



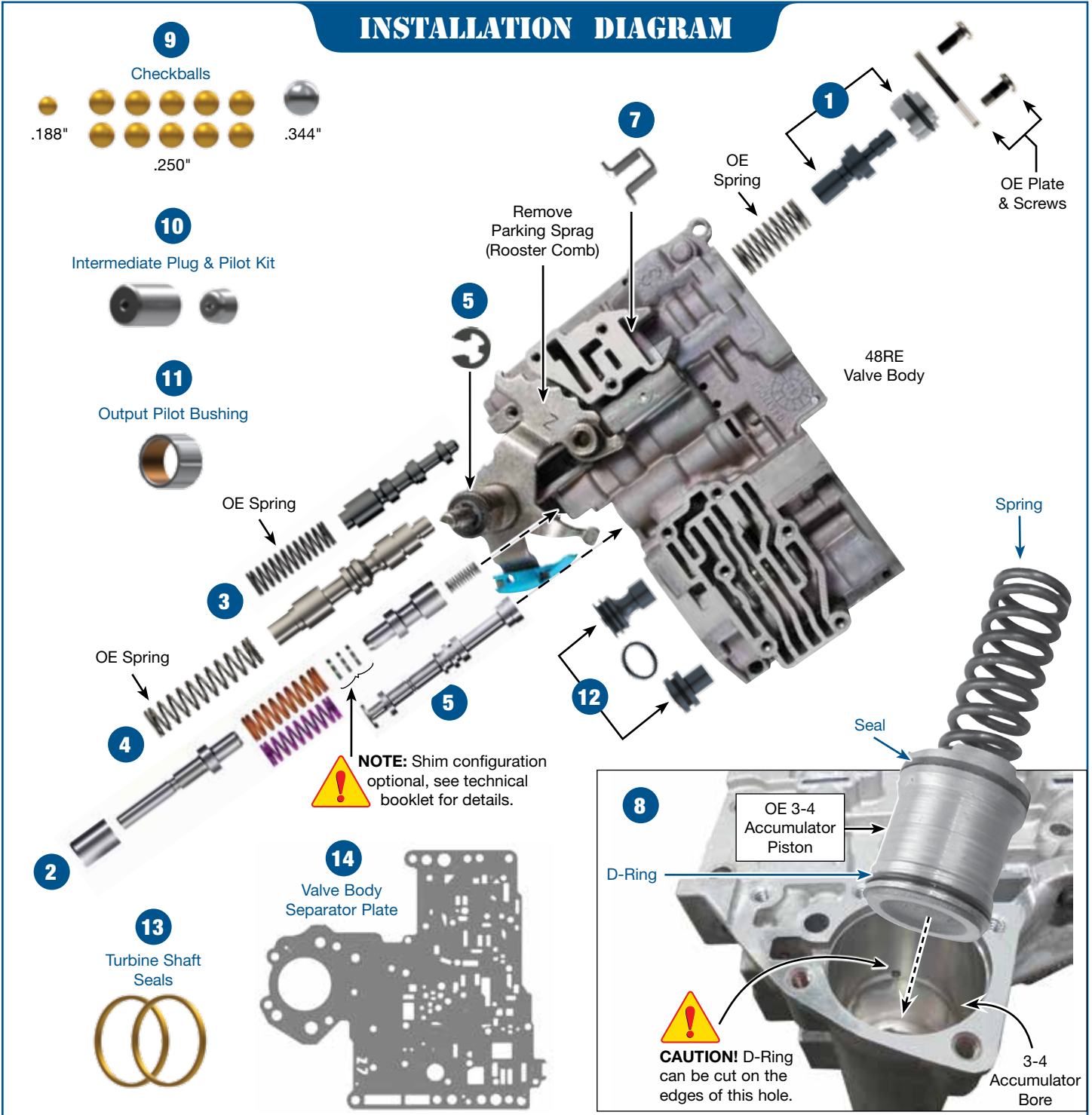
# CHRYSLER 48RE ZIP KIT®

PART NUMBER 48RE-ZIP

QUICK GUIDE

Parts are labeled here in order of installation. See other side of sheet for details on kit contents.

## INSTALLATION DIAGRAM



In addition to general rebuilding tips and technical information, the technical booklet included in this kit contains vacuum testing and additional repair options for higher mileage units or for repairing specific complaints which are beyond the scope of this kit.

## Kit Contents & Installation Steps

### Step 1 Replace Line Pressure Plug & Sleeve

**NOTE:** Components replace an OE 3-piece line pressure plug and sleeve arrangement. If an OE 2-piece design is found during disassembly, alternative components (not included) may be required.

