

# Service Bulletin AP-03

Models: 2400ES, 2700ES, 715ES, C800ES, C920ES, C920ESC, 660EF, 660EFO, 830ES, 940ES, 940ESO, C1050ES, C1210ES, C1210ESC

## Direct Hot Water Recirculation



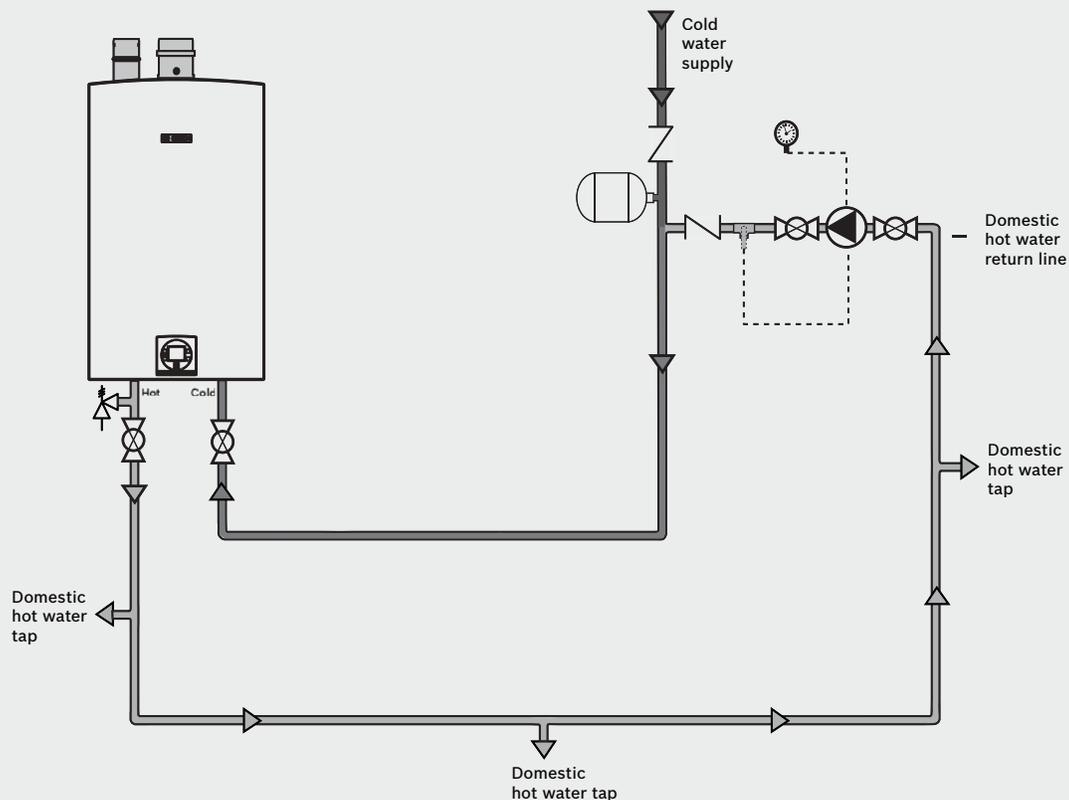
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### Introduction

- ▶ The following information and illustration can be used as a guideline for supplying instant hot water to desired taps when recirculating directly through the water heater. By use of a circulator, aquastat and/or timer, a loop of hot water is kept constantly hot and ready to use. This limits wait time for hot water delivery to the tap and excessive waste of water.

### Parameters for recirculation application

- ▶ An Aquastat, with a 5° F differential to control the pump, is recommended for optimal temperature stability.
- ▶ The usage of a timer is recommended to limit the energy consumption.
- ▶ Water heater set point minimum 14° F above the Aquastat setpoint
- ▶ Keep hot water piping insulated to limit heat loss.
- ▶ Set temperature on the water heater must not exceed 140°F (GWH C 920 ESC, C 1210 ESC).



