

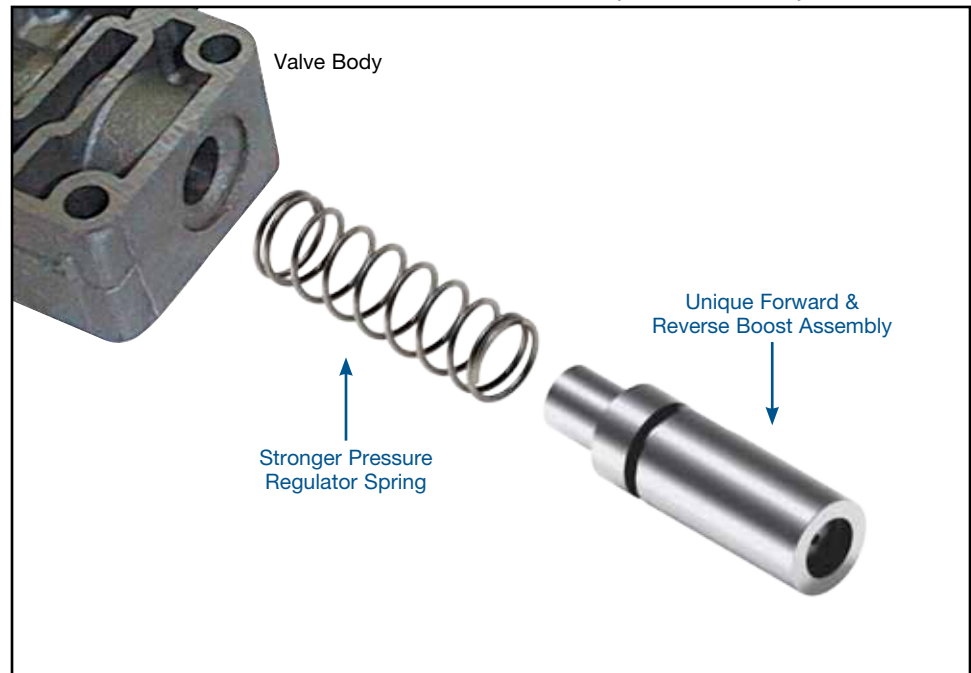
## Line Pressure Booster Kit

**Part No.**  
**4R70W-LB1**

- Unique Forward & Reverse Boost Assembly
- Stronger Pressure Regulator Spring

Patent Pending

## AODE, 4R70W, 4R75W



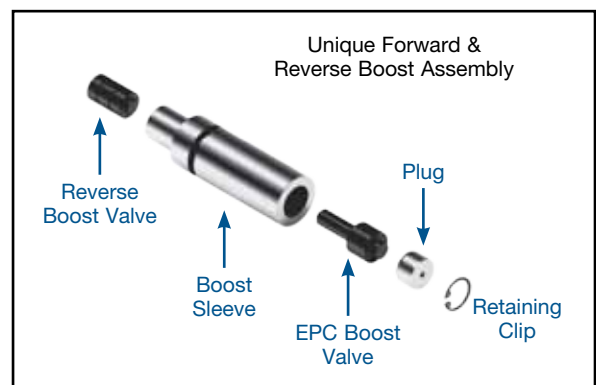
### 1. Disassembly

- Remove and discard OE boost valve assembly and spring. Save OE sleeve retaining clip for use with new boost assembly.
- Remove and inspect pressure regulator valve. If worn, replace with one of the following Sonnax parts: **76948-01** for '91 - '95 units or **76948-09** for '96'-later units

### 2. Installation

Install the sleeve into the valve body, open end toward the spring, deep enough to reinstall the retaining clip. The retaining clip groove in the sleeve must be visible through the top of the valve body. This will allow the retaining clip to fully seat on the sleeve.

