

**HydroPanel® // Shower System  
with HydroGuard® T/P Series e700 Combination Valve****Technical Instructions****Description ■**

The Powers HydroPanel® // Shower System with HydroGuard® T/P Series e700 valve combines water control with the convenience of modular shrouding. HydroPanel® // stainless steel shrouding provides a concealed shower system where in-wall piping does not exist or may not be practical.

The Series 450-7100 and 450-7050 HydroPanel® // comes complete with the stainless steel HydroPanel® // shrouding, Series e700 valve with checkstops, piping, showerhead, end cap and mounting hardware. Some models feature a stainless steel soap dish. An optional hand shower comes pre-assembled with a full spray push button hand shower, 60" hose, 18" mounted glide-bar and connectors. The Series e700 valve is CSA approved and ASSE type T/P listed.

The following instructions serve as guide for installation, general maintenance and parts replacement for HydroPanel® // Shower Systems with e700 T/P combination Valves. For detailed repair and maintenance instructions for the e700 valve or integral checkstops, please refer to Form ES-P-E700. For specification or installation of the HydroPanel® // Modular Shrouding for shower rooms, please refer to ES-P-450SH.

**Operation ■**

Hot and cold water enter respective ports in the valve and mix in a chamber containing an advanced thermal actuator. This actuator controls the position of the plunger and temperature.

Rotating the adjustment handle repositions the plunger in the cartridge assembly to produce the desired temperature. The mixed water passes over the shutoff disc to the outlet. If the hot or cold supply water temperature or pressure changes, the thermal actuator contracts or expands. This movement repositions the plunger to maintain the desired temperature. With the adjustment handle in full clockwise (OFF) position, the shutoff disc closes the mixing chamber from the outlet.

A high temperature limit stop restricts the movement of the control handle. All HydroGuard® T/P e700 valves are factory set to deliver tempered water up to 110°F (43°C) with equal supply pressures, with hot water temperature 140°F (60°C), cold water temperature 60°F (15.6°C).

**Features ■**

- Installation requires minimal hardware: Mount the brackets, connect supply piping and hang shrouding.
- All exposed surfaces are easy to clean stainless steel or chrome plated.
- Fixed (vandal resistant) and swivel showerheads are available.
- Single handle control and color coded dial offer quick and easy temperature selection.
- Optional hand-held showers with flexible hoses mount on 24" (610mm) glide rails for use in special applications.



**HydroPanel® //  
Model 450-7100**



**HydroPanel® //  
Model 450-7054**

- Optional HydroPanel® // Modular Shrouding offers convenient configuration of horizontal and vertical panels to cover all exposed shower room piping. See ES-P-450SH for details on HydroPanel® // Modular Shrouding.
- HydroGuard® T/P Series e700 are CSA certified and ASSE 1016 type T/P listed.

**Specifications ■**

**HydroPanel® //:** Brushed 18 Gauge 304 SS. Dimensions: 31-1/8" H x 7-1/2" W x 6" D (791 mm H x 191 mm x 154 mm D).

**Piping:** 1/2" (15mm) copper tubing.

**Showerhead:** Fixed: Chrome plated brass, maximum flow 2.5 gpm @ 80psi (0.16 l/s @ 552 kPa). Adjustable Swivel: Chrome plated brass, 30° angle of rotation, maximum flow 2.5 gpm @ 80psi (0.16 l/s @ 552 kPa).

**Valve Assembly and Trim:** HydroGuard T/P Series e700 Combination Valve. Four port (bottom outlet plugged), cast brass body with chrome plated zinc or ABS lever handle. 1/2" (15mm) sweat inlet/outlet connections. Standard integral checkstops. Metal to metal limit stop.

**Valve Operation:** 4.0 gpm @ 45psi differential (15 l/min. @ 310 kPa). Maximum pressure (static) 125psi (862 kPa). Maximum inlet temperature 190°F (88°C).