#### Packaging Pocket 1

- Plug • Sleeve • O-Rings (2) 1 Extra

### Step 2 Install Throttle Valve Lineup



**NOTE:** For helpful hints and details on this step, reference page 2 in technical booklet. Pay close attention to the number of shims, the type of spring and whether or not you should use the balance spring in your application.

#### Packaging Pocket 2

- Valve • Plunger • Sleeve • Shims (3) • TV Springs (2)

### Step 3 Replace 4-Spool Switch Valve



**NOTE:** Part will only fit units with 4-spool switch valve. Reference page 2 of technical booklet for identification.

#### Packaging Pocket 3

- Valve

### Step 4 Replace Pressure Regulator Valve



**NOTE:** Fits '78-later units only. Sonnax Pressure Regulator valve allows converter charge in Park.

**CAUTION:** Verify casting wall at pressure regulator valve has not been drilled with line-to-lube hole. See pages 2 and 3 of technical booklet.

#### Packaging Pocket 4

- Valve

### Step 5 Replace Manual Valve, Reinstall Bracket & Pkg Sprag

#### Packaging Pocket 5

- Valve • E-Ring

### Step 6 Adjust PR Spring & Set Throttle Lever Stop

### Step 7 Replace Boost Valve Retainer

#### Packaging Pocket 6

- Retainer

### Step 8 Install 3-4 Accumulator Spring & Seals



**CAUTION:** D-Ring can be easily cut on sharp casting bore opening.

#### Packaging Pocket 7

- Spring • Seal • D-Ring

### Step 9 Replace Checkballs

#### Packaging Pocket 8

- .188" Checkball • .250" Checkballs (10) • .344" Checkball

### Step 10 Replace Intermediate Shaft Pilot & End Plug

#### Packaging Pocket 9

- End Plug • Pilot

### Step 11 Install Output Pilot Bushing

#### Packaging Pocket 10

- Bushing

### Step 12 Install Governor Bore Plug Kit

#### Packaging Pocket 11

- 1-2 Plug • 2-3 Plug • Seals, PTFE (3) 1 Extra

### Step 13 Replace Turbine Shaft Seals

#### Packaging Pocket 12

- Seals (2)

