TRANSGO 6L80-TOW and Pro Performance Reprogramming Kit User Manual

Contents

TRANSGO 6L80-TOW and Pro Performance Reprogramming Kit

Product Information

The 6L80-TOW&PRO kit is designed to fit 2006-2020 vehicles with 6L45 through 6L90 transmissions. It is a patented product that maintains the factory shift feel at light to medium throttle and provides progressively firmer shifts above 1/2 to wide-open throttle. The kit includes reworked clutch regulator and boost valves, a new HP main boost bushing and valve.
This kit is known for producing firmer, faster, and cleaner shifts with increased holding capacity without any undesirable noises or issues. It is particularly suitable for work trucks and performance vehicles. Additionally, when combined with TEHCM software tuning using HP Tuners or EFI live, it can produce hard throttle tire chirping shifts.

Product Usage Instructions

1. Step 1: Assemble the EPC Relief 3/16 ball and Plain Spring into the New HP Bushing. Spread the Cotter Pin legs.
2. Step 2: Discard the Original Boost Assy. PR Valve and Large PR Spring. Replace the Spring with the New RED PR Spring. Install the New Boost Valve into the New Boost Bushing Assy using the original retainer pin.
3. Rotating Pump Ring Installation:
    - If your pump stator's ring groove area is made of steel anduses rotating rings, you can install the NEW design sealing rings and expander wires provided in this kit to fix any leaky ring issue. In this case, updating the stator to the non-rotating ring type stator is not required. However, do not use the new rings on aluminum ring grooves.
    - Use cold assembly gel to hold the rings in place.
    - Install the expander wire first, making sure the wire ends do not cross over each other.
    - Put some cold assembly gel into each ring groove, then install the new sealing rings.
    - If you come across an early aluminum ring groove stator WITH rotating rings, do not use the rings and

expanders supplied in this kit.

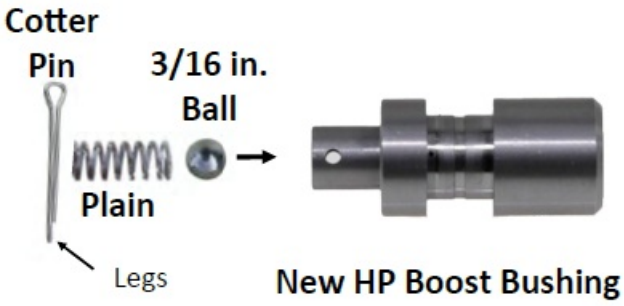
Please refer to the user manual for additional information and clutch clearances related to specific applications and power levels.

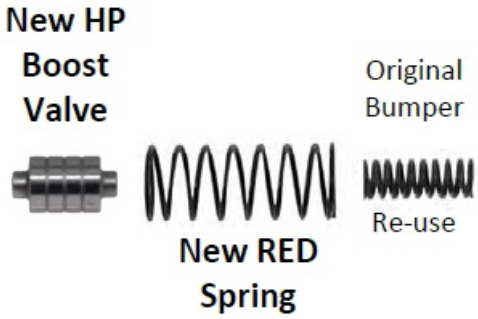
This kit maintains factory shift feel at light to medium throttle & gets progressively firmer above 1/2 to WOT by reworking the 2-6, 3-5-R & 4-5-6 clutch regulator and boost valves along with a new HP main boost bushing and valve.
This kit alone produces firmer, faster and cleaner shifts with increased holding capacity without adding any bumps, clangs or bangs. Perfect for work trucks & performance.
This kit & some simple TEHCM software tunning of the shift time tables using HP Tuners or EFI live, can produce 1-2 & 2-3 hard throttle tire chirping shifts that will bring a smile to your face. See TEHCM tuning pages.

A MUST READ

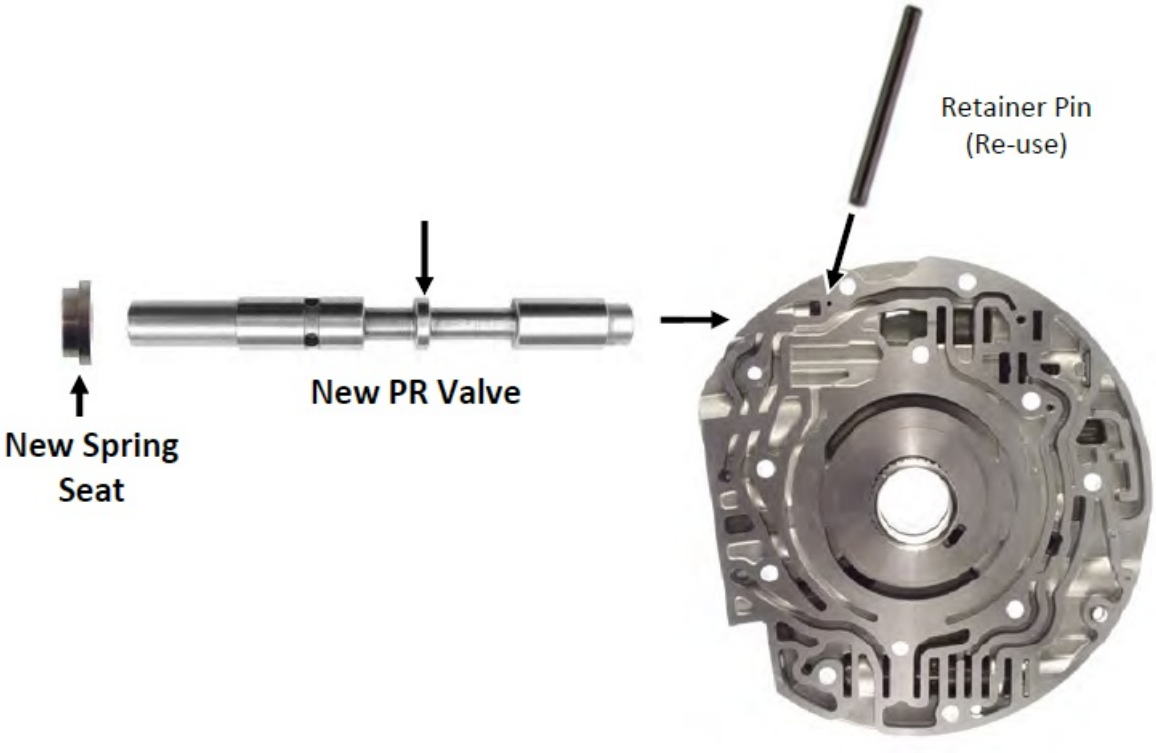
This kits was developed & tested in several vehicles stock & modified, V6 & V8 Camaros, Tahoe's, work trucks & one very fast blown 5.3 short bed with just over 500 RWHP. We used OEM clutch plates & counts, kept all the wave plates, used OEM clutch clearances and loved the way they worked. No bind-ups bangs or clangs or any hint that clutch capacity was lacking. For applications and power levels listed above adding clutch plates & removing wave plates or reducing clutch clearances is not recommended & can lead to bind-ups bangs or clangs. See additional info pages for clutch clearances

Step 1.
Assemble EPC Relief 3/16" ball & Plain Spring into New HP Bushing & Spread the Cotter Pin legs.





