

1. Read complete instructions and familiarize yourself with the illustrations before beginning. **Plumber installation is recommended.**
2. **WARNING! SHUT OFF WATER SUPPLIES BEFORE DISASSEMBLING THE TUB SHOWER VALVE.**

3. Remove handle.
4. **CAUTION!** Mark the Rotational Limit Stop "RLS" (A) with a pen or pencil on the raised rib that aligns with the groove on the brass stop (B). NOTE: after installing the new cartridge, its RLS must be in the same position (if this position provided the correct handle rotation previously). See important information and RLS Adjustment on the back of this sheet (Steps 4.1, 4.2 and 4.3).

5. **CAUTION!** Pull off the RLS (A) and note the position of the raised stop (C) on the cap assembly that says "hot side". The cartridge must always be put back in this same position. The raised stop should **always** be located on the hot water inlet side so cold water will flow first. For normal installations, the raised stop will be on the left.

6. Pull outside sleeve (D) off. Then, if necessary, slide the sleeve O-Ring (E) toward you until it stops at the raised brass section (F) on the tub/shower body. Do not pull the sleeve O-Ring over the raised brass section. NOTE: when the sleeve is re-installed, it will slide on this O-Ring.

7. **▲WARNING! BE SURE WATER SUPPLIES ARE SHUT OFF!**

8. Unscrew the brass bonnet (G).

9. **Do not pry the cartridge out of the body with a screwdriver.** Re-install the handle on brass stem (H) and rotate counterclockwise while lifting the cartridge out of the two notches on the sides of the body.

10. **CAUTION! Do not twist the Cap and Lower Housing of the New Cartridge to take it apart.** If they are separated for any reason, be sure they are locked back together by twisting them together until they snap back together. **WARNING! Never take the Lower Housing Apart.**

11. Install the cartridge with the raised stop on the cap (C) on the hot water inlet side (see Step 5).

12. Re-assemble the brass bonnet (G).

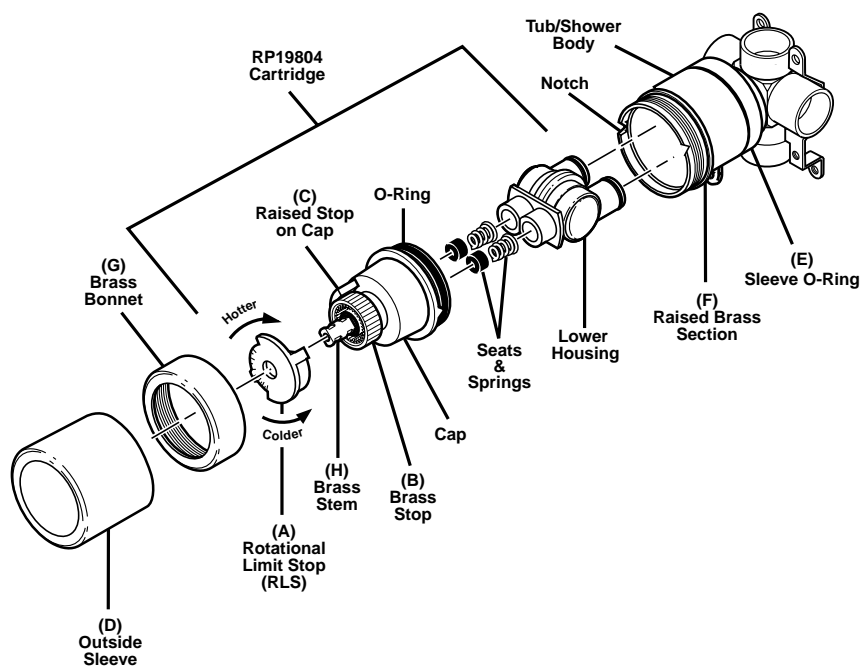
13. Slide on the outside sleeve (D) (see Step 6).

