

POWERS

A WATTS INDUSTRIES CO.

TECHNICAL INSTRUCTIONS

HYDROPANEL™ II SHOWER SYSTEM with Metering Valve

DESCRIPTION

The Powers Hydropanel II Series 450-4000M Shower System combines the water control of metering valves with the convenience of modular shrouding. Hydropanel II stainless steel shrouding provides a concealed shower system where in-wall piping does not exist or may not be practical. Behind the shroud, a mechanical metering valve delivers pre-tempered water to a showerhead. With the push of a button, the metering valve opens to allow water flow for a preset time (adjustable to 60 seconds), then automatically closes. Tempered water can be supplied upstream by a master mixing valve like the Powers Hydroguard 430 Thermostatic Mixing Valve or Hi-Lo Supply Fixture, with or without a cabinet.

The Series 450-4000M Hydropanel II comes complete with the stainless steel Hydropanel II Shrouding, mechanical metering valve with stop, piping, showerhead, end cap and mounting hardware. Some models feature a stainless steel soapdish. An optional handshower comes preassembled with a full spray pushbutton handshower, 60" hose, 24" mounted glide-bar and connectors. Series 450-4000M Hydropanel II units carry a one-year limited warranty.

The following instructions serve as guide for installation, general maintenance and parts replacement for the Hydropanel II Series 450-4000M Shower System. For specification or installation of the Hydropanel II Optional Modular Shrouding for shower rooms, please refer to Forms #PS450SH and #TI450SH.



*Hydropanel II Model 450-4002M
with Swivel Showerhead and Soapdish*



*Hydropanel II Model 450-4004M
with Handshower Assembly and
Soapdish*

OPERATION

A master mixer supplies tempered water to the metering valve. The metering valve consists of a cast bronze body and pushbutton around a timing cartridge. Inside the cartridge is a timing needle and sealed chamber of silicone fluid. Attached around the end of the cartridge is a plastic valve seat. By pressing the pushbutton, a bather forces open the valve seat to pass water to the showerhead.

The pushbutton action also forces the silicone inside the cartridge to flow across a piston check valve. As the silicone slowly meters back, the cartridge returns to its original state, and the valve seat stops the water flow. The distance between the valve seat and timing needle determines the metering cycle (shower run time). Turning the needle in or out adjusts the run-time from a few seconds up to one minute.

The entire timing mechanism remains separate from the water, which makes the valve more reliable and less prone to "sticking." The button can be pushed at any time to restart the timer.

SPECIFICATIONS

Hydropanel: Brushed 18 Gauge 304 SS. Dimensions 31 1/8"H x 7 1/2"W x 6"D [791mm H x 191mm W x 154mm D].

Piping: 1/2" copper tubing.

Showerhead: Fixed: Chrome plated brass, maximum flow 2.5 gpm @ 80 psi [.16 l/s @ 552 kPa]. Adjustable Swivel: Chrome plated brass, 30° angle of rotation, maximum flow 2.5 gpm @ 80 psi [.16 l/s @ 552 kPa].

Valve Body: Metering Valve. Self closing, adjustable to 60 seconds. Bronze body with stainless steel escutcheon. 1/2" NPT inlet/outlet connections. Integral stop valve.

Valve Operation: 5-7 gpm @ 35-40 psi differential [.32-.44 l/s @ 241-276 kPa]. Maximum pressure 60 psig [414 kPa]. Maximum inlet temperature 130°F [52°C]. Recommended inlet temperature 105°F [46°C].

Handshower: Full spray with pushbutton water control. Minimum flow 2.0 gpm @ 20 psi [.13 l/s @ 138 kPa]. Maximum flow 2.5 gpm @ 80 psi [.16 l/s @ 138 kPa]. 60" [1499mm] reinforced vinyl hose with 1/2" chrome finished supply connections. 24" [610mm] chrome finished brass glide bar.

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The Series 450-4000M Hydropanel II comes complete with the stainless steel Hydropanel II Shrouding, mechanical metering valve with stop, piping, showerhead, end cap and mounting hardware. Some models feature a stainless steel soapdish. An optional handshower comes preassembled with a full spray pushbutton handshower, 60" hose, 24" mounted glide-bar and connectors. Series 450-4000M Hydropanel II units carry a one-year limited warranty.

