

DESCRIPTION

The Hydroguard thermostatically blends hot and cold water to deliver mixed water at the desired temperature, quickly compensating for temperature variations due to changes in inlet temperature, pressure or flow, and reduces flow upon water supply failure. The 1430's delivery temperature will hold to within $\pm 5^{\circ}\text{F}$ ($\pm 2.7^{\circ}\text{C}$) when tested in accordance to ASSE 1017.

WARNING: TO INSURE 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 insure proper operation of all critical components.

FAILURE TO COMPLY WITH PROPER INSTALLATION INSTRUCTIONS COULD CONTRIBUTE TO VALVE FAILURE, RESULTING IN INJURY OR DEATH.



1432 Hydroguard Valve

SIZING

Table A, Capacity Table, presents the Hydroguard discharge capacity in gpm and l/m for various pressure drops across the valves (the difference between the lowest inlet pressure and the discharge pressure at the Hydroguard).

Model	Min. Flow Rate*	Min. Flow to ASSE 1017	Pressure Drop Across Valves in psi							
			5	10	20	30	45	60	75	100
1432	0.5 gpm	1.5 gpm	13.5	18.0	27.0	32.0	40.0	47.0	52.0	60.0
1434	0.5 gpm	5.0 gpm	32.0	45.0	66.0	80.0	100.0	117.0	132.0	152.0

* Minimum flow when Hydroguard is installed at or near hot water source with recirculated tempered water with continuously operating recirculating pump.

Model	Min. Flow Rate*	Min. Flow to ASSE 1017	Pressure Drop Across Valves in kPa							
			34	69	138	207	310	414	517	690
1432	1.89 lpm	5.68 lpm	51	68	102	121	151	178	197	227
1434	1.89 lpm	18.92 lpm	121	170	250	302	378	442	500	575

* Minimum flow when Hydroguard is installed at or near hot water source with recirculated tempered water with continuously operating recirculating pump.

SPECIFICATIONS

Operating

Maximum Pressure Differential 100 psi (689 kPa)
 Maximum Static Pressure 125 psig (861.25 kPa)
 Maximum Hot Water Temperature 200°F (93°C)
 Minimum Hot Water Temperature 15°F (8°C) Above Set-Point
 Minimum Flow: 1432 1.5 gpm **
 1434 5.0 gpm **

Temperature Adjustment Range* 40°F (4°C) - 160°F (71°C)
 Listing ASSE 1017
 Certified CSA B125

Note: *Low limit cannot be less than the cold water temperature. For best operation, hot water should be at least 15°F (8°C) above desired set point.
 **Minimum flow at which valve will control to ASSE 1017 requirements.

OPERATION

Typical Flow

Hot and cold water supplies enter Hydroguard at indicated ports, (see Figure 1) then flow past their respective balanced poppet plug and seats. Next, hot and cold water flow is directed to the mixing chamber where the thermostatic motor is located.

Temperature Change

With a rise in discharge temperature due to pressure or temperature fluctuation on the inlet, the actuator expands, decreasing flow of hot water. The reverse occurs with a drop in discharge temperature.

Responses

Temperature adjustment screw moves the actuator/poppet to the desired discharge temperature.

- Cold water supply failure – causes actuator to expand reducing the flow of hot water.
- Hot water supply pressure failure – causes actuator to contract reducing the flow of cold water.

Funnel expands or contracts depending on flow rate ensuring maximum heat transmission to actuator.

