



## DEAERATORS & BOILER FEED SYSTEMS

- Up to 4500 HP
- Single Tank or Split Tank
- Pressurized or Atmospheric
- .005 to .03 Deaeration
- Heated and Non-Heated Boiler Feed Systems
- Our Epoxy Phenolic Lining and Industrial Grade Construction allows us to provide a 15 Year optional Pressure Vessel Warranty
- 18 Month Parts Warranty
- All units can be completely customized to meet your specifications and needs
- Some examples:
  - Stainless Steel Tanks
  - Tank Capacity
  - VFD Pumping
  - Touch Screen Controls
  - BMS Communication



## WHY USE A DEAERATOR?

### ➤ LONGER EQUIPMENT LIFE

- Deaeration reduces oxygen and carbon dioxide corrosion in the boiler and associated piping.
- Using preheated feedwater reduces the chance of thermal shock caused by the expansion and contraction of heating surfaces.

### ➤ REDUCE PIPING REPLACEMENT COSTS CAUSED BY EXCESS GASES IN THE BOILER WATER SYSTEM

- CO<sub>2</sub> is the usual cause of steam and return line corrosion.
- CO<sub>2</sub> is produced when feedwater is raised to steaming temperature in the boiler.
- CO<sub>2</sub> is vented to atmosphere in the deaerator.
- Continuous deaeration reduces total CO<sub>2</sub> in the steam system.

### ➤ PROTECT YOUR INVESTMENT

- Boiler, installation and maintenance costs can be major expenditures.
- *Deaerators pay for themselves!*

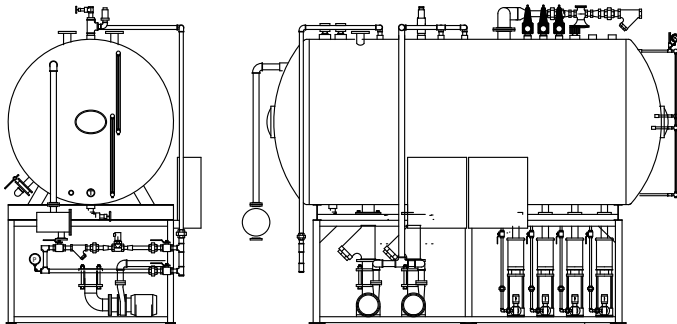
### ➤ LOWER OPERATING COSTS

- Mechanical deaeration provides a fixed method of eliminating oxygen.
- The only alternative method is to inject high volumes of expensive oxygen scavenging chemicals into the boiler feed water supply.
- Mechanical deaeration and a lower volume of chemicals achieves best results.
- *Stop throwing money down the drain!*

## SELLERS DEAERATORS

### PRESSURIZED SERIES UP TO 3000 HP

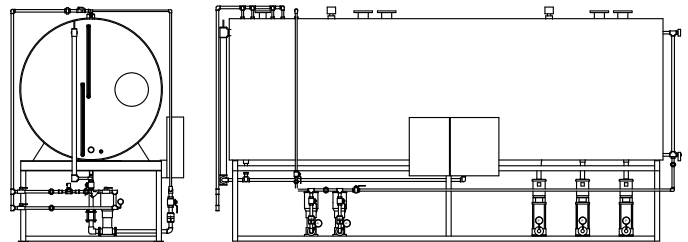
**Sellers Pressurized Series** is ideal for applications where gravity returns are not present.



**.005 CC / LITER » O<sub>2</sub> AND CO<sub>2</sub> LEVELS BELOW .005 CC/LITER OF WATER**

### ATMOSPHERIC SERIES UP TO 4500 HP

**Sellers Atmospheric Series** is ideal for applications over 3000 HP or where a high percentage of make-up water is present.



**.03 CC / LITER » O<sub>2</sub> AND CO<sub>2</sub> LEVELS BELOW .03 CC/LITER OF WATER**

– OR –

**.005 CC / LITER » O<sub>2</sub> AND CO<sub>2</sub> LEVELS BELOW .005 CC/LITER OF WATER**

## WHAT IS A BOILER FEED SYSTEM?

A boiler feed system is an assembly that collects condensate and pumps feedwater into a boiler, or DA system. Seller's boiler feed systems help prolong the life of boilers and maintain peak efficiency. Additionally, they provide more economical options to deaerators.

## SELLERS BOILER FEED SYSTEMS

### THERMAFEED SERIES

**The Thermafeed Series** is an economical prefabricated boiler feed system utilizing the direct injection of live steam into stored water to heat the boiler feed water to 205-208 degrees Fahrenheit. Heating water to these levels effectively removes up to 90% of excess dissolved oxygen contained in raw water makeup without creating an excessive vent loss.



#### FEATURES AND BENEFITS

- Removes up to 90% dissolved oxygen
- Heats feedwater to 205–208 degrees F
- Supply pressures from 6 –250 psig
- Sizes from 100 – 1,800 BHP
- Capacity of 3,450 – 62,100 lb/hr
- Receiver mounted on steel stand
- Epoxy lined
- Magnesium anode included
- SPARGE tube heating assembly
- Self-contained steam valve

### RS SERIES

**The RS Series** provides a simple feed system that collects condensate by gravity, or pumped return. These units include a receiver to hold return condensate as well as a float valve to add makeup water.



#### FEATURES AND BENEFITS

- Simple design to deliver boiler feedwater
- Tank mounted on structural steel stand
- Receiver capacity from 33 - 1,264 gallons
- Centrifugal pumps
- Drain valve
- Stainless steel temperature gauge
- Makeup feeder: MM #21
- Electric controls with control panel

## WHAT IS A DEAERATOR?

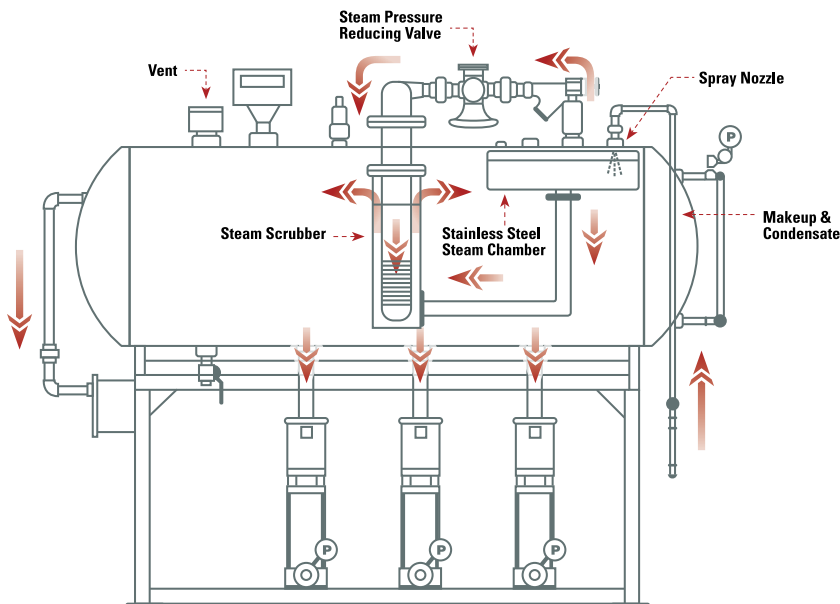
Deaerators are mechanical devices that remove dissolved gases from boiler feedwater through a heating, agitation and liberation process.

Deaeration protects industrial steam systems from the effects of corrosive gases by reducing the concentration of dissolved oxygen, carbon dioxide and other non-condensable gases to a level where corrosion is minimized.

A dissolved oxygen level of 5 parts per billion (ppb) or lower is needed to prevent corrosion in most high-pressure (>200 pounds per square inch) boilers. While oxygen concentrations of up to 43 ppb may be tolerated in low-pressure boilers, equipment life is extended at little or no cost by limiting the oxygen concentration to 5 ppb. Dissolved carbon dioxide is essentially completely removed by the deaerator.

## HOW DOES A DEAERATOR WORK?

- Raises the water temperature above the zero saturation temperature.
- Agitates to overcome surface tension, and release gases.
- Vents the gases from the system.



## DEAERATOR OPTIONAL EQUIPMENT

### EQUIPMENT

- Jacket and insulation
- Pre-piped Discharge Piping manifold
- Standby Pumps
- Pump Fused Disconnects
- Pump Failure Alarm Circuit
- Modulating Level Controls
- Seismic Stand with Certification
- Extended Tank Warranties
- 304 Stainless Steel Pressure vessel
- Variable Frequency Drive Pumps
- HMI Touchscreen Control Panels
- Complete Customization

### STEAM VALVE

- Self Contained Actuator
- Electric Actuator
- Air Operated Actuators

### LEVEL CONTROL

- Probe Type
- Solenoid
- Float Type
- Pneumatic
- Pressure Differential, make up only

### PUMP

- Low NPSH: Used where needed to maximize design
- Pumps with integrated variable frequency drive

### ADVANCED CONTROL PANEL

- Touchscreen HMI Interface
- Customized control of pump and Level Sequences.
- Plug and Play Communication via Bacnet, Lonworks & UC Modbus
- Annunciation of all Alarm & Service Conditions.



## **.005 PRESSURIZED DEAERATOR**

### **GENERAL DESCRIPTION**

The Sellers pressurized .005 deaerators condition make-up water and condensate returns to convert them into more desirable boiler feedwater. Super heating and atomization are used to remove oxygen and carbon dioxide before the water is pumped to the boiler. Pressurized deaerators are particularly desirable when blend temperatures exceed 180° F.

A level controller and valve admits fresh make-up to the bottom third of the receiver as needed. Valve is sized for each application based on the make-up percentage of the project.

Manual and automatic vent valves in the surge section allows oxygen, CO<sub>2</sub> and other gases to leave the unit while keeping steam venting to a minimum.



### **MODEL DESCRIPTION**

#### **MODEL P5 SINGLE TANK**

Sellers .005 deaerators are designed to heat boiler feedwater and to reduce oxygen and CO<sub>2</sub> to less than .005 cc/liter of water. This treatment protects the boiler and reduces corrosion. Single tank pressurized deaerators economically handle these requirements over a wide range of flow rates and temperatures.

Pumped return condensate and fresh make-up water are injected into the steam chamber to be pre-heated and partially deaerated. Further heating and scrubbing by steam impingement complete the process to provide .005 cc/liter quality water. Oxygen and CO<sub>2</sub> are vented through manual and automatic vents. Pressurized systems also are particularly adept at handling high temperature condensate. Large quantities (over about 10%) of high temperature condensate (over 227° F.) should be introduced through an optional under water injection tube.

