

### Installation Instructions

#### ⚠ WARNING



Read this Manual **BEFORE** using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.



#### ⚠ WARNING

**Need for Periodic Inspection/Maintenance:** This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. All products must be retested once maintenance has been performed. Corrosive water conditions, inlet temperatures over 200°F (93°C), and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal components helps assure maximum life and proper product function.



#### Installation ■

1. Flush all piping thoroughly before installing.
2. Remove knobs A, B, and C.
3. Remove the four-bracket screws (D) and panel screws (E) then remove stainless steel box assembly. Do not remove front panel from box. There are six (6) bracket screws on the pressure equalizing models.
4. For wall mounting, use rough-in drawing to locate mounting holes on wall. Mount bracket to wall. Do not remove mixer assembly from bracket.
5. Make final connections to hot and cold supplies and outlet from vacuum breaker. Facing front of mixer, connect hot water to left side (marked HOT) and cold water to right side (marked COLD). Inlet connections must be piped correctly for proper operation of Fotopanel.

#### ⚠ WARNING

Do not exert excessive torque on the outlet pipe when connecting it to the vacuum breaker which is supported by a plastic manifold.

6. Replace stainless steel box assembly and attach knobs A, B, and C and the front panel screws E.

#### Thermometer Calibration ■

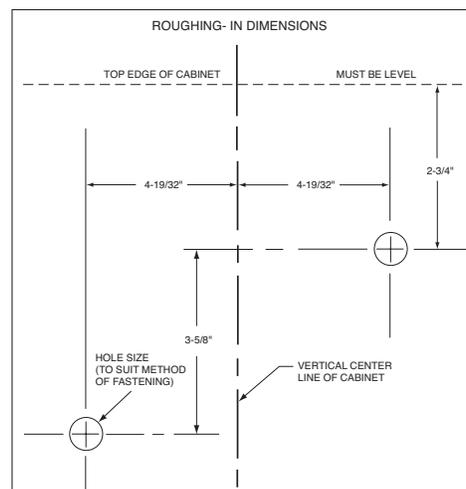
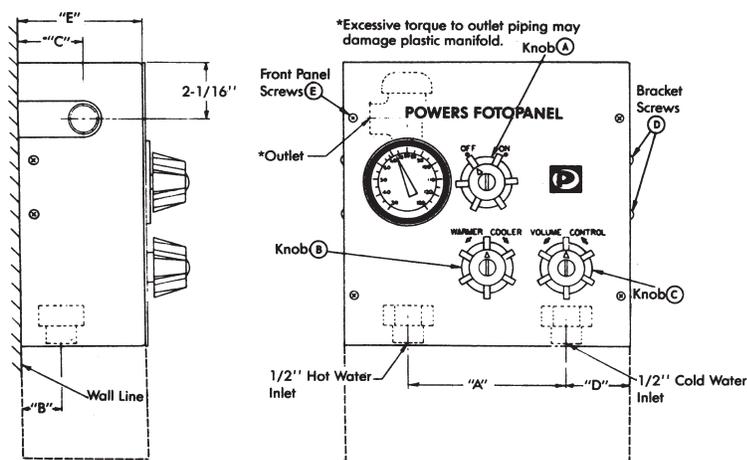
1. If thermometer should need calibration, remove front knobs A, B, and C and the front panel screws E.
2. Calibration screw is located on back of thermometer case.

#### 440-1000

CAPACITY	"A"	"B"	"C"	"D"	"E"
6 gpm	5-7/8	1-1/2	2-7/16	2-3/8	4-3/4

#### 440-3000

CAPACITY	"A"	"B"	"C"	"D"	"E"
14 gpm	5-3/4	1-3/4	2-11/16	2-7/16	6-3/4



## Troubleshooting and Repair for Series 440 Mixing Valves ■

What to look for if:

- **The maximum temperature cannot be obtained...**
  - a. Lime deposits may have accumulated in the hot water pipes, restricting the hot water supply.
  - b. The hot water supply temperature may be too low.
  - c. The knob rotation setting may be too low. Remove knobs and stainless box assembly, then readjust the high temperature limit stop. (Refer to maximum temperature setting section).
- **Flow of water is less than desired...**
  - a. The upstream supply valves may not be fully open.
  - b. The inlet supply pressure(s) may be low.
  - c. Lime deposits may have accumulated in cartridge, restricting water flow. Replace cartridge kit.
  - d. The fixture head may be clogged. Remove and clean.
  - e. The checkstops may be clogged. Clean checkstops.
- **The valve opens with hot water flow rather than cold water flow...**
  - a. The inlet water supplies are connected to the wrong ports. Remove the valve and reinstall.
- **The tempered water is too cold, although motor has been replaced, OR the hot water temperature is below 115°F.**
  - a. Raise the temperature of the hot water supply.
- **Flow of water is completely shut off...**
  - a. The upstream supply valves may be completely closed.
  - b. The hot or cold water supply pressure may have failed. The Hydroguard 420 valve is designed to close down upon cold water failure.
  - c. The checkstops may be closed. Access the checkstops and open by turning the adjustment screw fully counterclockwise.

