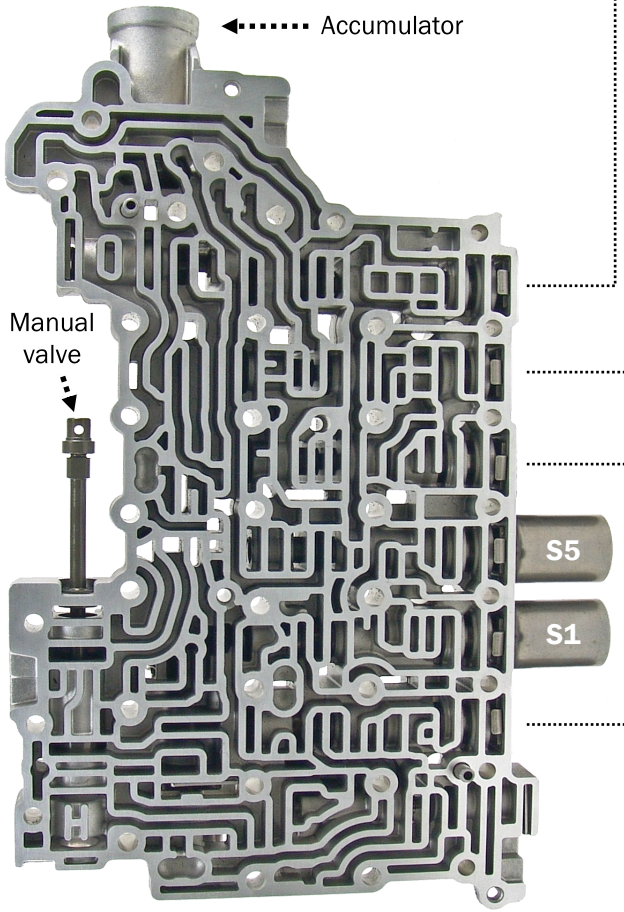
8L90-REG-OS

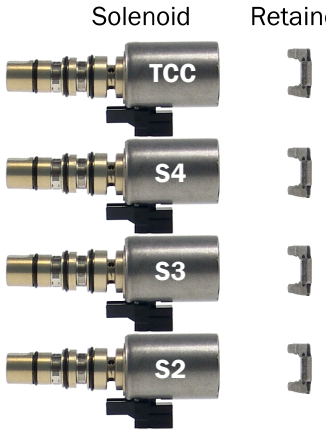
Oversize TCC/S2/S3 and early style S4 regulator valve
Fits GEN1 8L45, 8L90

Requires #8L90-REG-TK Tool Kit

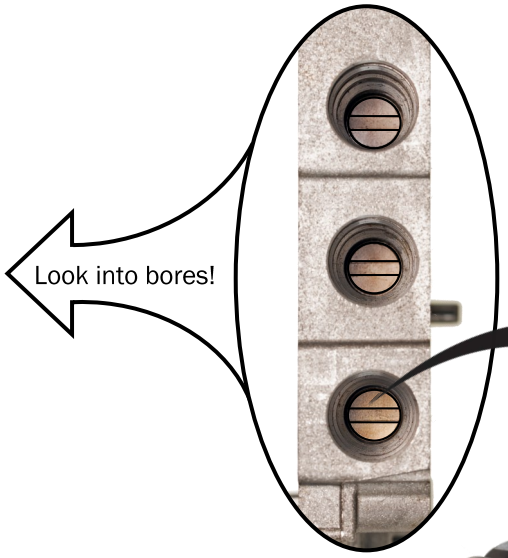
Corrects/Prevents/Reduces:

- Harsh, delayed reverse engagement
- Harsh, slipping, or missing shifts
- Coast downshift clunks
- TCC shudder or slip
- Transmission Control Solenoid Valve 2, 3, 4, or 7
  (TCC) Stuck Off (P0776, P0796, P2174, P2808)
  (TCC) Stuck On (P0777, P0797, P2175, P2809)





Step 1. Prior to removing solenoids, make sure to mark them to know which bore they go in. Even those with the same code number on them have different flowrates. They must go back into the same bore they came out of. With the valve body orientation as shown, with the accumulator at the top, and manual valve on the left, remove retainers and solenoids from **TCC-S2-S3-S4** locations and set them aside.