#### **MODEL PDK5 SPLIT TANK**

Split tank deaerators provide one large ASME tank with an internal baffle to split the tank into two sections. High temperature condensate above 227° is returned to the deaerator section. Pumped low temperature condensate and fresh make-up water go to the surge section. First step deaeration occurs in the surge section as the mixture is sprayed into 8 psi steam.

A transfer pump moves the mixture to the deaerator section where steam impingement further heats, agitates and scrubs the water. Excess water overflows the internal baffle into the surge section to be mixed with and preheat the make-up and returns.

Boiler feed pumps force hot deaerated water from the deaerator section to the boilers.



## .005 SINGLE TANK PRESSURIZED DEAERATOR CAPACITIES

BASE SYSTEM MODEL NUMBER	POUNDS STEAM PER HOUR	GALLONS PER MINUTE	OVERALL RECEIVER SIZE (INCHES)	FULL CAPACITY (GALLONS)	CAPACITY TO OVERFLOW		STANDARD MAKE-UP VALVE	SHIPPING WEIGHT* (POUNDS)
					GALLONS	MINUTES		
P5-100	3,450	6.9	36 x 73	293	231	33	EM2	1,375
P5-150	5,175	10.4	36 x 73	293	231	22	EM2	1,375
P5-200	6,900	13.8	36 x 73	293	231	17	EM2	1,375
P5-250	8,625	17.3	36 x 73	293	231	13	EM2	1,375
P5-300	10,350	20.7	42 x 76	408	339	16	EM2	1,550
P5-400	13,800	27.6	42 x 76	408	339	12	EM2	1,550
P5-500	17,250	34.5	42 x 130	732	604	18	EM2	2,175
P5-600	20,700	41.4	42 x 130	732	604	15	PM3	2,175
P5-800	27,600	55.2	42 x 130	732	614	11	PM3	2,450
P5-900	31,050	62.1	48 x 132	968	824	13	PM3	2,450
P5-1000	34,500	69.0	48 x 132	968	824	10	PM3	2,550
P5-1200	41,400	82.8	48 x 132	968	824	10	PM3	2,550
P5-1500	51,750	103.5	54 x 135	1,229	1,076	10	PM3	3,900

\*Does not include boiler feed pumps.

### STANDARD EQUIPMENT FURNISHED

**Receiver:** 50 PSI ASME with 12 x 16 manhole.

**Epoxy Lining:** Receiver is sandblasted, lined with two coat/two color baked on epoxy lining.

**Stand:** Welded structural steel.

**Make-Up Valve:** EM2 Electric on 100 to 500 HP.  
Pneumatic valve on 600 HP and larger.

**Vent Condenser:** Internal stainless steel spray type.

**Low Water Alarm:** Probe type to stop pumps and sound alarm.

**Air Filter Regulator:** Maximum 150 PSI inlet pressure.

**Vent Valves:** Manual and automatic to vent liberated O<sub>2</sub>, CO<sub>2</sub>, and other gases.

**Water Gauge Set:** Brass safety type with check.

**Boiler Feed Pumps:** Per customer specifications.

**Temperature Gauge:** One 3" dial type.

**Pressure Gauge:** One 4.5" diameter on receiver.

**Overflow Drainer:** External float type to prevent flooding the receiver.

**Drain Valve:** One installed.

**Steam Valve:** Self contained, electric, or pneumatic.

**Steam Strainer:** Screwed or flanged to match valve.

**Heating Assembly:** Two stage stainless steel.

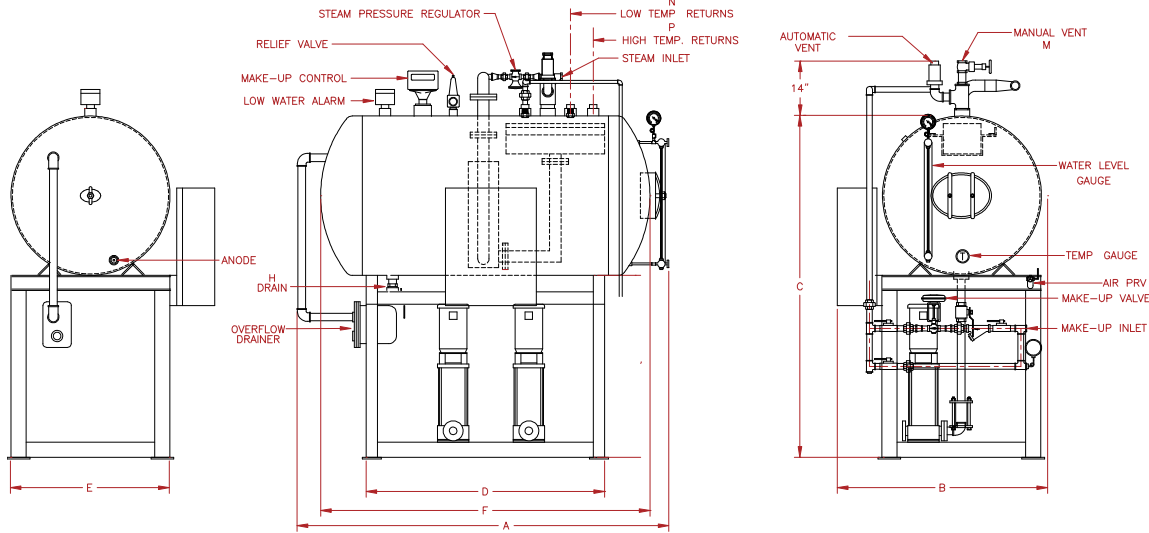
**Pressure Relief Valve:** Full capacity of steam valve.

**Control Panel:** UL Listed assembly with group dead front disconnect, IEC starters, integral circuit breakers, HOA switch and lights. Includes control transformer, alarm horn and silencing switch.

**Factory Assembly:** Complete unit factory assembled.



## .005 SINGLE TANK PRESSURIZED DEAERATOR



MODEL NUMBER	A	B	C	D	E	F	G	H	I	J	K
P5-100	91	51	85	48	36	73	1	1.5	1	1.5	1
P5-150	91	51	85	48	36	73	1	1.5	1	1.5	1
P5-200	91	51	85	48	36	73	1.25	1.5	1	1.5	1
P5-250	91	51	85	48	36	73	1.25	2	1	1.5	1
P5-300	94	57	91	46	42	76	1.25	2	1	1.5	1
P5-400	94	57	91	46	42	76	1.5	2	1	1.5	1
P5-500	148	57	91	100	42	130	1.5	2	1	2	1
P5-600	148	57	91	100	42	130	1.5	2	1.25	2	1.5
P5-800	148	57	91	100	42	130	1.5	2.5	1.25	2.5	1.5
P5-900	150	63	97	100	48	132	1.5	2.5	1.25	2.5	1.5
P5-1000	150	63	97	100	48	132	2	2.5	1.25	2.5	1.5
P5-1200	150	63	97	100	48	132	2	3	1.25	3	1.5
P5-1500	154	63	103	99	54	135	2.5	3	1.25	3	1.5

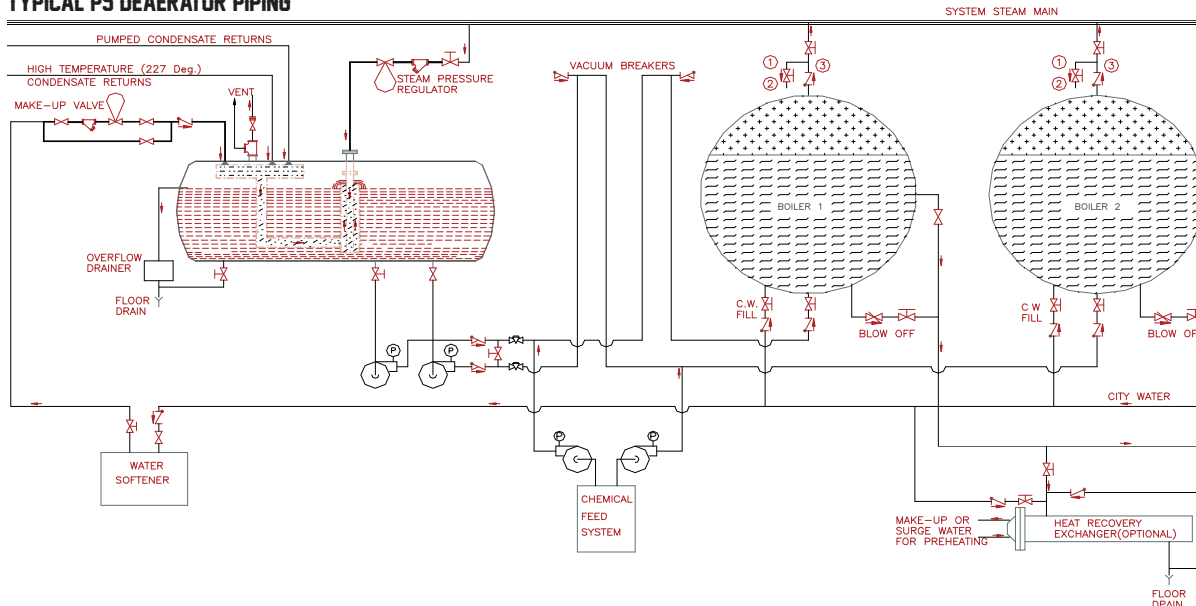
\* "C" dimension will vary with stand selection.

\* "D" dimension will vary with thickness and depth of heads.

### NOTES

- (1) Make-up supply line to valve should be a minimum of one pipe size greater than the valve size.
- (2) Dimensions "A" through "F" are approximate and may vary depending on options furnished.
- (3) Consult factory for over height shipping arrangements.
- (4) Pump orientation is typical. Quantity and type of pumps will determine final orientation.
- (5) All dimensions are in inches.
- (6) Stand height may increase as a result of pump selection, altering dimension "C".