**CAUTION:** If installed incorrectly, the retaining clip will protrude above the valve body surface.

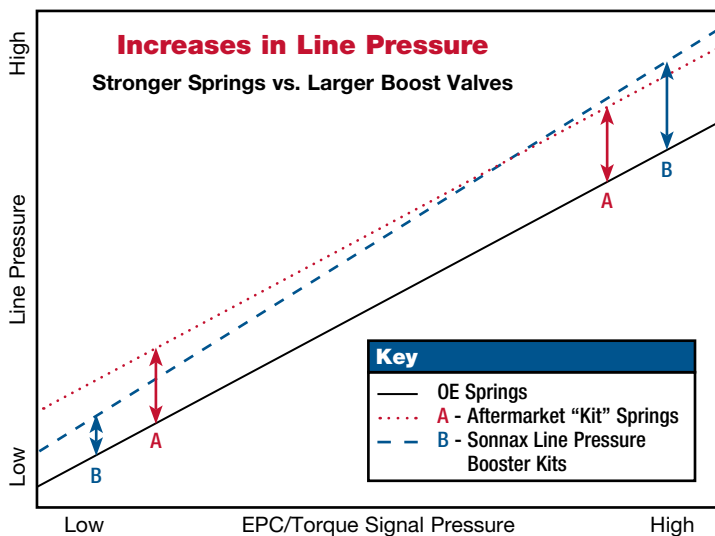


### The Prescription for Optimum Pressure

Stronger pressure regulator springs raise pressure equal amounts at idle and maximum pressure. Many aftermarket “kit” springs are a compromise, raising pressure too much at idle and not enough at maximum pressures (**A** in graph). Larger boost valves, on the other hand, have a progressive effect on pressure, changing the rate of pressure increase (**B** in graph).

The Sonnax large ratio boost valves and stronger pressure regulator springs are designed to work together. This is an ideal combination: smooth engagements and lower load on the pump at idle, but a greater increase in pressure as the transmission is worked harder.

For a more in-depth look at raising line pressure, read *The Prescription for Optimum Pressure* in the Sonnax online technical library at [www.sonnax.com](http://www.sonnax.com).



## Pump Tech

### Good Pressure Depends on a Good Pump

#### Verify Pump Specifications

Excess clearance equals low pump volume and pressure.

|                                |                                                                                                                                    |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gear Pocket Clearance</b>   | .0007" to .0026"<br>Check with feeler gauge and straight edge over pump face, or with Plastigauge and bolt complete pump together. |
| <b>Outer Gear to Pump Body</b> | .004" max.                                                                                                                         |
| <b>Lobe to Lobe</b>            | .004" to .006" max.                                                                                                                |
| <b>Pump Housing Flatness</b>   | .001"                                                                                                                              |

F5 and later casting number has revised porting and is a preferred upgrade for early production units.

## Optional Shift Tech

### Too Much of a Good Thing Causes Problems

Most times when a feed orifice is enlarged, the change in shift feel is far greater than intended and results in nuisance harsh shifts which many customers do not like. Sonnax kits raise line pressure in a progressive way so the biggest increase in pressure is at higher pressure ranges when it is needed most. This has an overall positive effect on shift feel without generating complaints.

Sonnax does not recommend drilling feed holes in all transmissions or recommend specific drill sizes because there are so many different original calibrations and what works well in one may not work well in another. If you do wish to enlarge feed orifices, we have provided these guidelines to help you determine what drill size corresponds with a specific percentage increase in orifice area so you are less likely to cause problems.

