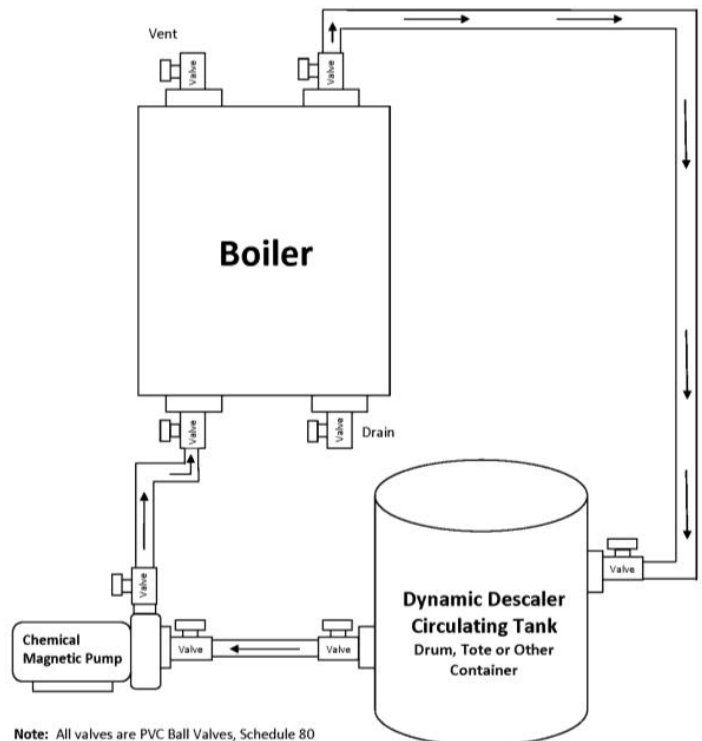


Boilers

Cleaning instructions:

1. Shut down Boiler.
2. Blow down with pressure still in boiler.
3. Close steam valve.
4. Drain & flush Boiler Unit.
5. Disconnect the water in/out connections from the Boiler unit.
6. Attached the necessary hoses to the water in/out connections on the Boiler unit to a circulation pump and a circulating tank. (You might be able to connect the inlet hose to the valve on the bottom of the Boiler. The discharge hose should be connected to the top of the boiler where a safety relieve valve is in place. Simply take the safety relieve valve off and install a schedule 80 PVC ball valve. This will be your discharge going into the circulating tank).
7. We recommend you circulate with water first to see if the system has any leaks, or if any unnecessary valves are not turned off. If you do have leaks, repair before proceeding to next step.
8. Circulate our Descaler for 20 minutes; then turn off the circulating pump and let Descaler stand for approximately 20 minutes. Repeat this process for a total of 4 to 8 hours (time is determined by the water volume of the boiler, or the size of Boiler)
9. After the first 20 minutes of circulation time, check the pH of our Descaler with a pH meter or with pH strips. Before use, Our Descaler has a pH between 0 and 1.15 pH. Depends which of our product is being used. If the pH rises to around 3 or 3.5 pH after the first 20 minutes, add more of our Descaler to lower the pH to around 1. Continue this process through the time allowed (4 to 8 hours). When the pH of our Descaler remains the same, there should be no more scale, so the Boiler should be clean. The Boiler should be free of scale. The only way the pH of our Descaler would increase is by having scale remaining in the boiler.
10. We recommend the procedures in 7 and 8 to effectively to clean boilers. The 20 minutes circulation and the 20 minutes saturating time are actually the US Navy procedures. The US Navy uses our products. We have increased the circulation time to speed up the cleaning. The Navy wanted 5-minute circulating time and 20 minutes saturating time.
11. The reason for this procedure is to allow the Descaler to penetrate through tough scales while been saturated. This allows our Descaler to work more effectively in your Boiler. After 20 minutes of saturating, proceed with circulating to wash away all scale and debris.



12. If you decide to bypass the saturation technique, you may do this. In a complete circulation with no saturation, the time for cleaning will decrease. This would allow for less down time in your plant. Please call for more information.

13. Pump or remove the remaining Descaler into another container. If the Descaler still has a pH around 1-3 pH, use the Descaler for another cleaning.

14. After removing our Descaler from the Boiler, flush the Boiler with water to remove all debris and remaining Descaler. If you want to completely neutralize the Boiler, add sodium bicarbonate (baking soda) to the water while circulating. Add a ratio of 1/2 pound of sodium bicarbonate to 25 gallons of water.

15. Once you have flushed the Boiler, disconnect the hoses from the circulating pump and circulate tank. Re-connect the water inlet and outlet to the Boiler. If you chose to discharge the Descaler from the safety valve on top of boiler, be sure to place the safety valve for safety measures. Be sure to open steam valve.