

Descaling the Heat Exchanger

Models: C1210ESC, C1210ES, C1050ES, C950ES, 940ES, 940ESO, 830ES



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Introduction

- ▶ Periodic descaling may be necessary in areas where the water supply is highly mineralized. Scale build up in the heat exchanger may result in reduced flow rates, error codes and boiling sounds in the heat exchanger.

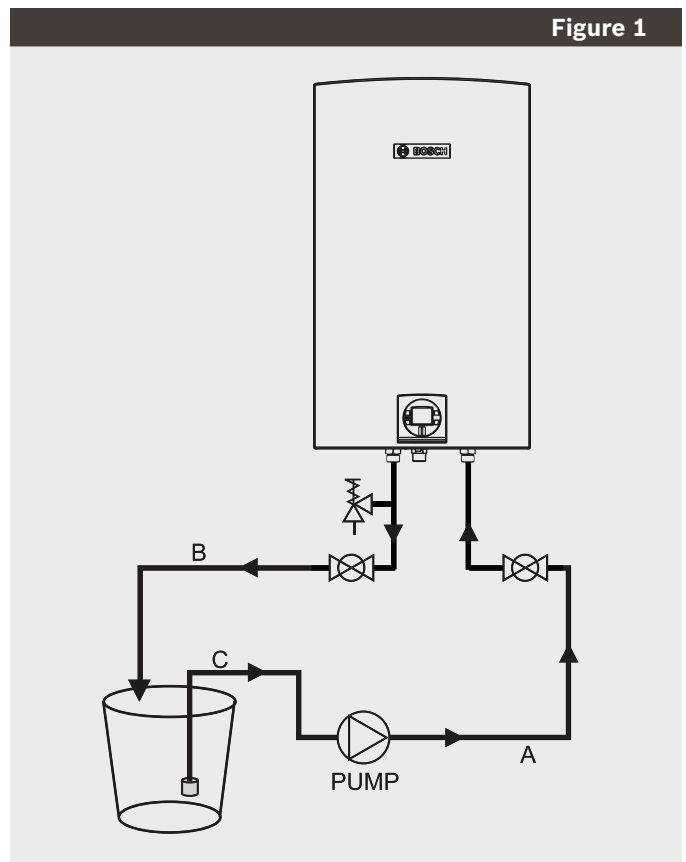
Tools needed:

- ▶ Various plumbing wrenches
- ▶ 5 gallon bucket for descaling solution
- ▶ Small circulator or pump
- ▶ 3 Hoses for circulating
- ▶ Filter for descaling solution

Descaling procedure

1. Clear error code (if displayed) by pressing the reset button.
2. Press On/Off button to "Off".
3. Disconnect electrical supply from the water heater.
4. Shut off the water supply to the water heater using (installer supplied) isolation or shutoff valves.
5. Open hot water taps to drain and relieve pressure from the plumbing system.
6. Drain water by disconnecting the inlet and outlet water connections from the heater.
7. Connect a hose (A) from the outlet of the circulating pump (installer supplied) to the inlet water fitting on the water heater. (Fig. 1)
8. Connect another hose (B) to the water outlet fitting on the water heater. Route the other end of this hose into a descaling reservoir or bucket. (Fig. 1)
9. Using a 3rd hose (C) from the descaling reservoir, connect to the inlet side of the circulator/pump. Install a filter on the end of the hose in the descaling reservoir. (Fig. 1)
10. Make sure all connections are 'hand tight'.
11. Fill reservoir/bucket with descaling solution so both hoses inside are submersed. We recommend straight white vinegar. If using a commercial descalant, refer to manufacturer's instructions for proper dilution ratio with water.
12. Operate the circulating pump.
13. Make sure there are no leaks and the solution is flowing from the descaling reservoir, through the heater and returning to the reservoir.

Figure 1



14. Run solution through the heater until the solution returning to the descaling reservoir/bucket comes out clear. Changing to a fresh solution may be necessary during this process.
15. Properly discard of dirty descaling solution. Disconnect lines A and C (Fig. 1). Reconnect cold water supply to the water heater.
16. Open cold supply shutoff valve to flush water heater with clean water. Allow enough water to flow through the heater to properly flush it. Filling the 5 gallon descaling bucket once should be sufficient.
17. Close cold water shutoff valve and disconnect line B (Fig. 1). Reconnect hot water line to the water heater.
18. Plug in power cord and press On/Off button to "On".
19. Open water shutoff valves, and return water heater to service.

Water Quality

- ▶ Water quality can have an impact on appliance longevity and may void the manufacturer's warranty.
- ▶ For water analysis data, call your local water department. If on a well, have the well water analyzed periodically. If water quality exceeds one or more of the values specified in Figure 2, Bosch recommends consulting a local plumber about installing a water conditioner or softener.
- ▶ If the tankless water heater is operating in applications where the outlet temperature exceeds 140°F, a water softening system is strongly recommended. The higher the set temperature is on the appliance, the greater the risk for scale/mineral deposits. Damage from scale/mineral deposits is not covered under warranty. Refer to manufacturer's limited warranty.

Figure 2

Description	Max. Levels	
	pH	pH
TDS (total Dissolved Solids)	mg/l or ppm	500
Total hardness	gpg or ppm	100 (6 gpg)
Aluminum	mg/l or ppm	2.0
Chlorides	mg/l or ppm	250
Copper	mg/l or ppm	1.0
Iron	mg/l or ppm	0.3
Manganese	mg/l or ppm	0.05
Zinc	mg/l or ppm	5.0



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