**Hand Shower:** Full spray with pushbutton water control. Minimum flow 2.0 gpm @ 20psi (0.13 l/s @ 138 kPa). Maximum flow 2.5 gpm @ 80psi (0.16 l/s @ 138 kPa). 1/2" (15mm) chrome finished supply connections. 24" (610 mm) chrome finished brass glide bar, self-tensioned for easy height adjustment. Professional model: 60" (1499 mm) reinforced vinyl hose. Deluxe Model: 60" (1499 mm) metal spiral hose.

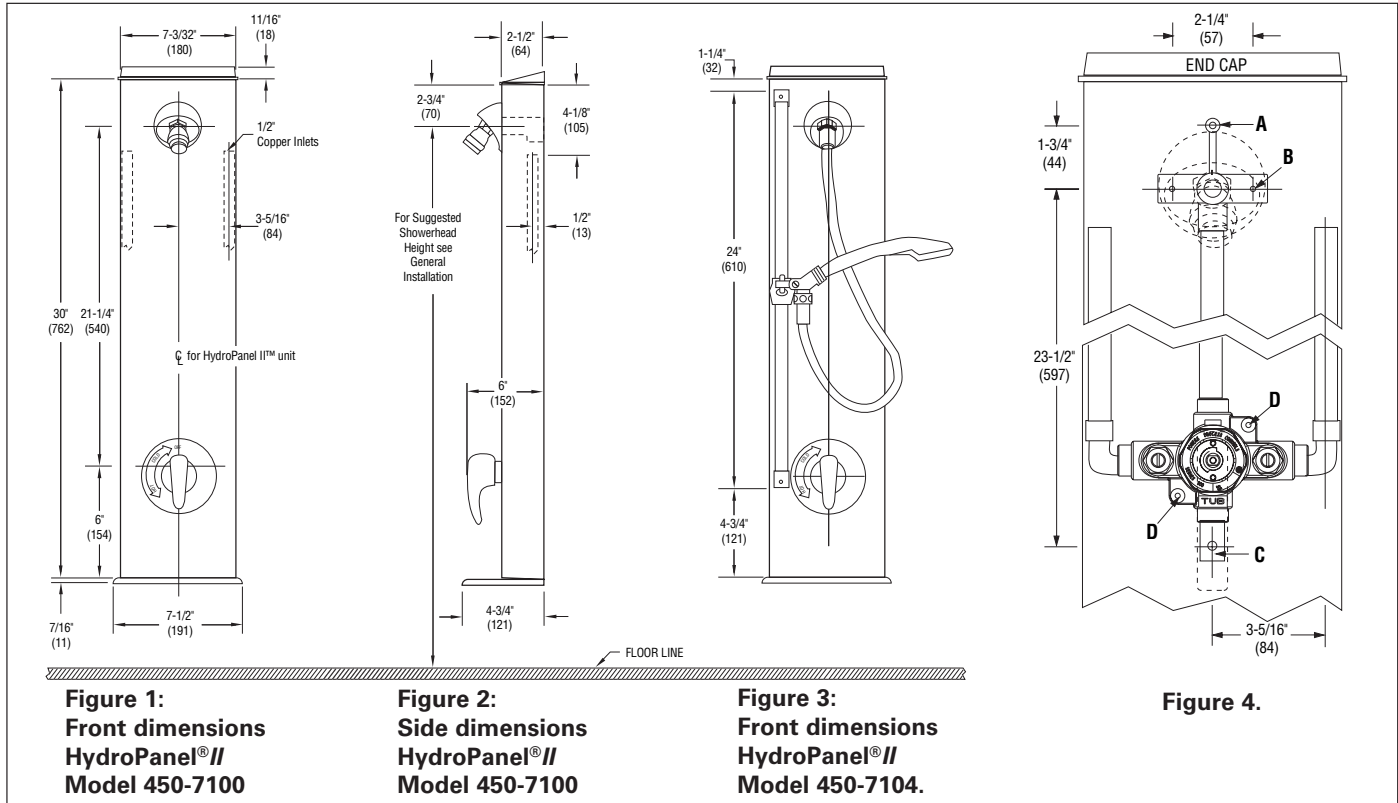
## Installation ■

Before installation of any HydroPanel®// unit, rotate the stem (or handle if attached) of the valve to its full clockwise position (OFF).

