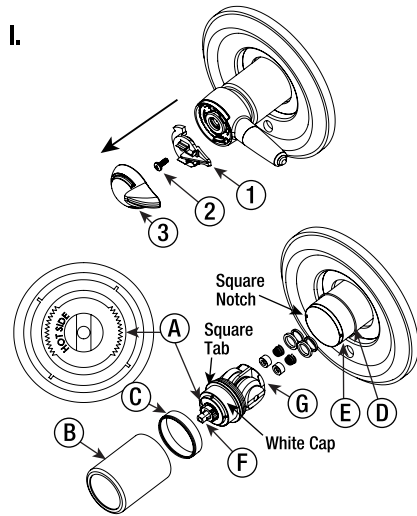


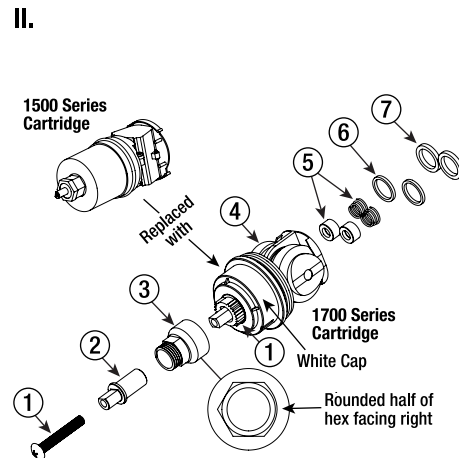


# Instructions for Delta® 1500/1700 Series Cartridge for Tub/Shower Faucets



## I. Disassembly and Removal of Old Cartridge (See figures above)

1. Read all instructions completely and familiarize yourself with the illustrations before beginning.  
**WARNING! SHUT OFF WATER SUPPLIES BEFORE DISASSEMBLING ANYTHING.**
2. Carefully pry off temperature control cover (3), remove handle screw (2), temperature control knob (1) and handle.
3. **CAUTION!** Note the position of the lettering labeled "HOT SIDE" (A). The cartridge must always be put back in the same position. The "HOT SIDE" lettering *MUST* be located on the hot water inlet side so the cold water will flow first. For normal installations, the hot side will be on the left.
4. Pull outside sleeve (B) off. Then slide or roll the sleeve O-ring (D) towards you until it stops at the raised brass section (E) on the tub/shower valve body. **DO NOT PULL THE SLEEVE O-RING OVER THE RAISED BRASS SECTION.** NOTE: When the sleeve is reinstalled, it will slide on this o-ring. **MAKE SURE WATER SUPPLIES ARE SHUT OFF!**
5. Unscrew brass bonnet nut (C).
6. **CAUTION!** Note the position of the hot side of the cartridge labeled "HOT SIDE". Gently grasp the valve stem (F) with pliers to remove.
7. **CAUTION!** Do not twist the Cap or 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 until they snap back together.  
**WARNING! NEVER TAKE THE LOWER HOUSING APART OR REMOVE THE VOLUME PLATE (G).**



## II. Installation of New Cartridge (See figures above)

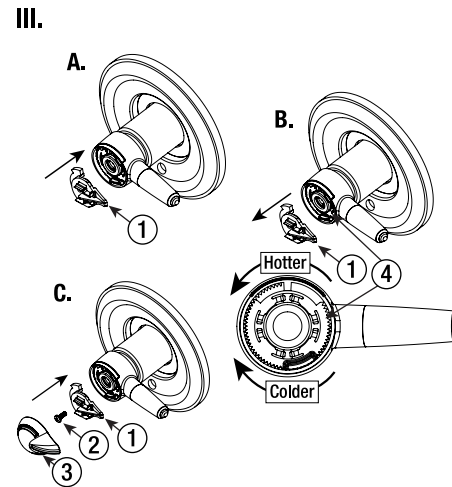
NOTE: First determine what type your old cartridge is - 1700 or 1500 series. See illustrations above.

### A. TO CONVERT YOUR 1500 SERIES CARTRIDGE TO THE NEW 1700 SERIES CARTRIDGE, you will need to use replacement parts listed: 1, 2, 3, 4, 5, and (6 or 7 - whichever is currently in your valve).