The following instructions serve as guide for installation, general maintenance and parts replacement for the Hydropanel II Series 450-4000M Shower System. For specification or installation of the Hydropanel II Optional Modular Shrouding for shower rooms, please refer to Forms #PS450SH and #TI450SH.

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*Hydropanel II Model 450-4002M
with Swivel Showerhead and Soapdish*



*Hydropanel II Model 450-4004M
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Soapdish*

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INSTALLATION

POSITION THE HYDRO PANEL II UNIT

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

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

- Men - 77" [1956mm] Youth - 66" [1676mm]
- Women - 70" [1778mm] Youth - 60" [1524mm]

2. The preassembled copper tubing supply water inlet is 8-3/4" [222mm] from the top of the shroud, and 1-1/2" [38mm] to the right of the centerline. Connect supply piping accordingly.

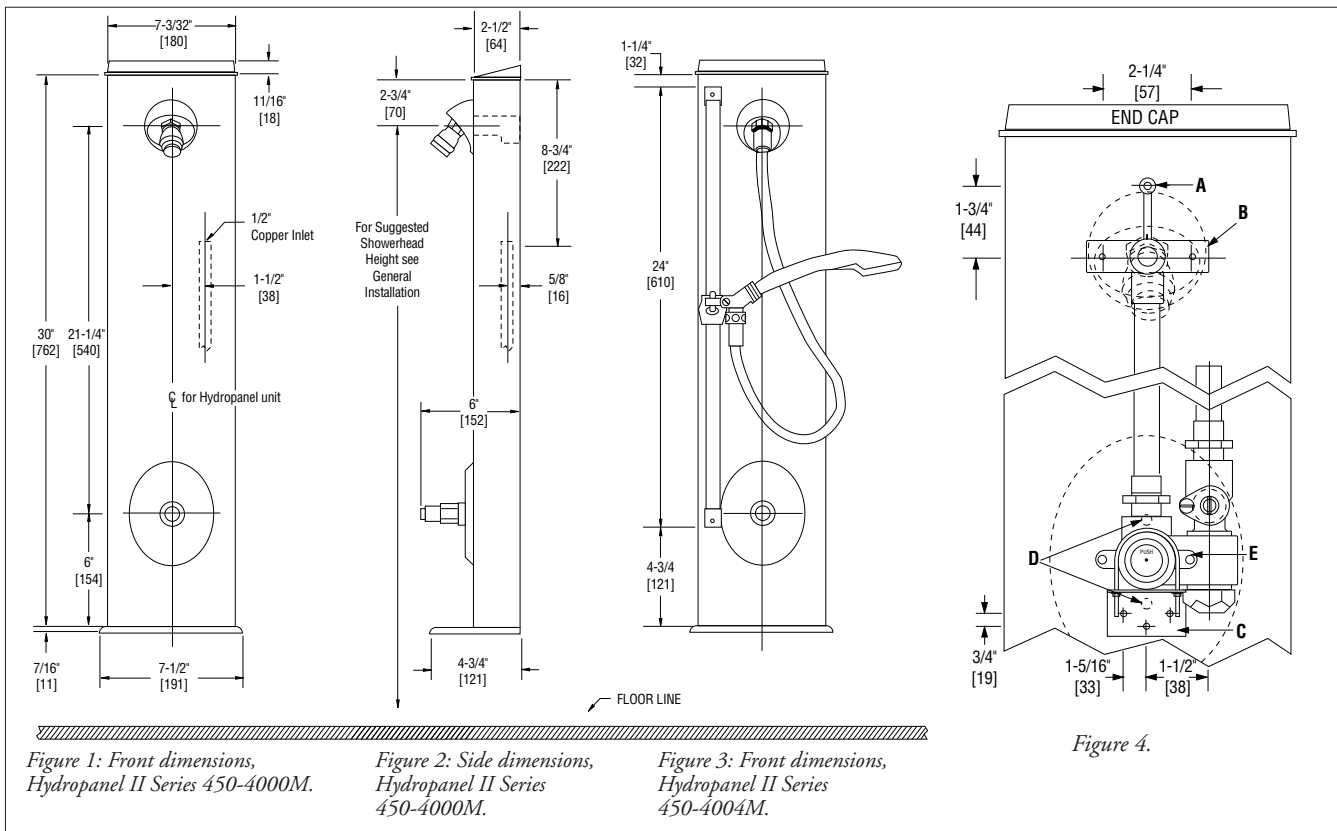


Figure 1: Front dimensions, Hydropanel II Series 450-4000M.