Step 2.
Remove & discard original Retainer, PR Valve & LARGE PR Spring. Assemble New Spring Seat on New TransGo® PR Valve as shown above and insert into Pump. Re-use original bumper

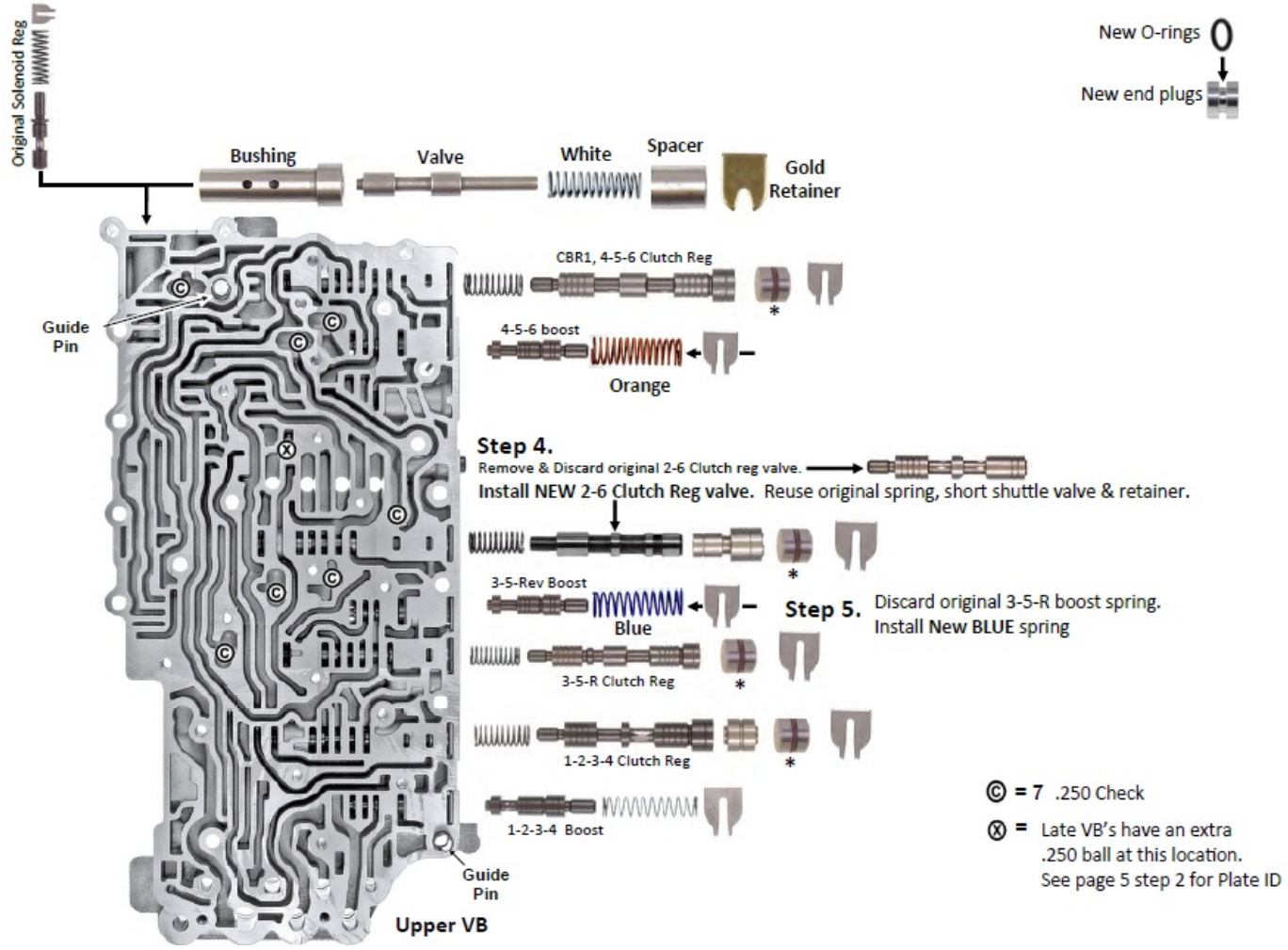


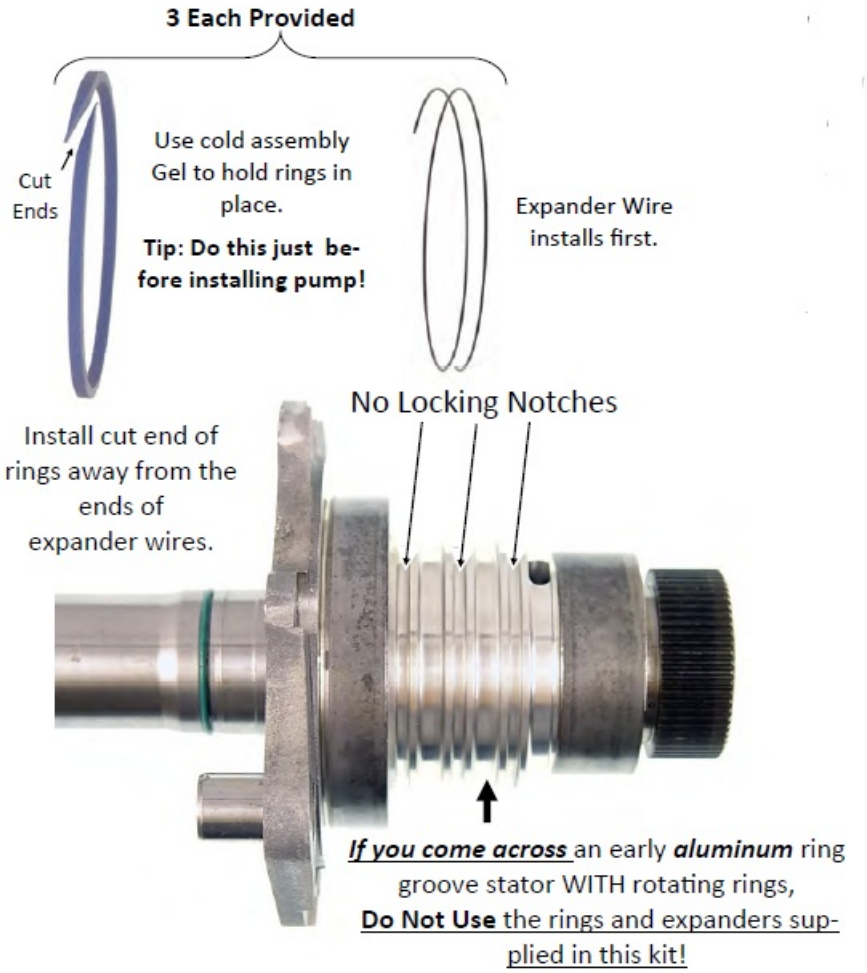
Spring with New RED PR Spring, then install New Boost Valve into New Boost Bushing Assy & re-use original retainer pin.
The Original Bumper Spring & The NEW RED PR SPRING MUST BE USED WITH THE NEW TransGo PR VALVE.

