4'1"x4'5" x 5'0"
HS4004-014	409	14,100	296	10	6'0"x4'5" x 5'2"	2.5	3	2,000	4,400	6,000	7'6"x5'6" x 6'0"	4'1"x4'5" x 5'0"
HS4006-020	577	20,000	420	10	8'1"x4'5" x 5'2"	2.5	4	2,400	5,500	7,560	9'6"x5'6" x 6'8"	5'9"x4'5" x 5'0"
HS4008-025	725	25,000	525	10	10'1"x4'5" x 5'2"	2.5	6	2,800	7,000	10,000	11'6"x5'6" x 6'8"	6'3"x4'5" x 6'6"
HS4010-031	928	31,000	1650	10	12'1"x4'5" x 5'2"	2.5	6	2,900	8,000	11,000	13'6"x5'6" x 6'8"	9'9"x4'5" x 6'6"
HS4508-035	1,027	35,000	734	10	10'3"x4'11" x 5'8"	2.5	6	3,100	8,400	11,800	11'9"x6'9" x 6'9"	6'3"x4'11" x 6'6"
HS4510-045	1,304	45,000	944	10	12'3"x4'11" x 6'5"	2.5	6	3,900	11,000	15,000	13'8"x6'9" x 7'2"	9'9"x4'11" x 6'6"
HS5008-047	1,371	47,300	993	10	10'10"x5'5" x 6'2"	2.5	6	3,600	10,800	15,000	12'9"x7'0" x 7'8"	6'1"x5'5" x 6'6"
HS5010-060	1,674	60,000	1,260	10	12'10"x5'5" x 6'2"	2.5	6	3,850	12,650	17,650	14'9"x7'0" x 7'8"	8'3"x5'5" x 6'6"
HS5012-070	1,977	70,000	1,469	10	14'10"x5'5" x 6'2"	3	8	4,100	14,500	20,300	16'9"x7'0" x 7'8"	10'3"x5'5" x 6'6"
HS5510-072	2,108	72,000	1,511	10	13'0"x 5'11"x 6'8"	3	8	4,300	15,500	22,000	15'2"x7'7" x 8'5"	9'3"x5'11" x 6'6"
HS5512-089	2,486	89,000	1,888	10	15'0"x 5'11"x 6'8"	3	8	4,800	16,800	24,500	17'2"x7'7" x 8'5"	10'9"x5'11" x 8'0"
HS5514-102	2,864	102,000	2,140	10	17'0"x 5'11"x 6'8"	3	8	5,300	19,200	27,900	19'2"x7'7" x 8'5"	12'9"x5'11" x 8'0"
HS6012-110	3,111	110,000	2,308	10	15'2"x6'5" x 7'2"	3	8	6,000	23,000	31,000	17'5"x7'10" x 9'0"	10'11"x 6'5"x8'0"
HS6014-125	3,582	125,000	2,624	10	17'2"x6'5" x 7'2"	4	10	6,000	22,500	29,600	19'3"x7'10" x 9'0"	12'11"x 6'5"x9'0"
HS6016-140	4,051	140,000	2,935	10	19'2"x6'5" x 7'2"	4	10	6,550	25,200	33,100	21'3"x7'10" x 9'0"	Consult Factory
HS6516-164	4,478	164,000	3,441	10	19'4"x6'5" x 7'8"	4	12	8,300	36,000	46,000	21'5"x8'4" x 9'6"	Consult Factory
HS6518-185	5,369	185,000	3,882	10	21'4"x6'5" x 7'8"	4	12	8,900	40,000	51,000	23'5"x8'4" x 9'6"	Consult Factory
HS7012-154	4,475	154,000	3,242	10	15'7"x7'5" x 8'6"	6	10	7,500	30,000	38,000	17'10"x8'10" x 10'0"	Consult Factory
HS7014-175	5,072	175,000	3,672	10	17'7"x7'5" x 8'6"	6	12	8,100	32,300	41,000	19'10"x8'10" x 10'0"	Consult Factory
HS7016-200	5,805	200,000	4,206	10	19'7"x7'5" x 8'6"	6	12	9,000	40,600	51,400	22'9"x8'10" x 10'0"	Consult Factory
HS7516-238	7,257	238,000	5,258	10	19'10"x8'0" x 8'10"	6	12	9,500	44,000	58,000	23'0"x8'0" x 12'0"	Consult Factory
HS7518-264	8,083	264,000	5,856	10	21'10"x8'0" x 9'0"	6	14	9,700	46,000	60,000	25'0"x8'0" x 12'0"	Consult Factory
HS8016-282	8,306	282,000	6,018	10	20'0"x8'5" x 9'6"	6	14	10,200	52,200	66,000	23'2"x9'10" x 11'0"	Consult Factory
HS8018-313	9,246	313,000	6,699	10	22'0"x8'5" x 9'6"	6	14	11,100	57,000	72,000	25'2"x9'10" x 11'0"	Consult Factory
HS8020-343	10,186	343,000	7,380	10	24'0"x8'5" x 9'6"	6	14	12,100	63,600	80,500	27'2"x9'10" x 11'0"	Consult Factory