## Temperature Setting for Series 440 Mixing Valves ■

### Test the System

1. Verify that the valve is in the OFF position (fully clock-wise position).
2. Turn on water supply and then rotate the valve knob (warmer, cooler) counterclockwise. Water should come through the fixture head.

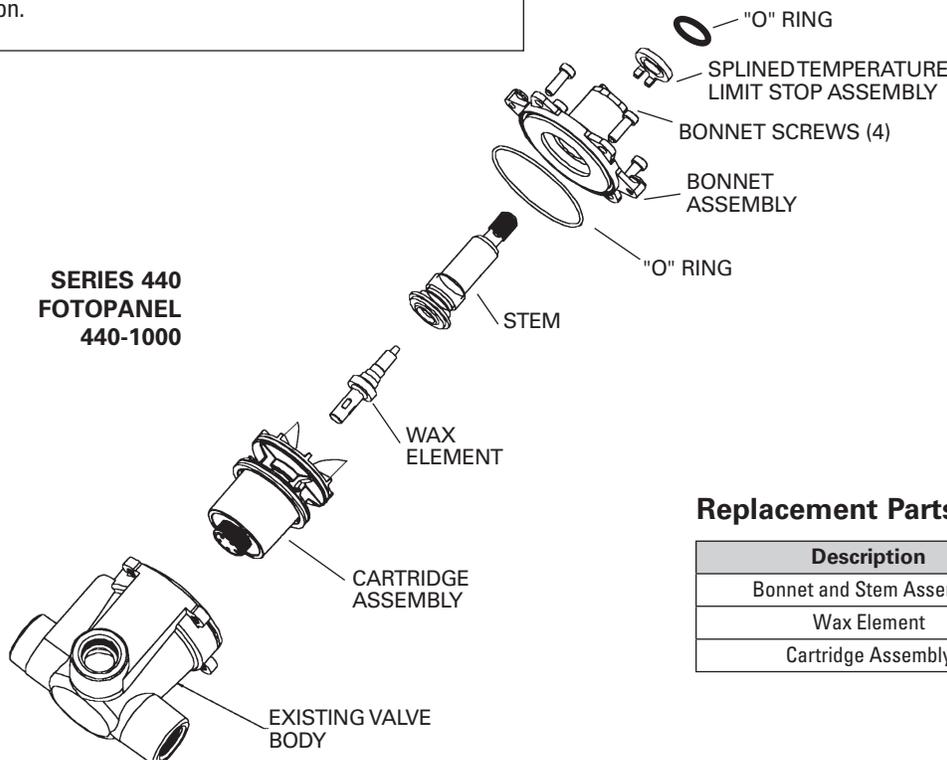
### ⚠ WARNING

Any repair or modification of the valve may affect the high temperature setting. The maximum temperature setting must be checked by the installer before use.

3. Remove the knobs, stainless steel box assembly and both splined stops.
4. Re-insert the knob back on the (warmer, cooler) valve stem and adjust the valve to the desired maximum outlet temperature. Install the splined limit stop with its tab against the bottom of the bonnet stop.
5. Re-assemble the stainless steel box assembly and the knobs.

### Maximum Temperature Setting/Knob Rotation Stop

The knob rotation setting must be adjusted to limit the distance the user can rotate the handle towards the full hot water position.



### Replacement Parts Kit ■

Description	Repair Kit
Bonnet and Stem Assembly	420 454
Wax Element	420 453
Cartridge Assembly	420 452C

## Troubleshooting and Repair for Series 440 High Capacity Valves ■

What to look for if:

