

Standby boiler layup procedure

(Standby for over 10 consecutive days)

Layup conditions: This procedure is intended for layup of boilers where standby or shutdown is between 10 days and 1 month. For durations shorter than 10 days, please consult and perform the proper wet layup procedures for the shorter duration. Dry layup or long term wet layup may be necessary for longer term shutdowns and storage of more than 1 month.

1. Press the "Operation ON/OFF" button on the control panel and turn the boiler OFF. Boiler should be in "DISABLE".
2. Completely empty the boiler of water via performing a bottom blowdown.
3. Inject chemical so that the boiler water pH is within the range of 12.0 – 12.4 when filled with water.
4. Press the "Operation ON/OFF" button on the control panel and turn the boiler ON to fill the boiler with water.
5. When the boiler is filled with water, press the "Operation ON/OFF" button on the control panel and turn the boiler OFF. Boiler should be in "DISABLE".
6. Take water samples from the boiler to confirm that the pH is within the range of 12.0 – 12.4.
7. After the target pH is confirmed and boiler is turned off, close the valves to isolate the boiler from the steam, vacuum breaker and feedwater inlet during negative pressure conditions: steam outlet -> boiler makeup/feedwater valve -> vacuum breaker.

*note – must add a manual valve on the vacuum breaker as this does not come standard

Bringing boiler back online

Open the valve on the vacuum breaker. This will allow the negative pressure within the boiler to return to atmospheric conditions.

Open the remaining valves necessary to operate the boiler (i.e. steam valve and feed water valve).

- Before performing a blow down with a negatively pressurized boiler, open the vacuum breaker valve.

< Parts to Check >

Keeping a spare of the following parts on-site is recommended:

1. Water Level Probes (Cut to length)
2. Conductivity Probe
3. Pressure Gauge
4. High Limit Pressure Switch
5. Stand-by Pressure Switch
6. Blow Down Ball Valve
7. Surface Blow Down Solenoid Valve
8. Vacuum Breaker

< Caution >

Potentially flammable gases may accumulate in the boiler when volatile layup chemicals are added. Please keep any source of ignition away from boiler openings. (Miura boiler water treatment chemicals are non-volatile)

1. Use protective equipment (Safety glasses, rubber gloves, etc.) when handling chemicals or objects with high temperature. It may lead to injuries such as burns or blindness.
 - a. Please rinse the chemical away with water when chemical becomes in contact with the skin.
 - b. If the chemical splashes into your eyes, immediately rinse with water and consult with a doctor
 - c. If an irritation occurs after handling the chemical, there may be chemical residue on your clothes.
 - d. Vaporized, lay up chemical is flammable and should be kept away from open flame.
2. Do not peer into the inspection port or the tubing attached during processes involving chemical, as caustic chemical may splash.
 - a. Use a bucket to collect all chemical coming out of the inspection port during the refill process if caustic is added with the inspection port open.
3. The water drained after this process may be highly caustic. Notify the customer and review local regulations before draining the boiler.

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