### Step 14 Install Separator Plate & Assemble Valve Body

#### Packaging Pocket 13

- Separator Plate

**NOTE:** The parts listed here may be protected by patent 6,689,007.



# CHRYSLER 48RE ZIP KIT®

PART NUMBER 48RE-ZIP

INSTALLATION & TESTING BOOKLET

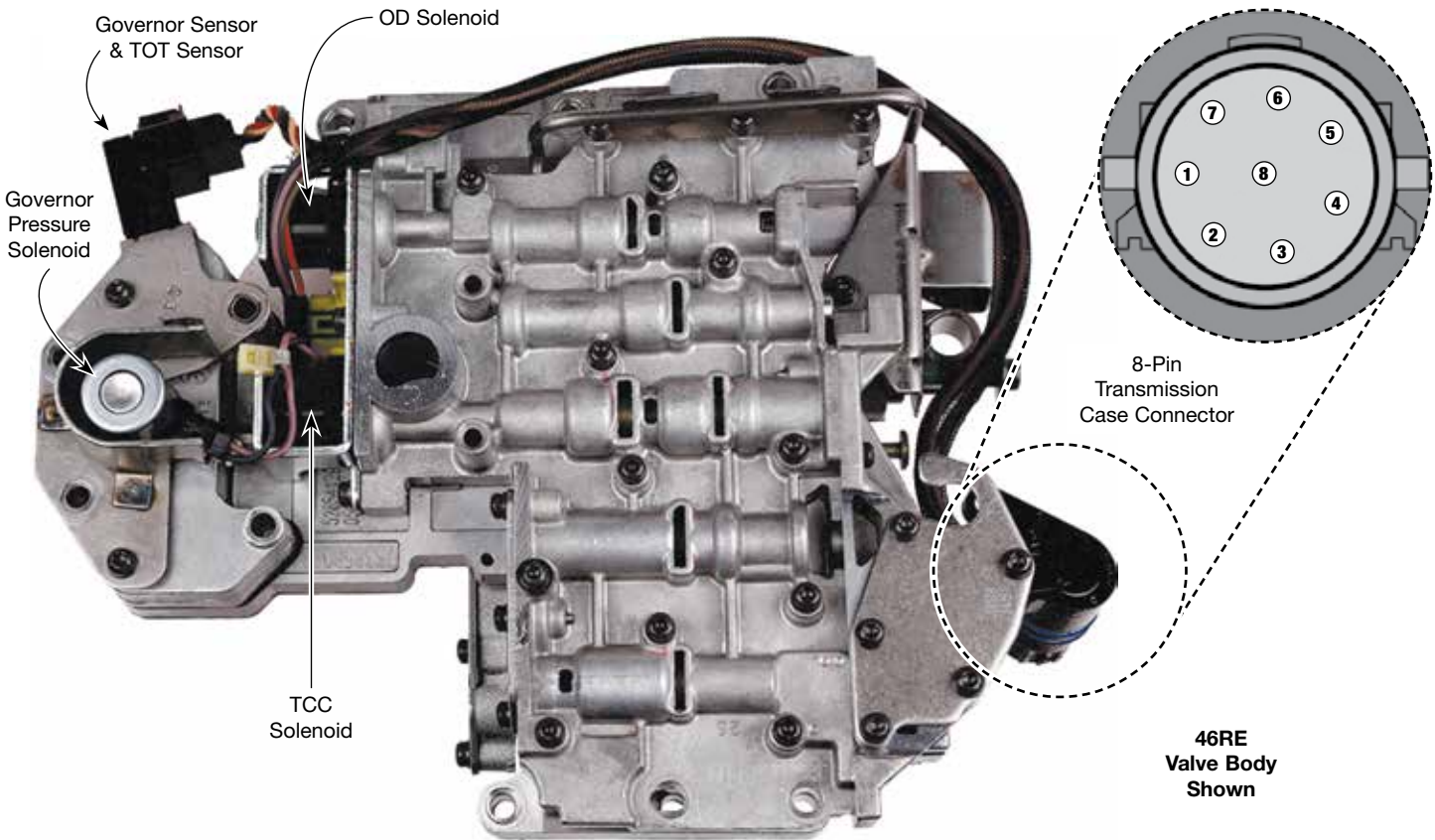
## Unit Assembly Specifications, Apply Chart & Electrical Checks

Electronic Checks		
Solenoid	Terminals	OHM Value
OD Solenoid	6 & 1	20-40
TCC Solenoid	7 & 1	20-40
Governor Solenoid	5 & 1	4-6

Technical Specifications		
Pump-to-Stator Bolts 15 ft-lb	Valve Body-to-Case Bolts 106 in-lb	Pump-to-Case Bolts 15 ft-lb
OE Endplay .034-.084"	Valve Body Assembly Bolts 35 in-lb	

Component Application Chart								
Gear	Front Clutch	Rear Clutch	Front Band	Rear Band	Low Roller Clutch	Overdrive Clutch	Overdrive Direct Clutch	Overdrive Roller Clutch
P								
R	ON			ON			ON	Holding
OD-1st		ON			ON		ON	Holding
OD-2nd		ON	ON				ON	Holding
OD-3rd	ON	ON					ON	Holding
OD-4th	ON	ON				ON		
M2		ON	ON				ON	Holding
M1		ON		ON	ON		ON	Holding

8-Pin Terminal Location & Function	
Pin	Terminal Function
1	12-Volt Power Supply from Relay/TCM
2	5-Volt Power Supply to Governor Pressure Sensor
3	Governor Pressure Sensor Ground
4	Governor Pressure Sensor Signal out to PCM
5	Governor Pressure Solenoid Ground Control from PCM
6	PCM Ground Control to OD Solenoid
7	PCM Ground Control to TCC Solenoid
8	Transmission Oil Temperature Sensor Signal to PCM





# Zip Kit Instructions

## 1. Replace Line Pressure Plug & Sleeve

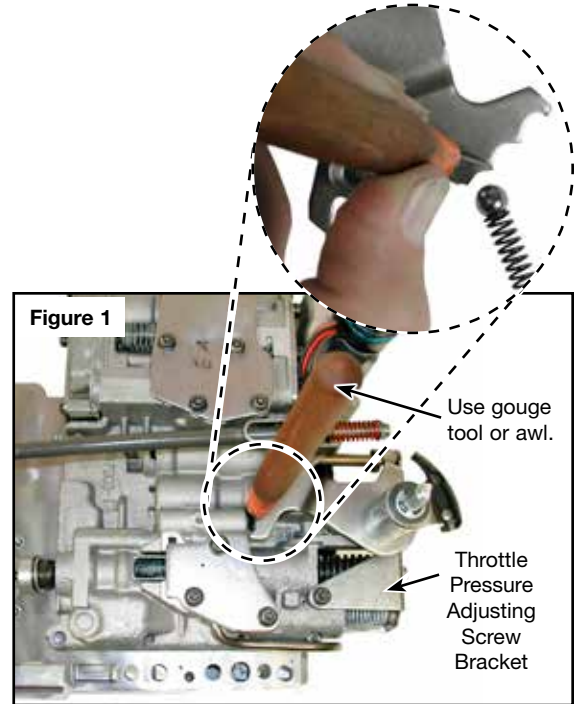
Reference quick guide for details.

