Sellers
MANUFACTURING CO.

DEAERATORS AND BOILER FEED SYSTEMS

Compare to the competition and see the

THE SELLERS ADVANTAGE

VERSATILITY

- Options to meet every application or budget
- Single Tank or Split Tank
- Pressurized or Atmospheric
- .005 to .03 Deaeration
- Heated and Non Heated Boiler Feed Systems

WARRANTY

- Our Epoxy Phenolic Lining and Industrial Grade Construction allows us to provide a 10 Year Pressure Vessel Warranty with an optional 15 Year
- 2 Year Parts Warranty is Best in Industry

CUSTOMIZATION

- 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

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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_2 is the usual cause of steam and return line corrosion.
- CO_2 is produced when feedwater is raised to steaming temperature in the boiler.
- CO_2 is vented to atmosphere in the deaerator.
- Continuous deaeration reduces total CO_2 in the steam system.

PROTECT YOUR INVESTMENT

- Boiler, installation and maintenance costs can be major expenditures.

  Deaerators pay for themselves!

LOWER OPERATING COSTS

- Mechanical dearation 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.

  Stop throwing money down the drain!

DEAERATOR SIZING

OVERALL SIZING CRITERIA

- Percentage of Return and Makeup
- Temperature of Return and Makeup
- Boiler Operating Pressure
- Tank capacity needed in gallons
- Power Characteristics Voltage/Hertz/Phase

TOTAL BOILER EVAPORATION RATE

- 1Bhp = 34.5 lb/hr
- 1Bhp = 0.069 GPM
- 1000 lb/hr Steam = 2.0 GPM

STORAGE CAPACITY

- Recommended 10 Minute Storage Minimum
- Total Evaporation Rate × 10 = Storage Volume

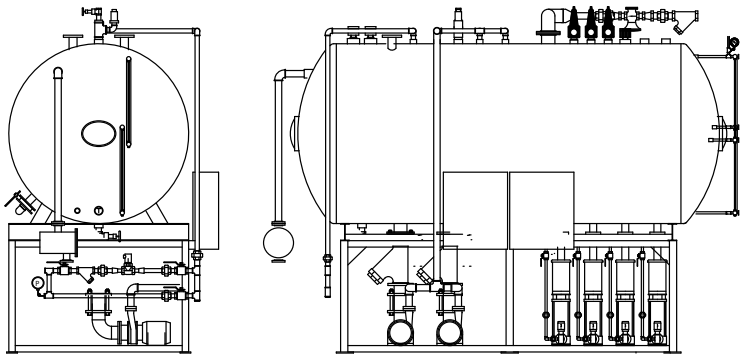
PUMPING CAPACITY

- On-Off Pumping Rate = Evaporation Rate × 1.5
- Constant Pumping Rate = Evaporation Rate × 1.25
- Pump Head Pressure = (Relief Valve Setting × 2.31) + 32

SELLERS DEAERATORS

PRESSURIZED SERIES UP TO 3000 HP

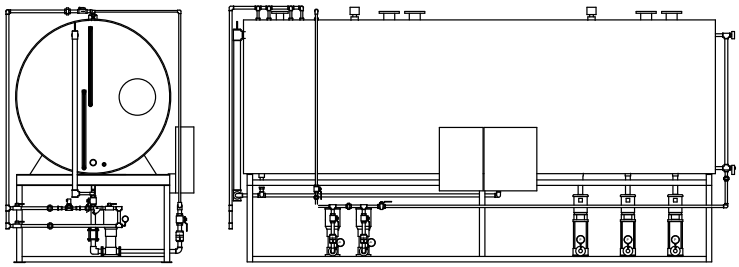
Sellers Pressurized Series is ideal for applications where gravity returns are not present.



.005 CC / LITER » O2 AND CO2 LEVELS BELOW .005 CC/LITER OF WATER

ATMOSPHERIC SERIES UP TO 4500 HP

Sellers Atmospheric Series is ideal for applications where there the end user anticipates a high percentage of make-up water or gravity returns.



