

# HOLBY VALVE TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	REMEDY
<p><b>1.0 Water too hot</b></p>	<p><b>1.1 Thermostat has failed</b> (See 5. "Testing a Thermostat")</p> <p><b>1.2 Different Pressures</b></p> <p><b>1.3 Improper installation</b></p> <p><b>1.4 Not enough Cold Water to Holby Valve</b></p> <p><b>1.5 Stripped Adjusting Screw</b></p> <p><b>1.6 Stuck Piston</b></p> <p><b>1.7 Someone Tampering with Adjustment</b></p>	<p>1.1.1 Replace Thermostat.</p> <p>1.2.1 There should not be more than a 10% difference between the hot &amp; cold inlets. Use pressure regulating valves.</p> <p>1.3.1 Check all piping. See that they follow drawings for proper installation of thermal loop(s), and make sure that recirculating return line(s) are properly tied into the system. (See "Installing a Holby Tempering Valve")</p> <p>1.4.1 Check for pressure drops during high peak periods.</p> <p>1.5.1 Replace adjusting screw.</p> <p>1.6.1 If the thermostat has failed and has not been replaced over a period of time, the piston may freeze in the inside bore of the Holby Tempering Valve (HTV), not allowing any cold water to blend with the hot water to allow proper mixture. (See 6.0 "Removing a Piston")</p> <p>1.7.1 See "Clogged Coil" under "Water Temperature Fluctuates"</p>
<p><b>2.0 Water not hot enough</b></p>	<p><b>2.1 Hot Water source not large enough</b></p> <p><b>2.2 Pressure Difference</b></p> <p><b>2.3 Coils Not Delivering Enough Hot Water</b></p>	<p>2.1.1 Check to make sure your hot water supply source delivers enough hot water.</p> <p>2.2.1 Make sure there is not more than a 10% difference in pressure between the hot and cold inlets. If it is greater, pressure regulating valves may be required.</p> <p>2.3.1 Coils could become coated on the inside, thereby preventing proper heat transfer. The coil could also have an obstruction or there could be an obstruction in the piping.</p>

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<p><b>3.0 Outlet Temperature Fluctuates</b></p>	<p><b>3.1 Coils not delivering enough hot water</b></p> <p><b>3.2 Unequal Pressures</b></p> <p><b>3.3 Sticking Piston</b></p>	<p>3.1.1 As previously described, when the coils do not deliver enough hot water and the outlet temperature of the HTV drops down, someone who does not realize the coil problem may try to increase the outlet temperature by turning the adjusting screw counterclockwise. <u>DO NOT DO THIS</u> because when someone turns the adjusting screw counterclockwise, they are opening the hot port more, thereby pulling the water through the coil faster and in doing so continuing to decrease the temperature leaving the coil. Then when the demand is decreased and the hot water is being drawn at a slower rate, it has more time to be heated and the temperature of the water leaving the HTV is then too hot. This process continues with the outlet temperature being too hot, then too cold. Again, the coil should be cleaned or replaced.</p> <p>3.2.1 There should not be more than a 10% difference between the hot and cold inlets. If there is a greater difference, pressure regulating valves should be installed.</p> <p>3.3.1 The thermostat develops considerable force when heated and moves the piston towards the cold position. A thermostat experiencing a cooling condition however releases the piston and allows the spring to return the piston towards the bonnet, resulting in increased hot water flow. Occasionally the piston will stick momentarily then drop to the hot position with a "thud" or dull clicking sound. Open valve and clean valve bore and piston.</p>
<p><b>4.0 Water Too Cold</b></p>	<p><b>4.1 Stuck Piston</b></p> <p><b>4.2 Piston in backwards</b></p> <p><b>4.3 Hot water shut off</b></p>	<p>4.1.1 A piston could be stuck in the bore of the HTV, not allowing any or only allowing very little hot water to pass into the valve. Remove piston and clean with fine emery cloth until it moves freely. If out of round, replace.</p> <p>4.2.1 Check assembly of parts. When bonnet is removed, you should see the open end of the piston first, then the guide bar of the piston. (See Assembly Sheet)</p> <p>4.3.1 Make sure there is hot water going to the hot water inlet side of the HOLBY TEMPERING VALVE.</p>

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<b>5.0 Testing a thermostat</b>	<b>5.1 <i>Overheated condition or repeated overheating.</i></b>	5.1.1 The best way to test a standard thermostat is to press the protruding rod on the thermostat; it should have a spring action. Apply heat by immersing the thermostat in hot water (approximately 120 degrees F). If the rod on the thermostat moves outward and cannot be compressed when heated, the thermostat is normally good. If the thermostat is inoperable, the rod will still have the spring action after being heated. A low-temperature thermostat will not have a spring action when it is cool, but when heated, the thermostat rod will move outward, if it is normally good. The above is a test in the field to find if the thermostat is inoperable. (Note: For a true test, the thermostat must be placed under a special pressure test at our plant.)
<b>6.0 Removing a stuck piston</b>	<b>6.1 <i>HOLBY Tempering Valve is inoperative or has not been in service for an extended period of time.</i></b>	6.1.1 To free a stuck piston: A. Isolate HOLBY Tempering Valve B. Remove the thermostat C. Using a short pipe (see chart below) and make two notches in the same end of the pipe but opposite each other so they fit over the crossbar guide of the piston. Place the notched end of the pipe on the crossbar guide of the piston, place a pipe wrench on the opposite end of the pipe and turn the pipe (clockwise or counterclockwise if necessary) until the piston is freed. Do not force or hit the piston in or out to try to remove it, because this could damage the HOLBY Tempering Valve. After the piston is freed, clean it with fine emery cloth. Do NOT emery or file the bore in the HOLBY Tempering Valve, just wipe same clean.

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Size of HOLBY	Size of Pipe (A)	Length of Pipe (B)	Width of notches (C)*	Depth of notches (D)
½" ; ¾" ; 1"	1"	12"	½"	1"
1-¼"	1"	12"	½"	1"
1-½"	1"	12"	½"	1"
2"	1-½"	12"	½"	1"
2-½"	2"	18"	¾"	1"
3"	2-½"	18"	¾"	1"
4"	3"	18"	¾"	1"

\*If notches on pipe don't fit over the crossbar guide of the ½" – 1" HOLBY Valve Pistons, the end of the pipe with the notches can be widened.