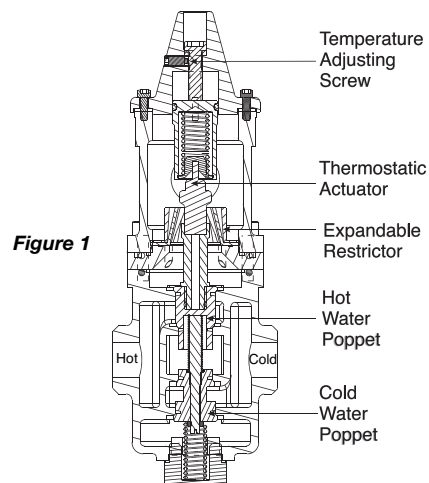
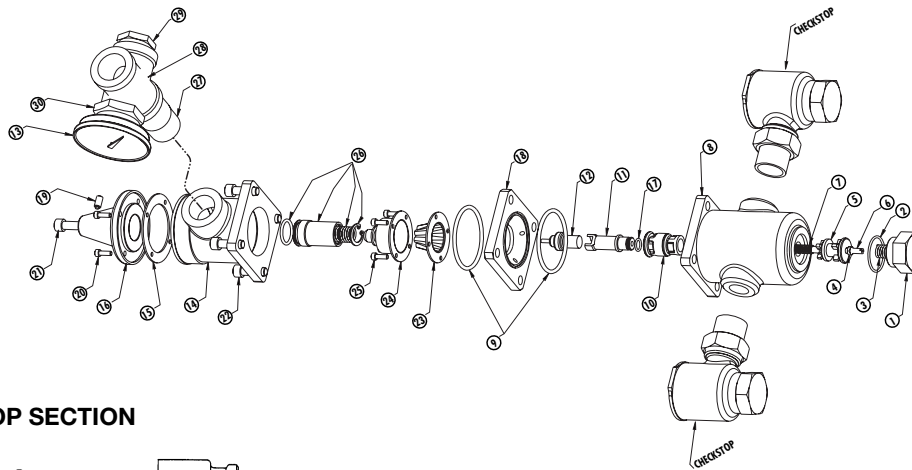


Figure 1

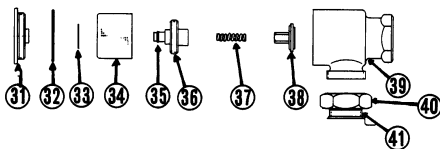
PARTS LIST

NO.	NAME	1432 BRONZE	1432 POLISHED CHROME	1434 BRONZE	1434 POLISHED CHROME
1	Body Cap	390-334	390-335	390-336	390-336
2	"O" Ring	084-020	084-020	047-132	047-132
3	Return Spring	390-068 Kit	390-068 Kit	390-070 Kit	390-070 Kit
4	Nut	390-068 Kit	390-068 Kit	390-070 Kit	390-070 Kit
5	Cold Water Poppet	390-068 Kit	390-068 Kit	390-070 Kit	390-070 Kit
6	Cold Water Stem	390-068 Kit	390-068 Kit	390-070 Kit	390-070 Kit
7	Motor Failure Spring	390-068 Kit	390-068 Kit	390-070 Kit	390-070 Kit
8	Lower Body	n/a	n/a	n/a	n/a
9	"O" Ring	047-036	047-036	047-047	047-047
10	Hot Water Poppet	390-068 Kit	390-068 Kit	390-070 Kit	390-070 Kit
11	Motor Adapter	390-024	390-024	390-521	390-521
12	Thermal Motor	390-500 Kit	390-500 Kit	390-543 Kit	390-543 Kit
13	Dial Thermometer	894-3709	894-3709	894-3709	894-3709
14	Motor Housing	n/a	n/a	n/a	n/a
15	Motor Housing Gasket	390-051	390-051	390-095	390-095
16	Motor Housing Cap	n/a	n/a	n/a	n/a
17	"O" Ring	047-020	047-020	084-014	084-014
18	Funnel Cage	n/a	n/a	n/a	n/a
19	Set Screw	390-026	390-026	390-026	390-026
20	Screw (4)	390-027	390-027	390-526	390-526
21	Temp. Adjustment Screw	390-028	390-028	390-527	390-527
22	Bolts	390-028	390-028	390-527	390-527
23	Expandable Restrictor	390-500 Kit	390-500 Kit	390-543 Kit	390-543 Kit
24	Retainer	n/a	n/a	n/a	n/a
25	Screws (4)	390-064	390-064	390-526	390-526
26	Overload Assy.	n/a	n/a	n/a	n/a
27	Pipe/Nipple	390-031	390-058	390-531	390-535
28	Cross	390-033	390-060	390-528	390-532
29	Hex Plug	390-053	390-061	390-530	390-534
30	Hex Bushing	390-056	390-062	390-529	390-533

* Replace both hot and cold water poppets together. Kit contains matched pair to give proper travel.



