E4OD, 4R100

PART NUMBERS **36948-09K, -12, -13K**

Accumulator Control Valve Kit

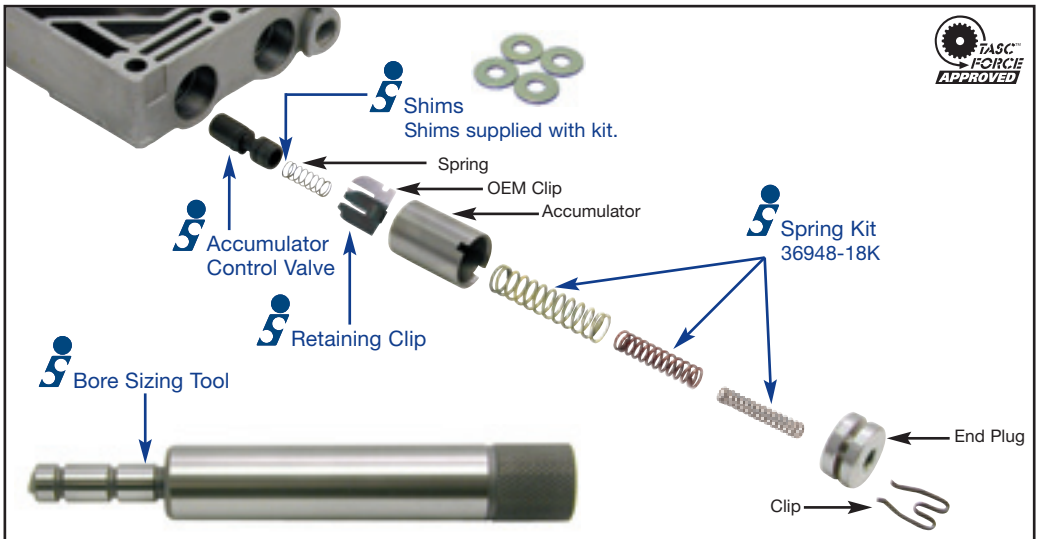
36948-09K
3-4 Accumulator Location

36948-13K
1-2 & 2-3 Accumulator Locations

Each includes the following:
1 Valve
1 Retaining Clip
4 Spring Shims

36948-12
1 Bore Sizing Tool

Also available:
36948-18K
Accumulator Spring Kit



Note: The bore sizing tool is not required but is recommended so that rhe bore can be resized properly to prevent hang-up of OEM or Sonnax valve..

Application information

Sonnax Valve Used	Shift Quality 1-2	2-3	3-4
36948-09K	Very firm shift (not recommended)	Firmer shift than OEM	Firmer shift than OEM
36948-13K	OEM shift quality	OEM shift quality	OEM shift quality

Installation Instructions

1. Remove the OEM valve, retaining clip and spring. Discard the OEM valve but save the clip and spring. Note: The 3-4 spring (generally white) is different than the 1-2 and 2-3 spring. Keep separated for installation.
2. If the OEM valve was stuck in the valve body or if the new Sonnax valve sticks in the bore, use the Sonnax bore sizing tool (see bore sizing instructions on page 2).
3. Install recommended valve in the location described with the OEM spring (see recalibrating of shift quality below).
4. The new Sonnax retaining clip works in conjunction with the OEM clip. Place the new clip under the bent metal hook of the OEM clip (see Figure #3). This will help retain both clips in the valve body.

Warning: Improper installation of clip will result in harsh shifts!

5. Install the new accumulator control valve with proper shims into the valve body along with the OEM spring. Press the retaining clip into its slot to retain the valve and spring. The nub on the Sonnax bore sizing tool helps with spring installation (see Figure 5). Align the slots in the retainers so that they slide over the nub on the sizing tool and catch the spring.

36948-09K Rev:A, 36948-13K Rev:-, 36948-12 Rev:A, 36948-09K-IN 12-19-08
800-843-2600 • 802-463-9722 • F: 802-463-4059 • www.sonnax.com • info@sonnax.com

PART NUMBERS **36948-09K, -12, -13K**

Recalibrating Shift Quality

Shift quality can be recalibrated to achieve either a desired feel on a specific shift (i.e. 1-2) or can be recalibrated to change the overall shift feel of the unit in all shifts. Targeted shift quality should be determined by the driver's preference, the vehicle application and what the vehicle is used for (what kind of load it will have). For specific shift changes, using the **36948-09K** valve in any location will result in a firmer, quicker shift than the **36948-13K** valve in the same location. The use of the **36948-09K** increases oil flow, which also increases shift firmness (the **36948-09K** is recommended upgrade for all applications in the 3-4 location).

