sonnax®
PERFORMANCE

HIGH PERFORMANCE **TRANSMISSION** PARTS

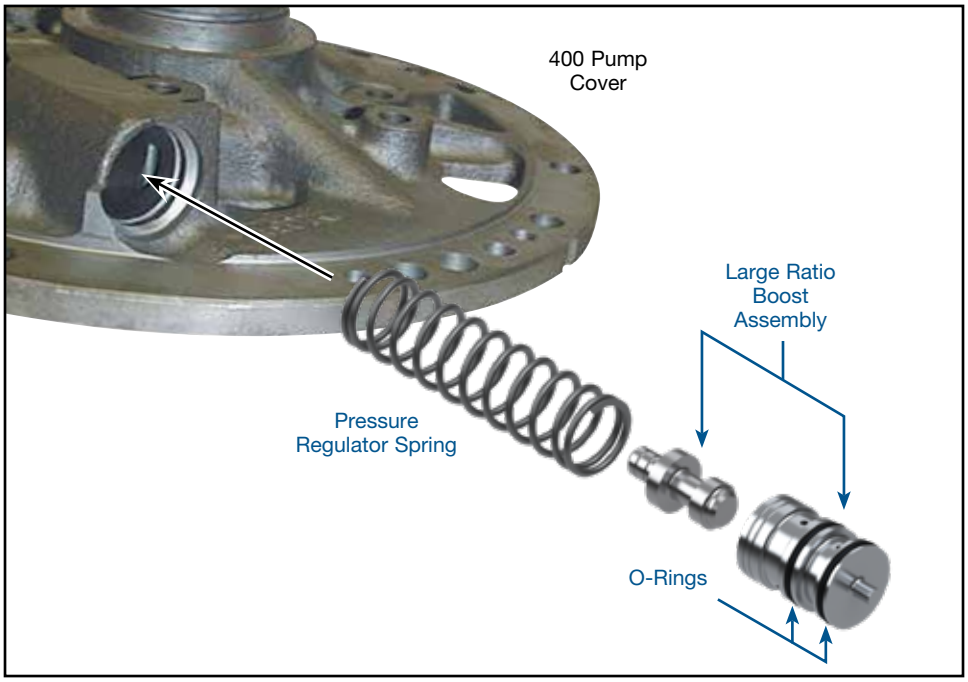
Instructions

GM 400

Line Pressure Booster Kit

Part No. 400-LB1

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



1. Disassembly

Discard OE boost sleeve and valve, pressure regulator spring and horseshoe-shaped shim. Retain the OE pressure regulator valve, spring seat and retaining ring .

2. Bore Preparation

The O-rings included in this kit provide extra insurance toward preventing cross leaks and always should be installed.

a. 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 1**) works best, but the bore always should be thoroughly cleaned after any de-burring.

b. 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.

3. Installation

a. Install the pressure regulator valve, spring seat and pressure regulator spring. Do not install horseshoe shim.

b. Carefully push the sleeve assembly into the pump body, just deep enough to install the retaining ring (**Figure 2**).

Figure 1

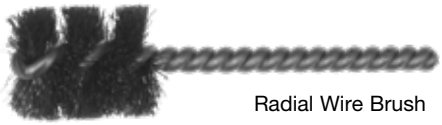
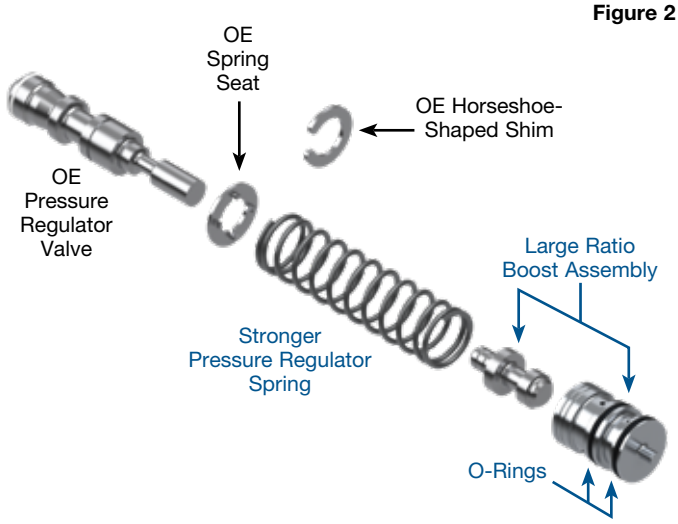