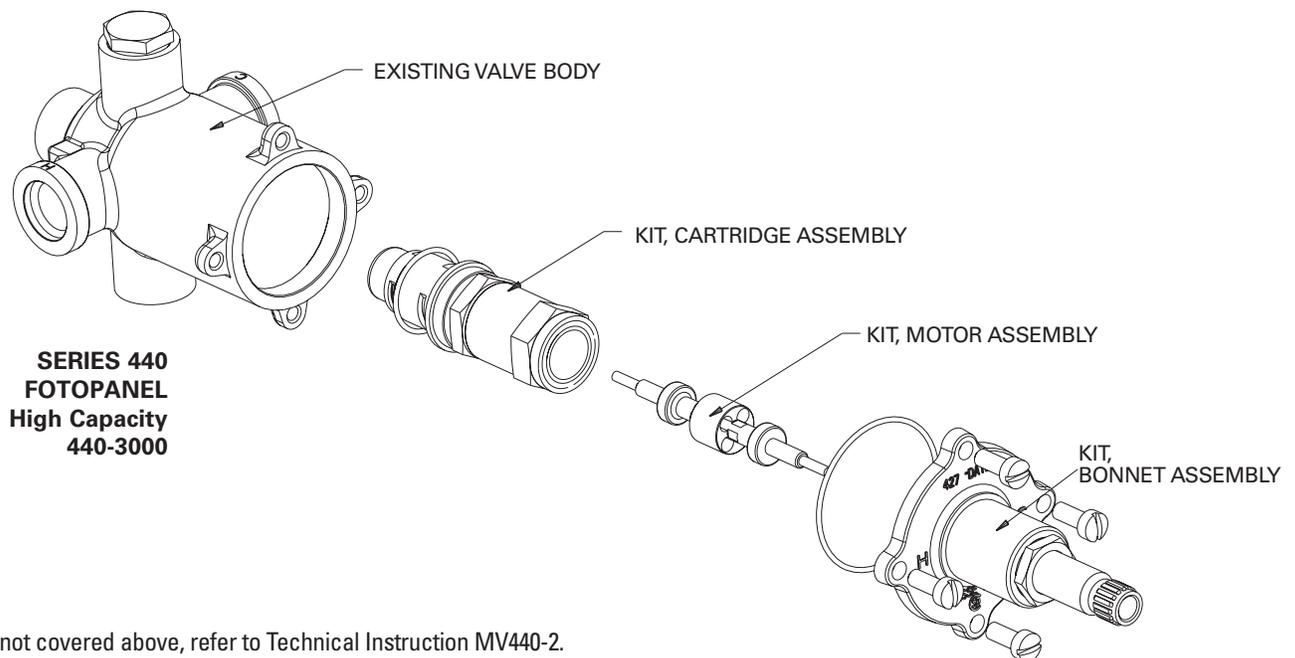
- **The maximum temperature cannot be obtained...**
  - a. Lime deposits may have accumulated in the hot water pipes, restricting the hot water supply.
  - b. The hot water supply temperature may be too low.
  - c. The knob rotation setting may be too low. Remove knobs and stainless box assembly, then readjust the high temperature limit stop.
- **Flow of water is less than desired...**
  - a. The upstream supply valves may not be fully open.
  - b. The inlet supply pressure(s) may be low.
  - c. Lime deposits may have accumulated in cartridge, restricting water flow. Replace cartridge kit.
  - d. The fixture head may be clogged. Remove and clean.
  - e. The checkstops may be clogged. Clean checkstops.
- **The valve opens with hot water flow rather than cold water flow...**
  - a. The inlet water supplies are connected to the wrong ports or cartridge is installed improperly. **The tempered water is too cold, although cartridge has been replaced, OR the hot water temperature is below 115°F.**
  - b. Raise the temperature of the hot water supply.
- **Flow of water is completely shut off...**
  - a. The upstream supply valves may be completely closed.
  - b. The hot or cold water supply pressure may have failed. The e427/e428 valve is designed to close down upon cold water failure.
  - c. The checkstops may be closed. Access the checkstops and open by turning the adjustment screw fully counterclockwise.

## Temperature Setting for Series 440 High Capacity Valves ■

The standard e427/e428 HydroGuard is factory set to deliver tempered water up to a maximum temperature of 110°F (43°C) with equal supply pressures, hot water temperature 140°F (60°C), cold water temperature 60°F (16°C). If desired, the maximum temperature setting can be raised or lowered as follows:

### ⚠ WARNING

Maximum temperature setting adjustment must be set on the job to no greater than 110°F [43°C]. The high temperature limit stop is located on the bonnet. Rotate handle to the maximum desired outlet temperature. With an open-end wrench, screw high temperature limit stop into bonnet until it touches stem's shoulder. Close valve and open it to full hot to verify settings.



For parts not covered above, refer to Technical Instruction MV440-2.

## Replacement Parts Kit ■

Description	Repair Kit
Motor Kits	427 250 Standard
	427 251 Low
	427 252 High
Bonnet Assembly Kit	427 019
Cartridge Assembly Kit	427 017

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.  
**For more information:** [www.watts.com/prop65](http://www.watts.com/prop65)

## 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 OF 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.

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