.03 CC / LITER » O2 AND CO2 LEVELS BELOW .03 CC/LITER OF WATER

– OR –

.005 CC / LITER » O2 AND CO2 LEVELS BELOW .005 CC/LITER OF WATER

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
- SIEMENS RWF40: Compact Universal Controller
- SIEMENS FLOWRITE SKB/C/D: Valve Actuator

PUMP

- CR LOW-NPSH: Designed to eliminate the risk of cavitation and ensure a stable and reliable operation
- E-PUMPS: 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 & Modbus.v
  - Annunciation of all Alarm & Service Conditions.

WHAT IS A BOILER FEED SYSTEM?

A boiler feed system is an assembly that efficiently pumps feedwater into a boiler. 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

T**he 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
- ASME Section VIII and U Stamp certifications
- 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

RS SERIES

The RS Series provides a simple feed system that efficiently pumps feedwater into a boiler. These units include a receiver to hold return condensate as well as a float valve to add makeup water.

FEATURES AND BENEFITS

- ASME Section VIII and U stamp certifications
- 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 preheating 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.

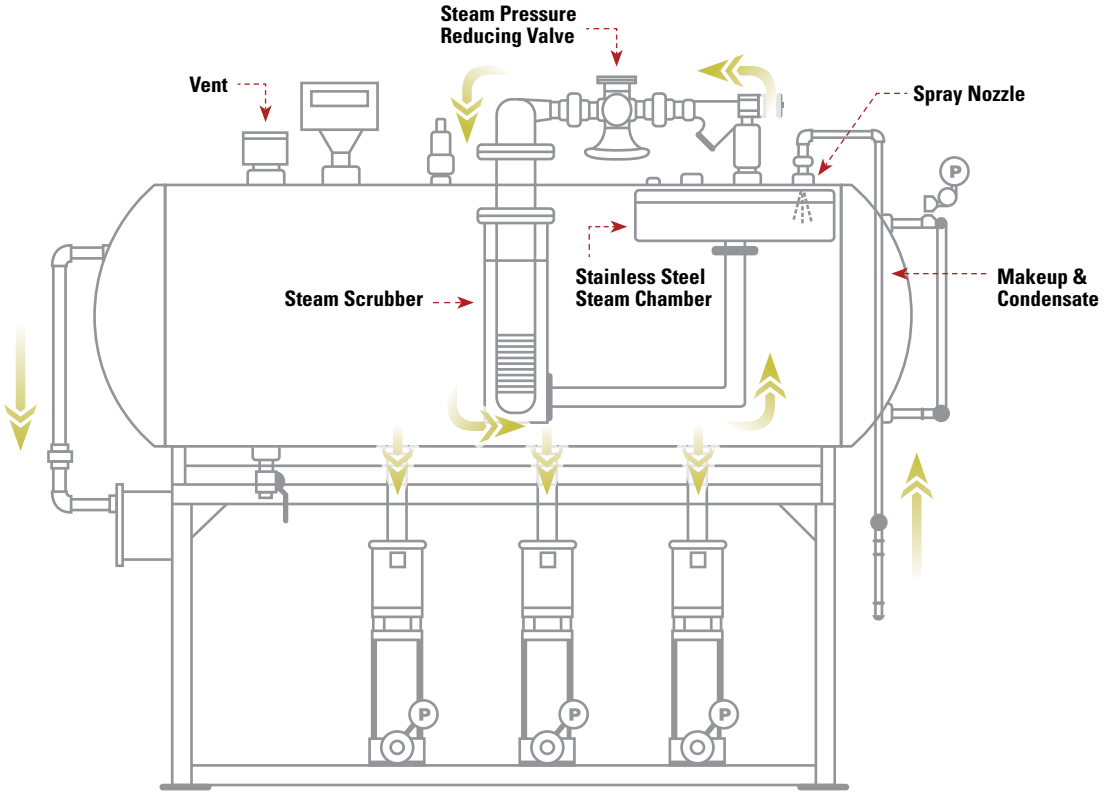
A dissolved oxygen level of 5 parts per billion (ppb) or lower is needed to prevent corrosion in most high-pressure (>200 pounds per square inch) boilers. While oxygen concentrations of up to 43 ppb may be tolerated in low-pressure boilers, equipment life is extended at little or no cost by limiting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

