

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

Prior to performing a descaling on brazed plate condensers or evaporators you will first need to visit our calculation tool at www.goodway.com/waterfurnace-calculator. This online calculator will provide the proper amount of ScaleBreak-MP and circulation time needed to perform a cleaning. When cleaning the WaterFurnace Modular Chillers, we recommend you purchase our GDS-MSA adapters to simplify the cleaning process.

1. Isolate the brazed plate heat exchanger from the system by closing the supply and return water valves.
2. WaterFurnace Modular Chillers are piped with Victaulic fittings. Simply unbolt the couplings and remove the pipe section on both the top and bottom of the BPHE.
3. Our GDS-MSA adapters come with the valve tap offset so the bottom adapter can be positioned to the low side of the BPHE and the upper adapter can be positioned up on the high side of the BPHE. The valve tap offset ensures you do not create an air pocket on the high side during the circulation and enables debris to be removed when flushing from the low side. Bolt in both adapters as described into the unit.
4. When attaching your circulation hoses, be sure to pump the descaling fluid into the low side of the BPHE and returning the descaling fluid out the top. Your return hose should be elevated 6-8 inches above the BPHE and tied off. This action ensures the entire plate pack is flooded and the ScaleBreak-MP comes in contact with all the wetted interior surfaces. It also minimizes the potential of the upper areas becoming air bound with CO₂ or foaming resulting from the cleaning.
5. Fill your heat exchanger with water and perform a hydrostatic test by turning your pump on and circulating water. This action ensures the BPHE is isolated and none of the ScaleBreak-MP fluid will be lost.
6. You will need to bleed off enough water equal to the volume of ScaleBreak-MP required for the cleaning. If you relieve too much water, you can add some back to complete your circulation loop.
7. Water formed deposits will occupy volume; additional water may need to be added during the cleaning process as deposits are dissolved.
8. If you are using one of our GDS pump systems, reverse the flow every 15-20 minutes. This can be accomplished by simply sliding the reversing valve to the other side and is imperative when plugged plates are suspected.
9. Circulate the ScaleBreak-MP solution for the recommended timeframe as indicated by our calculation tool.
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 you have reached the recommended circulation time and your ScaleBreak-MP has completed the job, you can begin your flushing process.
12. Though ScaleBreak-MP is a biodegradable solution, most facilities need to conform to pH discharge limits. ScaleBreak Neutralizer can be utilized to safely elevate your pH value to meet your discharge limit. Please follow the instructions for this process in the ScaleBreak Neutralizer information sheet.
13. To flush your BPHE, turn off your circulation pump, remove the return hose from your recirculation system and put it to drain.
14. Add a fresh water hose to your recirculation bucket on your pump system and turn the pump back on.
15. Continue running clean water through the BPHE for 10 minutes or until the return water is running clear. This action will also flush out your pump system and hoses.
16. As an added safeguard, you can reverse your hoses so you are pumping into the top and flushing out the bottom. This action will flush away any debris that may have settled at the bottom of the exchanger.
17. Disconnect your hoses and remove the GDS-MSA adapters. Reinstall the original pipe fittings and secure into place with the couplings. Open your water supply and return valves and check for leaks.
18. Your chiller can now be returned to service.

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

Please note:

- Heavily fouled brazed plate heat exchangers may require additional ScaleBreak-MP and circulation time.
- If plugging of plates 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, pin holes or similar types of damage.

Please contact Goodway Technologies with any questions.