## 2. Remove Parking Sprag & Throttle Pressure Adjusting Screw Bracket & Install Throttle Valve Lineup



**NOTE:** Do not use Sonnax balance spring when using Sonnax purple TV spring.

- For ease in removing and installing parking sprag, use small woodworker's type gouge or awl tool to compress detent ball and spring (**Figure 1**).
- Remove and discard OE E-ring.
- Remove parking sprag, detent ball and spring, setting aside for reuse.
- Remove throttle pressure adjusting screw bracket and set aside for reuse.
- Remove OE throttle valve lineup. Discard sleeve, plunger and spring.
- Inspect OE throttle valve for etching between spools, which indicates poor ground circuit. Add additional ground between transmission and chassis ground if necessary. Discard OE throttle valve.
- Reference chart to determine shim usage for any desired change in TV pressure.
- If, and only if, there is excessive bore wear discovered in your inspection and you choose to use the orange TV spring, you can use the balance spring. If small amounts of wear are noticeable or you choose to use the purple TV spring, do not use the balance spring.
- Install any desired shims over spring stem of Sonnax throttle valve, then install in valve body with spring stem outboard (**Figure 2**).
- Install your chosen selective Sonnax TV spring (**Figure 2**).
- Install Sonnax throttle plunger and sleeve (**Figure 2**).
- Install Sonnax balance spring if meeting criteria in step "h".



**Figure 1**  
Use gouge tool or awl.  
Throttle Pressure Adjusting Screw Bracket

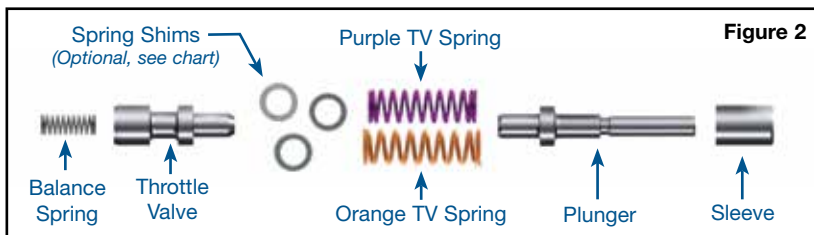
### Sonnax Spring & Shim Usage for Desired Change in TV Pressure

	No. of Shims	Approx. Change to TV Pressure
<b>Higher Upshifts with Orange TV Spring</b>	3	Not Recommended
	2	+ 14 psi
	1	+ 7 psi
	0	0 psi
<b>Lower Upshifts with Purple TV Spring</b>	3	- 7 psi
	2	- 14 psi
	1	- 21 psi
	0	- 28 psi

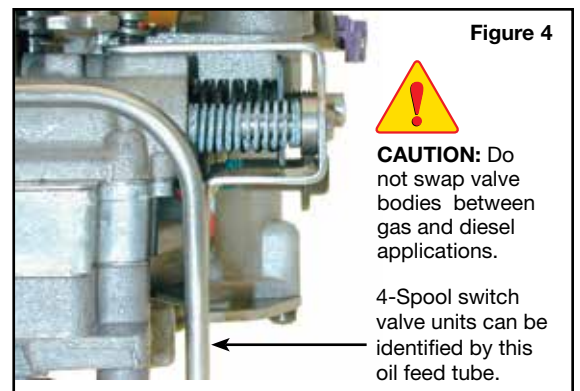
## 3. Replace 4-Spool Switch Valve



**NOTE:** This Sonnax valve (**Figure 3**) will only fit units with 4-spool switch valves. These valve bodies can be easily identified by the tube that supplies oil to the boost valve (**Figure 4**).

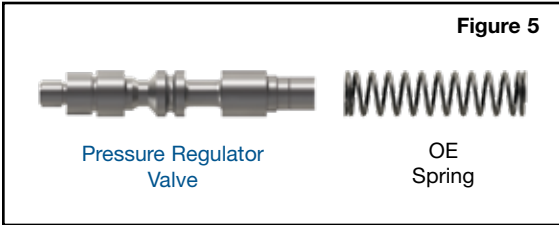


OE Specifications	Pressure Regulator Spring
Free Length	2.57"
Wire Diameter	.061"
Approximate No. of Coils	11.5



**CAUTION:** Do not swap valve bodies between gas and diesel applications.

4-Spool switch valve units can be identified by this oil feed tube.