Listen-up!

It's easy to get confused and take out the wrong valves. Once the solenoids have been removed, double check to confirm you are working on the correct bores.

TCC-S2-S3-S4 valves have one line across as shown on the left and in the picture below. If the any valve does not have only one line across, you removed the wrong solenoid.

☑ TTC-S4(Early)-S3-S2 valves

☒ S4 Late Use #8L90-S4LATE-OS, see last page for details.

☒ S1 and S5 Use #8L90-S1REG-OS, see last page for details.

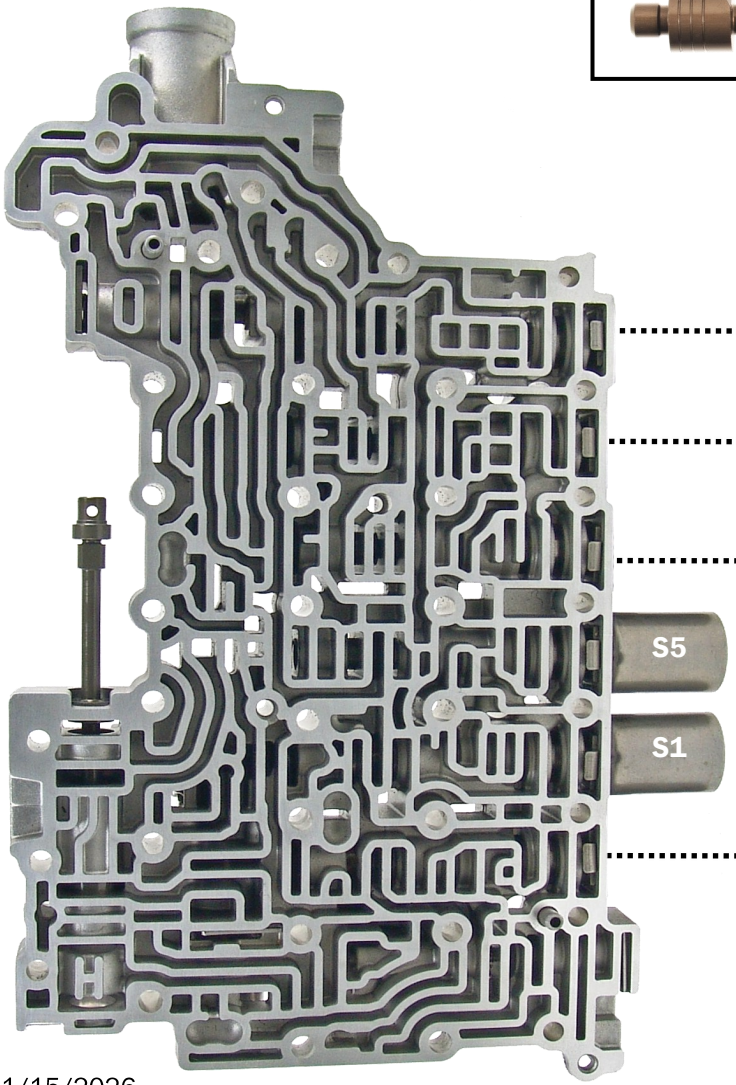
Step 3. Valve identification:
With the solenoids removed, verify if S4 valve is an early or late design by either identifying a two-land vs **three-land valve** design.

If it is a two-land design, you'll need to order 8L90-S4LATE-OS for your application.