Rotating Pump Ring Installation

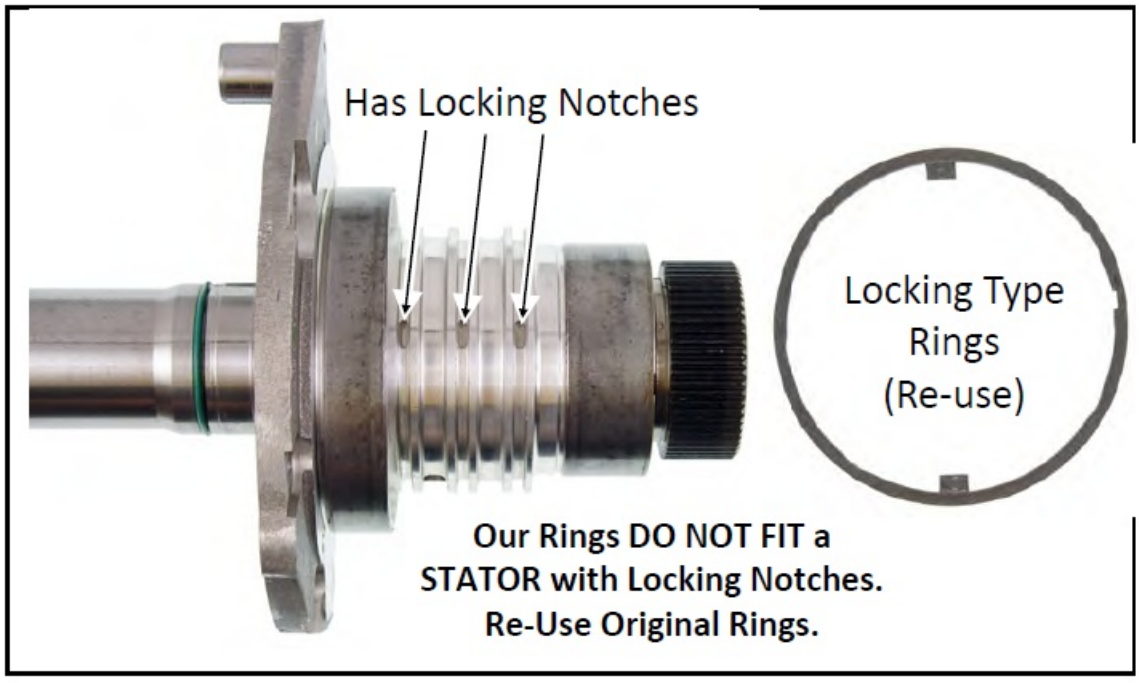
Read this: If your pump stator's ring groove area is made of steel and uses rotating rings, then installing our NEW design sealing rings and expander wires will fix the leaky ring issue with those stators and therefore updating the stator to the non rotating ring type stator is not required.

Do not use the new rings on aluminum ring grooves!

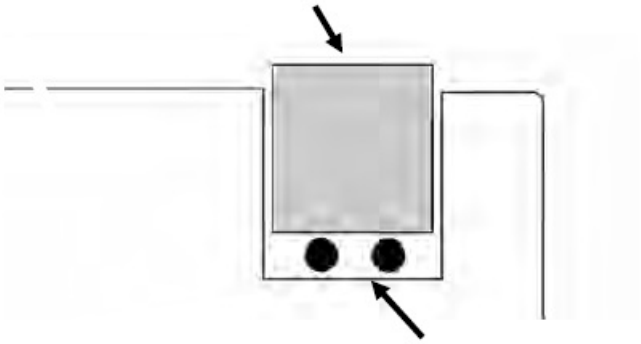




New Rings only FIT Stator's WITHOUT Locking Notches!



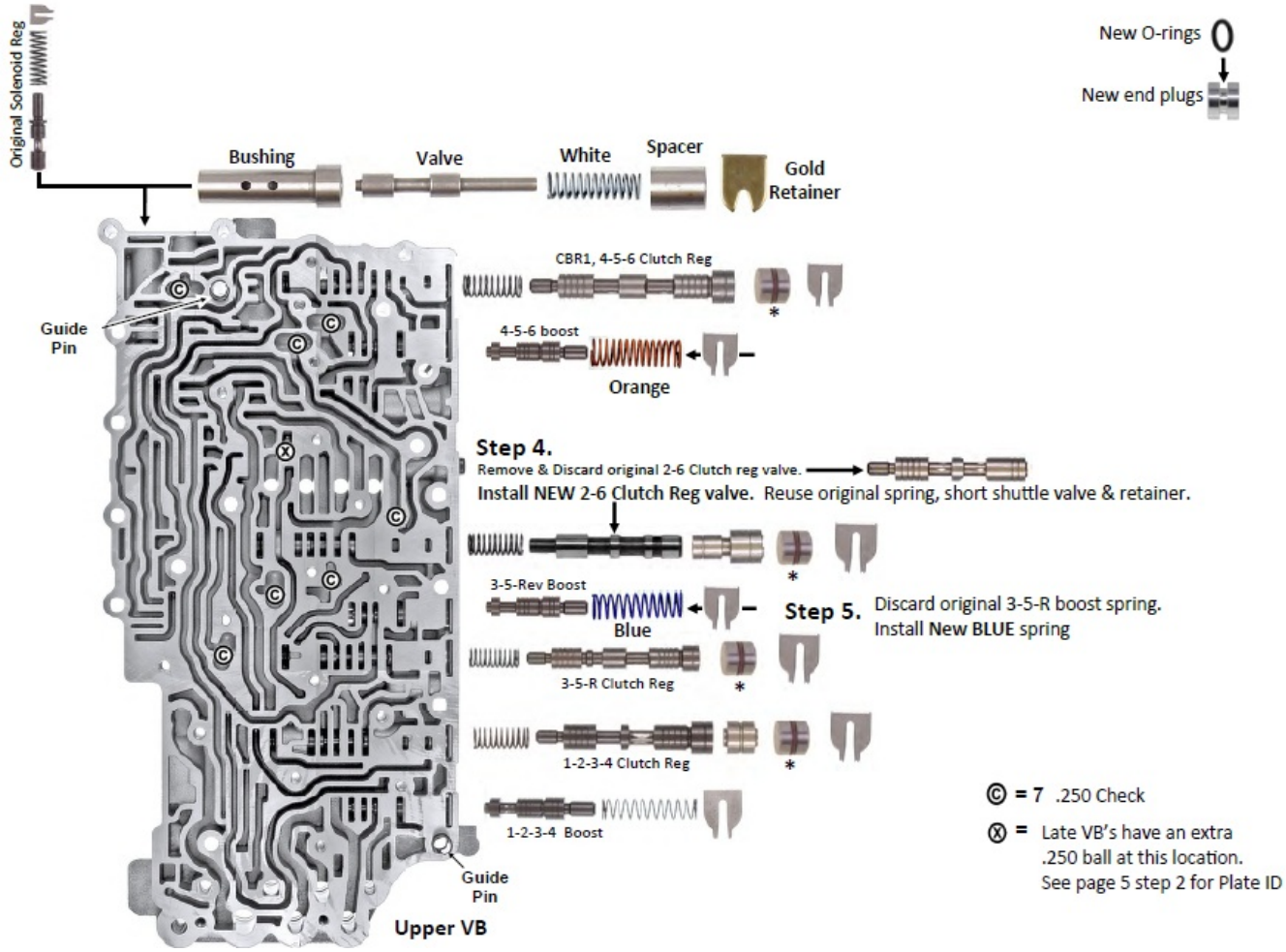
Step 1. Install Expander Wire in bottom of ring groove FIRST! Make SURE wire ends do not cross over each other. They should lay side by side.
Step 2. Put some cold assembly Gel into each ring groove, then install the New Sealing rings like this.



Tech Note:
This land is purposely undersized for additional lube flow. This helps prevent engine chug while coasting to a stop, when hot.

Step 1.

- Remove and discard original Solenoid Regulator Valve, Spring & Retainer.
- Clean bore & New parts, Install NEW Bushing, Valve, White Spring, Spacer & Gold Retainer as shown.
- Depending on bore condition, you may need to Gently tap the bushing into place. That's ok.