Figure 2: Side dimensions, Hydropanel II Series 450-4000M.

Figure 3: Front dimensions, Hydropanel II Series 450-4004M.

Figure 4.

Install the Piping Assembly

The valve handle assembly, piping and Hydropanel II shrouding must be separated before mounting to wall. For #450-4004M and #450-4005M Hydropanel II units, the handshower, hose and showerhead base come preassembled to the shrouding. Refer to Figure 4.

3. Remove the screws holding the faceplate to the shroud at D. Slide the faceplate off over the valve cover.
4. Remove the two screws at E that secure the shroud to the valve.
5. Detach the piping from the shrouding, by removing the screw at A above the showerhead. Slide the piping out of the shrouding; the showerhead remains attached to the shroud.
6. 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.
7. For mounting the piping assembly lower bracket (C), use the bracket as a template to mark mounting position, and drill 3 holes.
8. Install any mounting anchors as detailed by the individual room specifications.

9. Secure upper piping bracket B with mounting screws (not included).
10. Secure lower piping bracket C with mounting screws (not included).
11. Connect the supply line 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.

10. To remove the scored section, hit it sharply with a hammer.
11. 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 II system. Turn on water supply and push the metering valve button. Water should come through the showerhead for the desired time. When valve meters off, check all connections (showerhead, pipe connections, valve) for leaks.

INSTALLATION, CONTINUED

Set the Metering Cycle

The metering valve can cycle for up to one minute.

12. To adjust, insert the the 3/32" allen wrench into the small hole in the center of the pushbutton (see Figure 5). Inside the hole is the metering cycle timing needle.
13. To increase the shower time, turn the allen wrench counterclockwise. This will widen the distance inside the valve between the timing needle and the valve seat.
14. To decrease the shower time, turn the allen wrench clockwise. This will shorten the distance inside the valve between the timing needle and the valve seat.

Assemble the Valve Cover

15. (Figure 4) Secure the piping to the shroud with the two screws at E.
16. (Figure 4) Slide faceplate over the valve and attach it to the shroud with the 1" screws at D.
17. (Figure 4) Finish assembly by tightening the shrouding screw at A above the showerhead.

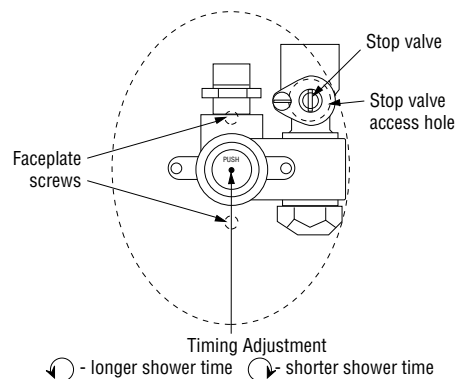


Figure 5.

SERVICING THE HYDROPANEL UNIT

Before servicing valve or piping, turn off the supply water upstream or close the stop valve.

To access the stop valve, refer to Figure 5. Remove the two faceplate screws, then slide the faceplate over the valve. A small hole in the shrouding allows access to the stop valve. To close, turn the adjustment screw fully clockwise. To open, turn the adjustment screw fully counterclockwise.

The timing cartridge for the metering valve is replaceable as a single cartridge. Every six months, check the timing on the valve and inspect for sticking.

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

TROUBLESHOOTING

NOTE: If problems with water tempering occur, please refer to the appropriate technical instructions for your master mixing valve.

1. If the flow of water is less than desired...

- a. The upstream master mixer may not be fully open.*
- c. The showerhead may be clogged. Remove and clean.
- b. The metering cartridge may be sticking. Access and check. Service with Repair Kit #141 839.
- d. The stop valve may not be fully open. Access and adjust accordingly.

2. If the flow of water is completely shut off...

- a. The upstream master mixer may be shut-off.*
- b. The metering valve may be stuck. Access and check. Service with Repair Kit #141 839.
- c. The stop valve may be closed. Access and open by turning the adjustment screw fully counterclockwise.

3. If water continues to flow from the showerhead after valve shut-off...

- a. The metering valve may be damaged. Access and check for sticking. Service with Repair Kit #141 839.