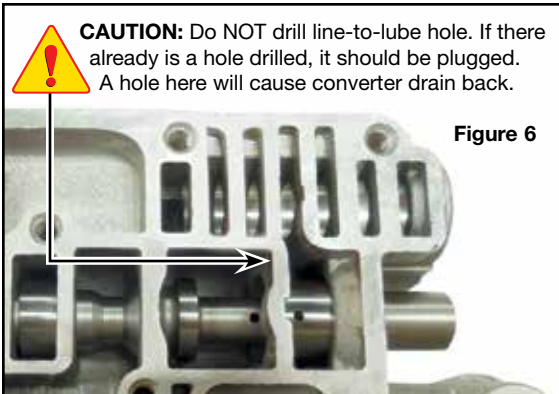


#### 4. Replace Pressure Regulator Valve

- a. Remove OE pressure regulator valve spring and save for reuse.
- b. Remove and discard OE pressure regulator valve.
- c. Install Sonnax lube regulated pressure regulator valve (**Figure 5**).
- d. Return OE spring to bore, ensuring coils slide over stem of Sonnax valve.

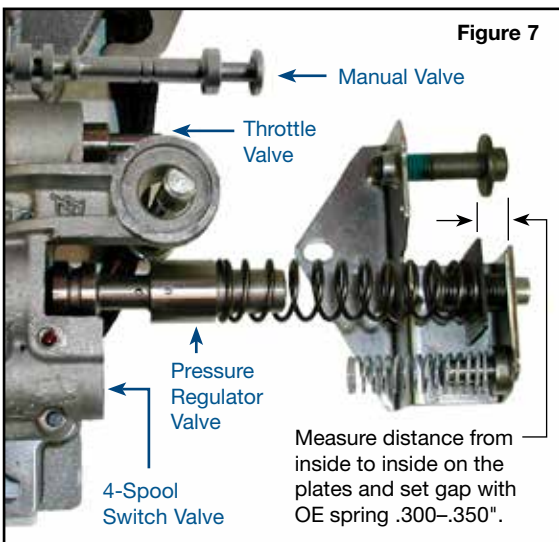


**CAUTION:** Fits '78-later units only.



#### 5. Replace Manual Valve, Reinstall Throttle Pressure Adjusting Screw Bracket & Reinstall Parking Sprag

- a. Replace manual valve (**Figure 7**).
- b. Reinstall throttle pressure adjusting screw bracket.
  1. Ensure OE springs are returned to appropriate bores (**Figure 7**).
  2. Torque screws to 35 in-lb.
- c. Reinstall parking sprag (**Figure 1**).
  1. Reinstall OE spring and detent ball into detent casting bore.
  2. Reinstall OE parking sprag on casting boss. Reference **Figure 1** and use gouge tool or awl for compressing detent ball during assembly.
  3. Install Sonnax E-ring, ensuring it is installed in proper orientation (**Figure 1**).
  4. Ensure leg on parking sprag engages manual valve.



#### 6. Adjust Pressure Regulator Spring & Set Throttle Lever Stop

- a. Adjust pressure regulator spring.
  1. Line pressure must be between 60–65 psi at idle in Drive with minimum TV pressure. This is accomplished by setting distance to .300-.350" between inside of spring retaining plates (**Figure 7**).
  2. Each full clockwise turn of the adjuster will move the plate by approximately .050". Adjust gap between plates to .300-.350".



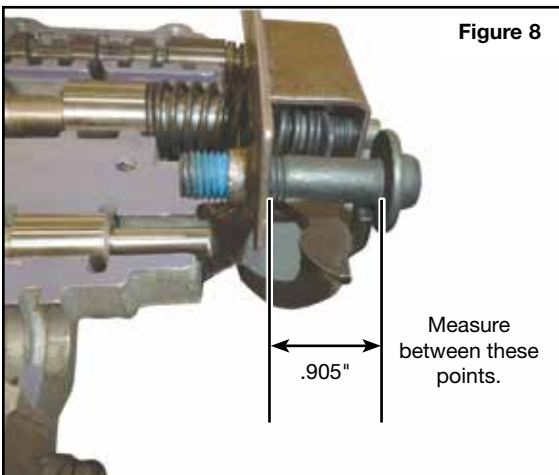
**NOTE:** This adjustment can only be made with an OE spring. Aftermarket springs will require pressure gauge reading and subsequent readjustment of the distance setting to obtain correct line pressure.