### Symbols



## Parameters for recirculation pump

- ▶ **Must provide a recirculation flow above 1.7 GPM.** This can be verified in the control unit diagnostics section of the installation manual; mode P4 – 3d (not available on 660EF-EFO).
- ▶ **Note:** The Grundfos model 15-55 has been tested and shown to work on recirculating systems up to 120 feet. System conditions vary and each pump must be sized by a professional to insure performance.
- ▶ Pump must be bronze or stainless steel.
- ▶ Size the pump according to the system pressure drop (Figure 2).
- ▶ Maximum flow allowed through the recirc loop is 5 GPM.

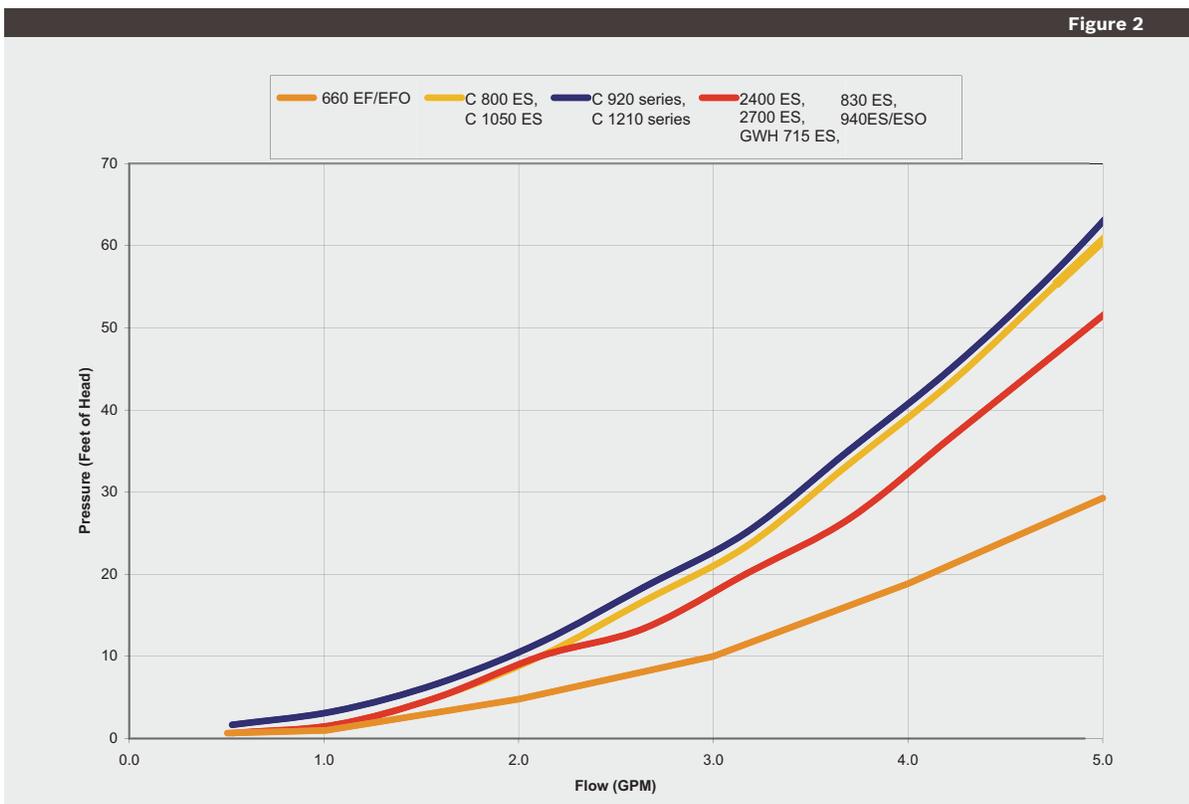


If the water heater is used within an approved hot water recirculation application and supplied with circulated water, the heat exchanger warranty is decreased. Please refer to the installation manual for detailed warranty period information.



Run the system for 30 minutes to remove debris from the plumbing. Then remove the unit's inlet water filter to decrease pressure drop through the system. If the inlet water filter, when removed, contains debris, install a Y-strainer (installer supplied) on the cold water inlet.

Figure 2



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