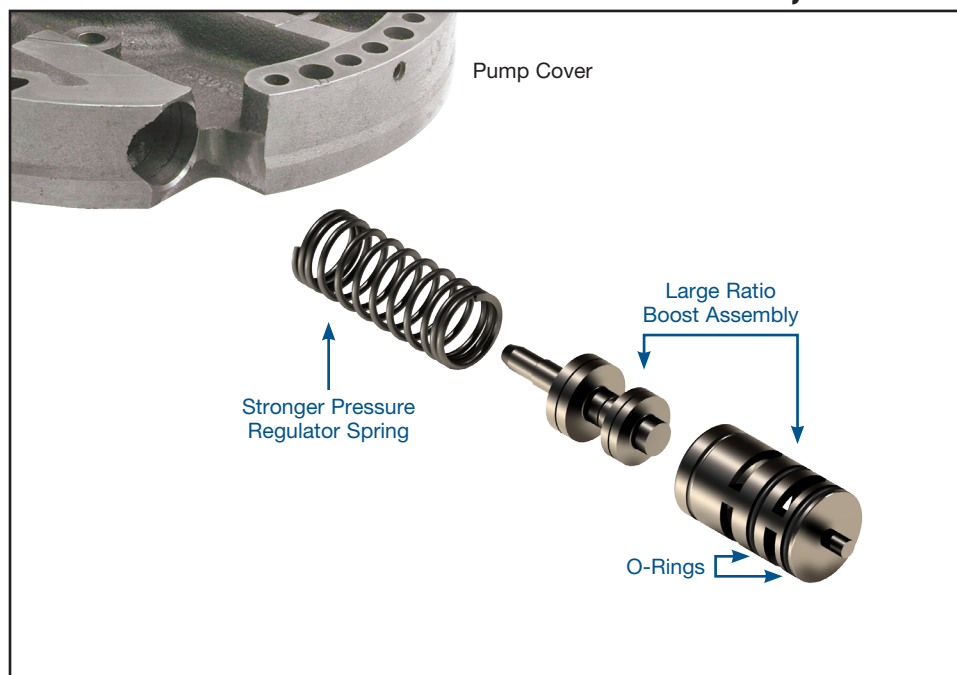


Line Pressure Booster Kit

Part No.
4L80E-LB1

- Large Ratio Assembly
- Stronger Pressure Regulator Spring
- O-Rings (2)

4L80-E, 4L85-E



1. Disassembly

Remove and discard OE boost valve and sleeve and large diameter pressure regulator spring. Retain the OE pressure regulator valve, bumper spring, spring seat, end plug and retaining clip.

2. Retrofit Modifications

Units with '89-'91 early pressure regulator valve design must be retrofitted. To retrofit, both the Sonnax boost valve and the pressure regulator valve need to be shortened by grinding the ends (**Figure 1**).

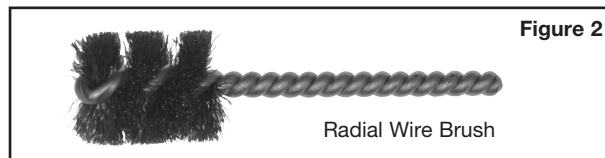
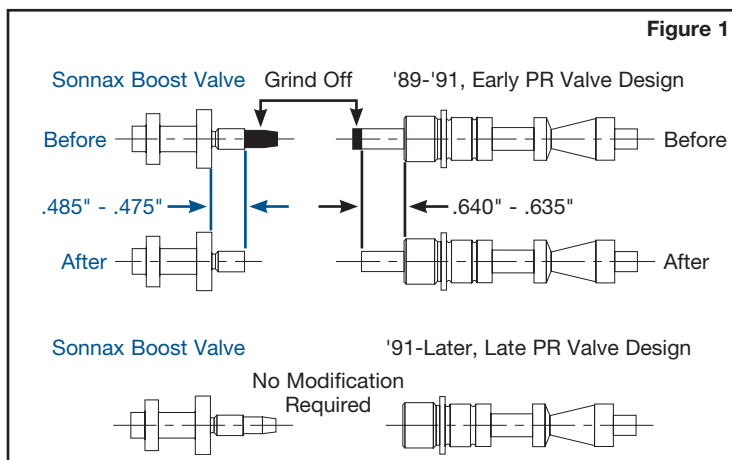
3. Bore Preparation

The O-rings included in this kit provide extra insurance for preventing crossleaks and should always be installed.

- Carefully inspect snap ring grooves, feed holes or bore edges and de-burr if necessary to reduce cutting. A non-abrasive tool such as a radial wire brush (**Figure 2**) works best, but the bore should always be thoroughly cleaned after any de-burring.
- Place the two O-rings into the grooves on the boost sleeve, roll sleeve over bench to resize the O-rings, then pre-lube the O-rings. Sonnax Slippery Stick™ (O-LUBE) or Door Ease® are ideal for this purpose.