CHECKSTOP SECTION



NO.	NAME	FINISH	1432	1434
31	Bonnet*	Rough Bronze	230-267	230-287
		Polished Chrome	230-268	230-288
32	"O" Ring	n/a	047-029	047-130
33	Gasket	n/a	230-083	230-083
34	Screen	n/a	230-116	230-104
35	"O" Ring	n/a	047-009	047-009
36	Stem	Rough Bronze	230-269	230-289
		Polished Chrome	230-270	230-290
37	Spring	n/a	230-127	230-103
38	Poppet Assembly	n/a	230-271	230-293

NO.	NAME	FINISH	1432	1434
39	Body	Rough Bronze	n/a	n/a
		Polished Chrome	n/a	n/a
40	Nut	Rough Bronze	230-117	230-096
		Polished Chrome	230-118**	230-097**
41	Tail Piece	Rough Bronze	230-119	230-094
		Polished Chrome	230-120**	230-095**

** Available as complete body, nut and tail piece assembly only.

REPAIR KITS (Repair Kit Parts)

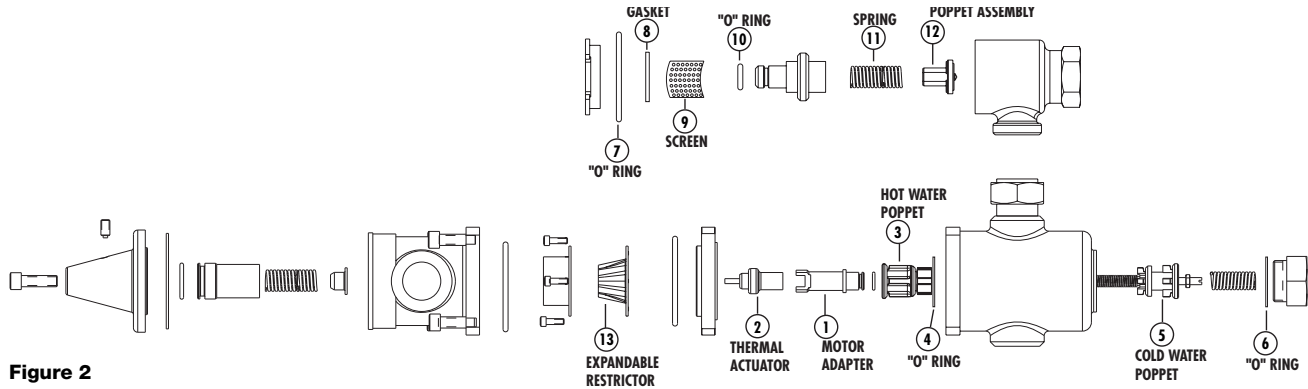


Figure 2

PART DESCRIPTION	REPAIR KIT INCLUDES: (Numbers below correspond with numbers in Figure 2)	1432	1434
HiLo Motor Replacement Kit	1, 2 and 13 Gaskets, and "O" Rings	390-500	390-543
Strainer Replacement	7, 8, 9, and 10	230-134	230-136
Checkstop Replacement	7, 8, 10, 11, and 12	230-135	230-137
Gasket and Disc Replacement	1, 2A, 4, 6, 7, 8, 10, and 12	390-298	390-306
Mixing Valve Replacement	3, 4, 5, and 6	390-068	390-070

Strainer and Checkstop Repair Kits contain parts for one (1) pair. Repair kits include parts for both old-and new-style checkstop (Items 7, 8, 10, 12) and body Cap Gasket (Item 6). Use appropriate part for your style Hydroguard. If replacing either bonnet or stem on old-style checks, you must replace both with new parts. Do not use the new bonnet with an old stem or vice versa. Repair Kits containing "O" Rings include silicone gel for use on "O" Rings during installation.

MAINTENANCE AND TROUBLESHOOTING

What to look for if:

- **The flow of water is less than desired...**
 - a. Stop valves or supply to Hydroguard not fully open.
 - b. Clogged checkstop strainer screens.
 - c. Accumulation of lime deposits around valve seats.
 - d. Low supply pressures or unusual supply temperatures.
- **The flow of water is completely shut off...**
 - a. Stop valves or supply valves are completely closed.
 - b. Valves downstream from Hydroguard fully closed.
 - c. Loss of either hot or cold water supply pressure.
- **Discharge temperature varies...**
 - a. Very large restriction in outlet flow.
 - b. Very large drop in inlet pressure.
 - c. Very large fluctuation of hot water supply temperature.
 - d. Worn valve seats.
 - e. Minimum flow requirement not achieved.
 - f. Lime deposits around motor, poppets and/or seat.