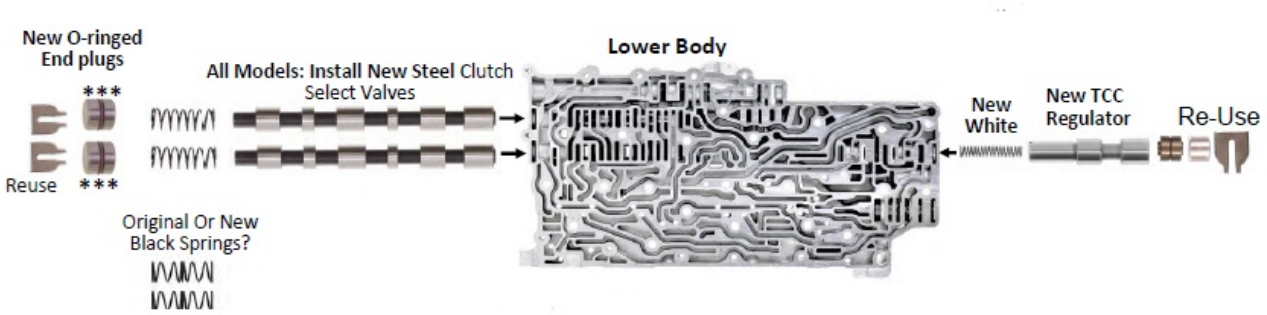


Step 2. *
As you are assembling all 4 clutch reg valves, Replace all end plugs with the New end plugs provided that use O-rings. Lube new O-rings before in-stalling them into the groove in new plugs. The remaining two plugs & O-rings are for page 4.

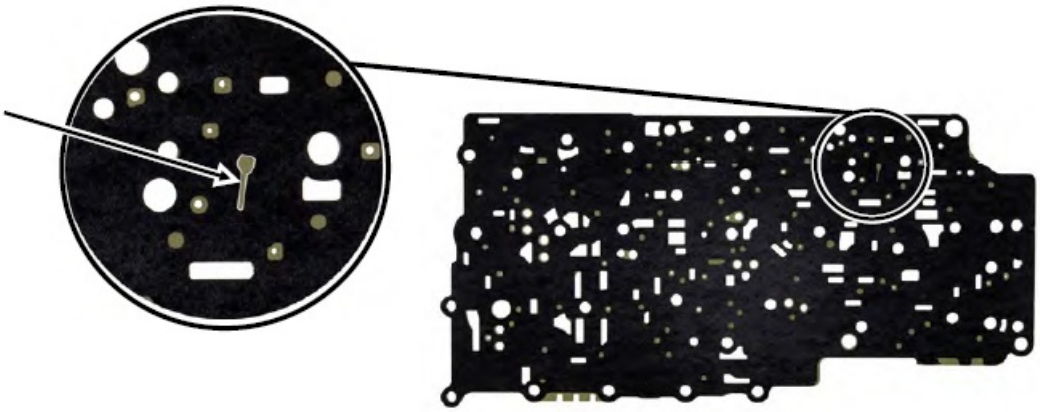
MEASURE CHECKBALLS! No forward or Reverse can be undersized Check-balls!

Lower VB Repair

Step 1.
Discard original clutch select valves and end plugs. Save the springs. When installing the new select valves hold the valve body in the vertical position, let the valve drop into the bore. The valve should bounce off the bottom of the bore. The bounce tells you it's free. Read step 2 for spring selection.



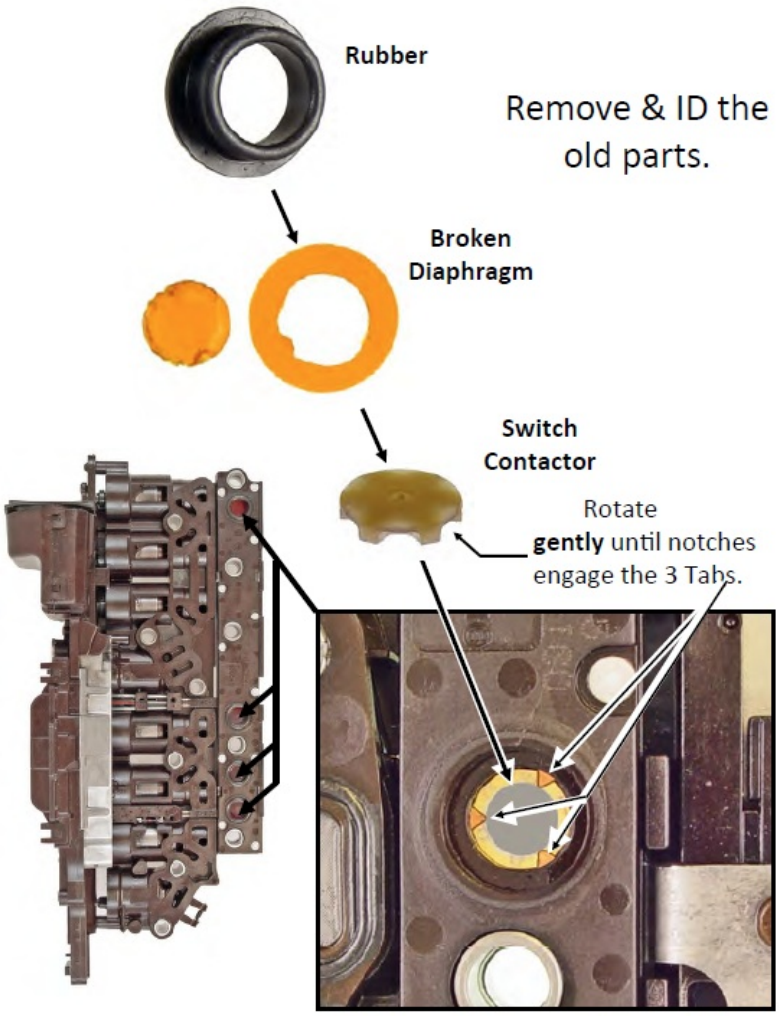
Step 2.
All models: If this separator plate gasket you are using (bonded or not) has this slot discard original clutch select valve springs and use the NEW Black Springs provided. Gasket without this slot reuse original springs.
Install New Select Valves, springs then Lube new O-rings before installing them into the grooves in new plugs, install o-ringed end plugs and reuse retainers.
Clutch Select Valve Sticky in the Bore?



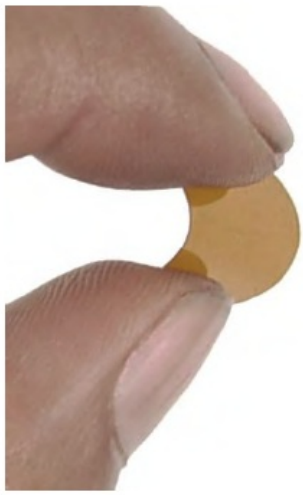
Move valve to tight spot in bore. Place screw driver tip against the valve between the lands. Whack screw driver with 5/8" wrench. Re-check. Valve MUST be totally free before you in-stall springs, plugs & retainers.
Step 3.
Remove and Discard original TCC Regulator & Spring. Install new White Spring and New TCC regulator Valve. Re-use original Shuttle valve, end plug & retainer.

TEHCM Pressure Switch Repair

Often this trans experiences a drum or clutch piston failure often due to a Pressure malfunction. Typically, at least 2 of the 4 pressure switches in the assembly will also be blown out as shown below. Your choice is to repair the TEHCM with this kit or replace it with a new TEHCM from the dealer & have it programmed. $$$!
We have provided the parts you need to repair the pressure switches. It does take a bit of talent but mostly PATIENCE to get it done. Many techs have performed this task with great success but it's your choice. You need only repair the switches that are damaged.



