

CLEANING INSTRUCTIONS FOR WATERFURNACE[®] HYBEX MODULAR CHILLERS WITH SCALEBREAK[®]-MP

Annualized preventive maintenance is recommended by WaterFurnace to maintain optimal efficiency during operation. The following instructions for Cleaning-In-Place (CIP) of the evaporator and condenser is based on the GDS-C40 or GDS-C92 CIP machine available from Goodway[®]. Visit www.goodway.com/waterfurnace for determining the correct amount ScaleBreak-MP descaler required for a cleaning HybrEx heat exchangers.

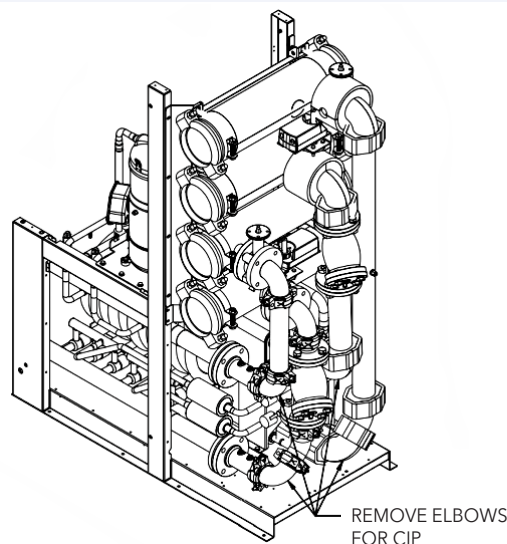
1. Disable the unit from the primary controller HMI and turn off power to the unit from the power switching gear.
2. Close manual isolation valves and verify that the actuated valves are also in the close position. If actuated valves are still open, manual overwrite the valve position.
3. Remove the grooved elbows shown in the inlet and outlet of each unit.
4. Connect the GDS-MSA-250 (Goodway) adapter with the bottom adapter offset is set the lowest position possible and the top adapter is set to the highest position possible. This ensures that no air pockets are created during the flushing procedure.
5. Attach the circulation hoses. Pump the descaling fluid in the low side and return through the top side.
6. Fill the heat exchanger with water and perform a hydrostatic test. If no leaks are present, proceed with the descaling procedure.
7. Bleed off enough water equal in volume to the descaling solution needed.
8. Reverse the flow every 15-20 min.
9. Circulate the ScaleBreak-MP solution for the recommended time frame as indicated by the Goodway calculator.
10. During your ScaleBreak-MP cleaning you will want to make sure your descaling solution remains active. For this step, please follow our "Testing ScaleBreak's Effectiveness" procedure.
11. Once circulation time is completed, begin the flushing process
12. Ensure that the pH levels are safe for discharge and follow your local regulations for discharge. Neutralize the solution using ScaleBreak Neutralizer if pH balancing is required.
13. Turn off your circulation pump, remove the return hose and place put it in a drain.
14. Add fresh water to the pump recirculation bucket and start the pump.
15. Continue running clean water through the BPHE for 10 minutes or until the return water is running clean.
16. Disconnect your hoses and remove the adapters.
17. Reinstall the grooved pipe elbows.
18. Remove and clean the strainer baskets and re-install.
19. Power and enable the chiller.
20. Open manual isolation valves.

Additional information can be found at: www.goodway.com/waterfurnace

Please note:

- Heavily fouled heat exchangers may require additional ScaleBreak-MP and circulation time.
- If plugging is suspected, consult with a Goodway technician for additional information and procedural steps.
- Follow all local regulations for discharge.
- Follow all plant personal protective equipment guidelines as determined by your EH&S team.

ScaleBreak-MP has very minimal corrosion rates, however, the application of ScaleBreak-MP may reveal pre-existing under-deposit corrosion (UD) or microbiologically influenced corrosion (MIC). These types of corrosion can present themselves in the form of pitting or pin holes.



Please contact Goodway Technologies with any questions.