3. Verify line pressure after assembly with a gauge hooked into the line pressure tap located on passenger side, middle of case, between the accumulators. Line pressure will be boosted at TCC apply and 4<sup>th</sup> Gear. Line pressure must be between 60–65 psi at idle in Drive with minimum throttle valve pressure.



**CAUTION:** Use caution adjusting the spring or high pressure will create bind-ups from cross-leaks and increase throttle sensitivity.

- b. Set throttle lever stop and adjust throttle adjusting screw as needed to meet .905" measurement specification (**Figure 8**).



#### 7. Replace Boost Valve Retainer

#### 8. Replace 3-4 Accumulator Spring & Seals

Reference quick guide for details.

### 9. Replace Checkballs & Assemble Valve Body with New Separator Plate

- a. Install five .250" checkballs and one .344" checkball into the upper housing (Figure 9).
- b. Install two .250" checkballs into the upper side of transfer plate (Figure 10).
- c. Install valve body separator plate and filter onto transfer plate and tighten the five OE plate bolts to 35 in-lb (Figure 11).

**NOTE:** It is helpful for plate alignment to use two drill bits in the two machined holes locations shown (Figure 12). This keeps the valve body sections and separator plates in alignment during assembly. Once plates are aligned, remove drill bits.

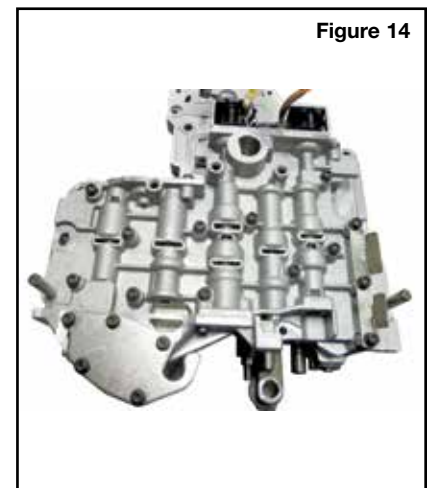
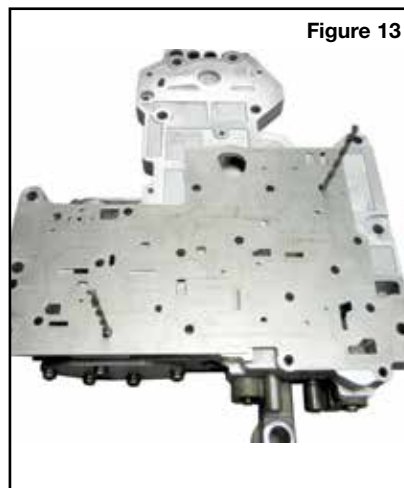
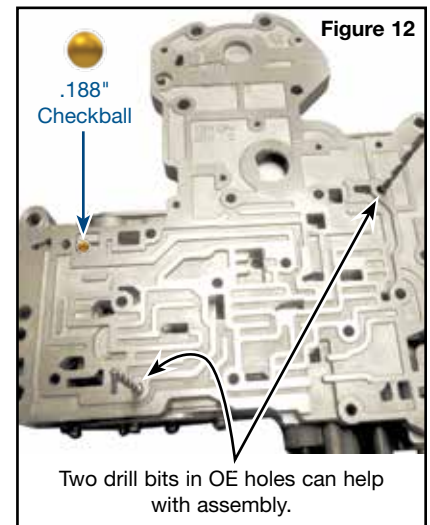
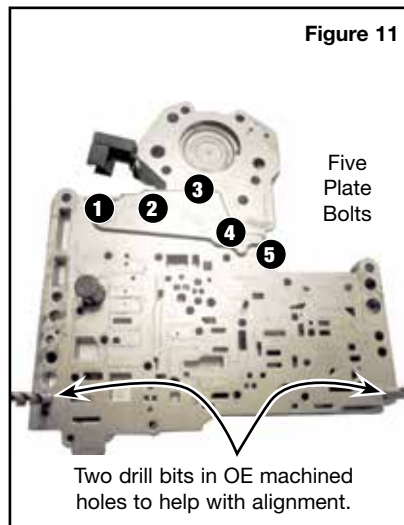
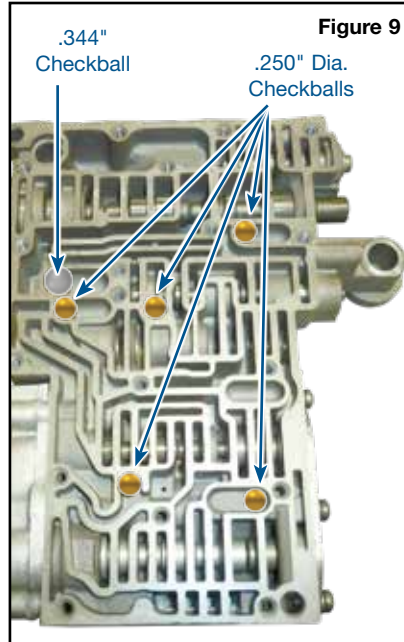
- d. Set transfer plate onto upper housing. Install Sonnax .188" checkball (Figure 12).
- e. Set separator plate onto transfer plate (Figure 13).
- f. Install lower housing onto transfer plate. Install and torque the valve body bolts (Figure 14).
- g. Install boost tube and bend tabs to retain it.

