

Pressure Regulator Valve Kits

77917-06

4L60

77917-07

4L60-E

Each includes the following

1 Regulator Valve



77917-TLC

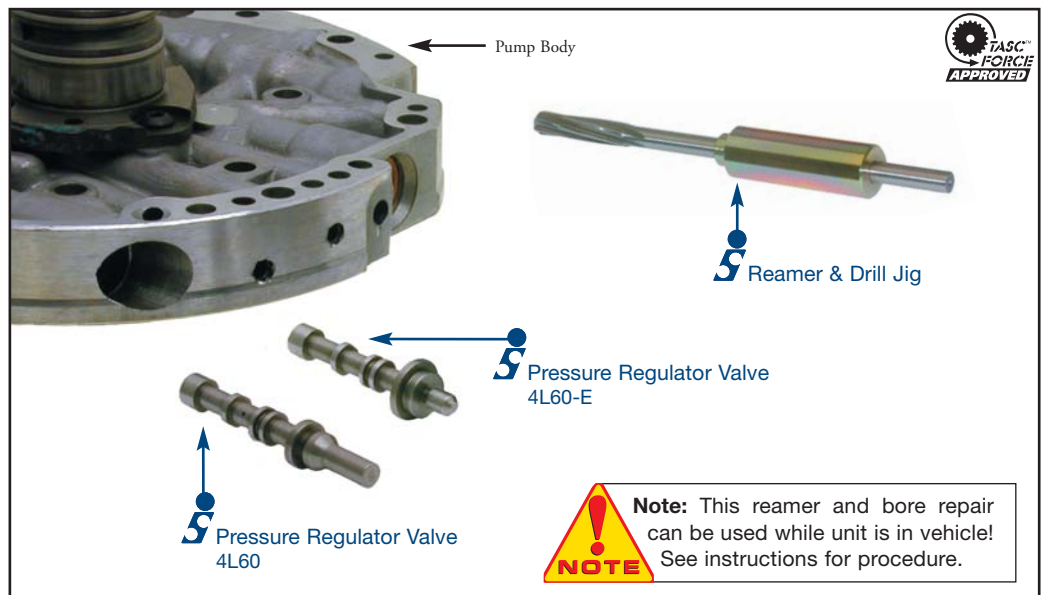
1 Carbide Reamer & Drill Jig

77917-TL

1 High Speed Steel Reamer & Drill Jig

Note: Reamer and drill jig are the same for both the 4L60 & 4L60-E.

Carbide tool kit will provide increased tool life over high speed steel.



Reaming Instructions

1. Remove and discard the OEM pressure regulator valve.
2. Clamp the pump housing securely to a bench.
3. Install the reamer and jig 77917-TLC or 77917-TL as shown in Figure 1.
4. Flood the valve bore and reamer flutes with cutting fluid (Mobilmet S-122, Lubegard Bio-Tap, Tap Magic™, etc.).
5. Ream the valve bore using a low rpm, high torque air drill regulated to a maximum of 200rpm. Maintain a constant moderate clockwise rotation, and apply steady forward pressure and continuous cutting fluid until the reamer reaches the bottom of the bore. The reamer should cut easily. Continue to turn the reamer clockwise as it is removed from the bore. Ream one pass only.
6. Remove any debris and burrs from the bore. Lubricate and install the Sonnax replacement valve and the remaining OEM parts.

To repair worn bore with transmission still in vehicle

1. Remove cooler-out (bottom line).
2. Remove pressure regulator and boost valves.
3. Install reamer jig then reamer.
4. Have assistant blow low air psi into the cooler line fitting, which will force chips away from cooler circuit.
5. Drive reamer with low speed drill with 3/8" chuck.
6. After reaming the bore, blow air into the pump suction inlet to force out chips.