### Position the HydroPanel®//Unit

(See Figures 1 and 2) Determine the horizontal position of the unit according to shower room layout, and mark the center line. For multiple shower applications, the recommended minimum distance between the center line of two units is 36" (1914 mm).

6. For mounting the piping assembly lower bracket (C), drill one small holes in the wall 23-1/2" (587mm) below the showerhead on the centerline.
7. Install any mounting anchors as detailed by the individual room specifications.
8. Secure upper piping bracket B with mounting screws (not included).
9. Secure lower piping bracket C with mounting screw (not included).



1. Determine the floor-to-showerhead height for the unit. Recommended heights are listed below:
 

<b>Men -</b>	77" (1956 mm)	<b>Youth -</b>	66" (1676 mm)
<b>Women -</b>	70" (1778 mm)	<b>Youth -</b>	60" (1524 mm)
2. The pre assembled copper tubing supply water inlets are 4-1/8" (105 mm) from the top of the shroud, and 3-5/16" (84mm) left and right of the center line. Adjust supply piping accordingly.

### Install the Piping Assembly

The valve handle assembly, piping and HydroPanel®// shrouding must be separated before mounting to wall. For #450-7104, 7054, 7105, 7055, 7106 and 7056 HydroPanel®// units, the hand shower, hose and showerhead base come pre-assembled to the shrouding. Refer to Figure 4.

3. Detach the valve assembly by removing valve retaining screw, handle and collar. Undo the screws at D and take off the dial insert.
4. Remove the screw at A above the showerhead. Slide the piping out of the shrouding; the showerhead remains attached to the shroud.
5. For mounting the piping assembly upper bracket (B), use the bracket as a template and drill two small holes in the wall at showerhead height.

10. Connect the supply lines to the piping assembly.

### Attach the Shrouding

Do not remove the entire chrome plated end cap from the shrouding. It functions as an end cap and gasket for shroud extension. Part of the end cap can be broken out to provide vertical and horizontal piping clearance.

11. To remove scored section, hit it sharply with a hammer.
12. To connect the showerhead on the shroud to the water outlet pipe, slide the showerhead nipple on the inside of the shroud into the piping assembly. The End Cap will slide over the supply piping. Secure the shrouding with the screw at A.

### Test the System

Before final assembly, test the HydroPanel®// system.

13. Fit the handle onto the valve stem and turn clockwise to the shut off position.
14. Turn on water supply, and then rotate the valve handle counterclockwise. Water should come through the showerhead.
15. Now turn handle fully counterclockwise and measure the temperature of the outlet water. Wait until the temperature stabilizes for an accurate reading.
16. Turn off valve (fully clockwise) and check all connections (showerhead, pipe connections, valve bonnet) for leaks.

## Installation Continued ■

### Set the Limit Stop (See Figure 5)

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

**CAUTION:** Any repair or modification of the valve will affect the high temperature setting. Any changes in inlet water temperature will require readjustment of the limit stop.

16. Remove the valve handle.
17. Adjust the valve to the desired maximum outlet temperature (110°F (43°C) max). Screw on the high temperature limit stop until it touches the stem shoulder.
18. Turn the stem clockwise until the water stops. Open valve to full hot position and verify maximum outlet temperature setting.
19. Replace handle. Repeat steps 17 through 18 until desired maximum outlet temperature is reached. Remove handle before final assembly of shrouding.

### Assemble the Valve Cover and Handle

20. (Figure 4) Fit the dial insert onto the shrouding and secure to the shroud and valve at D with the 2-1/4" screws.
21. Slide the O-ring and sleeve over the bonnet. Place the lever over the stem, and secure with retaining screw using Allen wrench.
22. (Figure 4) Finish assembly by tightening the shrouding screw at A above the showerhead.

