

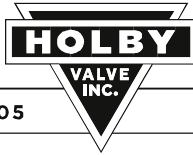
HOLBY CLEANING TOOL INSTRUCTIONS

For difficult deposits and hard to reach cleaning, we recommend using a honing tool such as the Flex-Hone tool as available in the Holby Valve Cleaning Tool Kit.

1. To use the Holby Cleaning Tool, isolate and drain the valve. **IMPORTANT:** Always close the Hot isolation valve first.
2. Open the valve by removing the Bonnet. Three components must be removed from the valve to perform servicing: The Thermal Element, Piston and the Spring.
3. Wet the Holby Cleaning Tool using clean water before inserting into the valve. Do not use any type of oil or solvents for honing/cleaning Holby Tempering Valves. (Use the Flex-Hone Tool with battery operated drill only).
4. Have the Holby Cleaning Tool rotating slowly upon entry and removal from the bonnet end of the valve.

Always use Eye Protection When Servicing Holby Tempering Valves

5. Recommended Cleaning Tool RPM range for 1/2" to 2-1/2" Holby Valves is 500-1200 RPM.
6. Recommended Cleaning Tool RPM range for 3" and 4" Holby Valves is 500-800 RPM.
7. Cleaning/honing time should be 10-20 seconds
8. Flush and clean valve bore after using the Holby Cleaning Tool. Carefully flush the "HOT" passageways of the valve by very briefly opening and closing the hot water isolation valve. Next flush the "COLD" passageways. After flushing use a clean damp cloth to wipe out the inside bore of the Holby Tempering Valve.
9. Clean the Piston with fine (320 grit) waterproof sandpaper.
10. Test to verify that the Piston can move freely in the valve by inserting the Piston only and move it into the body so that the cold port is exposed. (The cold port is the machined opening around the perimeter of the bore closest to the bonnet end of the bore). Remove the Piston.
11. Reinstall the Piston, Thermostat and Spring. (Refer to Exploded Parts View for proper Piston orientation).
12. Re-install the bonnet. Take care to insure that the extended end of the thermostat is positioned into the end of the Bonnet Adjusting Screw. After tightening the bonnet, turn the adjusting screw clockwise to move the Piston into the Cold position. Always start the valve adjustment process from the Cold position.
13. Slowly open the Cold isolation valve first, then the Outlet valve followed by the Hot isolation valve. Create hot water demand by running several sinks or tubs.
14. Open the hot water recirculation isolation valve and start the hot water recirculation pump. Insure that the recirculation water temperature is at least 5 degrees below the desired mixed water temperature. If not, operate the Holby valve with Cold water only until the recirculation water temperature is 5 degrees below the required mixed temperature.
15. Begin adjusting the valve by turning the adjusting screw counter-clockwise. Refer to Holby Adjusting Instructions attached.



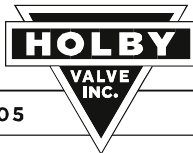
HOLBY CLEANING TOOL INSTRUCTIONS, (CONT.)

16. Prior to using the Cleaning Tool take note of the Valve bore and the location of the Thermostat Guide located towards the outlet of the valve. The chart below shows the recommended minimum and maximum insertion depth of the Cleaning Tool for each valve size. Exceeding the maximum insertion depth may damage the Cleaning Tool and thermostat guide

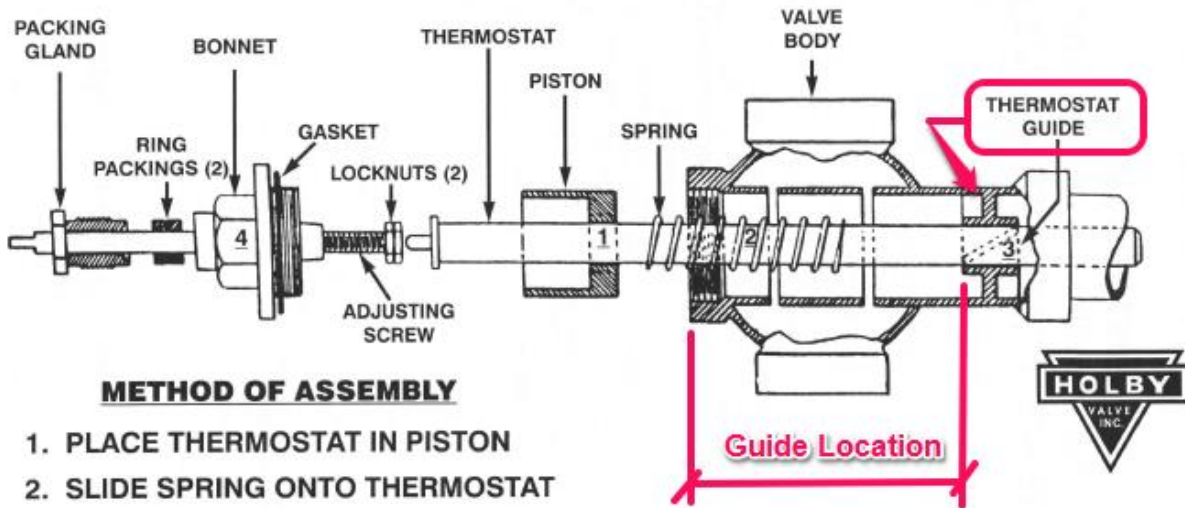
| Valve Size | Tool Color | Insertion Min/Max Depth | Thermostat Guide |
|-------------------|-------------------|--------------------------------|-------------------------|
| 1/2", 3/4" | Purple | 2.75"/ 3.25" | 3.75" |
| 1-1/2" | " | 3.75"/ 4.25" | 6.00" |
| 1-1/4" | Orange | 3.50"/ 4.50" | 5.00" |
| 2" | Yellow | 4.50"/ 5.00" | 7.25" |
| 2-1/2" | Blue | 5.50"/ 6.00" | 9.00" |
| 3" | Red | 6.00"/ 6.50" | 10.00" |
| 4" | Green | 7.50"/ 8.00" | 9.75" |

NOTE: All dimensions are from the bonnet end of the valve.





INSTRUCTIONS FOR ASSEMBLING THE HOLBY TEMPERING VALVE



METHOD OF ASSEMBLY

1. PLACE THERMOSTAT IN PISTON
2. SLIDE SPRING ON TO THERMOSTAT
3. INSERT ASSEMBLY INTO THERMOSTAT GUIDE
4. SCREW BONNET ON TO VALVE BODY

IMPORTANT: PISTON MUST SLIDE SMOOTHLY
IN BORE OF VALVE BODY. TO CLEAN PISTON
USE FINE EMERY CLOTH.

FORM H18A ASSEM
PARTS CUT-A-WAY
9/12

FOR INSTALLING and ADJUSTING
INSTRUCTIONS, SEE OTHER SIDE

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