### 10. Replace Intermediate Shaft Pilot & End Plug (Figure 15)

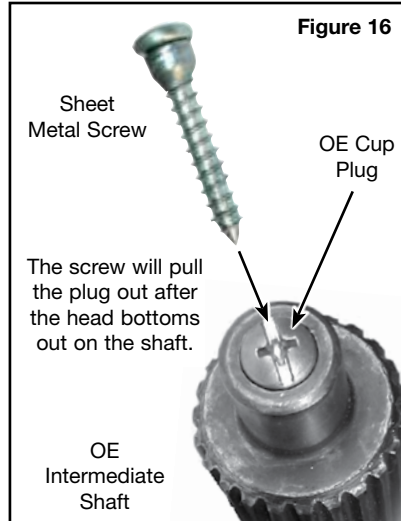
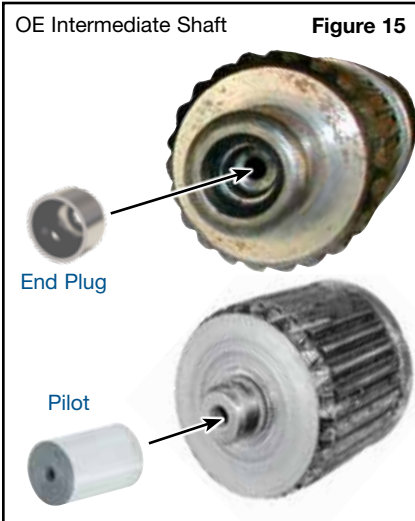
- a. Using a sheet metal screw, remove the OE cup plug from the OE intermediate shaft (Figure 16) and discard plug.
- b. Using a steel rod (.188" x 1"), drive the OE shaft pilot out from the cup plug end of the OE intermediate shaft (Figure 17) and discard pilot.
- c. Clean the OE intermediate shaft bore thoroughly.
- d. Install the Sonnax cup plug into place by driving it into the OE intermediate shaft (an AXOD servo pin works well for this).
- e. Install the Sonnax shaft pilot into position by driving it in the front of the intermediate shaft. If the OE intermediate shaft does not have an internal stop to locate the pilot, position it so that .230-.280" of the pilot protrudes from the shaft.

### 11. Replace Output Pilot Bushing

- a. Drive out OE pilot bushing from overdrive output shaft.
- b. Drive the Sonnax output pilot bushing into the OE overdrive output shaft (Figure 18).