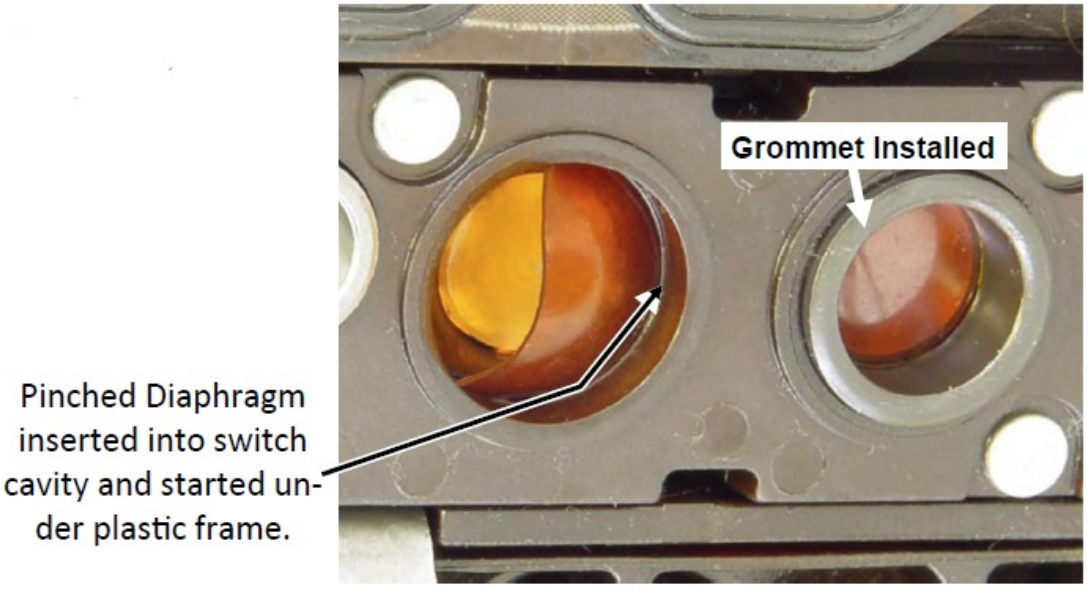
Diaphragm & Grommet Removed

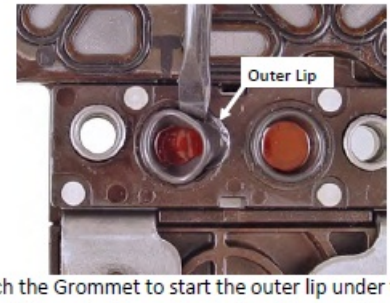


Pinching Diaphragm for installation.

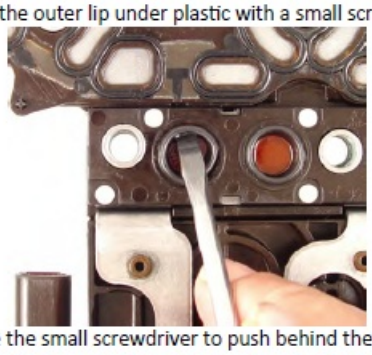
Testing switches:

- Using a flat washer and a rubber tip blow gun, place the flat washer over the rubber grommet and insert the blow gun tip into the center of the washer. Air check each switch that is not visibly damaged and make sure they hold air. If they do, leave them alone!
- If they don’t, or you see they are visibly dam-aged, remove the rubber grommet, the dam-aged diaphragm and insure the switch contactor is in place. Pushing on the switch contactor, you should feel a noticeable click as you release pressure off the contactor.
- Take one of the new diaphragms, gently pinch the diaphragm into the shape of an upside down taco shell. Insert it as shown below into the switch hole making sure you guide it under the lip of the plastic. Using a small flat-blade screw-driver, work the rest of the diaphragm into the hole until it lays flat on the switch contactor. You may use a pencil eraser to move it left or right till it drops in place. Continue on next





Pinch the Grommet to start the outer lip under the plastic.
Work the outer lip under plastic with a small screwdriver.



Use the small screwdriver to push behind the outer lip
(from the inside) to wedge it under the plastic.

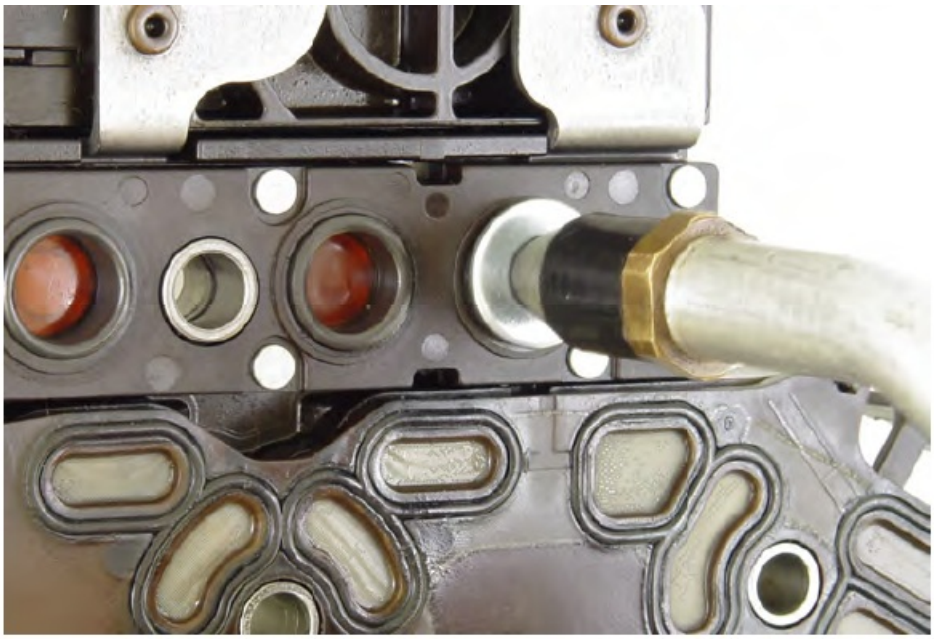
You may have to pull the top of the grommet back slightly to
make sure the lip is going under the plastic.

Rubber Grommet Installation

Installing the grommet is done by patiently coaxing it into posi-tion. You must get the outer lip of the grommet to go under the plastic housing. This is what seals the switch. Lube the grommet & diaphragm with 90w gear oil or something equally as slippery. Treat this just like you would a small child– with patience! The first one is always about getting the knack of do-ing it. Be successful and you'll be putting cash in your pocket for each TEHCM you didn't have to buy new & then program.

Final Testing

- Using a flat washer on the rubber tip of a good blow-gun, make sure the switch does not leak. It should seal tight.
- Do the air test with 30 psi. If it holds, it's ok. It will be too hard to hold the blow gun in place to use full shop air.
- Final test: Use a pencil eraser to gently push into the center of the switch to feel the switch click as you let up on it. Use one of the other switches to compare.
- The new grommets will be taller than old ones. It's OK!