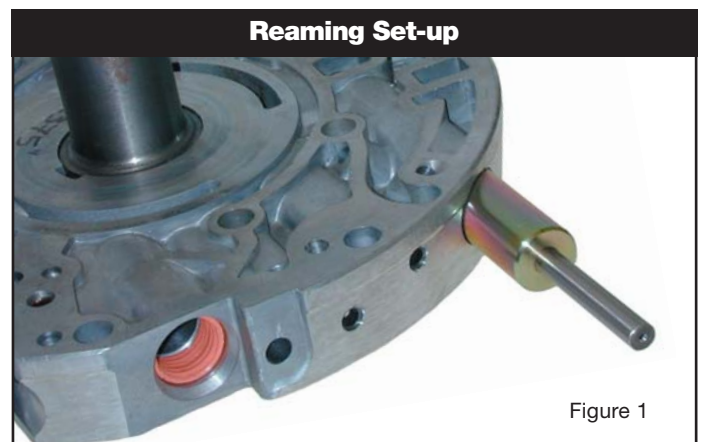


Figure 1

7. Clean and reflush area with brake cleaner.

Replace the boost valve(s) to compensate for larger PR valve

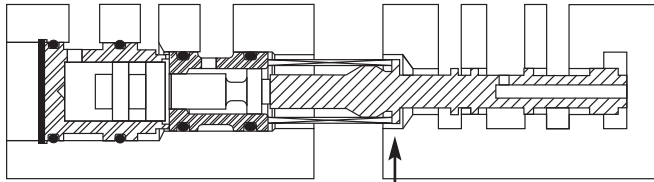
The boost valves should be checked for leakage at the same time the pressure regulator valve is being replaced. This is especially important since the replacement PR valve is oversized. Any boost valve leakage will reduce the effectiveness against the oversized PR valve. The Sonnax boost valves are also oversized to better match the size of the oversized PR valve. Sonnax boost valve part numbers are listed below. The boost valve literature explains the Wet Air Tests needed to test for boost valve leakage.

4L60 & E

Pressure Regulator Valve Kits

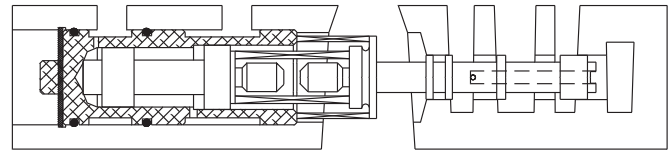
PART NUMBERS 77917-06, 77917-07, 77917-TL, 77917-TLC

4L60 Boost Requirements



Spring seat on Sonnax valve compensates for larger diameter. Original spring results in same line at idle.

4L60-E Boost Valve Requirements



Sonnax Boost Valves

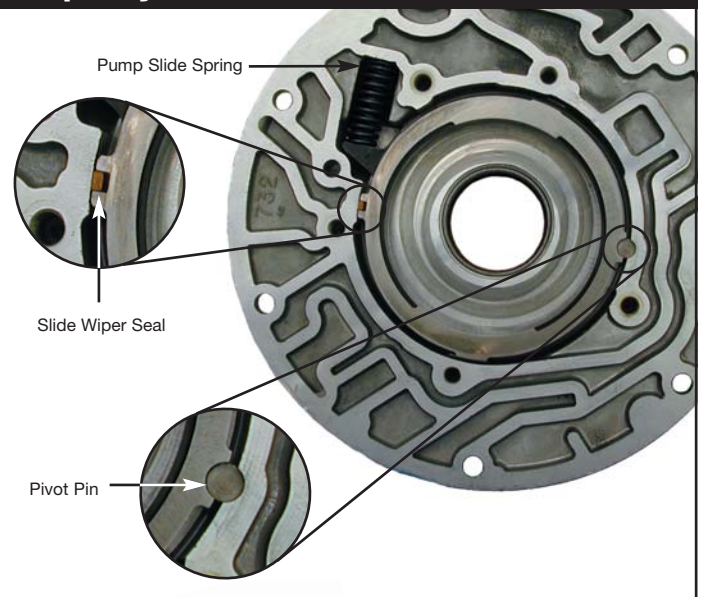
4L60	Throttle Boost Valve	77917-471 or 77917-500 (77917-500 boosts pressure higher than 77917-471)
	Reverse Boost Valve	K77898
4L60-E	Boost Valve	77898E-K

Bonus Tech Tips

In addition to installing the Sonnax PR valve, the following areas should be addressed to ensure that the unit will not continue to have problems due to other sources. Check the following areas of the pump carefully.

- Add a second pump slide spring if there is only one. The slide spring acts against decrease pressure to control the output of the pump.
- Replace the pump slide pivot pin if it is worn. A worn pin will reduce pump output.
- Replace the slide wiper seal if it is loose (the seal is located opposite the pivot pin).
- Inspect the clearance from the top of the pump slide and rotor to the surface plane of the pump cover. Before measuring, remove the o-ring that is in the groove on the underside of the pump slide. Put a straight edge across the pump cover and use feeler gauges to measure the clearance with the slide and rotor. The clearance should not exceed .0025". If the clearance exceeds .0025" the rotor/slide pocket is worn. The pocket must be machined flat and the pump cover resurfaced to achieve the proper pocket depth.
- Inspect the surface finish of the pump housing and cover. There cannot be any phonograph type grooves on the surface. When resurfacing pumps it is important to use a slow feed rate, a high surface speed, and a diamond cutting bit. Carbide cutting bits often leave the surface finish too rough.

Pump Body Identification



Worn Valve Bore Test