INSTALLATION INSTRUCTIONS

1. **IMPORTANT:** Flush all piping thoroughly before installing.
2. Valves are to be installed as close to building inlet supply as possible to prevent/minimize pressure fluctuations.
3. Remove body screws to turn outlet to any of four positions. The Hydroguard body can be rotated to any position due to the union inlets. **Note: Make certain the body screws and unions are tightened securely to prevent leakage.**
4. **CAUTION:** When the Hydroguard supplies tempered water to self-closing and/or solenoid valves, provide a shock absorber (Powers Part No. 460-353) on the discharge line. This protects the Hydroguard thermostatic motor from damage by water shock waves generated by the quick closing valves.
5. **Before use, check maximum discharge temperature. Reset if necessary.**

OPERATION CHECK:

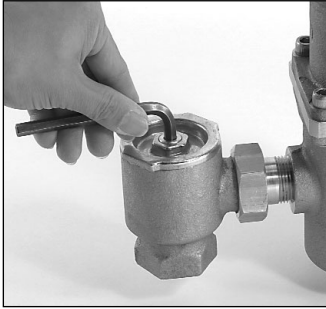
After Hydroguard is installed, make certain the supply stop valves and strainers are free and clean and ready for operation by disassembling checkstops as shown in "Servicing", steps 1, 2, and 3.

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

SERVICING

Note: Before disassembling, make certain both water supplies to the Hydroguard are shut off.

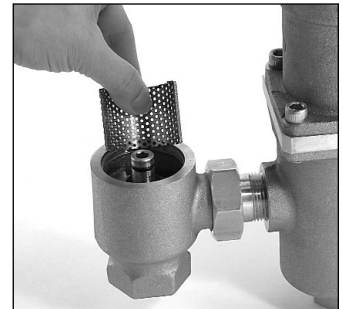
CHECKSTOP DISASSEMBLY



Close both inlet checkstop valves by turning stop valve stem clockwise with 1/4" (6.4mm) allen key.

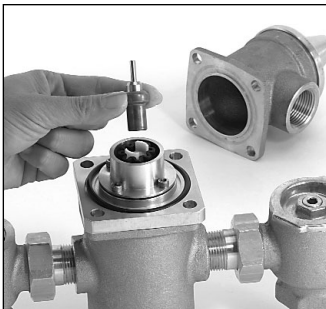


Remove bonnet with 2-1/4" (57mm) wrench for 3/4" NPT checks and 3" (76mm) for 1-1/4" NPT checks or use a 3/4" socket wrench.

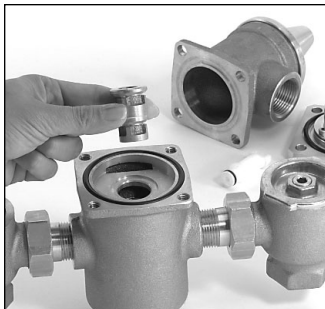


Lift out strainer screen (reassemble in reverse order).

VALVE DISASSEMBLY



Remove thermal element housing cap screws and lift thermal element by lifting up temperature adjustment knob.



Remove funnel assembly. Lift out the overload assembly and hot water poppet.



Remove body cap with wrench to service cold water poppet assembly.

ADJUSTMENTS

Temperature Adjustment and Lock



Maximum temperature setting for 1430 Series Valves:

1. Turn off re-circulation pump (if one is in the system).
2. Open up enough fixtures to meet minimum flow requirement of:
1432 = 1.5 gpm
1434 = 5 gpm
3. Loosen set screw on side of knob.
4. Turn maximum temperature screw counter-clockwise to full hot position.
5. Then start adjusting the screw clockwise to desired temperature.
Counter-clockwise adjustment: Mixes more hot water
Clockwise adjustment: Mixes more cold water

Note: Please allow valve temperature to settle in before making your next adjustment.

6. When desired temperature is set, tighten set screw on side of knob.
Turn re-circulation pump back on. Close open fixtures.

NOTE: AFTER COMPLETING REPAIRS, CHECK MAXIMUM DISCHARGE TEMPERATURE RESET IF NECESSARY.
WARNING: FAILURE TO PERFORM THIS OPERATION COULD RESULT IN UNSAFE DISCHARGE TEMPERATURE, WHICH MAY CAUSE INJURY OR DEATH.