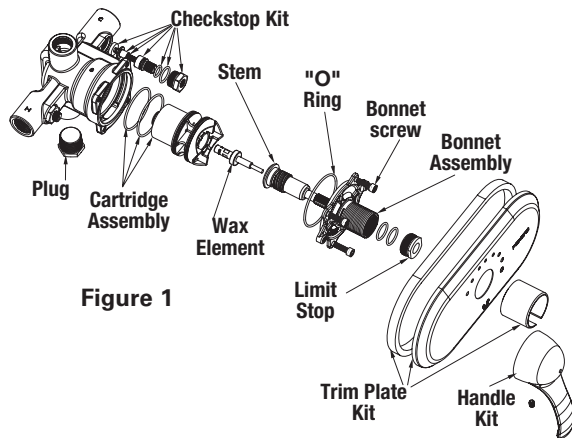


Technical Instructions

Description ■

The following instructions explain how to retrofit your existing 420 HydroGuard to the new, enhanced version which utilizes a wax element and cartridge type design. The combination of these design concepts results in a valve with enhanced performance. See the exploded view of this new assembly below:



Kit	Description
4204512	Full Upgrade Kit w/Color Trim Plate & Dome Handle
4204522	Full Upgrade Kit w/Etched Trim Plate & Dome Handle

Before you begin your upgrade, take the time to ensure you have all the necessary pieces. Your retrofit kit, for each valve, consists of the following (refer to above diagram when taking inventory):

1. Cartridge Assembly (w/2 "O"-Rings).
2. Wax Element.
3. Bonnet Assembly.
4. Bonnet "O"-Ring.
5. Lubricant.
6. Four (4) Bonnet Screws.
7. Trim Plate Kit.
8. Handle Kit.

After you verify that you have everything needed to complete the retrofit, proceed with the next section.

Retrofit:

Follow the instructions below to perform your retrofit. Save all components until you have successfully completed your retrofit.



e420 Full upgrade kit

Disassembly:

1. Turn off hot & cold water supply-stops (required for this retrofit).
2. Remove the handle and trim plate.
3. Remove 4 bonnet screws and bonnet assembly.
4. Remove all internal components from valve body.
5. Remove hot water seat using 7/8" hex socket if retrofit from 420 valve.
6. At this point you should have an empty valve body. You are now ready to put the new components into your existing valve.

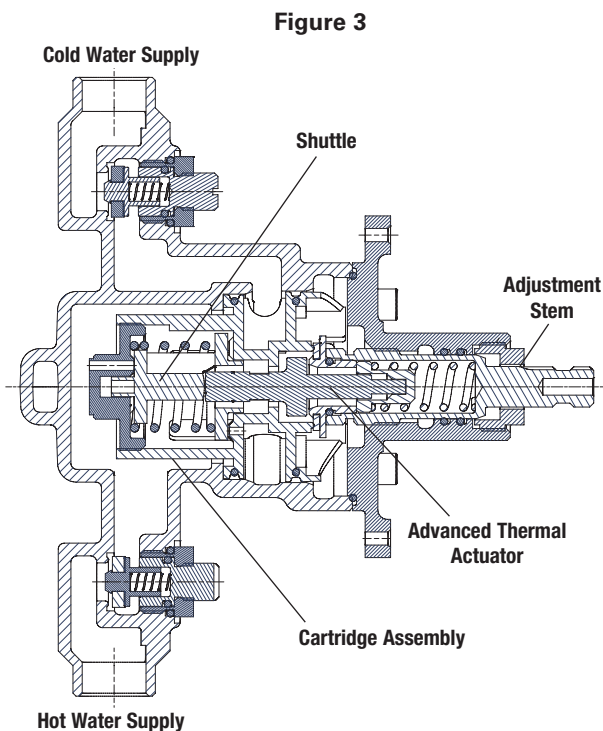
Reassembly:

1. Ensure the inside of the valve body is free of deposits and debris. Clean as necessary.
2. Push the cartridge into the body without the "O"-rings installed. The cartridge should slide in easily, and bottom out with its large fins just inside the front surface of the casting. If the cartridge is difficult to install, or does not go in all the way, remove the cartridge and clean the body or remove any obstructions. Repeat this step until the cartridge installs easily.
3. Remove the cartridge and install the 2 "O"-rings. Lubricate the "O"-rings with silicon lubricant.
4. Install the cartridge back into the body. The cartridge should go in until the large fins are just inside the front surface of the casting (same position as in Step 2). If you cannot push it in all the way due to "O"-rings, use bonnet and two (2) screws to force in. When using bonnet screws, be sure to use a diagonal direction to ensure cartridge seats in the body evenly.
5. Lubricate the bonnet "O"-ring and install into new bonnet assembly.