To increase shift firmness for a specific shift (i.e. 2-3 shift), use one or more of the following techniques:

1. Install shims provided in the spring pocket of the valve. Generally two are sufficient for heavy-duty use.
2. Make the "V" notch in the accumulator body deeper using a .120" drill bit (see Figure 6). Note: Early valve bodies will not have a notch.
3. Install **36948-09K** control valve into 2-3 position.

To increase shift firmness for all shifts in a particular unit, use the following technique:

1. Increase the diameter of the line modulator valve (see Figure 7 for application information).

To decrease shift firmness for a specific shift, use one or both of the following techniques:

1. Reduce spring pre-load on the control valve by removing ¾ of a coil from the control valve spring.

To decrease shift firmness for all shifts in a particular unit, use the following technique:

1. Install a smaller diameter line modulator valve (see Figure 7 for specific application information).

Assembled Sonnax and OEM retaining clip.

Figure 3

Bore Sizing Instructions:

1. Insert the end of the bore sizing tool into the accumulater control bore. Press it into the bore until it bottoms out.
2. Remove the sizing tool and check to see if the valve moves freely within the bore.
3. If the valve does not move freely reinstall the bore sizing tool and tap the sizing tool up and down using a hammer and screwdriver as shown in Figure 4. This will smooth out any ridges in the bore. Repeat process until the valve strokes freely.

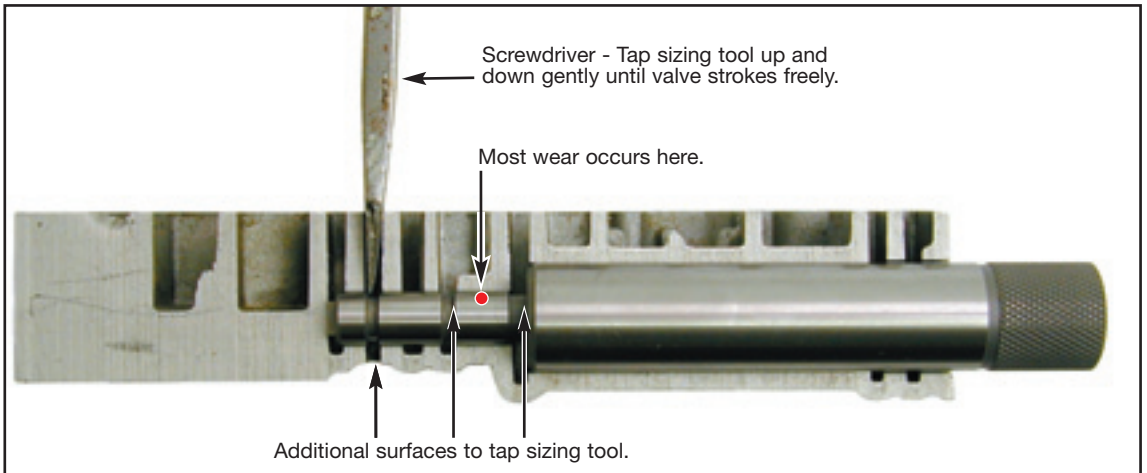
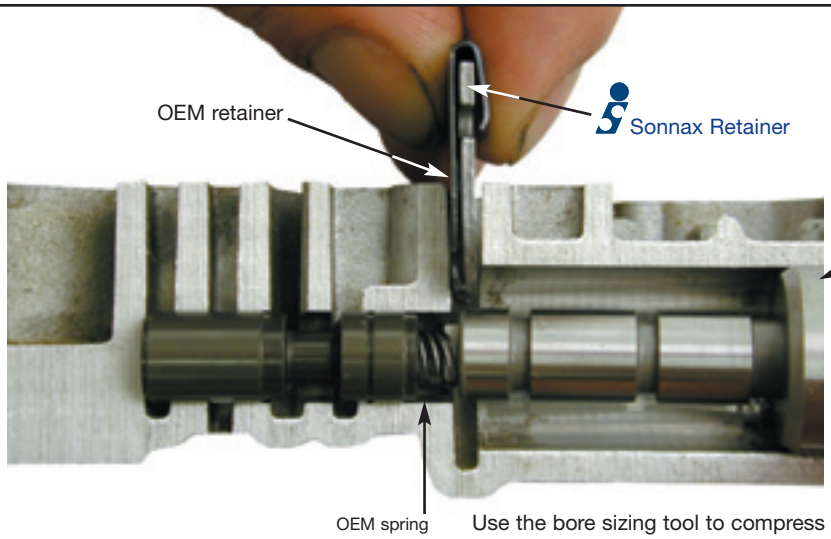