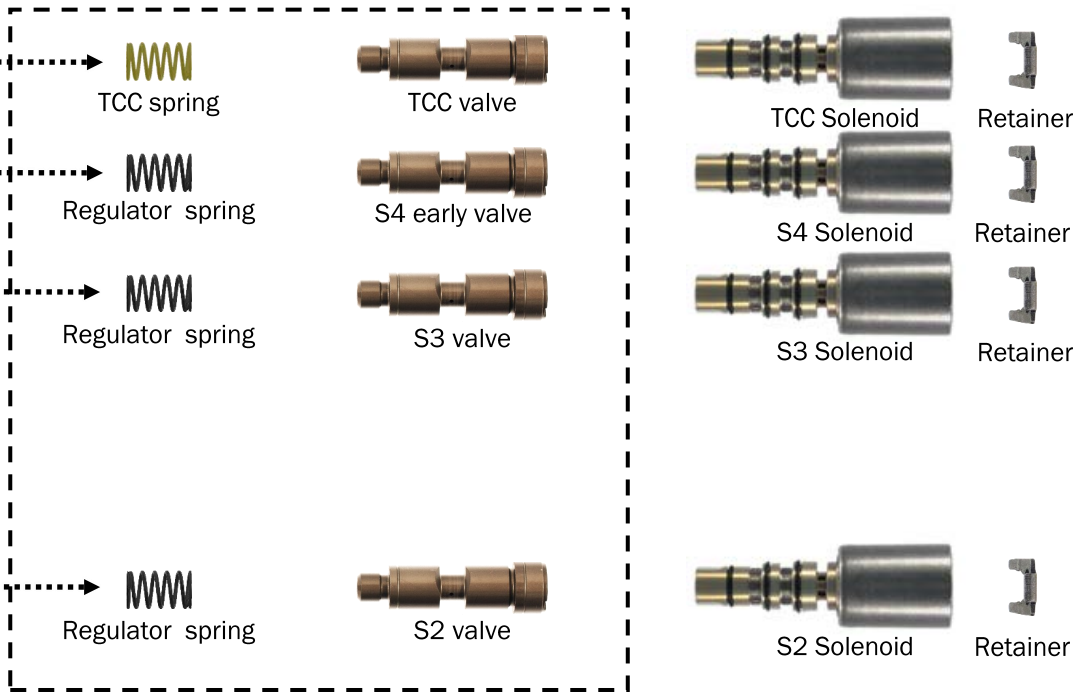
This kit fits TCC, S2, S3, and only early style **three-land S4 valve.**

☑ **Three-land S4 valve**

☒ Two-land S4 valve (use #8L90-S4LATE-TK)



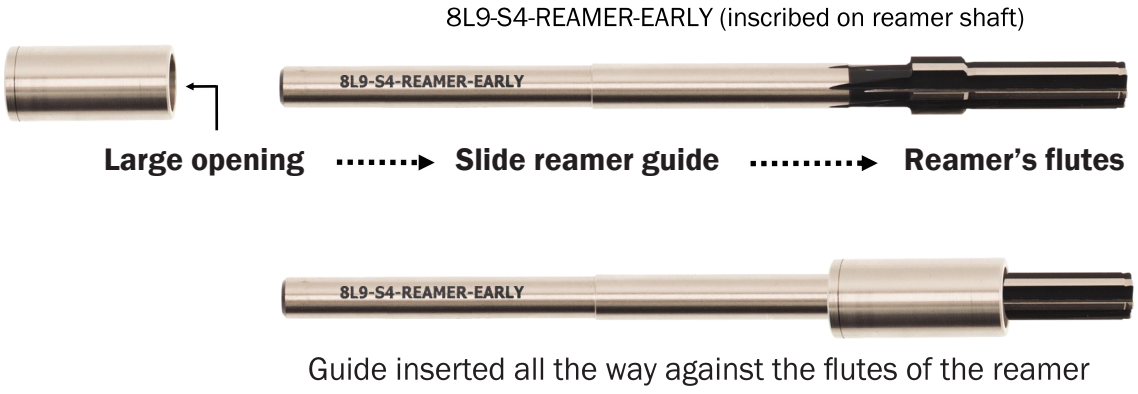
Step 4. Discard springs and valves being replaced.



Note the TCC valve spring differs from the rest.