## Servicing the HydroPanel® // Unit ■

Before servicing checkstops or piping, turn off the supply water upstream. To access the checkstops, remove the valve handle assembly, cover plate and shrouding (refer to **Install the Piping Assembly**).

At least every twelve months, open up the checkstops and check for free movement of the poppet.

Before servicing the valve, either turn off the water supply upstream (the shroud does not have to be removed), OR access and close the checkstops. To close the checkstops, turn the adjustment screw on each fully clockwise.

Every twelve months, remove the valve bonnet and check the internal components for freedom of movement.

To service or clean the showerhead, unscrew from shroud at hex nut. Service as necessary, and reattach.

## Troubleshooting ■

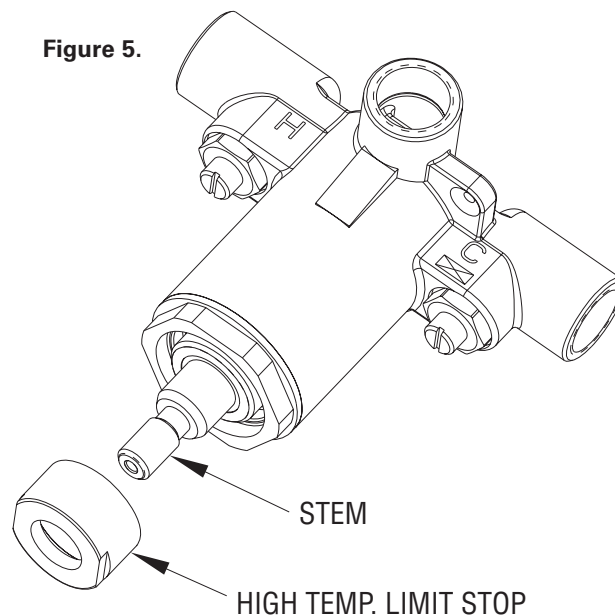
**Note:** For complete servicing the Series e700 Valves or Integral checkstops, please refer to Technical Instructions Form T1 e700.

*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 handle rotation setting may be too low. Remove valve handle, and readjust the high temperature limit stop.

Figure 5.



### 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. The showerhead may be clogged. Remove and clean the showerhead.
- d. The checkstops may be clogged.

### 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...

- a. Raise the temperature of the hot water supply.

### Flow of water is completely shut off...

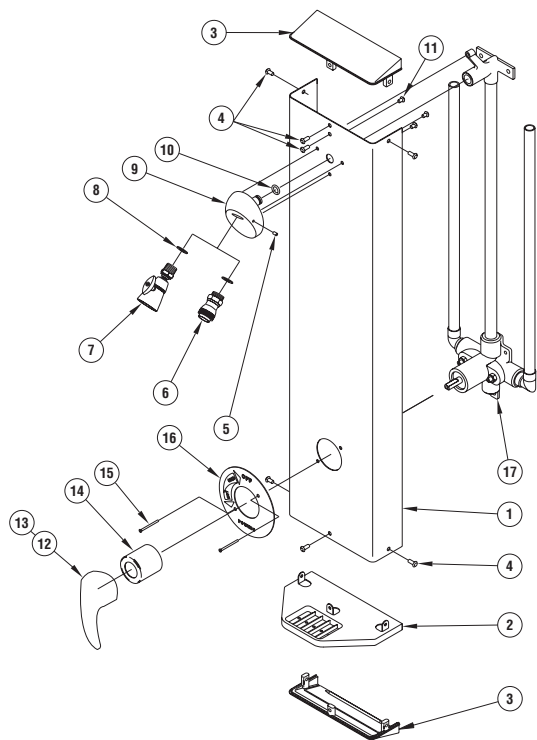
- a. The upstream supply valves may be completely closed.
- b. The hot or cold water supply pressure may have failed. The e700 valve is designed to close down upon cold water supply pressure failure.
- c. The checkstops may be closed. Access the checkstops and open by turning the adjustment screw fully counterclockwise.