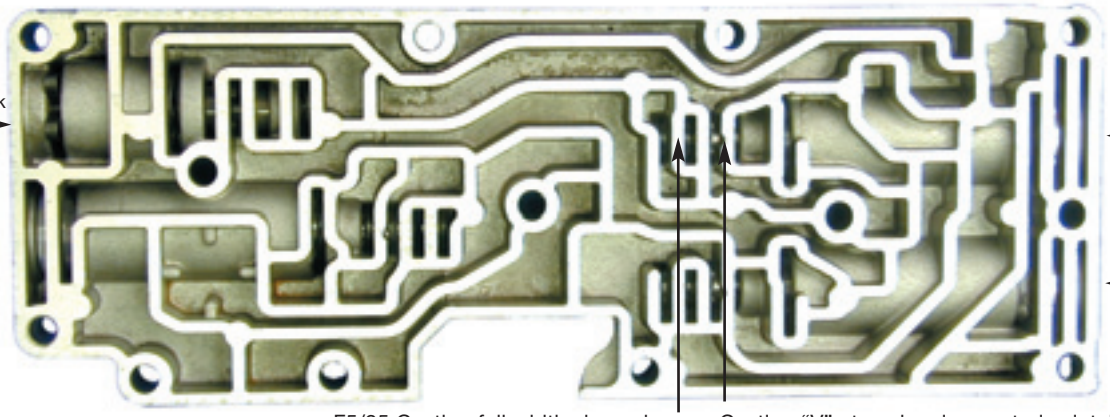
Figure 4

Figure 5



Use the bore sizing tool to compress spring while reinstalling the spring retainer.

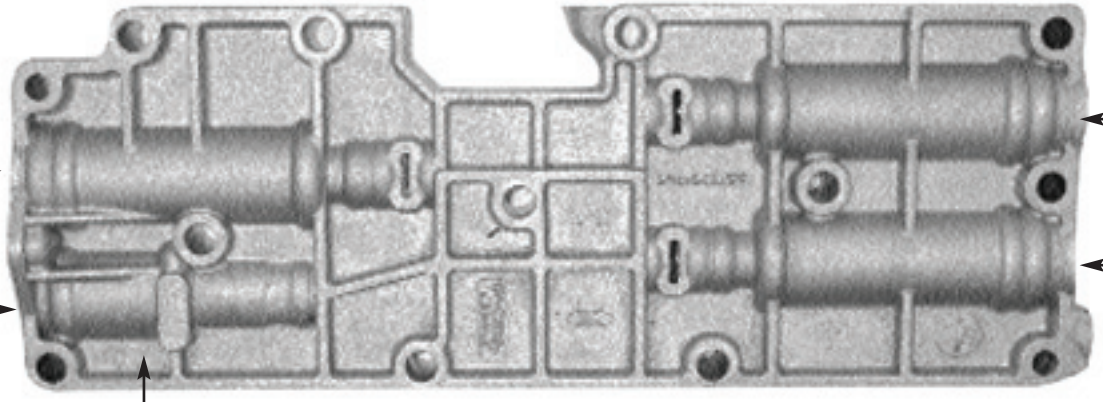
Figure 6



F5/95 Casting full width shown here
E9/89 casting recessed, narrowed

Casting "V" at each valve controls clutch feed
Deeper "V" = shorter/firmer shifts

Figure 7



No slot here on '96 and later. DO NOT mix match plate and body, or low pressure, no reverse, no 3rd gear will result.

Shift quality at all shift points can be tailored by selecting the appropriate Sonnax line pressure modulator valve listed below:

- **96948-01K** firmest shift
- **36948-05K** '85-'95 moderate OEM shift
- **36948-03K** '94 up, softer OEM shift