Dfuser Shift Improvement Module

"Sonnax™ valve/Tricumulator™ springs"

User Guide

The shift Improvement Module consists of three Tricumulator™ springs **(Figure 1)**, designed for late '97 and up Trucks using E4OD, 4R100 Automatic Transmission (where no short inner springs were used). This is by far the only shift improvement you will ever need! And "A Must For Every Rebuild ". The springs increase the line pressure in the transmission to firm up the shifts and make them happen faster. Feel seat of the pants performance from your sluggish transmission!

In addition, for street or high-performance trucks or SUVs, use of the Sonnax™ **(Figure 2)** Line Pressure Modulator Valve & Sleeve kit allows for quicker and firmer 1-2 and 2-3 shifts.

Some E4OD, 4R100 and AX4N transmissions have soft 1-2 or 2-3 shifts, intermittent harsh shifts or poor line rise complaints. These can be either ECU (electronic control unit) related or accumulator pressure related. These complaints are caused by severe wear of the line pressure modulator sleeve, allowing EPC (electronic pressure control) oil to leak past the valve and cause soft shifts. Severe wear will also cause the valve to intermittently stick or "hang up" causing harsh shifts.

Sonnax™ now offers the line pressure modulator sleeve and valve kit, which eliminate this oil loss problem with closely-held tolerances. The sleeve has been manufactured out of carbon steel and the valve from hardened alloy steel to prevent excessive wear. The sleeves have an O-ring added, similar to the AX4N style, to help prevent excessive EPC oil loss. The valves incorporate annular grooves to properly center the valve in the sleeve and eliminate side loading, which can lead to excessive wear. The outside diameters of the sleeves are the same, so the kits may be used in either of the E4OD, 4R100 or AX4N.

Installation Instructions

Installation is fairly simple, and should take about 2 hours. Start by draining the transmission fluid from the pan, then remove pan, pan seal (re-usable), filter (Tilt the Transmission Filter to allow excess fluid to drain into pan, **(Figure 3**), and filter o-ring (may get stuck in valve body). Remove accumulator valve body (sits across the entire front part, side to side, of the transmission, **(Figure 4**), held by two (10mm) nuts and eleven (8mm) bolts. Allow Valve body to drain on one side before removal.

Working on a clean surface, remove the security clips (use needle nose pliers **Figure 5**) that hold the valves in place. Use one of the 8mm bolts you just removed to thread into the valves and pull out gently **(Figure 6)**. If you have 2 springs in each valve, replace the inner spring with the new Tricumulator™ springs supplied. If only an outer spring is in place, add the new inner springs supplied to them. There are three shifts (see diagram below, 1-2, 2-3, and 3-OD), so three springs must be replaced or added. Reinstall valves and clips back in place with springs inside.

To install the Sonnax™ replacement assembly, remove the retaining clip from the line pressure modulator valve bore in the E40D and 4R100 accumulator valve body or AX4N valve body. Remove and discard both the worn line pressure modulator sleeve and plunger valve. This will not be easy to remove, so take your time. Insert the new plunger valve into the new sleeve. The plunger valve is completely symmetrical, so orientation is not an issue. Lubricate the assembly. Put the O-ring into the groove on the outside diameter of the sleeve. Push the sleeve into the valve body, open end toward the springs, only deep enough to reinstall the retaining clip. Assure the nub on the end of the plunger valve fits into the whole in the spring-assembly disc.

This a good time to clean the valve body with brake cleaner. Allow time to dry before re-installation. Also, clean the pan thoroughly. Remove the Magnet secured around the drain bolt and clean thoroughly. Make sure to put the magnet back before installing the pan.

Now secure the accumulator body back on the transmission with the two (10mm) nuts first, do not tighten, and followed by the eleven (8mm) bolts, and torque to ***80-in-lbs or 6.7-ft-lbs***, working your way from the inside to the outside in x-motion.

Finishing the re-assembly process:

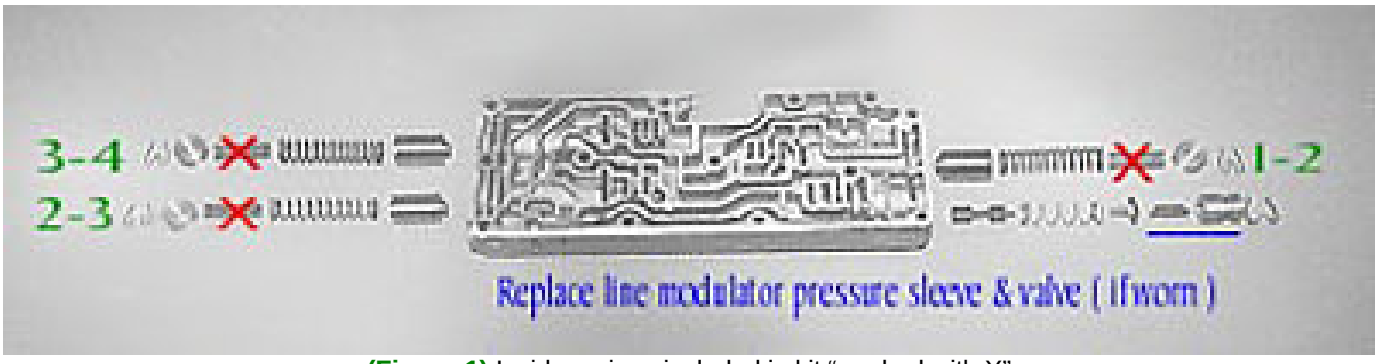
- Install a new Transmission filter with o-ring.
- Install Pan with re-usable gasket.
- Torque all pan bolts to ***10-ft-lbs***, working your way from the inside to the outside in x-motion.
- Add 6-7 quarts of new transmission fluid (check your manual for proper fluid type).
- Start engine and run it through the all gears while standing still.
- Re-check fluid and add as necessary. Check for leaks, and test drive.