4. If water continues to flow beyond desired cycle time...

- a. The metering valve timing needle needs to be readjusted. Refer to Setting the Metering Cycle.

ORDERING

#	Part #	Description	Qty	Material
3	N/A	Shroud M	1	St Steel
4	450 268	Soap Dish	1	St Steel
5	4504011	End Cap Kit	1	Chrm Plt ABS
6	450 273	Screw 10-32 x 3/8 (shrouding)	9	St Steel
x	141 318	Handshower with 24" Glidebar	1	-
7	450 276	Set Screw 10-32 x 7/8	1	St Steel
8	141 816	Fixed Showerhead	1	Chrm Plt Brass
9	141 815	Adjustable Swivel Showerhead	1	Chrm Plt Brass
10	450 277	Gasket, Showerhead Base	1	Garlock 3000
11	450267G	Showerhead Base	1	Chrm Plt Brass
12	047 013	Quad Ring 3/8 x 1/2 x 1/16	1	Buna N
13	450 274	Screw 10-32 x 1/4 (showerhead)	3	Brass
35	N/A	Screw 10-32 x 1 (valve/shroud)	2	St Steel
36	N/A	Metering Valve/Piping Assembly	1	-
37	450 307	U-Bolt w/Nuts	1	St Steel
38	450 306	Wall Mounting Bracket	1	St Steel
39	594 118	Washer (U-Bolt)	2	St Steel
NS	089 003	3/32" Service Wrench	1	Steel
NS	089 004	1/8" Service Wrench	1	Steel

NS = Not shown in diagram NA = Not available as commercial part

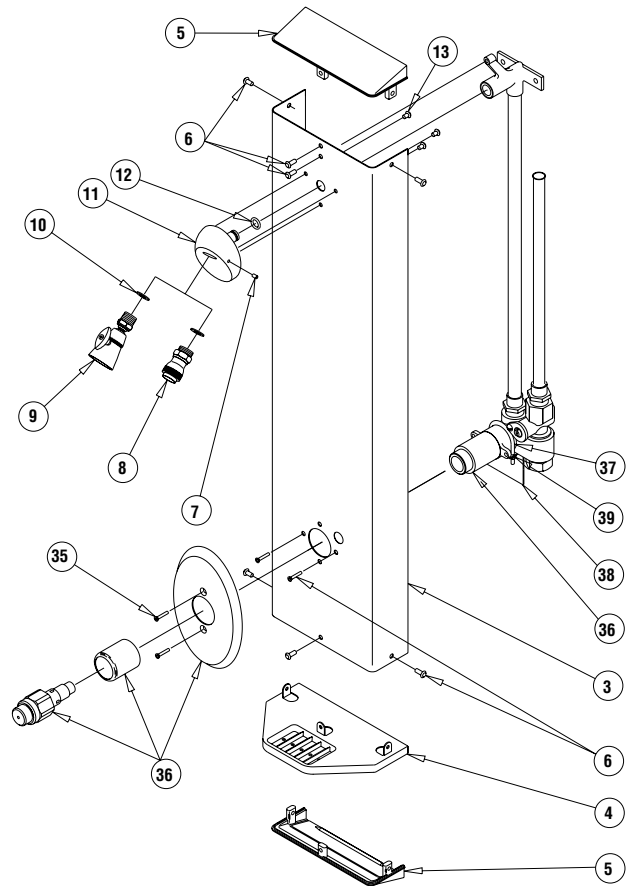


Figure 6. Exploded View Diagram of Hydropanel II Series 450-4000M Shower Unit..

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. (Installer: California law requires that this warning be given to the consumer.)