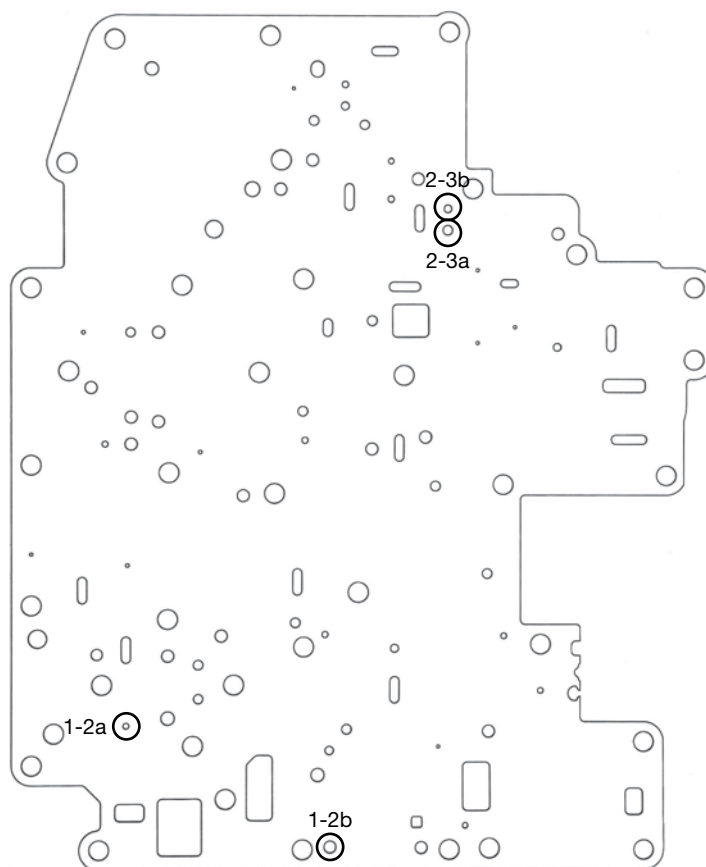
#### Orifice Feed Hole Guidelines

Do not drill feed holes too large. A small change in diameter can make a big change in the area of the hole the oil flows through. Use this chart to determine drill diameter for any increase in orifice area that you think best suits the vehicle.

| Original Orifice Diameter | Enlarged Diameter |            |            |              |            |
|---------------------------|-------------------|------------|------------|--------------|------------|
|                           | ← Conservative    |            |            | Aggressive → |            |
|                           | +10% area         | + 20% area | + 30% area | + 40% area   | + 50% area |
| 0.040                     | 0.042             | 0.044      | 0.046      | 0.047        | 0.049      |
| 0.045                     | 0.047             | 0.049      | 0.051      | 0.053        | 0.055      |
| 0.050                     | 0.052             | 0.055      | 0.057      | 0.059        | 0.061      |
| 0.055                     | 0.058             | 0.060      | 0.063      | 0.065        | 0.067      |
| 0.060                     | 0.063             | 0.066      | 0.068      | 0.071        | 0.073      |
| 0.065                     | 0.068             | 0.071      | 0.074      | 0.077        | 0.080      |
| 0.070                     | 0.073             | 0.077      | 0.080      | 0.083        | 0.086      |
| 0.075                     | 0.079             | 0.082      | 0.086      | 0.089        | 0.092      |
| 0.080                     | 0.084             | 0.088      | 0.091      | 0.095        | 0.098      |
| 0.085                     | 0.089             | 0.093      | 0.097      | 0.101        | 0.104      |
| 0.090                     | 0.094             | 0.099      | 0.103      | 0.106        | 0.110      |
| 0.095                     | 0.100             | 0.104      | 0.108      | 0.112        | 0.116      |
| 0.100                     | 0.105             | 0.110      | 0.114      | 0.118        | 0.122      |
| 0.105                     | 0.110             | 0.115      | 0.120      | 0.124        | 0.129      |
| 0.110                     | 0.115             | 0.120      | 0.125      | 0.130        | 0.135      |
| 0.115                     | 0.121             | 0.126      | 0.131      | 0.136        | 0.141      |
| 0.120                     | 0.126             | 0.131      | 0.137      | 0.142        | 0.147      |
| 0.125                     | 0.131             | 0.137      | 0.143      | 0.148        | 0.153      |
| 0.130                     | 0.136             | 0.142      | 0.148      | 0.154        | 0.159      |
| 0.135                     | 0.142             | 0.148      | 0.154      | 0.160        | 0.165      |
| 0.140                     | 0.147             | 0.153      | 0.160      | 0.166        | 0.171      |
| 0.145                     | 0.152             | 0.159      | 0.165      | 0.172        | 0.178      |
| 0.150                     | 0.157             | 0.164      | 0.171      | 0.177        | 0.184      |

#### Orifice Feed Holes

1-2a is the feed orifice, 1-2b should always be larger than 1-2a. 2-3a (some models) is the low speed 2-3 feed, 2-3b is the high speed 2-3 feed. 3-4 does not have a conventional feed orifice.