### TYPICAL P5 DEAERATOR PIPING



## .005 SPLIT TANK PRESSURIZED DEAERATOR CAPACITIES

BASE SYSTEM MODEL NUMBER	BOILER PONDS STEAM PER HOUR	G.P.M.	OVERALL RECEIVER SIZE (INCHES)	FULL CAPACITY (GALLONS)	CAPACITY TO OVERFLOW		STANDARD MAKE-UP VALVE	SHIPPING WEIGHT* (POUNDS)
					GALLONS	MINUTES		
PDK5-100	3,450	6.9	36 X 73	293	231	33	E2	1,875
PDK5-150	5,175	10.4	42 X 76	408	339	33	E2	2,075
PDK5-200	6,900	13.8	42 X 76	408	339	25	E2	2,075
PDK5-250	8,625	17.3	36 X 127	531	415	24	E2	2,500
PDK5-300	10,350	20.7	42 X 130	732	604	29	E2	2,700
PDK5-400	13,800	27.6	42 X 130	732	604	22	E2	2,775
PDK5-500	17,250	34.5	48 X 132	968	824	24	E2	2,900
PDK5-600	20,700	41.4	54 X 135	1,229	1076	26	E2	3,925
PDK5-800	27,600	55.2	60 X 137	1,542	1374	25	E2	4,350
PDK5-900	31,050	62.1	60 X 137	1,542	1374	22	E3	4,400
PDK5-1000	34,500	69.0	66 X 137	1,812	1638	24	E3	5,150
PDK5-1200	41,400	82.8	66 X 137	1,812	1638	20	E3	5,200
PDK5-1500	51,750	103.5	72 X 144	2,301	2102	20	E3	6,375
PDK5-1800	62,100	124.2	66 X 195	2,596	2346	19	E4	7,150
PDK5-2100	72,450	144.9	72 X 197	3,235	2956	20	E4	8,100
PDK5-2400	82,800	165.6	72 X 197	3,235	2956	18	E4	8,100
PDK5-3000	103,500	207.0	84 X 190	4,050	3764	18	E5	10,900

\*Does not include boiler feed pumps.

## STANDARD EQUIPMENT FURNISHED

**Receiver:** 50 PSI ASME with 12 x 16 manhole.

**Epoxy Lining:** Receiver is sandblasted, lined with two coat/two color baked on epoxy lining.

**Stand:** Welded structural steel.

**Make-up Valve:** Solenoid valve with probe type controller.

**Bypass:** Three valve around make-up valve.

**Transfer Pump:** One providing 125% capacity. Centrifugal type with mechanical seals and low NPSH requirements. Standby transfer pump is optional.

**Transfer Piping:** With suction valve, flexible coupling, discharge check valve and balancing cock.

**Bypass Valve:** Emergency bypass between compartments.

**Inlet Baffle:** Stainless steel to prevent undeaerated water from contacting the shell.

**Low Water Alarm:** Stop pumps and sound alarm.

**Air Filter Regulator:** Maximum 150 PSI inlet pressure.

**Boiler Feed Pumps:** See quote.

**Factory Assembly:** Complete unit factory assembled. May ship loose.

**Vent Valves:** Manual and automatic to vent liberated O<sub>2</sub>, CO<sub>2</sub>, and other gases.

**Water Gauge Set:** Brass safety type with check.

**Vent Condenser:** Internal stainless steel spray type.

**Temperature Gauge:** Two 3" dial type.

**Pressure Gauge:** One 4.5" diameter on receiver.

**Overflow Drainer:** F&T type to prevent flooding the receiver.

**Drain Valve:** Two installed.

**Steam Valve:** Self-contained or electric pneumatic.

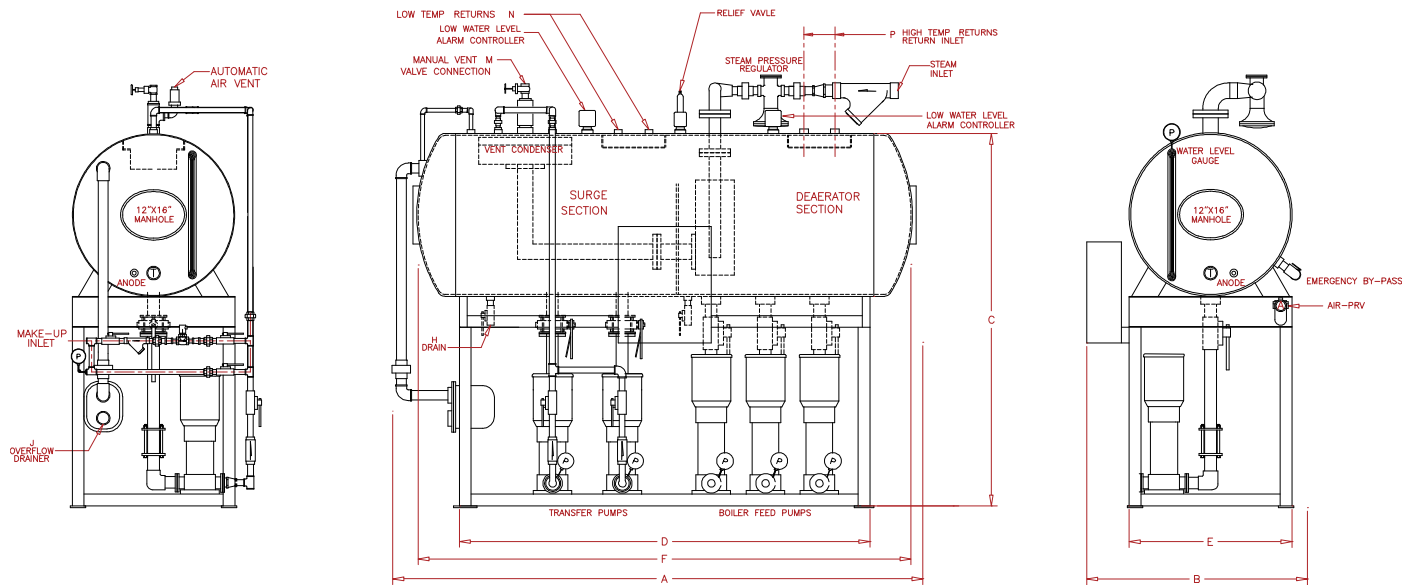
**Steam Strainer:** Screwed or flanged to match valve.

**Heating Assembly:** Two stage stainless steel.

**Pressure Relief Valve:** Full capacity of steam valve.

**Control Panel:** UL Listed assembly with group dead front disconnect, IEC starters, integral circuit breakers, HOA switch and lights. Includes control transformer, alarm horn and silencing switch.

## .005 SPLIT TANK PRESSURIZED DEAERATOR



### DIMENSIONS

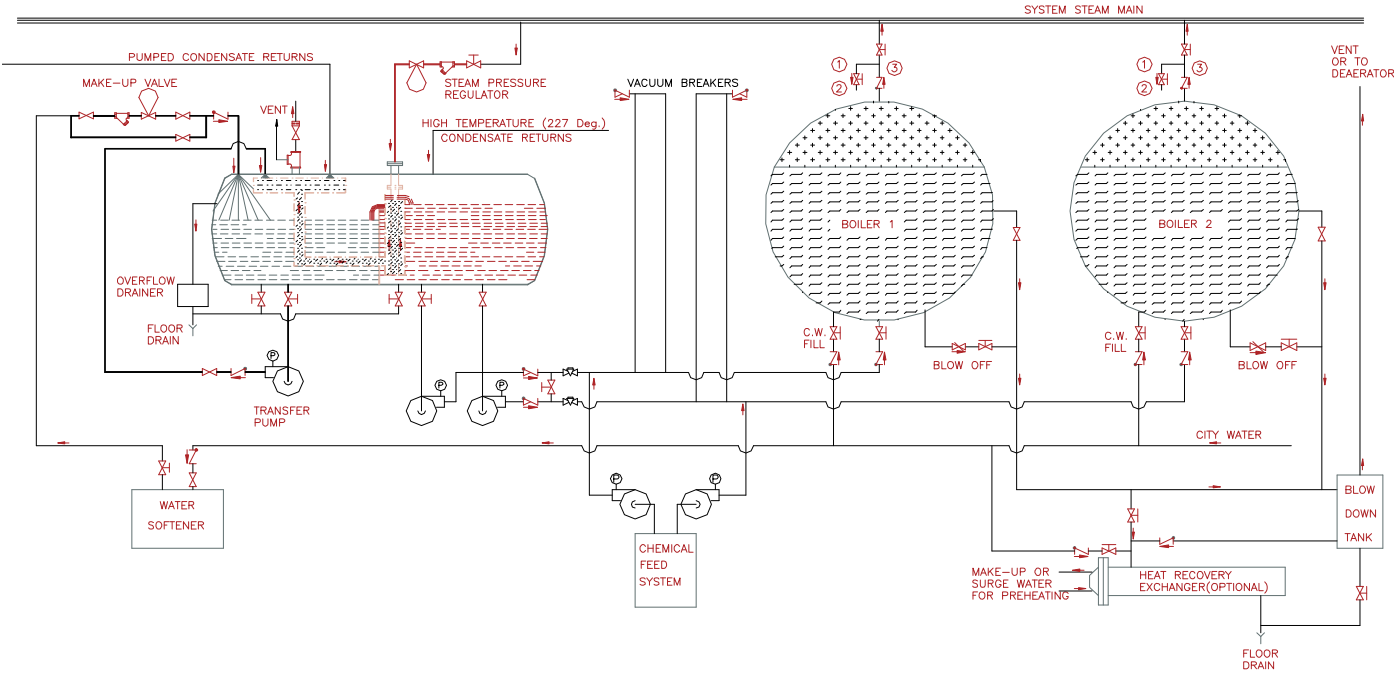
MODEL NUMBER	A	B	C	D	E	F	G	H	I	J	K
PDK5-100	91	51	85	48	36	73	1	1.5	1	1.5	1
PDK5-150	94	57	91	47	42	76	1	1.5	1	1.5	1
PDK5-200	94	57	91	47	42	76	1.25	1.5	1	1.5	1
PDK5-250	146	51	85	102	36	127	1.25	2	1	1.5	1
PDK5-300	148	57	91	100	42	130	1.25	2	1	1.5	1
PDK5-400	148	57	91	100	42	130	1.5	2	1	1.5	1
PDK5-500	150	63	97	100	48	132	1.5	2	1	2	1
PDK5-600	152	69	103	99	54	135	1.5	2	1.25	2	1.5
PDK5-800	156	75	109	98	60	137	1.5	2.5	1.25	2.5	1.5
PDK5-900	156	75	109	98	60	137	1.5	2.5	1.25	2.5	1.5
PDK5-1000	156	75	109	95	66	137	2	2.5	1.25	2.5	1.5
PDK5-1200	156	75	109	95	66	137	2	3	1.25	3	1.5
PDK5-1500	162	87	121	100	72	144	2.5	3	1.25	3	1.5
PDK5-1800	209	81	115	154	66	195	2.5	3	1.25	4	1.5
PDK5-2100	216	87	121	153	72	197	2.5	3	1.25	4	1.5
PDK5-2400	216	87	121	153	72	197	2.5	4	1.25	4	1.5
PDK5-3000	208	99	133	140	84	190	3	4	1.25	4	1.5

### NOTES

- (1) Make-up supply line to valve match strainer.
- (2) Dimensions A through F are approximate and may vary depending on options furnished.
- (3) Consult factory for over height shipping arrangements.
- (4) Pump orientation is typical. Quantity and type of pumps will determine final orientation.
- (5) All dimensions are in inches.
- (6) Stand height may increase as a result of pump selection, altering dimension "C".