For more information: www.wattsind.com/prop65



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INSTALLATION

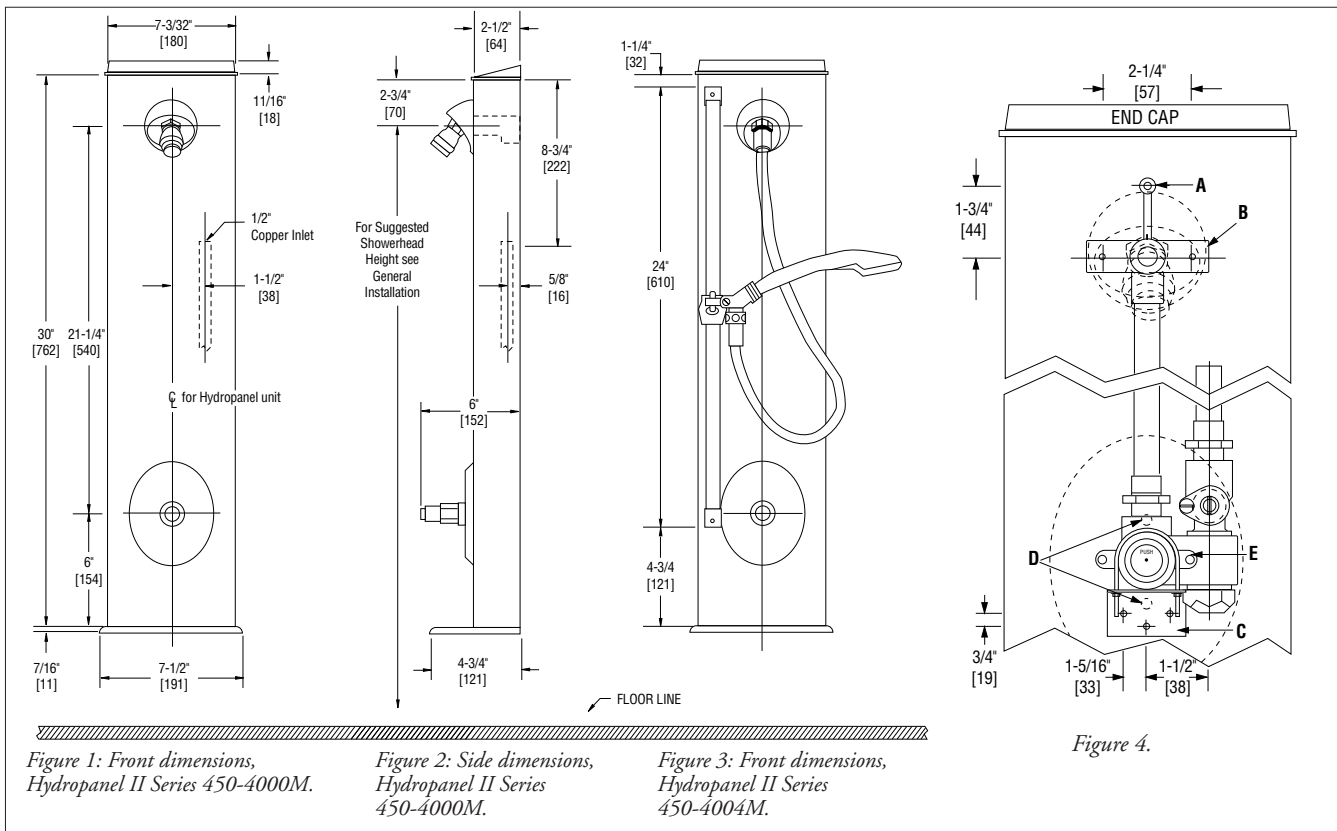
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The valve handle assembly, piping and Hydropanel II shrouding must be separated before mounting to wall. For #450-4004M and #450-4005M Hydropanel II units, the handshower, hose and showerhead base come preassembled to the shrouding. Refer to Figure 4.

3. Remove the screws holding the faceplate to the shroud at D. Slide the faceplate off over the valve cover.
4. Remove the two screws at E that secure the shroud to the valve.
5. Detach the piping from the shrouding, by removing the screw at A above the showerhead. Slide the piping out of the shrouding; the showerhead remains attached to the shroud.
6. 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.
7. For mounting the piping assembly lower bracket (C), use the bracket as a template to mark mounting position, and drill 3 holes.
8. Install any mounting anchors as detailed by the individual room specifications.

9. Secure upper piping bracket B with mounting screws (not included).
10. Secure lower piping bracket C with mounting screws (not included).
11. Connect the supply line 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.

10. To remove the scored section, hit it sharply with a hammer.
11. 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 II system. Turn on water supply and push the metering valve button. Water should come through the showerhead for the desired time. When valve meters off, check all connections (showerhead, pipe connections, valve) for leaks.

INSTALLATION, CONTINUED

Set the Metering Cycle

The metering valve can cycle for up to one minute.