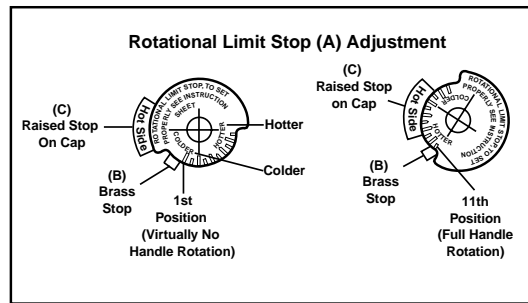
14. Remove and throw away the black retention plug (not illustrated) from the brass stem (H) at the top of the new cartridge.

15. Check for proper installation of the RLS (A) on the new cartridge by following Steps 4.1, 4.2 and 4.3 (on reverse side).

16. Re-install the handle then proceed to Step 17.

17. **FLUSH YOUR SYSTEM.** Turn handle to full on "hot and cold mix" position. Turn on water supplies. Check for leaks and let supply lines flush for one minute without moving handle. If you have a showerhead, divert water to it and flush for 30 seconds. This will remove any debris from the supply lines that can damage internal parts of the faucet and create leaks. **BE SAFE!** After you have finished the repair, turn on tub/shower valve to make sure **COLD WATER FLOWS FIRST.** If not, see Step 5.





4.1 CAUTION: After installing the new cartridge, remove the RLS (A). If the raised stop (C) on the cap assembly is located on the left (see Step 5) rotate the brass stop (B) to the bottom left so it is positioned below the raised stop (C) as illustrated in the Rotational Limit Stop Adjustment box. If the raised stop (C) on the cap assembly is located on the right, rotate the brass stop (B) to the top right so it is positioned above the raised stop (C).

4.2 IMPORTANT! The first position of the Rotational Limit Stop (RLS) (A) is that position that restricts the rotation of the handle (stem) the most and is at the maximum counterclockwise setting. According to industry standards, the maximum allowable temperature of the water exiting from the valve is 120°F**. This temperature may vary in your local area. The RLS may need to be readjusted manually if either of the inlet water temperatures change. For instance, during the winter, the cold water temperature is colder than it is during the summer, which could result in varying outlet temperatures. Typical temperature for a comfortable bath or shower is between 90°-110°F.

4.3 ADJUSTING THE ROTATIONAL LIMIT STOP:

- Let the water run so that cold is as cold as it will get and hot water is as hot as it will get. Place handle back on stem and rotate fully counterclockwise to the hottest position.
- Place a thermometer in a plastic tumbler and hold in the water stream. If the water temperature is above 110°-120°F**, the Rotational Limit Stop (RLS) (A) must be rotated counterclockwise to decrease temperature. In that case, remove the RLS and replace it one tooth counterclockwise for every 6°F (approximate) reduction in temperature that must be made. Repeat as necessary.

• **MAKE SURE COLD WATER FLOWS FROM THE VALVE FIRST.**

****MAKE SURE WATER (AT THE HOTTEST FLOW) DOES NOT EXCEED THE TEMPERATURE ALLOWED BY YOUR PLUMBING CODES (110° OR 120°F).**

If the water in your area has lime, rust, sand or other contaminants in it, your cartridge will require periodic inspection. To inspect the cartridge, **after shutting off the water supplies, turn the handle to the “on” position before following Steps 2 - 10 to disassemble.** The cartridge must be in the full “on” position before inspection. **If it is in the “off” position, this test will not work.** After removing the cartridge, shake it vigorously. If there is a rattling sound, it is functional and can be reinstalled following Steps 11-17.

If there is no rattle:

- Rotate the RLS to be sure it is in the “on” position;
- Rap the lower housing in the palm of your hand, or
- Replace the complete cartridge (RP19804).

Your tub/shower valve is designed to minimize the effects of outlet water temperature changes due to inlet pressure changes, commonly caused by dishwashers, washing machines, toilets and the like. It may not provide protection from hot water burns when there is a failure of other temperature controlling devices elsewhere in the plumbing system. If changes occur and you are not sure how to make the necessary RLS (A) adjustments, consult the installation instruction sheet provided with your tub/shower valve or call 1-800-345-DELTA (3358).