.005 SINGLE TANK PRESSURIZED DEAERATOR

TYPICAL PDK5 DEAERATOR PIPING



Example:

	Model	HP	Pumps		Heater		
	PDK5	300	3	153 H	C	100 U	4
P5 = Single tank							
PDK5 = Split Tank with Constant Circulation							
Total System Boiler Horsepower Capacity							
Quantity of Boiler Feed Pumps							
Model of Boiler Feed Pumps							
Horsepower of Boiler Feed Pumps							
Available Steam Pressure							
Heating Assembly Steam Tube Model							
Heating Assembly Steam Valve Model							

## .005 ATMOSPHERIC DEAERATOR

### GENERAL DESCRIPTION

The Sellers atmospheric .005 deaerators condition make-up water and condensate returns to convert them into more desirable boiler feedwater. Super heating and atomization are used to remove oxygen and carbon dioxide before the water is pumped to the boiler. Atmospheric deaerators are desirable when high make-up percentages or gravity returns are anticipated.

### MODEL DESCRIPTION

#### MODEL .005 SINGLE TANK

The single tank .005 cc/liter atmospheric deaerator is a complete factory assembled system. It offers simplicity in operation and service, and assures effective removal of oxygen to a level not to exceed .005 cc/liter. This system operates by mixing pumped returns and fresh water make-up and super heating them to 220 degrees F. in an external heat exchanger. The water is then admitted into the atmospheric storage tank through spring loaded spray nozzles for atomization. This fine mist will immediately flash to steam, resulting in the complete separation of oxygen and other non-condensable gases. The vapor then enters an externally mounted vent condenser. As the water falls to storage in the receiver, the oxygen and other gases are released through the unrestricted vent.

A level controller and valve admits fresh make-up as needed to maintain a minimum water level. Small quantities (up to 5%) of high temperature (over 212° F) gravity returns can be dropped directly in to the receiver through the top baffled opening. **Other low temperature returns should be pumped at 15 psi minimum.**

#### MODEL DK5 SPLIT TANK

The DK5 split tank atmospheric deaerator provides one large receiver with an internal baffle that splits the tank into two sections. Make-up and low temperature returns (gravity or pumped) are brought back to the surge section. High temperature condensate is returned to the deaerator section. This system is very versatile and can be used in most applications that have a blend temperature of less than 180° F. With the split tank design, the need for a separate condensate set to pump back to the deaerator is eliminated because **it can accept gravity returns.**

A transfer pump is provided to constantly move water from the surge section to the deaerator section for heating. The water is heated to 220° F. through an externally mounted heat exchanger and then enters the receiver through spray nozzles. Excess water not used by the boilers overflows back and preheats the surge section. This also provides recirculation of the stored water in the deaerator section to ensure constant .005 deaeration. An internal vent condenser and spray bar in the surge section condenses the steam. The oxygen and noncondensable gases are vented to atmosphere. A valve with level controller is provided to admit fresh make-up as needed to maintain a minimum water level.



**Example:**

**Model**   **HP**   **Pumps**   **Heater**  
DK5   300   3 880 H   EF 4

5 = Single tank

DK5 = Split Tank with Constant Circulation

K5 = Split Tank with Energy Saver

Total System Boiler Horsepower Capacity

Quantity of Boiler Feed Pumps

Model of Boiler Feed Pumps

Horsepower of Boiler Feed Pumps

Heating Assembly Exchanger Model

Heating Assembly Steam Valve Model

## SINGLE TANK ATMOSPHERIC DEAERATOR CAPACITIES

Base system model is selected from the following table. The model selected should be suitable for the total system design horsepower load or total boiler load in pounds of steam per hour.

MODEL NUMBER	POUNDS STEAM PER HOUR	GALLONS PER MINUTE	RECEIVER SIZE (INCHES)	CAPACITY TO OVERFLOW		MAKE-UP VALVE MODEL	SHIPPING WEIGHT* (POUNDS)
				GALLONS	MINUTES		
5-100	3,450	6.9	30 x 50	120	17.4	MM51S	1,010
5-150	5,175	10.4	30 x 50	120	11.5	MM51S	1,010
5-200	6,900	3.8	30 x 50	120	8.7	MM51S	1,010
5-250	8,625	17.3	30 x 84	200	11.6	MM51S	1,300
5-300	10,350	20.7	30 x 84	200	9.7	MM51S	1,300
5-350	12,075	24.2	30 x 104	250	10.3	MM51S	1,470
5-400	13,800	27.6	36 x 84	310	11.2	MM51S	1,560
5-500	17,250	34.5	42 x 84	430	12.5	MM51S	1,770
5-600	20,700	41.4	42 x 84	430	10.4	EM	1,770
5-800	27,600	55.2	42 x 104	540	9.8	EM	2,050
5-900	31,050	62.1	42 x 104	540	8.7	EM	2,050
5-1000	34,500	69.0	42 x 104	720	10.4	EM	2,610
5-1200	41,400	82.8	48 x 120	830	10.0	EM	2,990
5-1500	51,750	103.5	54 x 120	1,070	10.3	EM	3,320
5-1800	62,100	124.2	60 x 120	1,340	10.8	EM	3,840

\*Does not include pumps or heating assembly.

## STANDARD EQUIPMENT FURNISHED

**Receiver:** Single tank with handholes or manhole.

**Epoxy Lining:** Receiver is sandblasted, lined with two coat/two color baked on epoxy lining.

**Stand:** Welded structural steel.

**Make-up Valve:** Standard is sized for 25% of capacity.

**Make-up Controller:** Mechanical or electric.

**Vent Condenser:** External shell and tube type.

**Low Water Alarm:** Two probe type to stop pump and sound alarm.

**Spray Bar:** Stainless steel spray bar and nozzles.

**Air Filter Regulator:** Maximum 100 PSig inlet.

**Water Gauge Glass:** Brass safety type with check.

**Temperature Gauge:** Two 3" diameter dial type.

**Pressure Gauge:** Two 4-1/2" diameter dial type.

**Overflow Trap:** Includes syphon breaker.

**Drain Valve:** Pre-piped to overflow line.

**Steam Valve:** Self-contained or electric.

**Steam Strainer:** Screwed or flanged to match valve.

**Heat Exchanger:** Externally mounted to heat make-up and returns to 220° F.

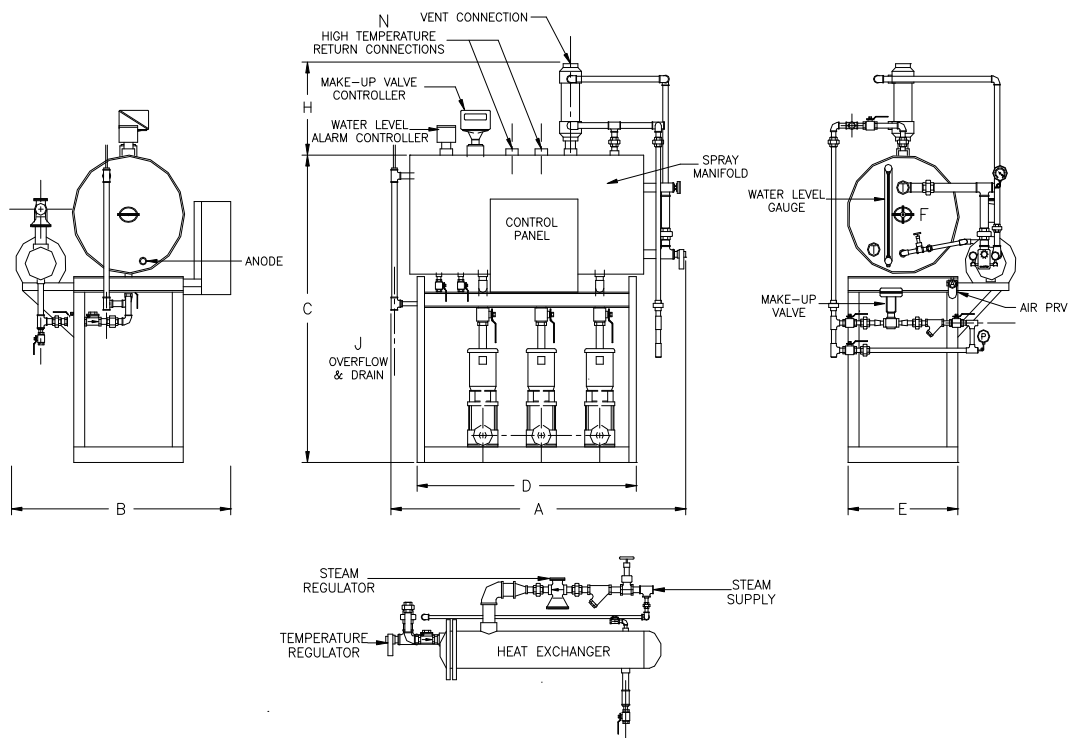
**Control Panel:** UL Listed assembly.

**Factory Assembly:** Complete package system ready for connection of utilities.

**Boiler Feed Pumps:** Per customer specifications.



## SINGLE TANK ATMOSPHERIC DEAERATOR DIMENSIONS



## NOTES

- (1) Overall dimensions could vary depending on options furnished.
- (2) Refer to submittal drawings for system height with condenser.
- (3) See submittal drawing for vent line and steam supply sizes.
- (4) Make-up supply line to valve inlet should be a minimum of one pipe size larger than valve.
- (5) Pump orientation is typical. Quantity and type of pumps will determine final orientation.
- (6) Stand height may increase as a result of pump selection, altering dimension "C".
- (7) Insulation not included in width dimensions.