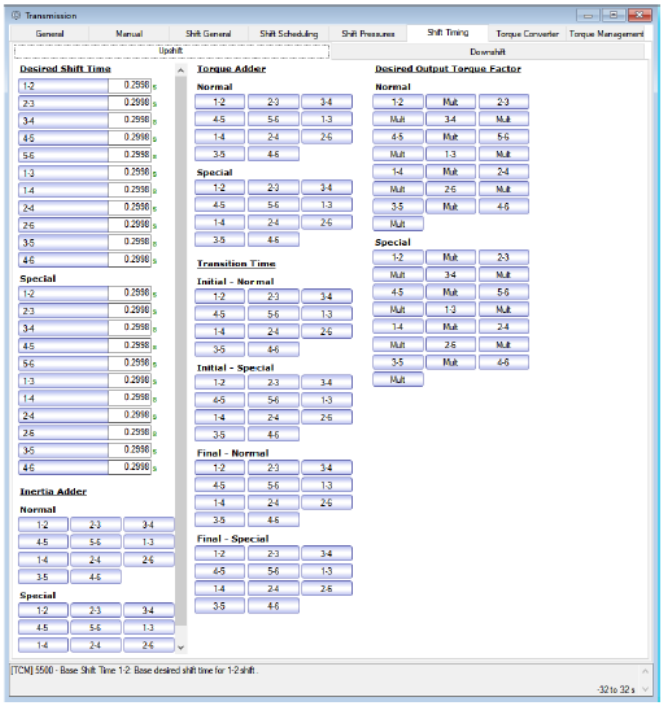


Optional TEHCM Tuning

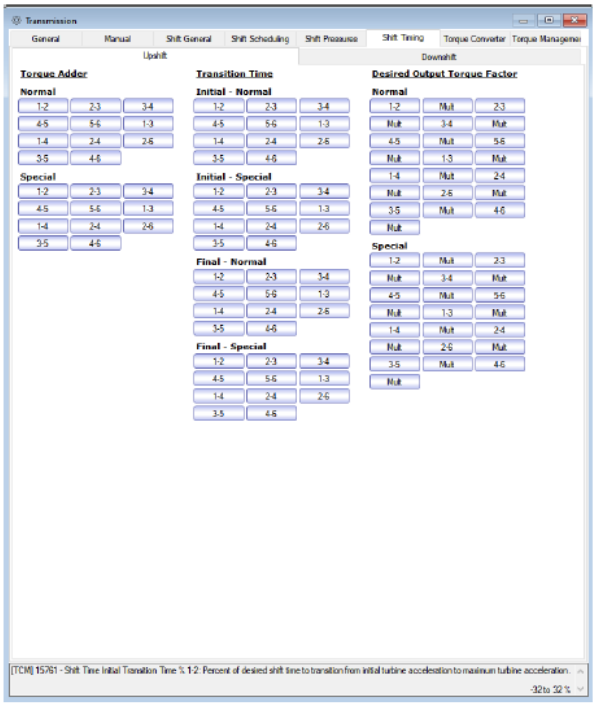
Street show-off options with HPtuners or EFI Live

Get 1-2 & 2-3 hard-throttle tire chirping shifts with simple computer tuning of shift time tables. (Must be used in conjunction with #6L80-TOW&PRO)
Use the QR code to watch the instructional videos using HPtuners software.

Early: 2006-2009 trucks and 2010 Camaro

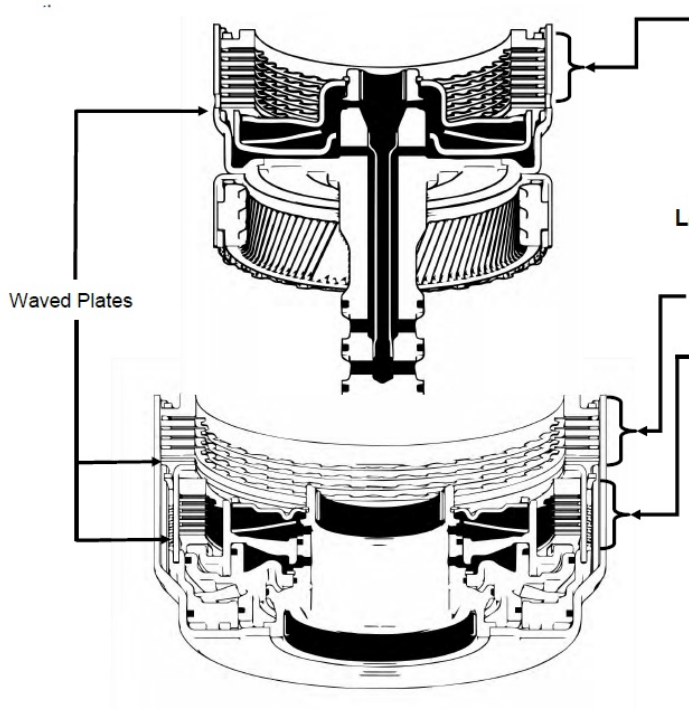


Late: 2010-2020 trucks and 2011-2020 Camaro



6L Additional Information

This transmission has a built in purge/cleaning process that pulses the solenoids after a key cycle, Clutch Clearances are Extremely Critical if the clutch clearance is too tight it will cause a chugging or binding sensation on the first shift after a key cycle. We have noticed that the 1-2-3-4 snap ring is usually thicker and can be mixed up with the 3-5-R snap ring during as-sembly causing clearance to be too tight.



4-5-6 Clutch Clearance: .060"- .074" (6L80/90)
.046"- .069" (6L50)

6L80/90 4-5-6 Selective Snap Ring:

24233407	.063" -.067" (Yellow)
24233408	.080" -.083" (No Color)
24233406	.096" -.100" (Purple)

Low Reverse Clutch Clearance: .051"- .081" (6L80/90)
.065"- .092" (6L50)

3-5-R Clutch Clearance: .050"- .070" (All)

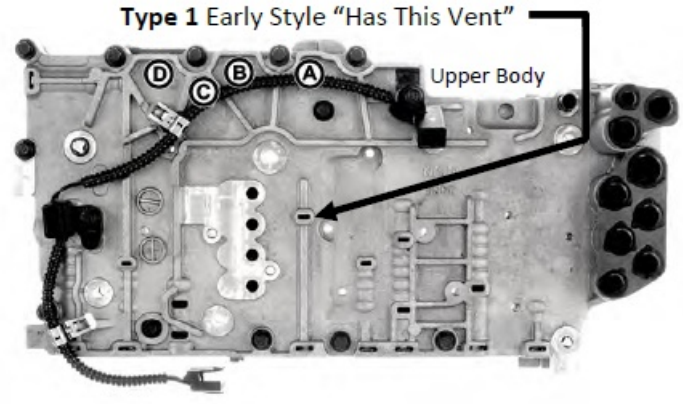
1-2-3-4 Clutch Clearance .060"- .078" (All)

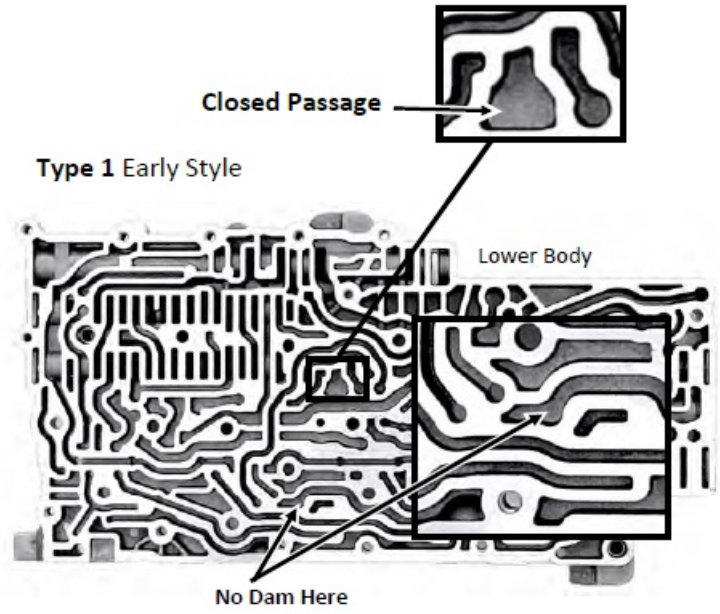
6L80/90 1-2-3-4/3-5-Rev. Selective Snap

24240194	3-5-R Snap ring	.063"-.067" (Gray)
24240195	3-5-R Snap ring	.074"-.078" (Green)
24240196	3-5-R Snap ring	.085"-.089" (Yellow)
24240197	1-2-3-4/3-5-R Snap ring	.095"-.099" (No Color)
24240198	1-2-3-4/3-5-R Snap ring	.106"-.110" (Purple)
24240199	1-2-3-4/3-5-R Snap ring	.117"-.120" (Blue)
24240200	1-2-3-4/3-5-R Snap ring	.127"-.131" (Orange)
24240201	1-2-3-4/3-5-R Snap ring	.138"-.142" (White)