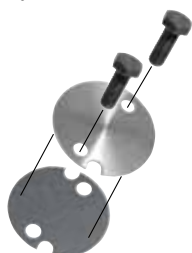


## Recommended Sonnax Products

| Part No.                       | Unit                     |
|--------------------------------|--------------------------|
| <b>Hydraulic Booster Kits</b>  |                          |
| 4R100-LB1                      | E40D, 4R100              |
| 4L60E-LB1                      | 4L60-E, 4L65-E, 4L70-E*  |
| 4L60E-LB2                      | 4L60-E, 4L65-E, 4L70-E** |
| 700R4-LB1                      | 4L60 (700-R4), 200-4R    |
| 400-LB1                        | 400                      |
| 4L80E-LB1                      | 4L80-E, 4L85-E           |
| 4T65E-LB1                      | 4T65-E                   |
| 350-LB1                        | 350                      |
| 4R70W-LB1                      | AODE, 4R70W, 4R75W       |
| <b>Electronic Booster Kits</b> |                          |
| 44957-LB1                      | 68RFE                    |
| 44957-LB2                      | 45/545RFE                |

\*Early-style pump \*\*Late-style pump

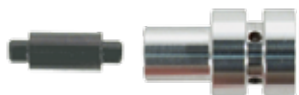
Valve Body Retainer Plate 76507F-01K



Overdrive Servo Pin 76833E



Overdrive Servo Regulator Valve Kit  
76948-29K



### Line Pressure Booster Kits

**Hydraulic Booster Kits** Sonnax hydraulic line pressure booster kits contain stronger pressure regulator springs and large ratio boost valves designed to work together to provide progressive pressure increases as driving conditions become more demanding. Sonnax springs are approximately 10% stronger than OE and more conservative in impact than other aftermarket "kit" springs.

**Electronic Booster Kits** Chrysler 45RFE, 545RFE and 68RFE units are unique because they utilize a true closed-loop pressure control system: the computer reads line pressure at all times through a full range pressure sensor. This means traditional methods of raising line pressure will have no effect because the computer simply re-adjusts the pressure until the voltage signal from the pressure sensor matches what the computer wants to see. Sonnax electronic line pressure boosters alter the pressure signal sent to the computer, causing the computer to raise line pressure. These kits are ideal for heavy duty and modified vehicles and even stock transmissions when a little extra pressure is desired. The booster installs easily between the pressure sensor and vehicle harness using OE-style sealed connectors.

### Valve Body Retainer Plate

#### 76507F-01K

The valve body stiffener plate in the 2-3 accumulator area was eliminated on '01-later 4R70W and 4R75W transmissions. Oil pressure builds up in unused cavities under the separator plate causing the plate to flex upwards as much as .010", allowing forward and direct oil passages to cross leak. The Sonnax retainer plate **76507F-01K** bolts in place and provides the clamping force to compress the lower valve body gasket. This prevents cross leaks, separator plate flexing and cracking, and even allows cracked separator plates to be reused.

### Overdrive Servo Pin

#### 76833E

In AODE transmissions, common problems are intermediate roller clutch, overdrive band or forward clutch failure traced to the O.D. servo pin wearing the case bore. The oil circuit that releases or holds the servo off is present as forward clutch oil in 1, 2, 3 ranges. If this release oil leaks through the case, it can cause the O.D. band to drag and/or forward clutches to overheat. If band overheating becomes extensive, it may not hold in 4th gear, which can allow a neutral condition and excessive roller RPM on a re-engagement of 4-2 downshift. Replace the OE servo pin with Sonnax overdrive servo pin **76833E**.

### Overdrive Servo Regulator Valve Kit

#### 76948-29K

Common problems with a 4R70W are a burned overdrive band, loss of 4th gear, and/or a 4-3-neutral shift pattern. These problems can be caused by wear at the inside diameter of the overdrive servo regulator boost valve sleeve due to constant oscillation. Excessive wear allows valuable overdrive oil to leak, preventing the proper regulation of the overdrive servo. The Sonnax replacement assembly **76948-29K** maintains critical tolerances that re-establish the hydraulic integrity of the circuit.