MODEL NUMBER	A	B	C	D	E	F	G	H	I	J	K	L
5-100	68	53	78	50	30	-	22	1.25	0.75	1.5	50	1.25
5-150	68	53	78	50	30	-	22	1.25	0.75	1.5	62	1.25
5-200	68	58	78	50	30	-	22	1.5	0.75	1.5	50	1.25
5-250	102	58	78	84	30	-	22	1.5	0.75	2	50	1.5
5-300	102	56	78	84	30	-	22	1.5	0.75	2	62	2
5-350	102	56	78	104	30	-	22	1.5	0.75	2	75	2
5-400	102	62	84	84	36	X	22	2	0.75	2.5	75	2
5-500	102	70	90	84	42	X	32	2	0.75	2.5	62	2
5-600	102	70	90	84	42	X	32	2	1	3	75	2.5
5-800	122	70	90	104	42	X	34	2	1	3	98	2.5
5-900	102	68	90*	104	42	X	34	2.5	1	3	88	2.5
5-1000	102	76	96*	104	48	X	34	2.5	1	4	88	2.5
5-1200	138	76	96*	120	48	X	44	2.5	1	4	88	3
5-1500	138	85	102*	120	54	X	44	3	1	4	88	3
5-1800	138	85	108*	120	60	X	35	3	1	4	98	3



## DK5 SPLIT TANK ATMOSPHERIC DEAERATOR CAPACITIES

Base system model is selected from the following table. The model selected should be suitable for the total system design horsepower load or total boiler load in pounds of steam per hour.

MODEL NUMBER	POUNDS STEAM PER HOUR	GALLONS PER MINUTE	RECEIVER SIZE (INCHES)	CAPACITY TO OVERFLOW**		MAKE-UP VALVE MODEL	SHIPPING WEIGHT* (POUNDS)
				GALLONS	MINUTES		
DK5-100	3,450	6.9	36 x 50	180	26.1	MM51S	1,660
DK5-150	5,175	10.4	36 x 50	180	17.3	MM51S	1,720
DK5-200	6,900	3.8	36 x 84	310	22.5	MM51S	2,060
DK5-250	8,625	17.3	36 x 84	310	18.0	MM51S	2,060
DK5-300	10,350	20.7	36 x 104	380	18.4	MM51S	2,260
DK5-350	12,075	24.2	36 x 104	380	15.7	MM51S	2,260
DK5-400	13,800	27.6	42 x 104	540	19.6	MM51S	2,550
DK5-500	17,250	34.5	48 x 104	720	20.9	MM51S	3,050
DK5-600	20,700	41.4	48 x 104	720	17.4	E3	3,360
DK5-800	27,600	55.2	60 x 104	1,160	21.0	E3	4,200
DK5-900	31,050	62.1	60 x 104	1,160	18.7	E3	4,200
DK5-1000	34,500	69.0	54 x 140	1,220	17.7	E3	4,200
DK5-1200	41,400	82.8	60 x 140	1,520	18.4	E3	5,110
DK5-1500	51,750	103.5	66 x 140	1,870	18.1	E3	5,850
DK5-1800	62,100	124.2	66 x 158	2,170	17.5	E3	7,190
DK5-2400	82,800	165.6	72 x 185	2,890	17.5	E4	9,960
DK5-3000	103,500	207.0	72 x 212	3,410	16.5	E5	10,880
DK5-4500	155,250	310.5	84 x 255	5,500	17.7	E6	12,610

\*Does not include pumps or heating assembly. \*\*55% in surge section, 45% in DA section.

## STANDARD EQUIPMENT FURNISHED

**Receiver:** Single tank with handholes or manhole.

**Epoxy Lining:** Receiver is sandblasted, lined with two coat/two color baked on epoxy lining.

**Stand:** Welded structural steel.

**Make-up Valve:** Mechanical or electric. Pneumatic on 600 HP and larger.

**Bypass:** Three valve around make-up valve.

**Vent Condenser:** Internal type.

**Low Water Alarm:** Probe type to stop pump and sound alarm.

**Spray Bar:** Stainless steel spray bar and nozzles.

**Water Gauge Glass:** Brass safety type with check.

**Temperature Gauge:** Two 3" diameter dial type.

**Pressure Gauge:** Two 4-1/2" diameter dial type.

**Overflow Trap:** Includes syphon breaker.

**Drain Valve:** Pre-piped to overflow line.

**Steam Valve:** Self-contained or electric.

**Heat Exchanger:** Externally mounted to heat make-up and returns to 220° F.

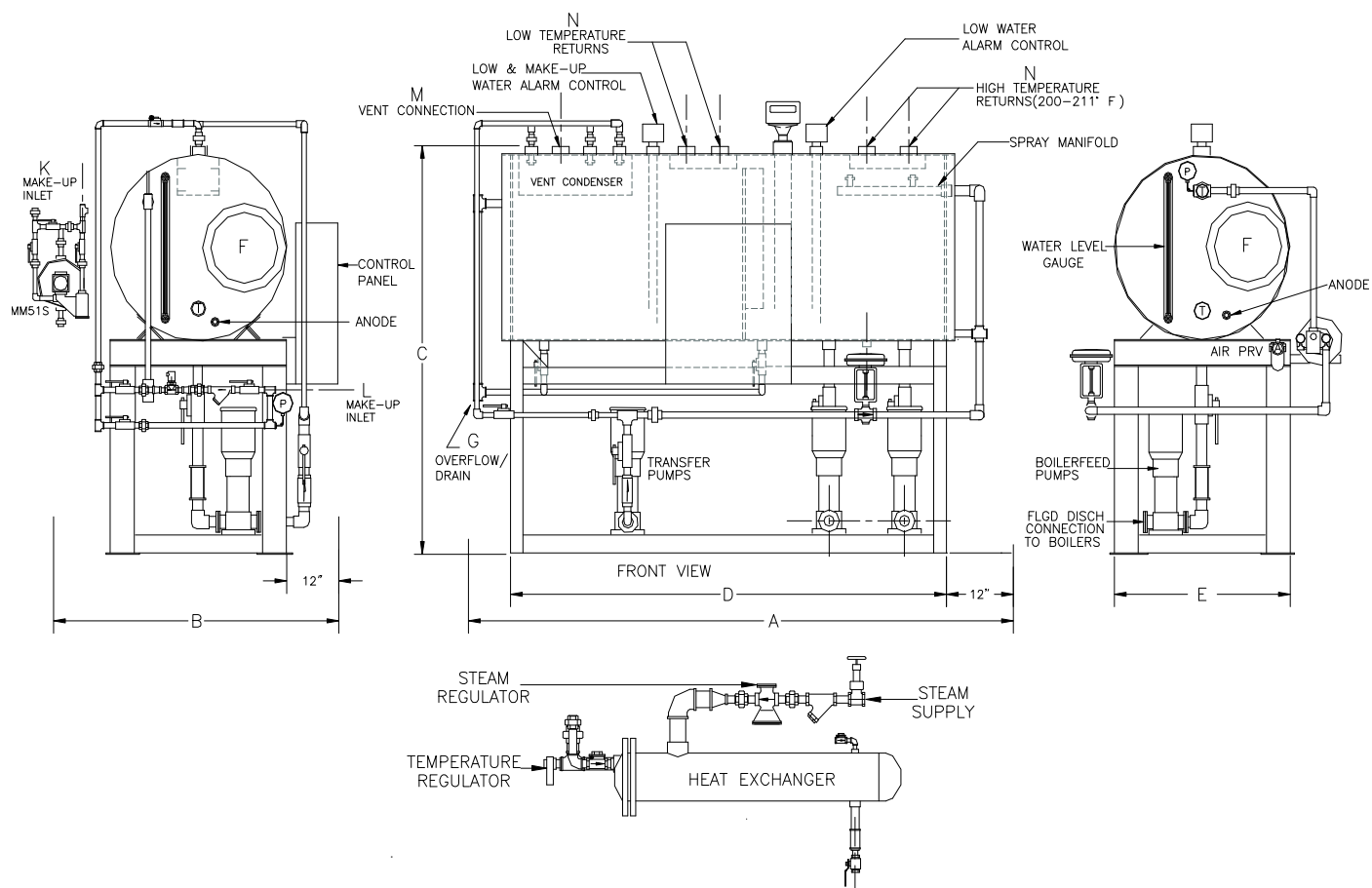
**Control Panel:** UL Listed assembly.

**Factory Assembly:** Complete package system ready for connection of utilities.

**Boiler Feed Pumps:** Per customer specification.

**Transfer Pump:** Factory mounted, piped and wired.

## DK5 SPLIT TANK ATMOSPHERIC DEAERATOR DIMENSIONS



MODEL NUMBER	A	B	C	D	E	F	G	H	I
DK5-100	68	62	84	50	36	X	1.25	1.5	50
DK5-150	68	62	84	50	36	X	1.25	1.5	62
DK5-200	102	62	84	84	36	X	1.5	1.5	50
DK5-250	102	62	84	84	36	X	1.5	2	50
DK5-300	122	64	84	104	36	X	1.5	2	62
DK5-350	122	64	84	104	36	X	1.5	2	75
DK5-400	122	70	90	104	42	X	2	2.5	75
DK5-500	122	79	96	104	48	X	2	2.5	62
DK5-600	122	79	96	104	48	X	2	3	75
DK5-800	122	91	108*	104	60	X	2.5	3	98
DK5-900	122	91	108*	104	60	X	2.5	3	88
DK5-1000	158	85	108*	140	54	X	2.5	3	88
DK5-1200	158	93	108*	140	60	X	2.5	3	88
DK5-1500	158	102	108*	140	66	X	2.5	4	88
DK5-1800	176	102	114*	158	66	X	2.5	4	98
DK5-2400	203	108	120*	185	72	X	2.5	4	98
DK5-3000	230	109	120*	212	72	X	2.5	4	98
DK5-4500	273	121	132*	255	84	X	4	6	98

### NOTES

- (1) Overall dimensions could vary depending on options furnished.
- (2) Refer to submittal drawings for system height with condenser.
- (3) See submittal drawing for vent line and steam supply sizes.
- (4) Make-up supply line to valve inlet should be a minimum of one pipe size larger than valve.
- (5) Pump orientation is typical. Quantity and type of pumps will determine final orientation.
- (6) Stand height may increase as a result of pump selection, altering dimension "C".
- (7) Insulation not included in width dimensions.

## .03 ATMOSPHERIC DEAERATOR

### GENERAL DESCRIPTION

The Sellers atmospheric .03 deaerators condition make-up water and condensate returns to convert them into more desirable boiler feedwater. Heating and atomization are used to remove oxygen and carbon dioxide before the water is pumped to the boiler. Atmospheric deaerators are desirable when high make-up percentages or gravity returns are anticipated.

### MODEL DESCRIPTION

#### MODEL .03 SINGLE TANK

The Single tank atmospheric deaerator provides an economical system to preheat boiler feed water and to drive off dissolved gases.