The 2-6 Clutch is NOT adjustable

Valve Body Identification

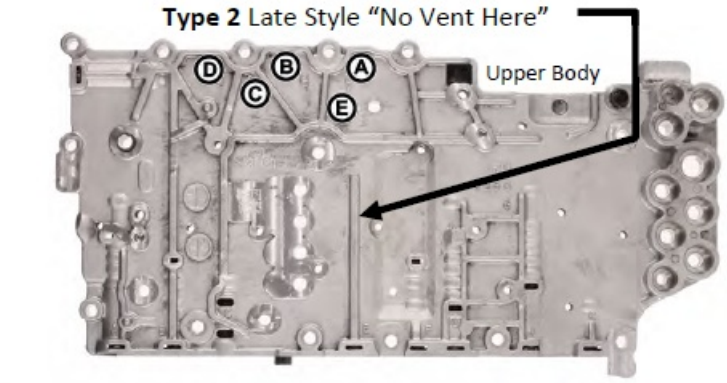


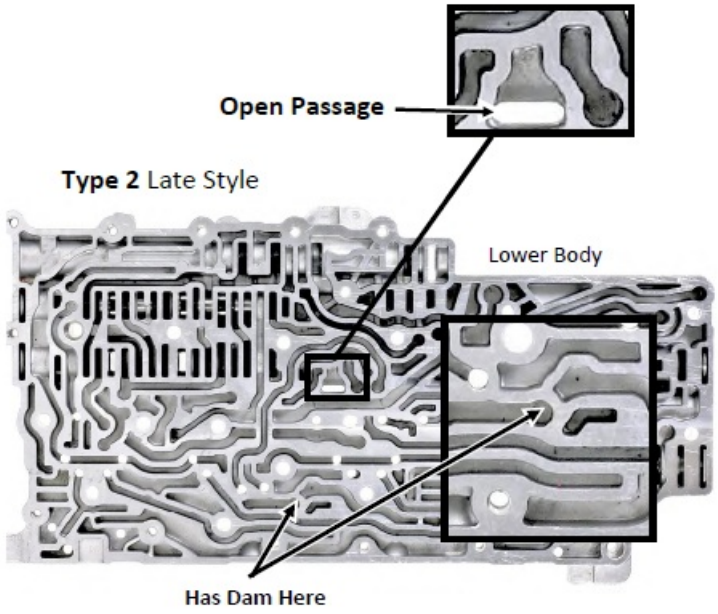


Upper VB Trans Codes: Which boss is ground?

- A= MYA or 6L45
- B= MYB or 6L50
- C= MYC or 6L80
- D= MYD or 6L90
- E= Unlisted ("E" not casted on Type1)

Note: Some Upper castings may not be ground.
Please, do not mix ANY parts between Type1 or Type 2! Keep in mind the Upper VB's are different for the various 6Lxx series of transmissions. (See codes above)



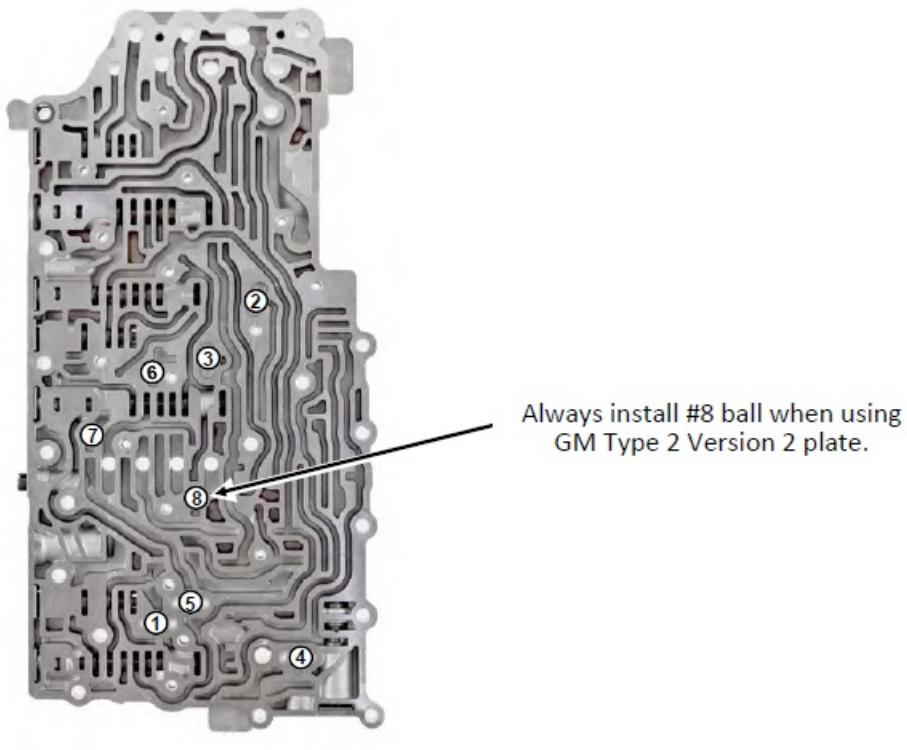


Type 1 Plate

- Used with Type 1 VB's
- Does not have the 3 circled holes. Has Hole 2X
- Latest Replacement plate
- For Type 1 VB's GM # 24245720 Install Check Balls 1-7

Type 2 Plate, Version 1

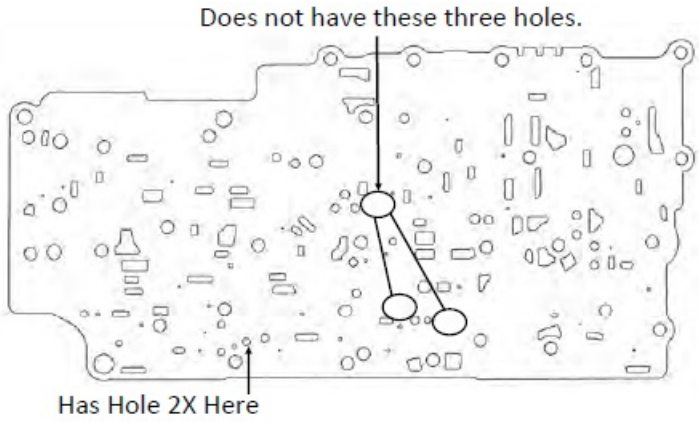
- Used on Type 2 VB's thru 2013
- Has the 3 circled holes & .180" feed hole A. No Hole 2X
- Install Check Balls 1-7
- It is a good idea to update this Type 2 Version 1 plate to a Version 2 during repairs and add the #8 check ball. Plates are cheap and come with bonded gaskets.