1. Install seats & springs (5), quad rings (6) or quad seal (7).
2. **ENSURE THE QUAD SEAL OR QUAD RINGS AND SEATS AND SPRINGS REMAIN IN PLACE WHILE INSTALLING THE CARTRIDGE.**
2. Install cartridge (4) into body, making sure square tab is aligned on left and fully seated into square notch in valve body.
3. Install bonnet nut (Illustration I, C) to hold cartridge in valve. Hand tighten securely. Remove stem retainer if present.
4. Install sleeve (Illustration I, B).
5. With the cartridge in the "off" position ("hot side" of black gear up (Illustration I, A)), install handle adapter (3) with rounded half of hex toward the right as illustrated.
6. Install volume control handle, secure with brass nut.
7. See Step III Installation and Adjustment of Rotational Limit Stop instructions.

### B. TO REPLACE YOUR 1700 SERIES CARTRIDGE, you will need to use replacement parts listed: 4, 5 and 7. Discard parts 1, 2, 3 and 6 in the illustrations above.

1. Install seats & springs (5), and quad seal (7).
2. **ENSURE THE QUAD SEAL AND SEATS AND SPRINGS REMAIN IN PLACE WHILE INSTALLING THE CARTRIDGE.**
2. Install cartridge (4) into body, making sure square tab is aligned on left and fully seated into square notch in valve body.
3. Install bonnet nut (Illustration I, C) to hold cartridge in valve. Hand tighten securely. Remove stem retainer if present.
4. Install sleeve (Illustration I, B).
5. With the cartridge in the "off" position ("hot side" of black gear up (Illustration I, A)), install volume control handle.
6. See STEP III INSTALLATION AND ADJUSTMENT OF ROTATIONAL LIMIT STOP INSTRUCTIONS.



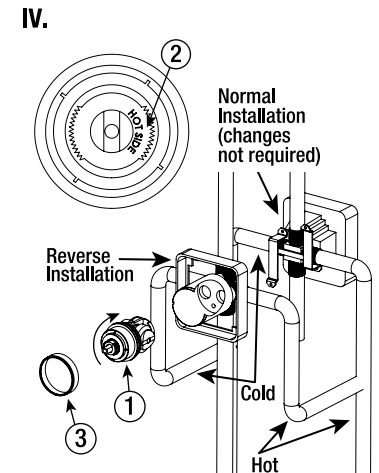
## III. Installation and Adjustment of Rotational Limit Stop instructions (See figures above)

### A. Place the temperature control knob (1) on the volume handle and rotate to the mixed position (if required), DO NOT SECURE SCREW. Turn on water supplies; let water run until hot and cold water is as hot/cold as possible. Place thermometer in a plastic tumbler and hold the tumbler in the water stream. Record the temperature reading. Note: The temperature knob for the 1500 Series valve (not shown) will operate similarly.

### B. If the water temperature is above 120° F, remove the temperature control knob (1) and rotate the limit stop (4) clockwise one tooth for every 4° F - 6° F (approximate) change in temperature. If water temperature is cooler than desired, rotate the limit stop counterclockwise. Note: The temperature knob for the 1500 Series valve (not shown) will operate similarly.

**IMPORTANT:** The first position of the Rotational Limit Stop (the limiter) is that position that restricts the rotation of the stem the most and is at the maximum clockwise 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 Rotational Limit Stop may need to be readjusted if the inlet water temperature changes. 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° F - 110° F.

### C. Secure temperature control knob (1) with screw (2) and snap control cover (3) onto knob. NOTE: Secure screw until handle wobble is reduced, DO NOT FULLY TIGHTEN. Overtightening will result in difficulty operating temperature control knob. Screw is self-locking. Complete handle installation of 1500 Series valve (not shown).



## IV. Back-to-Back Installation (See figures above)

NOTE: The following is not applicable for the 1500 to 1700 series conversion.

For back-to-back or reverse installations (hot on right and cold on left), rotate cartridge (1) so the words "HOT SIDE" (2) appear on the right. Install the cartridge making sure that the square tab (key) is fully seated in the square slot in the brass valve body (See step III). Slide bonnet nut (3) over the cartridge and thread onto the body. Hand tighten securely.

**FOR THE 1500 TO 1700 SERIES CONVERSION:** Carefully remove the white cap from the lower housing on the cartridge (1), rotate 180 degrees and reinstall being careful not to displace the black O-ring sealing between the cap ID and the round black portion at the front of the cartridge. Install the cartridge making sure that the square tab (key) is facing left and fully seated in the square slot in the brass valve body (See step III). The words "HOT SIDE" (2) should now appear on the right. Slide bonnet nut (3) over the cartridge and thread onto the body. Hand tighten securely.