Makeup valves modulate the incoming water from the softener in response to the demands of a float or a level controller. Makeup is mixed with low temperature pumped returns from the system. These are sprayed in thin films and droplets to absorb excess steam and liberate dissolved gases. A steam injector agitates and heats the water to boiling to drive off the oxygen and carbon dioxide. The CO<sub>2</sub> and O<sub>2</sub> gases are removed from the water and purge out the vent with a small amount of waste steam.

Small quantities (up to 5%) of high temperature (over 212° F) gravity returns can be dropped directly into the receiver through the top baffled opening. Larger quantities should be introduced through an optional injector tube. Other low temperature returns should be pumped at 15 psi.

#### MODEL DK3 SPLIT TANK

The DK3 split tank atmospheric deaerator provides one large receiver with an internal baffle that splits the tank into two sections. Make-up and low temperature returns (gravity or pumped) are brought back to the surge section. High temperature condensate is returned to the deaerator section. This system is very versatile and can be used in most applications that have a blend temperature of less than 180° F. With the split tank design, the need for a separate condensate set to pump back to the deaerator is eliminated because **it can accept gravity returns**.

A transfer pump is provided to constantly move water from the surge section to the deaerator section for heating. Steam is injected into the deaerator section to heat the water to 211° F. The injector distributes the steam in the tank and agitates the water to provide uniform heating. This agitation and heating drives air and other gases out of the water. Excess water not used by the boiler overflows back to the surge section and pre-heats the make-up and low temperature returns.

An internal vent condenser and spray bar in the surge section condenses the steam. The oxygen and non- condensable gases are vented to atmosphere.



**Example:**

Model HP Pumps Heater  
DK3 300 3 880 H H4E

3 = Single tank

DK3 = Split Tank with Constant Circulation

K3 = Split Tank with Energy Saver

Total System Boiler Horsepower Capacity

Quantity of Boiler Feed Pumps

Model of Boiler Feed Pumps

Horsepower of Boiler Feed Pumps

Heating Assembly Exchanger Model

### .03 SINGLE TANK ATMOSPHERIC DEAERATOR CAPACITIES

Base system model is selected from the following table. The model selected should be suitable for the total system design horsepower load or total boiler load in pounds of steam per hour.

MODEL NUMBER	POUNDS STEAM PER HOUR	GALLONS PER MINUTE	RECEIVER SIZE (INCHES)	CAPACITY TO OVERFLOW		MAKE-UP VALVE MODEL	SHIPPING WEIGHT* (POUNDS)
				GALLONS	MINUTES		
3-100	3,450	6.9	30 X 50	130	19	M51S	1,012
3-150	5,175	10.4	30 X 50	130	13	M51S	1,012
3-200	6,900	13.8	30 X 50	130	9	M51S	1,012
3-250	8,625	17.3	30 X 84	219	13	M51S	1,358
3-300	10,350	20.7	30 X 84	219	11	M51S	1,358
3-350	12,075	24.2	30 X 104	272	11	M51S	1,562
3-400	13,800	27.6	36 X 84	328	12	M51S	1,670
3-500	17,250	34.5	42 X 84	456	13	M51S	1,933
3-600	20,700	41.4	42 X 84	456	11	EM	1,933
3-800	27,600	55.2	42 X 104	566	10	EM	2,244
3-900	31,050	62.1	42 X 104	566	9	EM	2,244
3-1000	34,500	69.0	48 X 104	751	11	EM	2,929
3-1200	41,400	82.8	48 X 120	868	10.0	EM	3,239
3-1800	62,100	124.2	60 X 120	1,322	11	EM	4,110
3-2400	82,800	165.6	60 X 120	1,322	.8	EM	4,963
3-3000	103,500	207.0	66 X 158	2,140	10	EM	6,494

\*Does not include pumps or heating assembly.

### STANDARD EQUIPMENT FURNISHED

**Receiver:** Single tank with handholes or manhole.

**Epoxy Lining:** Receiver is sandblasted, lined with two coat/two color baked on epoxy lining.

**Stand:** Welded structural steel.

**Make-up Valve:** Standard is sized for 25% of capacity.

**Make-up Controller:** Mechanical or electric.

**Bypass:** Three valve around make-up valve.

**Vent Condenser:** Internal spray tube.

**Low Water Alarm:** To stop pump and sound alarm.

**Spray Bar:** Stainless steel spray bar and nozzles.

**Air Filter Regulator:** Maximum 100 PSig inlet.

**Water Gauge Glass:** Brass safety type with check.

**Temperature Gauge:** Two 3" diameter dial type.

**Pressure Gauge:** Two 4-1/2" diameter dial type.

**Overflow Trap:** Includes syphon breaker.

**Drain Valve:** Pre-piped to overflow line.

**Steam Valve:** Self-contained or electric.

**Steam Strainer:** Screwed or flanged to match valve.

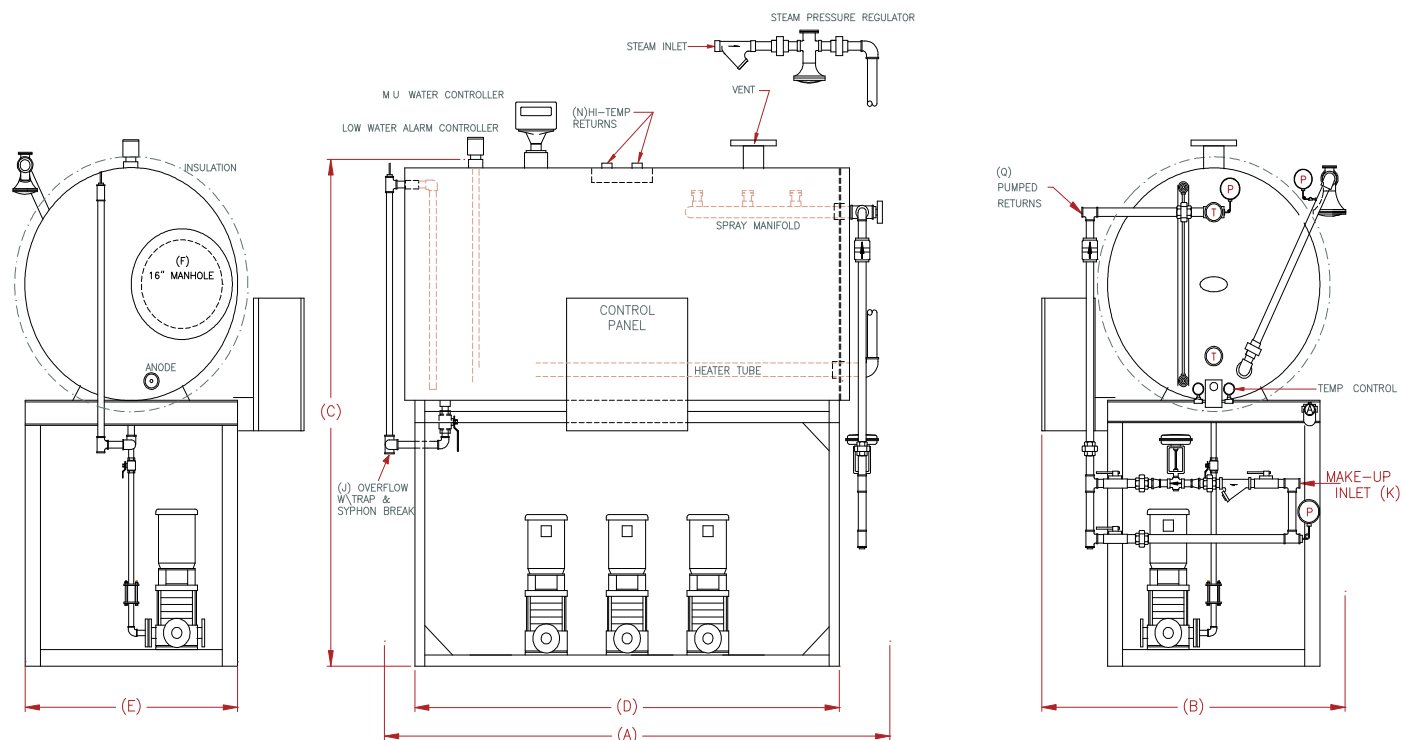
**Steam Heater Tube:** Stainless Steel

**Control Panel:** UL Listed assembly.

**Factory Assembly:** Complete package system ready for connection of utilities.

**Boiler Feed Pumps:** Per customer specifications.

### .03 SINGLE TANK ATMOSPHERIC DEAERATOR DIMENSIONS



MODEL NUMBER	A	B	C	D	E	F	G	H	I	J	K	L
3-100	64	50	79	50	30	-	1	1.25	0.75	1.25	28	1.25
3-150	64	50	79	50	30	-	1	1.25	0.75	1.25	46	1.25
3-200	64	50	79	50	30	-	1.25	1.5	0.75	2	60	1.25
3-250	98	50	79	84	30	-	1.25	1.5	0.75	2	60	1.5
3-300	100	50	79	84	30	-	1.25	1.5	0.75	2	60	2
3-350	120	50	79	104	30	-	1.25	1.5	0.75	2	60	2
3-400	100	56	85	84	36	X	1.5	2	0.75	2.5	60	2
3-500	100	62	91	84	42	X	1.5	2	0.75	3	60	2
3-600	100	62	91	84	42	X	1.5	2	1	3	60	2.5
3-800	120	62	91	104	42	X	1.5	2	1	3	60	2.5
3-900	120	62	91	104	42	X	1.5	2	1	3	60	2.5
3-1000	120	75	97*	104	48	X	2	2.5	1	4	60	2.5
3-1200	138	75	97*	120	48	X	2	2.5	1	4	60	3
3-1800	138	85	109*	120	60	X	2.5	3	1	4	60	3
3-2400	143	85	109*	120	60	X	2.5	3	1.5	4	60	3
3-3000	181	85	115*	158	66	X	3	4	1.5	4	60	3

### NOTES

- (1) Overall dimensions could vary depending on options furnished.
- (2) Refer to submittal drawings for system height.
- (3) See submittal drawing for vent line and steam supply sizes.
- (4) Make-up supply line to valve inlet should be a minimum of one pipe size larger than valve.
- (5) Pump orientation is typical. Quantity and type of pumps will determine final orientation.
- (6) Stand height may increase as a result of pump selection, altering dimension "C".
- (7) Insulation not included in width dimensions.
- (8) Consult factory for over height shipping arrangements.

## DK3 SPLIT TANK ATMOSPHERIC DEAERATOR CAPACITIES

Base system model is selected from the following table. The model selected should be suitable for the total system design horsepower load or total boiler load in pounds of steam per hour.