**Part List ■**

#	Part #	Description	Qty	Material
1	N/A	Shroud	1	St Steel
2	450 268	Soap Dish	1	St Steel
3	4504011	End Cap Kit	1	Chrm Plt ABS
4	450 273	Screw 10-32 x 3/8 (shrouding)	7	St Steel
5	450 276	Set Screw 10-32 x 7/8	1	St Steel
6	141 816	Fixed Showerhead	1	Chrm Plt Brass
7	141 379	Swivel Showerhead	1	Chrm Plt Brass
8	450 277	Gasket, Showerhead Base	1	Garlock 3000
9	450267G	Showerhead Base	1	Chrm Plt Brass
10	047 013	Quad Ring 3/8 x 1/2 x 1/16	1	Buna N
11	450 274	Screw 10-32 x 1/4 (showerhead)	3	Brass
12	220 050	Metal Handle Kit	1	St Steel
13	220 052	ABS Handle Kit	1	Chrm Plt Zinc
14	220 054	Sleeve Kit	1	Chrm Plt Brass
15	450 272	Screw 8-32 x 2-1/4 (dial insert)	2	St Steel
16	450 270	Insert Dial	1	Al w/Mylar
17	N/A	HydroGuard® /Piping Assembly	1	—
NS	089 003	3/32" Service Wrench	1	Steel
NS	089 004	1/8" Service Wrench	1	Steel
NS	220 060	Cartridge Kit	1	—
NS	900 050	Check Stop Replacement Kit	1	—

NS = Not shown in diagram

NA = Not available



**Ordering information ■**

**HydroPanel®//with HydroGuard®T/P e710**

**Combination Mixing Valves with ABS Handles**

**Order Code**

- Fixed Showerhead and Soap Dish ..... **450-7050**
- Fixed Showerhead less Soap Dish ..... **450-7051**
- Swivel Showerhead with Soap Dish ..... **450-7052**
- Swivel Showerhead less Soap Dish ..... **450-7053**
- Professional Hand Shower, Glide Rail, VB and Soap Dish\* ..... **450-7054**
- Professional Hand Shower, Glide Rail, VB less Soap Dish\* ..... **450-7055**
- Deluxe Hand Shower, Glide Rail, VB and Soap Dish\* ..... **450-7056**
- Deluxe Hand Shower, Glide Rail, VB less Soap Dish\* ..... **450-7057**
- Professional Hand Shower, Glide Rail, VB, Fixed Showerhead & Soap Dish\* ..... **450-7058**
- Professional Hand Shower, Glide Rail, VB, Swivel Showerhead & Soap Dish\* ..... **450-7059**

**HydroPanel®//with HydroGuard®T/P e710 Combination**

**Mixing Valves with Metal Handles**

- Fixed Showerhead and Soap Dish ..... **450-7100**
- Fixed Showerhead less Soap Dish ..... **450-7101**
- Swivel Showerhead with Soap Dish ..... **450-7102**
- Swivel Showerhead less Soap Dish ..... **450-7103**
- Professional Hand Shower, Glide Rail, VB and Soap Dish\* ..... **450-7104**
- Professional Hand Shower, Glide Rail, VB less Soap Dish\* ..... **450-7105**
- Deluxe Hand Shower, Glide Rail, VB and Soap Dish\* ..... **450-7106**
- Deluxe Hand Shower, Glide Rail, VB less Soap Dish\* ..... **450-7107**
- Professional Hand Shower, Glide Rail, VB, Fixed Showerhead & Soap Dish\* ..... **450-7108**
- Professional Hand Shower, Glide Rail, VB, Swivel Showerhead & Soap Dish\* ..... **450-7109**

\* ADA Compliant

**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](http://www.watts.com/prop65)

**ENGINEERING APPROVAL**

Project: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 Architect/Engineer: \_\_\_\_\_

**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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