Step 5. Turn valve body around keeping the accumulator side on top, and manual valve on the right.
Identify valve bores A-B-C-F for reaming. (Bore B is not embossed, but can be located between bores A and C)

Step 6. Slide the **reamer guide** onto the reamer with the **large opening of the guide facing the reamer's flutes**.
Slide the guide all the way until it bottoms out on the flutes area of the reamer.



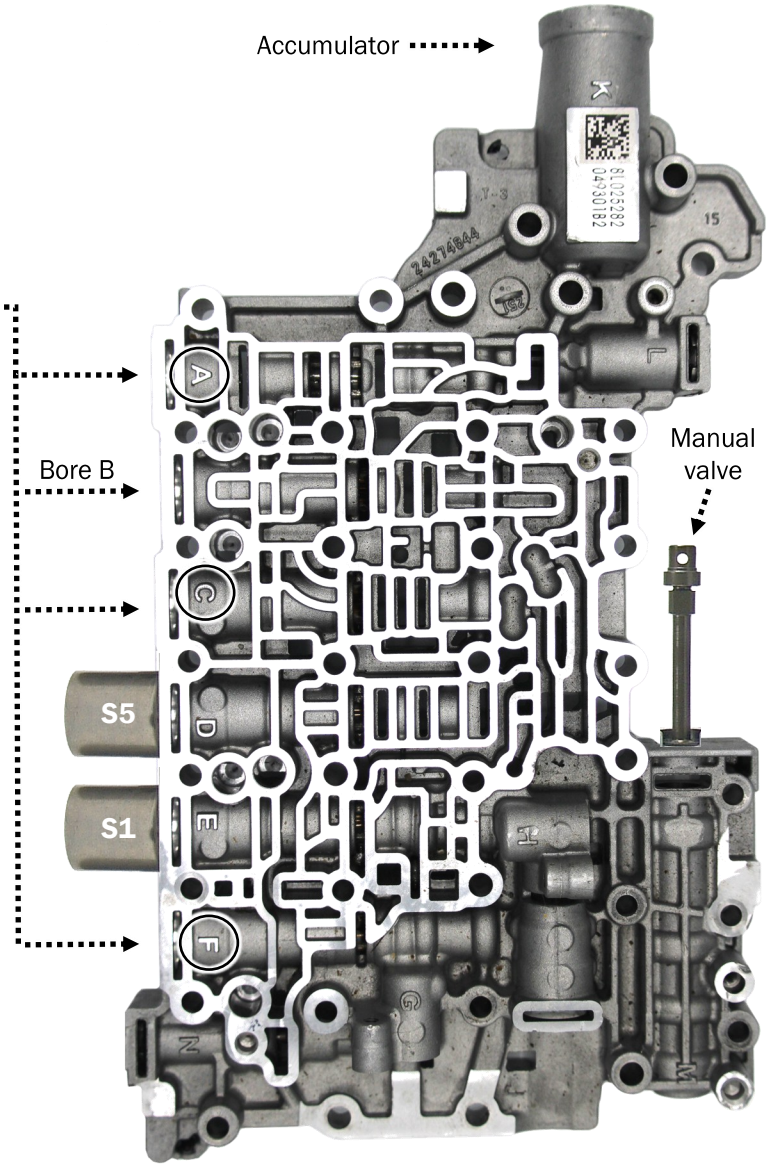
Guide inserted all the way against the flutes of the reamer