MODEL NUMBER	POUNDS STEAM PER HOUR	GALLONS PER MINUTE	RECEIVER SIZE (INCHES)	CAPACITY TO OVERFLOW**		MAKE-UP VALVE MODEL	SHIPPING WEIGHT* (POUNDS)
				GALLONS	MINUTES		
DK3-100	3,450	6.9	36 X 50	194	28	M51S	1,710
DK3-150	5,175	10.4	36 X 50	194	19	M51S	1,710
DK3-200	6,900	13.8	36 X 84	326	24	M51S	2,146
DK3-250	8,625	17.3	36 X 84	326	19	M51S	2,146
DK3-300	10,350	20.7	36 X 104	406	20	M51S	2,385
DK3-350	12,075	24.2	36 X 104	406	17	M51S	2,385
DK3-400	13,800	27.6	42 X 104	566	21	M51S	2,706
DK3-500	17,250	34.5	48 X 104	751	22	M51S	3,554
DK3-600	20,700	41.4	48 X 104	751	18	E3	3,554
DK3-800	27,600	55.2	60 X 104	1,145	21	E3	4,409
DK3-900	31,050	62.1	60 X 104	1,145	21	E3	4,409
DK3-1000	34,500	69.0	54 X 140	1,296	19	E3	4,652
DK3-1200	41,400	82.8	60 X 140	1,544	19	E3	5,346
DK3-1800	62,100	124.2	66 X 158	1,744	14	E3	5,798
DK3-2400	82,800	165.6	72 X 189	2,829	17	E4	11,104
DK3-3000	103,500	207.0	72 X 216	3,265	16	E5	12,240

\*Does not include pumps or heating assembly. \*\*55% in surge section, 45% in DA section.

## STANDARD EQUIPMENT FURNISHED

**Receiver:** Single tank with handholes or manhole.

**Epoxy Lining:** Receiver is sandblasted, lined with two coat/two color baked on epoxy lining.

**Stand:** Welded structural steel.

**Make-up Valve:** Mechanical or electric.

**Make-up Controller:** Pneumatic on 600 hp and larger.

**Bypass:** Three valve around make-up valve.

**Vent Condenser:** Internal type.

**Low Water Alarm:** To stop pump and sound alarm.

**Spray Bar:** Stainless steel spray bar and nozzles.

**Water Gauge Glass:** Brass safety type with check.

**Temperature Gauge:** Two 3" diameter dial type.

**Pressure Gauge:** Two 4-1/2" diameter dial type.

**Overflow Trap:** Includes syphon breaker.

**Drain Valve:** Piped to overflow line.

**Steam Valve:** Controls temperature and pressure with pneumatic valve. Provided with steam strainer.

**Heat Exchanger:** Externally mounted to heat make-up and returns to 220° F.

**Control Panel:** UL Listed assembly.

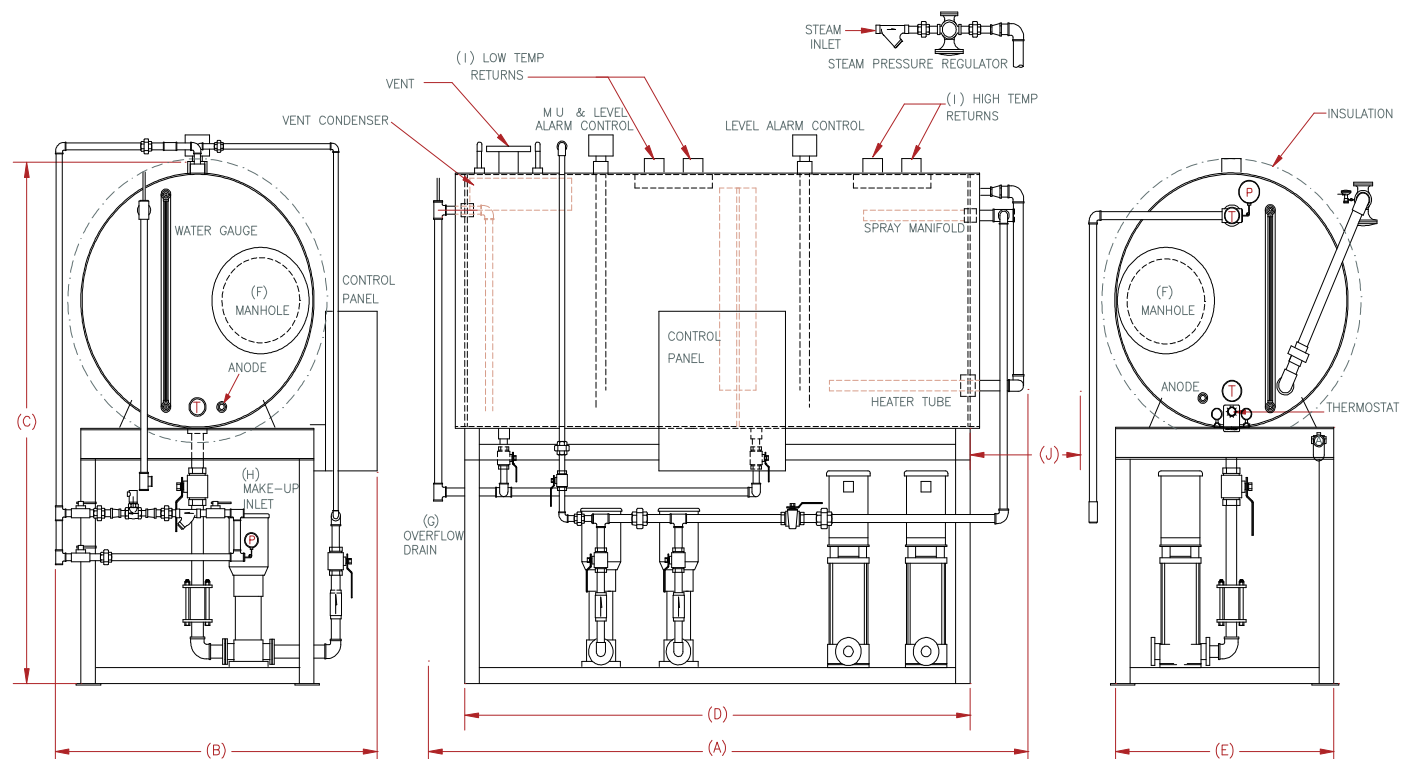
**Factory Assembly:** Complete package system ready for connection of utilities.

**Boiler Feed Pumps:** Per customer specifications.

**Transfer Pump:** Factory mounted, piped and wired.



## DK3 & SPLIT TANK ATMOSPHERIC DEAERATOR DIMENSIONS



MODEL NUMBER	A	B	C	D	E	F	G	H	I	J
DK3-100	64	55	85	50	30	X	1.25	0.75	1.5	50
DK3-150	64	55	85	50	36	X	1.25	0.75	1.5	62
DK3-200	100	55	85	84	36	X	1.5	0.75	2	50
DK3-250	100	56	85	84	36	X	1.5	0.75	2	50
DK3-300	120	56	85	104	36	X	1.5	0.75	2	62
DK3-350	120	56	85	104	36	X	1.5	0.75	2	75
DK3-400	120	56	91	104	42	X	2	0.75	2.5	75
DK3-500	120	73	97	104	48	X	2	0.75	3	62
DK3-600	120	73	97	104	48	X	2	0.75	3	75
DK3-800	120	85	109	104	60	X	2	0.75	3	98
DK3-900	120	85	109	104	60	X	2	1	3	88
DK3-1000	159	79	103	140	54	X	2.5	1	3	88
DK3-1200	159	85	109	140	60	X	2.5	1	3	88
DK3-1800	178	90	109	158	60	X	2.5	1.25	3	98
DK3-2400	205	105	120	189	72	X	2.5	1.25	3	98
DK3-3000	232	105	120	216	72	X	2.5	1.5	3	98

### NOTES

- (1) Overall dimensions could vary depending on options furnished.
- (2) Refer to submittal drawings for system height.
- (3) See submittal drawing for vent line and steam supply sizes.
- (4) Make-up supply line to valve inlet should be a minimum of one pipe size larger than valve.
- (5) Pump orientation is typical. Quantity and type of pumps will determine final orientation.
- (6) Stand height may increase as a result of pump selection, altering dimension "C".
- (7) Insulation not included in width dimensions.
- (8) Consult factory for over height shipping arrangements.
- (9) Dimension "J" shows max pull distance.



# THERMA-FEED BOILER FEED SYSTEM

## GENERAL DESCRIPTION

The Therma-Feed is an economical prefabricated boiler feed system utilizing the direct injection of live steam into the stored water to heat the boiler feed-water to 205-208° F. Heating the water up to these levels effectively drives off up to 90% of excess dissolved oxygen contained in raw water makeup without creating an excessive vent loss. The live steam is admitted to the water through a corrosion resistant perforated diffuser tube. It is controlled by a temperature-pressure regulating valve suitable for use with supply pressures of 6 psig to as high as 250 psig.

**THE RECEIVER SHELL IS CONSTRUCTED OF EXTRA HEAVY-GAUGE STEEL IN THICKNESSES GENERALLY EXCEEDING THOSE OF CONVENTIONAL FEED SYSTEMS.**

This provides greater corrosion allowance and longer service. Each receiver is protected with a baked on epoxy-phenolic lining and a replaceable magnesium anode. A heavy duty welded structural steel stand with integral pump supports is provided to hold the receiver securely. Larger receivers are furnished with a 16" diameter manhole and other necessary tapplings to suit installation requirements. Handholes are installed in all units. Top shell inlet openings are equipped with a dispersion baffle.

Makeup water is admitted to the system through a float operated feeder on all units up to 250 H.P. capacity. A solenoid valve operated by a probe type controller is used on larger systems. All makeup valves are sized to deliver 100% of system capacity rating at a minimum supply pressure of 40 psig at the valve inlet.

Boiler feed pumps are heavy duty industrial type designed for low N.P.S.H. service and are driven by standard open drip proof motors unless otherwise specified.

Each Sellers Therma-Feed System is shipped completely fabricated on an integral support stand.