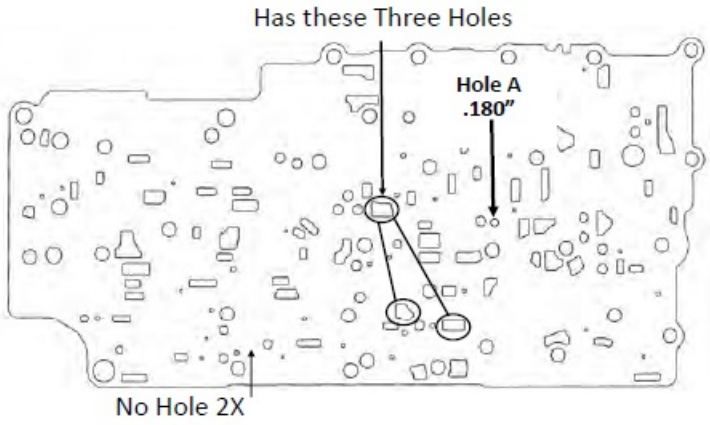


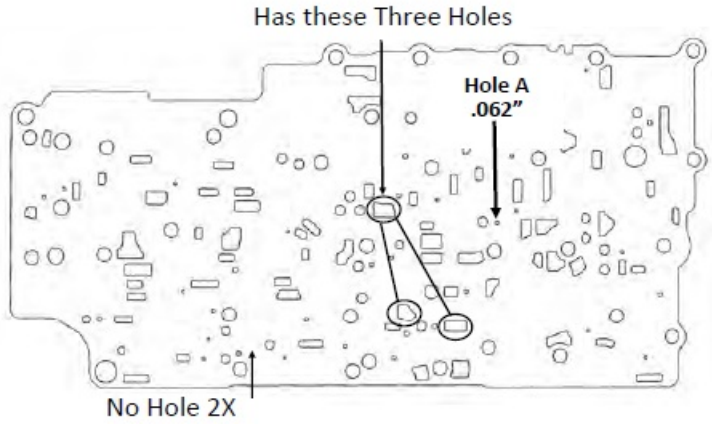
Type 2 Plate, Version 2.

- Used on Type 2 VB’s 2014 up
- Has the 3 circled holes & .062” feed hole A. No Hole 2X
- Install Check Balls 1-8
- GM # 24272467

Pay attention to #1 & #5 check balls. They wear and will stick in the plate causing forward & Reverse engagement concerns.

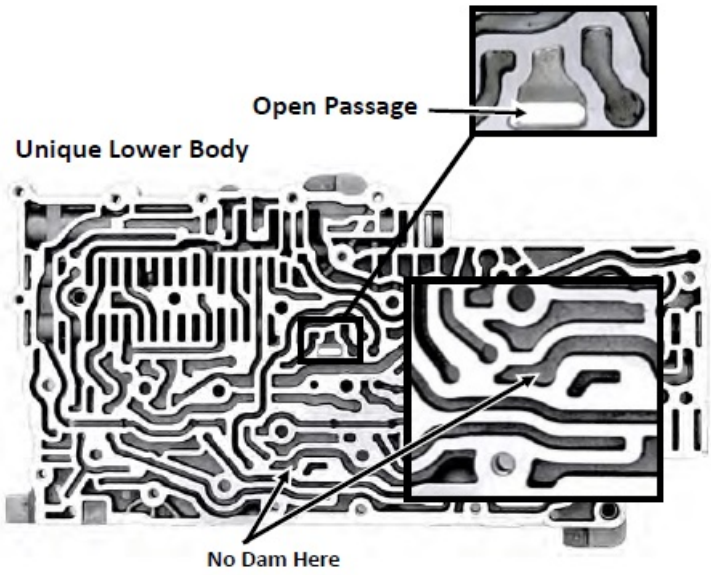






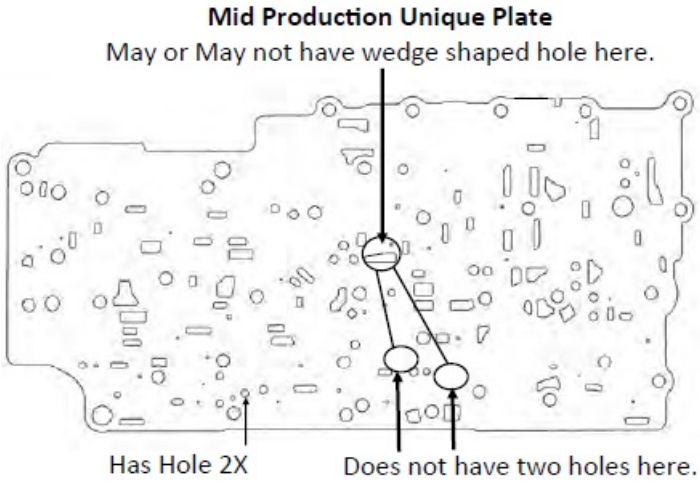
A Few GM & BMW’s Mid Production Change over from Type 1 to Type 2 Used a hybrid combo as follows:

- Type 1 Upper VB
- Unique Lower VB Has Open Passage but No Dam
- This VB can be found with two different plates.
- Type 1 plate: Plate has 2X hole, No wedge hole and no lower holes. (Can use updated plate # #24245720)
- Unique Plate Has 2X hole & Has wedge hole, does not have lower holes, no replacement plate available.

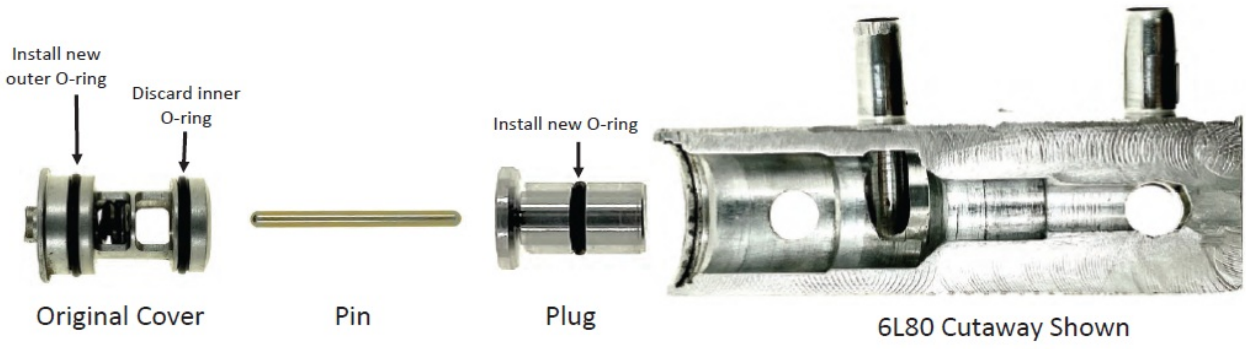


- Install balls 1-7

Mid Production Unique Plate



6L80-CLR-BYPASS Cooler Bypass Delete Kit
Fits: 6L80, 6L90 2014-on, 8L90 2016-on, Allison 2017-19
Corrects/Prevents/Reduces: Transmission overhea?ng, reduces opera?ng temperatures, eliminates thermosta?c assembly, allows you to check fluid immediately—no waiting.

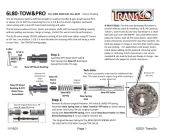


1. Step 1. Remove and save original cover and snap-ring. Remove and discard thermosta?c assembly, inner O-ring and lower spring.

Note: 8L90 and Allison cooler bypass assemble in the same order

2. Step 2. Fit furnished O-rings on TransGo Plug and
   Original Cover. outer and discard inner original o-ring. Apply assembly gel on pin and insert it in the plug. Install plug and pin then the original cover and snap-ring.

Documents / Resources

	TRANSGO 6L80-TOW and Pro Performance Reprogramming Kit [pdf] User Manual 6L80-TOW and Pro Performance Reprogramming Kit, 6L80-TOW and Pro, Performance Reprogramming Kit, Reprogramming Kit