- Place the wax element into the stem assembly, small end first, and place this bonnet-stem-motor assembly into/onto the valve body. Rotate the bonnet assembly to line up the bonnet screw holes and reinstall and tighten the four bonnet screws.

See cutaway below to see how everything goes together. (Figure 3)

- Rotate the stem assembly clockwise, by hand, until it bottoms out on the cartridge. At this point your valve is in the off position.
- Turn the hot and cold water supplies back on and verify there is no leakage. If the valve leaks disassemble and go back to step #1 and reassemble.



9. Maximum Temperature Setting

Maximum temperature setting adjustment (Figure 3) must be set on the job. The high temperature limit stop is threaded into the bonnet and is turned counter clockwise for a decreased setting. Powers recommends a maximum setting of 105°F (41°C). To adjust temperature, rotate handle to the maximum desired outlet temperature, screw temperature limit stop until it touches stem's shoulder. Close valve and open it to verify setting.

Warranty ■

The Seller warrants that the equipment manufactured by it and covered by this order or contract is free from defects in material and workmanship and, without charge, equipment found to be defective in material or workmanship will be repaired, or at Seller's option replaced F.O.B. original point of shipment, if written notice of failure is received by Seller within one (1) year after date of shipment (unless specifically noted elsewhere), provided said equipment has been properly installed, operated in accordance with the Seller's instructions, and provided such defects are not due to abuse or decomposition by chemical or galvanic action. THIS EXPRESS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, GUARANTEES, OR REPRESENTATIONS, EXPRESS OR IMPLIED. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. The Seller assumes no responsibility for repairs made on the Seller's equipment unless done by the Seller's authorized personnel, or by written authority from the Seller. The Seller makes no guarantee with respect to material not manufactured by it.

POWERS™

A Watts Water Technologies Company

⚠ WARNING

FAILURE TO COMPLY WITH PROPER INSTALLATION AND MAINTENANCE INSTRUCTIONS COULD CONTRIBUTE TO THE VALVE FAILURE, RESULTING IN INJURY. TO ENSURE THE ACCURATE AND RELIABLE OPERATION OF THIS PRODUCT, IT IS ESSENTIAL TO:

- Properly size each valve based on the individual application.
- Properly design the recirculation system to minimize pressure and temperature variations.
- Conduct an annual maintenance program to ensure proper operation of all critical components.
- Check outlet temperature to ensure it does not exceed 105°F (41°C). Make sure temperature limit stop is properly re-set to maximum 105°F (41°C) following valve maintenance or repair. Tampering with limit stop in any way may result in scalding temperature causing serious bodily harm.

Periodic Inspection: Corrosive water conditions, temperatures over 210°F, unauthorized adjustments or repair could render the valve ineffective for the service intended. Regular checking and cleaning of the valve's internal components helps assure maximum life and proper product function.

- Your valve should now be set properly. Verify proper operation by rotating the stem from the off position, counterclockwise, to the high temperature position. Verify the temperature does not exceed your desired maximum temperature. Rotate stem back to the off position.
- Peel off backing of dial gasket and attach it to the inside top edge of dial plate. Make sure gasket is approximately 1/16" beyond the plate edge.
- Hold plate firmly against the wall. Thread sleeve on the bonnet making sure that the cut away on the sleeve is facing out and is in the bottom position when tightened. Do not use any tool which will scratch the sleeve surface.
- Install handle with the screw provided on to the stem and tighten in place. Ensure the set screw lines up with the groove on the adjustment stem.

ATTENTION INSTALLER: After installation, please leave this Instruction Sheet for occupant's information.
IMPORTANT: Inquire with governing authorities for local installation requirements.

CALIFORNIA PROPOSITION 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (California law requires this warning to be given to customers in the State of California.)

For more information: www.watts.com/prop65

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