Example:

Model

HP

Pumps

Heater

T

300

2. 13 AA

TL3A

T = Thermafeed

Total System Boiler Horsepower Capacity

Quantity of Boiler Feed Pumps

Boiler Feed Pump Model

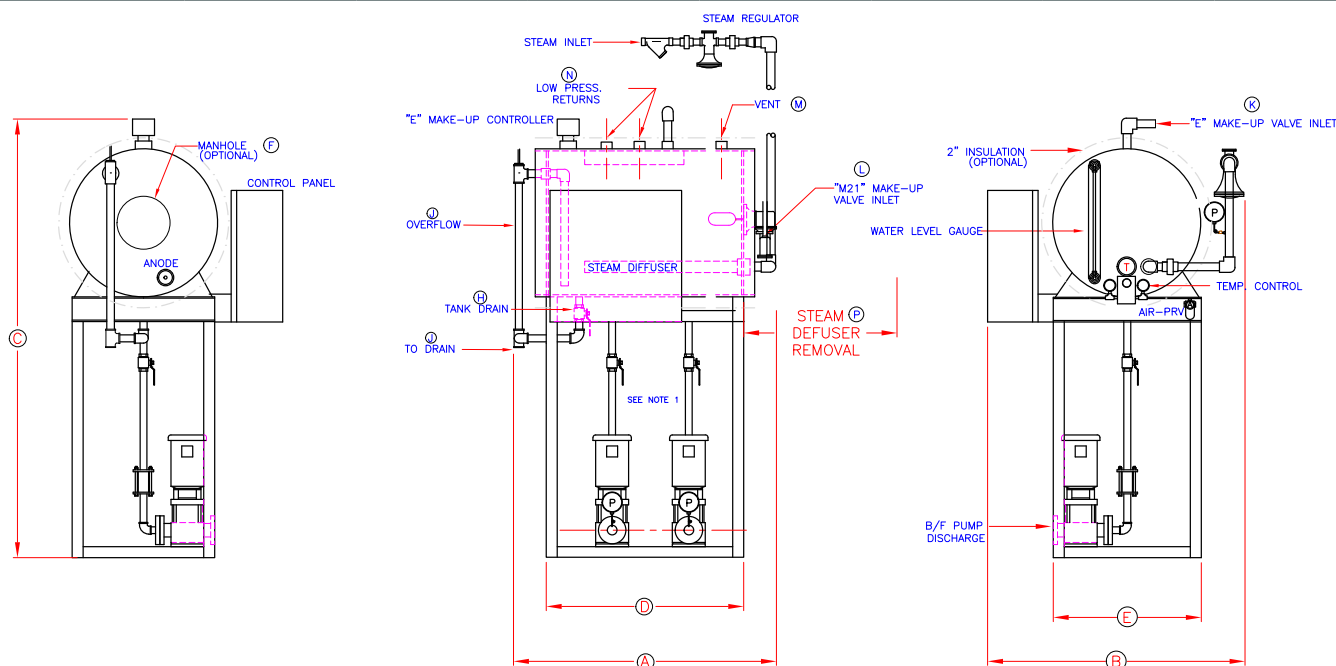
Boiler Feed Pump Horsepower

Heating Assembly

## THERMAFEED SYSTEM CAPACITY RATINGS

Base system model is selected from the following table. The model selected should be suitable for the total system design horsepower load or total boiler load in lbs. steam per hour.

MODEL NUMBER	POUNDS STEAM PER HOUR	GALLONS PER MINUTE	RECEIVER SIZE (INCHES)	CAPACITY TO OVERFLOW**		MAKE-UP VALVE MODEL	MAKE-UP VALVE SIZE
				GALLONS	MINUTES		
T-100	3,450	6.9	27 X 36	73	10.6	M21	3/4"
T-150	5,175	10.4	24 X 68	106	10.2	M21	3/4"
T-200	6,900	13.8	30 X 60	155	11.3	M21	3/4"
T-250	8,625	17.3	30 X 68	176	10.2	M21	3/4"
T-300	10,350	20.7	30 X 84	218	10.6	E3	3/4"
T-350	12,075	24.2	30 X 96	250	10.3	E3	3/4"
T-400	13,800	27.6	30 X 104	271	9.8	E3	3/4"
T-500	17,250	34.5	36 X 104	405	11.7	E4	1"
T-600	20,700	41.4	42 X 84	456	11	E4	1"
T-800	27,600	55.2	42 X 104	565	10.2	E4	1"
T-1000	34,500	69.0	48 X 104	751	10.9	E4	1"
T-1200	41,400	82.8	48 X 120	867	10.5	E5	1 1/4"
T-1800	62,100	124.2	60 X 120	1,384	11.1	E6	1 1/4"



MODEL NUMBER	A	B	C	D	E	F	H	J	K	L	M	N	MAX. P
T-100	46	40	75	36	27	-	1	1.25	-	0.75	1.5	1.5	28
T-150	82	37	72	68	24	-	1	1.25	-	0.75	1.5	1.5	46
T-200	70	43	78	60	30	-	1.25	1.5	-	0.75	2	1.5	60
T-250	76	43	78	68	30	-	1.25	1.5	-	0.75	2	2	60
T-300	96	43	78	84	30	-	1.25	1.5	0.75	-	2	2	60
T-350	108	43	78	96	30	-	1.25	1.5	0.75	-	2	2	60
T-400	96	50	84	104	36	X	1.5	2	0.75	-	2.5	2.5	60
T-500	96	56	90	104	42	X	1.5	2	1	-	3	3	60
T-600	96	56	90	84	42	X	1.5	2	1	-	3	3	60
T-800	120	56	90	104	42	X	1.5	2	1	-	3	3	60
T-1000	120	66	96	104	48	X	2	2.5	1	-	4	4	60
T-1200	134	66	96	120	48	X	2	2.5	1.25	-	4	4	60
T-1800	134	76	108	120	60	X	2.5	3	1.5	-	4	4	60

### NOTES

- (1) Pump orientation is typical. Quantity and type of pumps will determine final orientation.
- (2) Dimensions A through E are approximate and may vary depending on options furnished.
- (3) Stand height may increase as a result of pump selection, altering dimension "C".



## RS BOILER FEED SYSTEM

### GENERAL DESCRIPTION

The Sellers RS boiler feed system provides a simple assembly which collects condensate and pumps feedwater into a boiler. The unit includes a receiver to hold returned condensate as well as a float valve to add make-up water. Components are factory assembled on a structural steel stand. Many options and customer configurations are available upon request. More sophisticated pressurized return systems as well as heated return systems and deaerators can be provided to handle more critical needs.

### STANDARD FEATURES

**Receiver:** Tanks are made of heavy steel plate with a generous corrosion allowance. Heads are at least 5/16" thick. Standard receivers are vented as they are not designed to be pressurized.

**Stand:** The heavy duty structural steel stand rigidly supports all components.

**Pumps:** Centrifugal pumps with mechanical seals eliminate the problems that are typical with packed pumps. Closed coupled pumps eliminate coupling and alignment problems while providing high efficiency, lower NPSH and better balance. Stainless steel and bronze trimmed pumps reduce corrosion and wear.

**Drain valve to flush and clean tank.**

**Stainless steel temperature gauge.**

**Water gauge glass assembly with safety type ball check gauge cocks.**

**Make-up feeder:** MM #21 provides 17 gpm at 40 psi supply pressure to handle system losses. Larger pneumatic or electric solenoid valves are optionally available when needed.

**Electric control:** Pump combination motor starter and circuit breakers provided with overload protection.

**Control panel with numbered terminal trips and H-O-A switches all pre-wired to motors.**



### OPTIONS

**Linings:** Corrosion resistant epoxy-phenolic linings can be added to extend tank life.

**Heating Assembly:** Steam injectors can pre-heat the water and remove up to 90% of the oxygen and CO<sub>2</sub>. Hot feedwater reduces thermal shock and stress on the boiler.

**Manhole, 16 Round:** Allows greater access to receiver interior.

**Pump Discharge Piping:** Can include check valve, balancing valve and bypass lines for better operation.

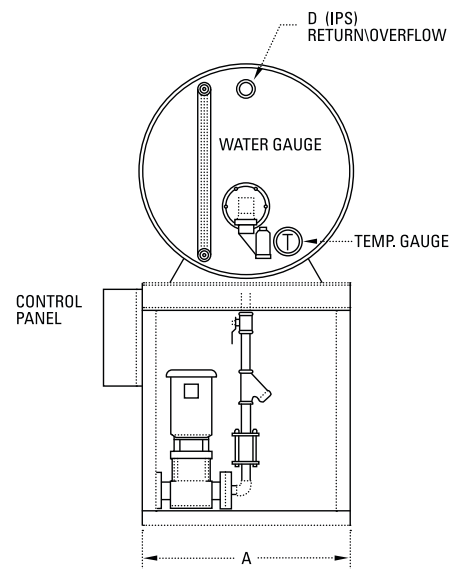
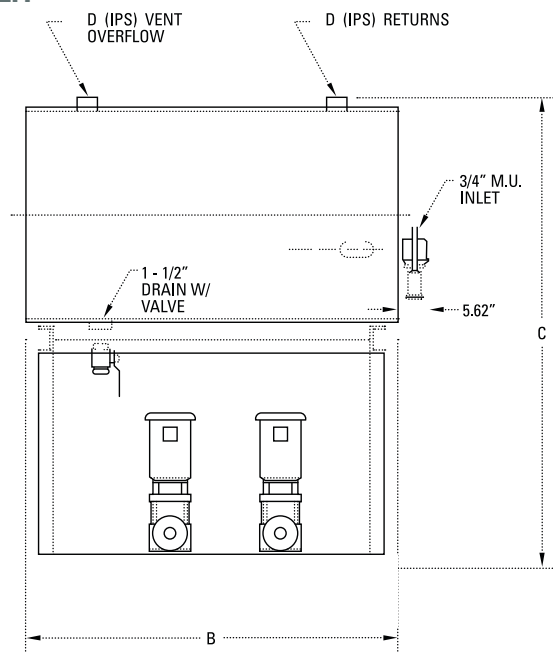
**Low Water Cutoff:** To protect the pumps.

**ASME Receiver:** To meet code requirements.

**Stainless Steel Shell Construction.**

**Vertical Configuration.**

## RS BOILER FEED SYSTEM



## RS SYSTEM RECEIVERS

RECEIVER CAPACITY	RECEIVER SIZE (INCHES)	DIMENSIONS				SHIPPING WEIGHT* (POUNDS)
		A	B	C	D	
33	18 X 30	18	34	53	2	240
58	24 X 30	24	34	59	2	315
93	24 X 48	24	52	59	2	315
151	30 X 50	30	54	65	3	730
217	36 X 50	36	54	71	3	875
316	30 X 104	30	108	65	3	1,100
386	48 X 50	48	54	83	3	1,100
455	36 X 104	36	108	71	3	1,280
620	42 X 104	42	108	77	3	1,675
809	48 X 104	48	108	83	3	1,950
1024	54 X 104	54	108	89	3	2,760
1264	60 X 104	60	108	95	3	3,495

\* Does not include pumps.