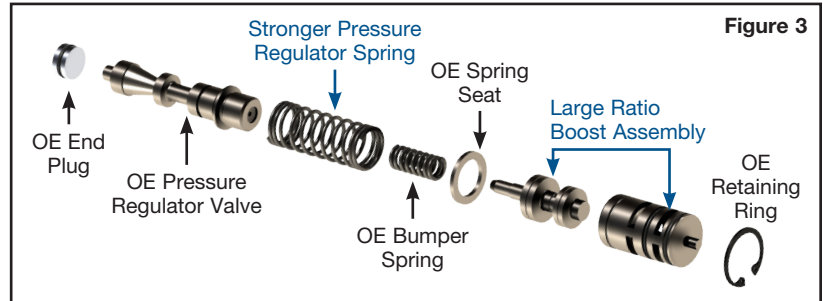
4. Installation

- Install the pressure regulator valve, original small bumper spring (used '92-later) and the Sonnax stronger pressure regulator spring.



4. Installation (Continued)

- With the open end toward the two springs, carefully push the boost sleeve assembly into the pump body, but only deep enough to reinstall the retaining ring.
- Install the retaining ring into the stator body.

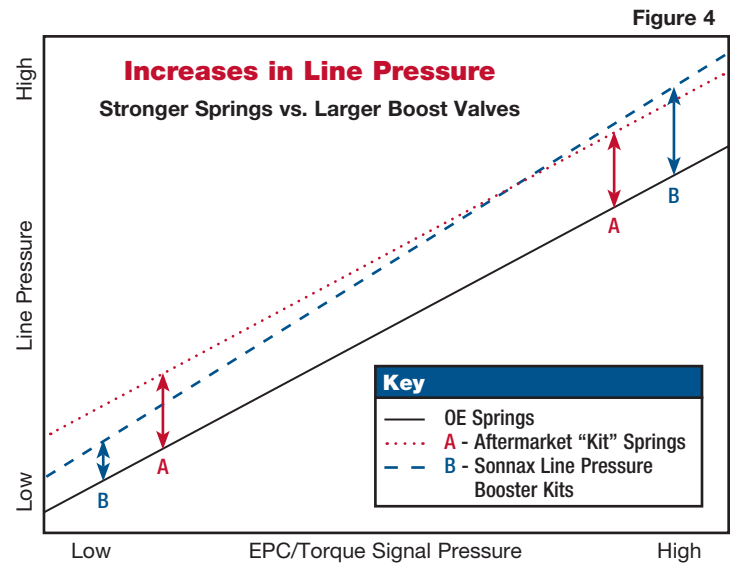


The Prescription for Optimum Pressure

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.



Pump Tech

Good Pressure Depends on a Good Pump

Verify Pump Specifications

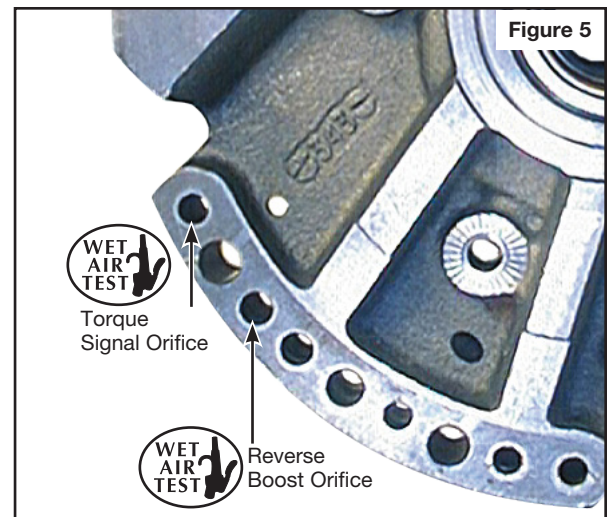
Excess clearance equals low pump volume and pressure.

Gear Pocket Clearance	.0008" to .0028" Check with feeler gauge and straight edge over pump face, or with Plastigauge and bolt complete pump together.
Outer Gear to Pump Body	.005" max.

Perform Wet Air Test

Pump Housing Flatness	.001"
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It is a good idea to perform the wet air test again (**Figure 5**) after installing the Sonnax line pressure booster kit. Continued leakage after replacing the boost valve and sleeve indicates cross leakage between the pump halves, which may be warped. Replace or resurface the pump halves to eliminate the remaining leakage, or use Loctite #518 gasket eliminator on the circuit from feed to boost sleeve.



Check for Wear

- Wear on tips of inner gear teeth or on the crescent means low pressure. Inspect inside of crescent, area between suction and discharge ports and tips of gear teeth for wear. Wear and excess clearance reduces pump efficiency.

