

START-UP FORM FOR A .03 TWO COMPARTMENT ATMOSPHERIC DEAERATOR

Job: _____
Location: _____

Plant Contact: _____

Date: _____
Serial Number: _____

Contact Phone: _____
Contact Fax: _____

- 1) Installation pre-inspected to insure it meets all state and local codes. (*Note: Someone should perform this with local jurisdiction.*
 - Soft Water
 - Chemical Feed
 - Domestic Water Supply (Primary and Secondary)
 - Vent line properly sized and installed.
 - Regulator(s) properly dripped
 - Regulator Sensing Line(s) properly installed
 - Receiver overflow properly piped to drain
 - (*If required*) Air supply line and supply pressure properly installed to any air operated controllers/ valves. "This is normally 20#'s". _____ Air pressure supplied to the unit.
 - Pump discharge piping including gate (isolation) valve, check valve (i.e., spring check design recommended), and balancing valve. (*Note: If discharge pressure of Shipco[®] centrifugal pump is 75 psig or greater, the pump will be fitted with a Griswold automatic flow control valve at the factory.*)

- 2) Check the nameplate on the electrical control panel to ensure the *design* incoming line voltage matches the *actual* incoming line voltage. If they are the same you may proceed. If they are different consult the factory to identify what changes to components are required in the control panel to support the actual line voltage.

- 3) Remove all the shipping brackets on the float switches.

- 4) Check to ensure the available steam pressure to the steam regulator[s] is as stated in the Installation, Operation and Maintenance (IOM) Manual for the Deaerator (DA).

- 5) Turn on the power to the control circuitry on the surge side of DA, *if applicable.* (*Note: not all units are designed with a control circuit disconnect.*)

- 6) Fill the surge compartment to its normal level using the make-up valve on the unit.

- 7) Check the operation of the float switches on the surge side of the unit.

- 7A) If unit was purchased with a Pressure Differential Controller – see Supplemental IOM

- 8) On vertical style *transfer pumps*, temporarily open the drain plug in the suction housing to allow air to escape and condensate to flood the suction chamber. Reinstall the drain plug and tighten as needed.

- 9) Fully open the suction and seal flush line isolation valves for *each* pump.

- 10) Turn the main power “on” to the *transfer pumps* on the surge side. Crack open the seal flush line on *each* pump (one at time) to bleed off any air during “bump testing” the pump. Bump test each pump using the momentary test button to check for pump rotation. Pumps should rotate clockwise when facing the motor.
- 11) Correct any pump rotation problems that are found to prevent pump damage. If the unit has three-phase power, switching any two of the conductors on the output of the starter changes the rotation.
- 12) Place one *transfer pump* selector switch in the “auto” position. Place the other pump selector switch in the “stand-by” position.
- 13) Add water to the DA side using the bypass around the modulating make-up valve. When the DA side is about 1/3-1/2 full stop filling the DA.
- 14) When the water level in the DA side is visibly above the preheat tube, crack open the steam regulator.
- 15) Turn on the power to the control circuitry, *if applicable*. (*Note: not all DA’s are designed with a control circuit disconnect*).
- 16) As the DA side is filling, manually check the operation of all floats on the DA side.
- 16A) If unit was purchased with a Pressure Differential Controller – see Supplemental IOM
- 17) Slowly bring the DA up to saturation point (i.e., temperature of 211°F at sea level). Do this slowly by opening the isolation valve to the steam regulator. As the temperature approaches 180°F, fully open the isolation valve and allow the temperature controller to take over control. Finish adjusting the DA temperature per the IOM for the temperature controller.
- 18) Ensure the selector switches for *each* boiler feed pump are in the “Off” position.
- 19) Fully open the suction isolation valves and seal flush line on *each* boiler feed pump.
- 20) On vertical style pumps, temporarily open the drain plug in the suction housing to allow air to escape and condensate to flood the suction chamber. Reinstall the drain plug and tighten as needed.
- 21) Turn the main power “on” to the boiler feed pumps. Crack open the seal flush line on *each* pump (one at time) to bleed off any air during “bump testing” the pump. Bump test each pump using the momentary test button to check for pump rotation. Pumps should rotate clockwise when facing the motor.
- 22) Correct any pump rotation problems that are found to prevent pump damage. If the unit has three-phase power, switching any two of the conductors on the output of the starter changes the rotation.
- 23) Throttle and balance each transfer and boiler feed pump to its design condition. (*Note: if the boiler feed pumps include an automatic balancing valve, they should balance themselves within the operating range of the valve*).
- 24) Measure and record the incoming line voltage for each leg on all the pumps.
- 25) Measure and record the Amp draw on each leg of all the pumps.

- 26) Calibrate the *pneumatic* temperature controller (*if provided*) to the measure tank temperature per the IOM. (*Note: sometimes the controller could be self-contained design*).
- 27) Open the inlet valve to the modulating *transfer* valve.
- 28) Adjust the modulating *transfer* valve controller as (*if necessary*) per the IOM.
- 29) Adjust pressure switch for stand-by pump[s] (*if applicable*).
- 30) Inspect the entire unit for any drips/leaks in piping caused by vibration during shipping.
- 31) Observe unit for proper operation.

Notes & Comments:

Incoming line voltage ____-____-____

Unit Design Line Voltage ____-____-____

Amp draw(s) Pump #1 _____

Amp draw(s) Pump #2 _____

Amp draw(s) Pump #3 _____

Amp draw(s) Pump #4 _____

Start-up Technician

Owner Approval

J\Shipco\Website\Startup_Guidelines
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