Warning: Re-torque bolts after a week, and re-check fluid levels.

Disclaimers

Like any other products we cannot be held liable for incorrect installation. Installation of performance enhancing products is solely at your own risk. Check your local emissions laws prior to installation. Except in cases of gross negligence the buyer holds us harmless.

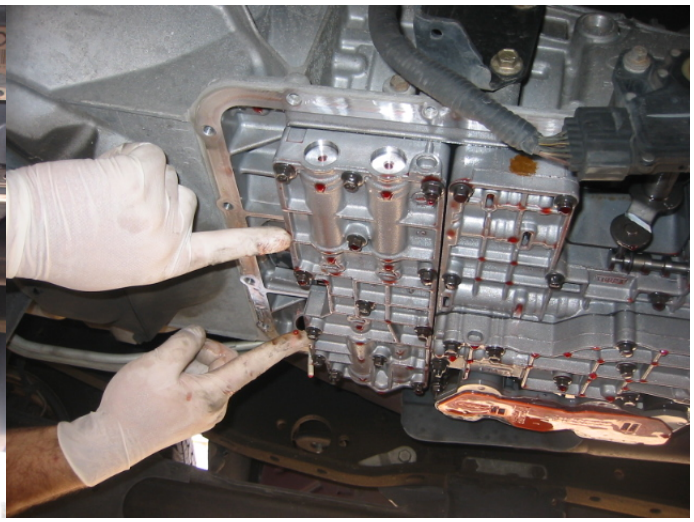
PS: It is recommended to replace the line modulator pressure sleeve and valve every 36,000 miles (if worn), known as the Sonnax™ Valve.



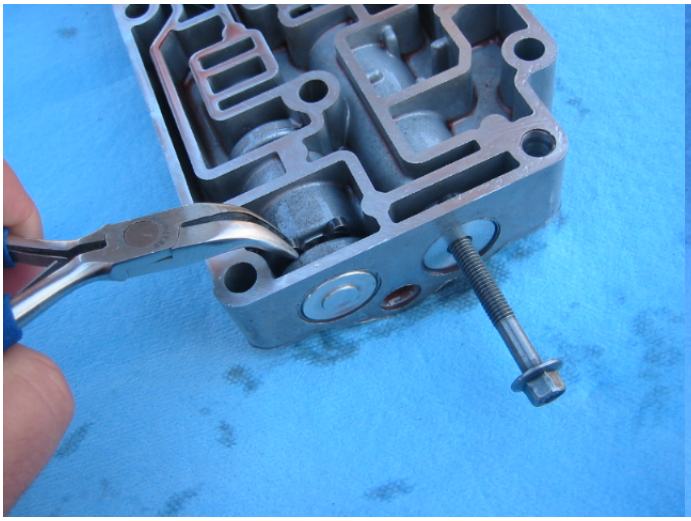
(Figure 1) Inside springs included in kit "marked with X"

(Figure 2) Sonnax™ Line Pressure Modulator Valve Kit

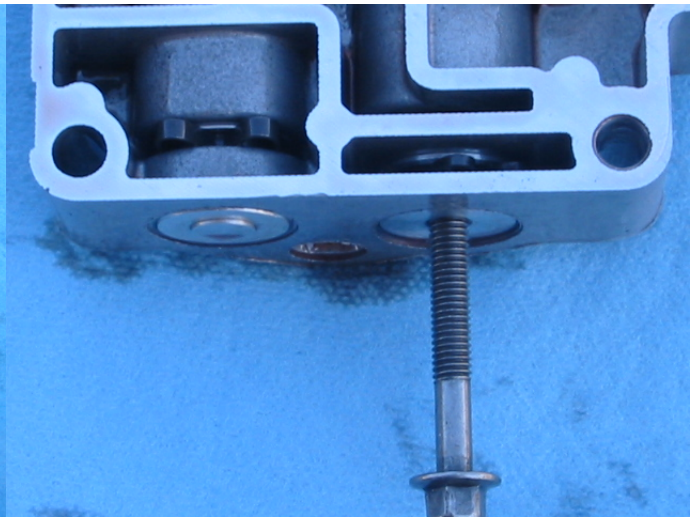
(Figure 3) Transmission Filter Removal



(Figure 4) Valve Body



(Figure 5) Remove Clips with small needle nose pliers



(Figure 6) 8 mm bolt from Valve body to pull valves