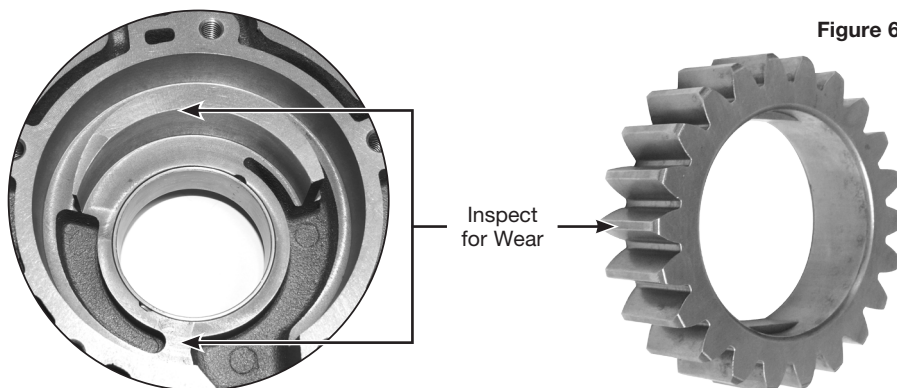


Figure 6

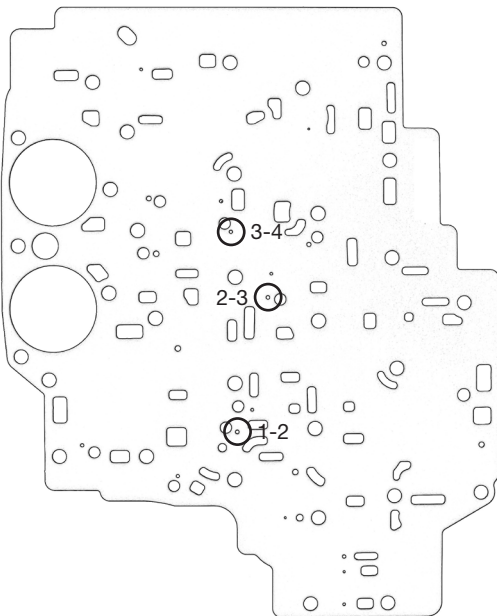
Optional Shift Tech

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 Holes



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

Recommended Sonnax Products

Part No.	Unit
Hydraulic Booster Kits	
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	A0DE, 4R70W, 4R75W
Electronic Booster Kits	
44957-LB1	68RFE
44957-LB2	45/545RFE

*Early-style pump **Late-style pump

Line-to-Lube PR Valve Kit 34200-14K



Line Pressure Booster Kits

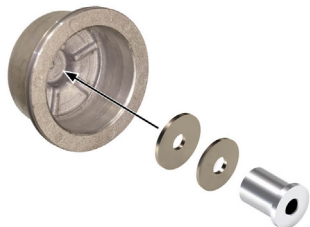
Hydraulic Booster Kits Sonnax hydraulic line pressure booster kits contain stronger pressure regulator springs and large ratio boost valves designed to work together to provide progressive pressure increases as driving conditions become more demanding. Sonnax springs are approximately 10% stronger than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

Line-to-Lube Pressure Regulator Valve Kit 34200-14K

The OE pressure regulator valve design prevents adequate cooler flow at low RPM and high pressure/demand conditions which can create overheat complaints. Additionally, in '99-later vehicles, the factory EPC pressure was set high at idle, resulting in engine surge conditions. Sonnax line-to-lube pressure regulator valve kit **34200-14K** provides a significant increase in cooler flow under low RPM and high pressure conditions that benefits all vehicles, and eliminates the need for reprogramming '99-later vehicles with high EPC pressure at idle. No machining required.

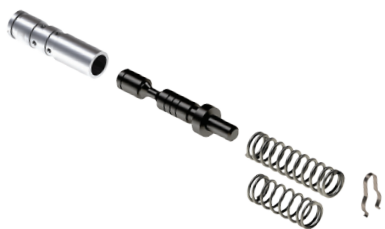
Reverse Servo Spacer Kit 34528-01K



Reverse Servo Spacer Kit 34528-01K

The Sonnax reverse servo spacer kit **34528-01K** prevents breakage of '96-later reverse servo pistons and eliminates the need to retrofit early design reverse servo pistons into late units. Servo piston stress is reduced by increasing the contact area between the aluminum piston and pin spacer. The new contact area is more than two times the original and the pressure between the piston and the spacer is reduced by 60%. No machining required.

AFL Valve Kit 34200-16K



Actuator Feed Limit Valve Kit 34200-16K

Low AFL pressure leads to no 4th gear, wrong gear starts and low maximum line pressure. Sonnax actuator feed limit valve kit **34200-16K** eliminates AFL loss and corrects low line pressure. To test for wear, remove spring from valve, then prop the valve open to operating position. Pry the valve side to side. Seeing valve movement or any oil being squeezed out indicates excessive clearance. Remove the valve and visually inspect the bore for wear. Reamer **77754-TL** or **F-34200-TL16** required.