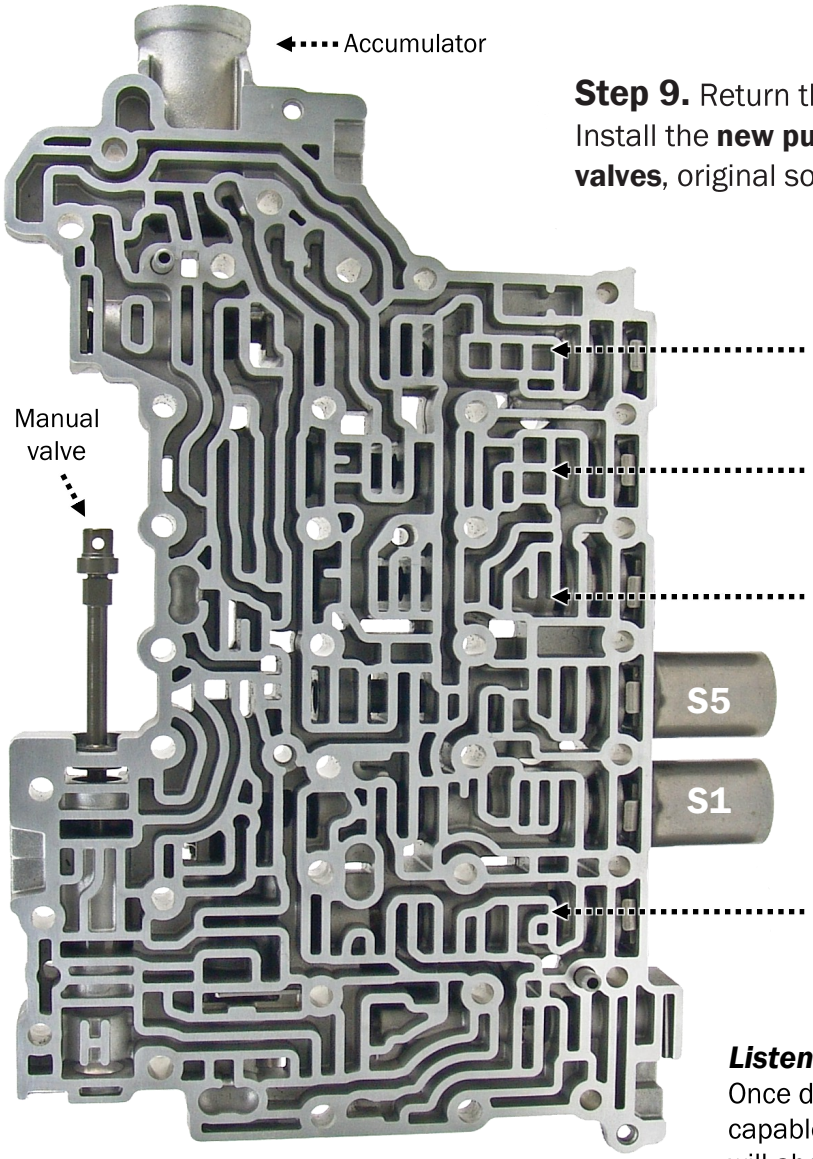
Listen up!
Reamers for S1-S5 and TCC-S4-S3-S2 regulator valves look identical. Verify you have the correct before reamer moving onto step 7.

Correct reamer is part of the 8L90-REG-TK tool kit, and is inscribed with 8L9-S4-REAMER-EARLY.

Step 7. Insert the reamer and guide assembled in the previous step into the bores A-B-C-F. Using plenty of WD-40®, ream the bore using a hand drill at low speed and let the reamer do the cutting. Don't force it!

Step 8. Remove the reamer and guide, thoroughly clean the valve body bore using solvent and compressed air. Insert the **new valves** in the bores, and make sure they move freely.





Step 9. Return the valve body to original position, accumulator side on top, and manual valve on the left. Install the **new purple spring** into TCC bore, **new black springs** into S4-S3-S2 bores, **new regulator valves**, original solenoid and the retainer in the valve body.

Listen up!

Once done with the installation, always clear all DTCs, then perform the fast learn procedure using a capable scan tool. Follow the instructions provided by the tool. The procedure will not be completed or will abort if the fluid temperature is not within the correct range, if there are any codes, or if any other conditions listed in the procedure instructions are not met.

Next, conduct an extensive road test to allow for the fine-tuning of each shift. The transmission adapts best under normal driving conditions, so avoid extremely light or heavy-footed driving.

If one or more gear changes do not smooth out, verify that the transmission is at normal operating temperature and that there are no engine, transmission, traction control, or anti-lock DTCs. Numerous codes can cause the computer to pause adaptation. Finally, ensure the vehicle is neither low on fuel nor has a completely full tank. Adaptation may not occur if the fuel level is not between 1/4 and 3/4 of a tank.