Figure 2



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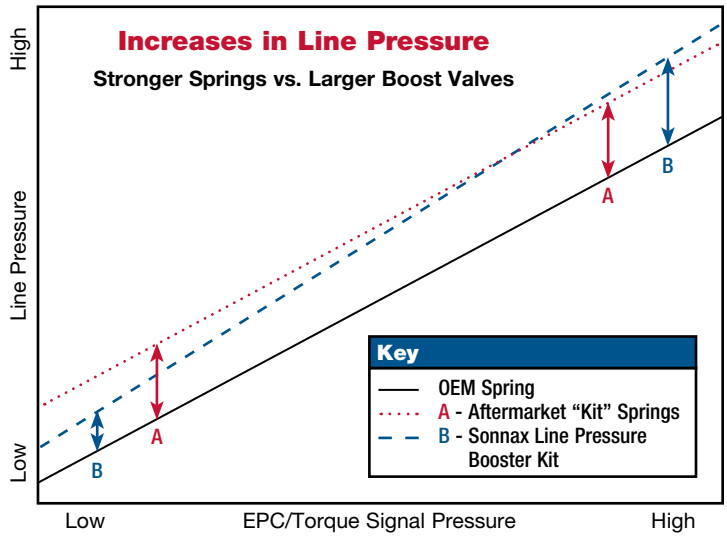
The Prescription for Optimum Pressure

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

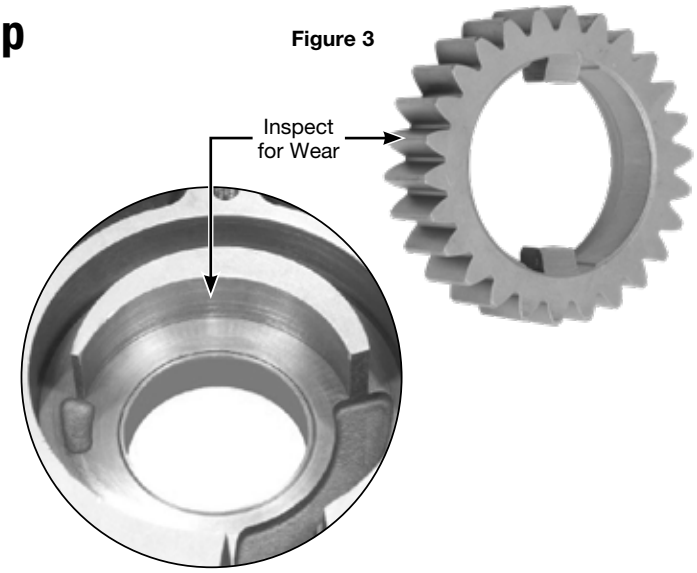
Excess clearance equals low pump volume and pressure.

Gear Pocket Clearance	.0007" to .0026" 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.

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 (**Figure 3**). Wear and excess clearance reduces pump efficiency.

Figure 3

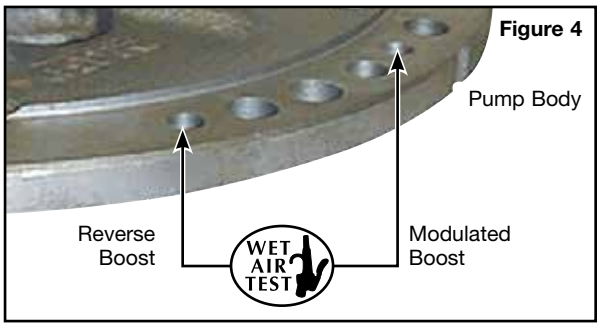


Perform Wet Air Test

Pump Housing Flatness	.001"

It is a good idea to perform the wet air test again (**Figure 4**) 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.

Figure 4



Shift Tech

For detailed information on drilling separator plate orifices, read *Drilling Orifices the Smart Way* in the Sonnax online technical library at www.sonnax.com.