A DEAERATOR CONSISTS OF

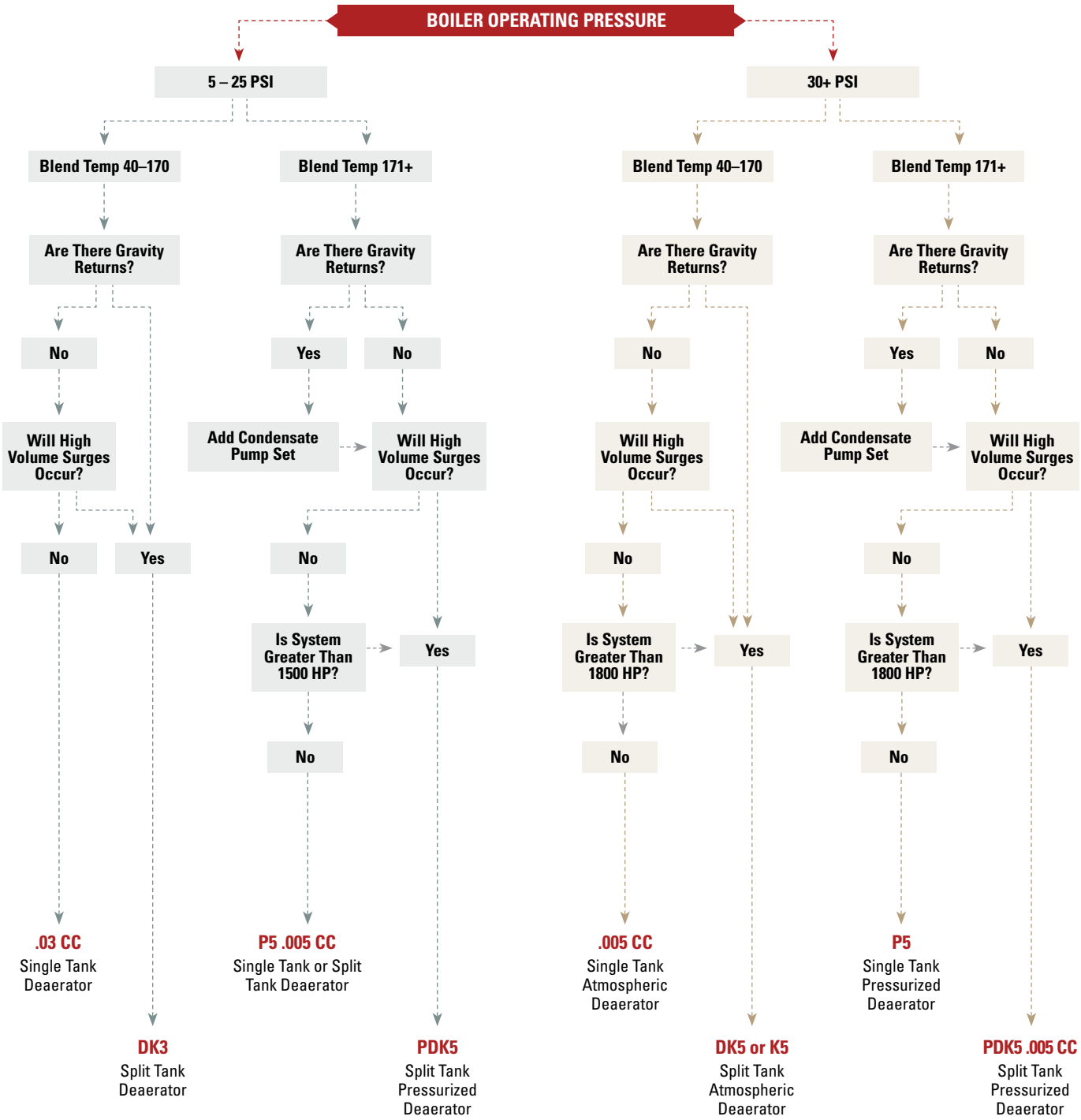
- **Storage Tank**
- **Heating Apparatus**
- **Feed Pump(s)**
- **Water Level Controls**

HOW DOES A DEAERATOR WORK?

- Raises the water temperature above the zero saturation temperature.
- Agitates to overcome surface tension.
- Atomizes water to smallest possible droplets.
- Allows time for gases to escape.
- Vents the gases from the system.



SELECTING A SELLERS DEAERATOR



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