12. To adjust, insert the the 3/32" allen wrench into the small hole in the center of the pushbutton (see Figure 5). Inside the hole is the metering cycle timing needle.
13. To increase the shower time, turn the allen wrench counter-clockwise. This will widen the distance inside the valve between the timing needle and the valve seat.
14. To decrease the shower time, turn the allen wrench clockwise. This will shorten the distance inside the valve between the timing needle and the valve seat.

Assemble the Valve Cover

15. (Figure 4) Secure the piping to the shroud with the two screws at E.
16. (Figure 4) Slide faceplate over the valve and attach it to the shroud with the 1" screws at D.
17. (Figure 4) Finish assembly by tightening the shrouding screw at A above the showerhead.

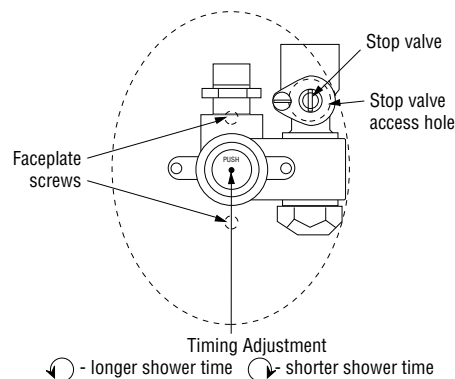


Figure 5.

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The timing cartridge for the metering valve is replaceable as a single cartridge. Every six months, check the timing on the valve and inspect for sticking.

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

TROUBLESHOOTING

***NOTE*:** If problems with water tempering occur, please refer to the appropriate technical instructions for your master mixing valve.

1. If the flow of water is less than desired...

- a. The upstream master mixer may not be fully open.*
- c. The showerhead may be clogged. Remove and clean.
- b. The metering cartridge may be sticking. Access and check. Service with Repair Kit #141 839.
- d. The stop valve may not be fully open. Access and adjust accordingly.

2. If the flow of water is completely shut off...

- a. The upstream master mixer may be shut-off.*
- b. The metering valve may be stuck. Access and check. Service with Repair Kit #141 839.
- c. The stop valve may be closed. Access and open by turning the adjustment screw fully counterclockwise.

3. If water continues to flow from the showerhead after valve shut-off...

- a. The metering valve may be damaged. Access and check for sticking. Service with Repair Kit #141 839.

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NS = Not shown in diagram NA = Not available as commercial part

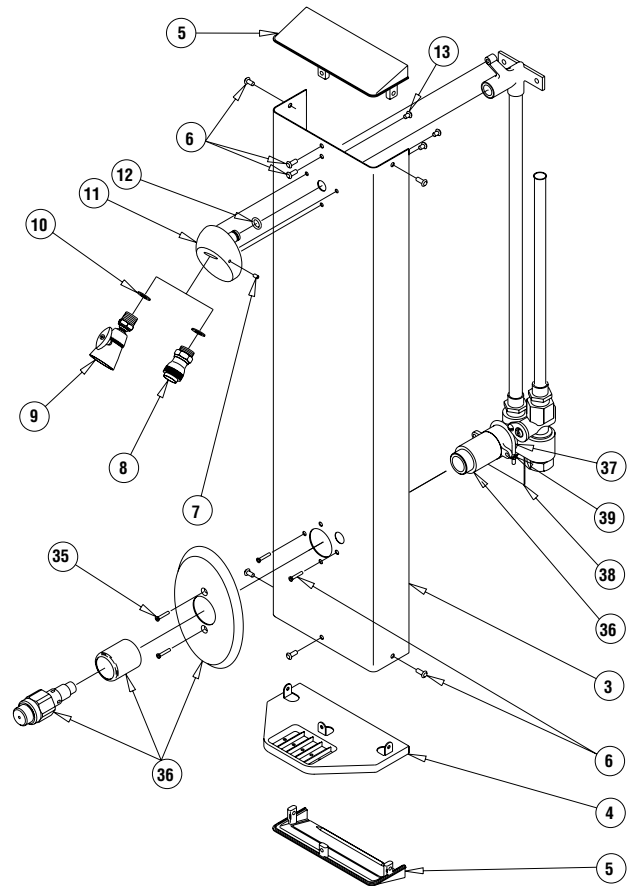


Figure 6. Exploded View Diagram of Hydropanel II Series 450-4000M Shower Unit..

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