## 12. Install Governor Bore Plug Kit

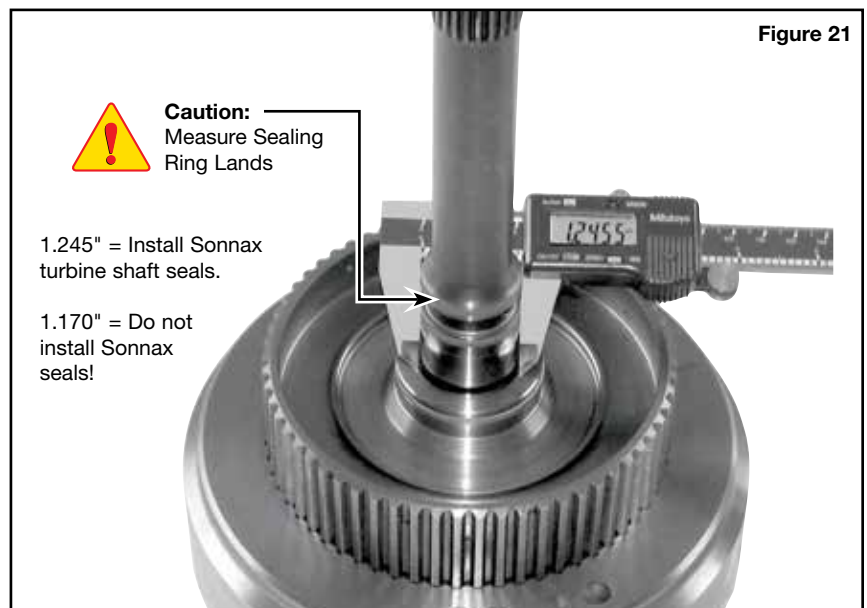
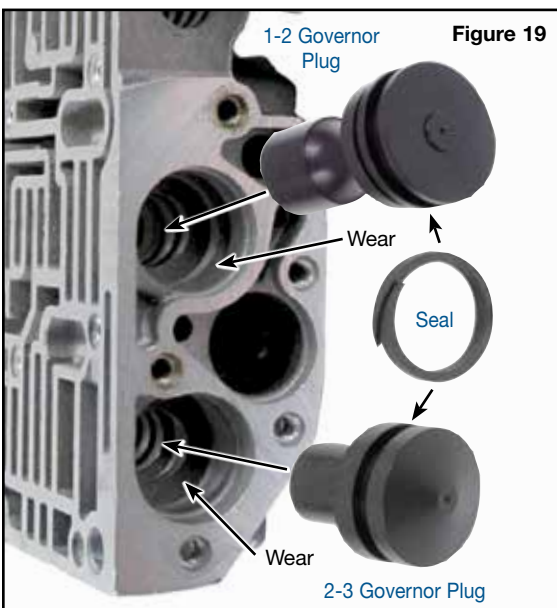
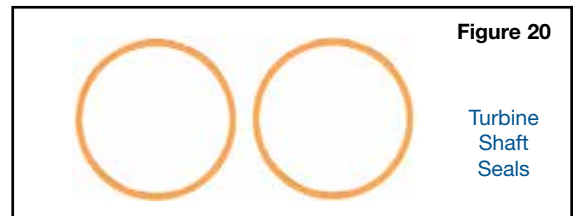
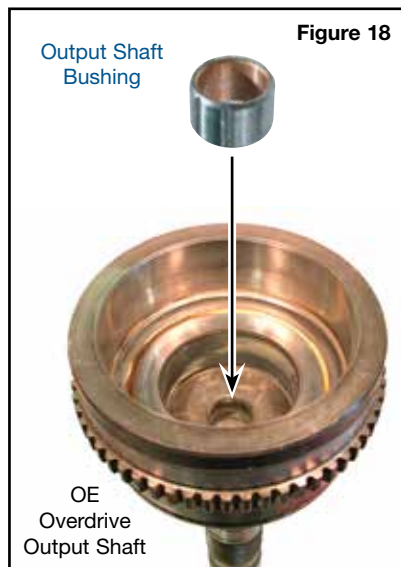
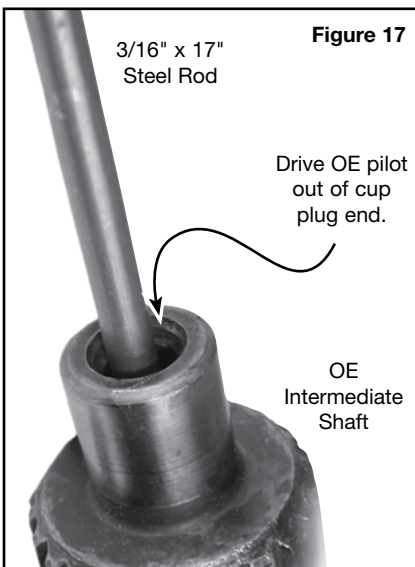
- Chamfer the leading edge of the bore. The rounded end of a hacksaw blade works well for this. Turn it over the sharp leading edge until the seal will insert properly (Figure 19).
- Bore size the seal prior to installation. Insert the pre-lubed Sonnax governor plugs with their seals in the opposite direction of their final assembly.
- Let plugs stand for several minutes to allow seal to size.
- Insert plugs in proper direction and stroke through entire travel numerous times.

## 13. Replace Turbine Shaft Seals

- Remove and discard OE shaft seals.
- Install the two Sonnax turbine shaft seals on the turbine input shaft.

**NOTE:** Measure sealing ring lands. These seals will not work on seal lands measuring 1.170". Only install these seals on landings measuring 1.245" (Figures 20 & 21).

## 14. Install Separator Plate and Assemble Valve Body



**Critical Wear Areas & Vacuum Test Locations**

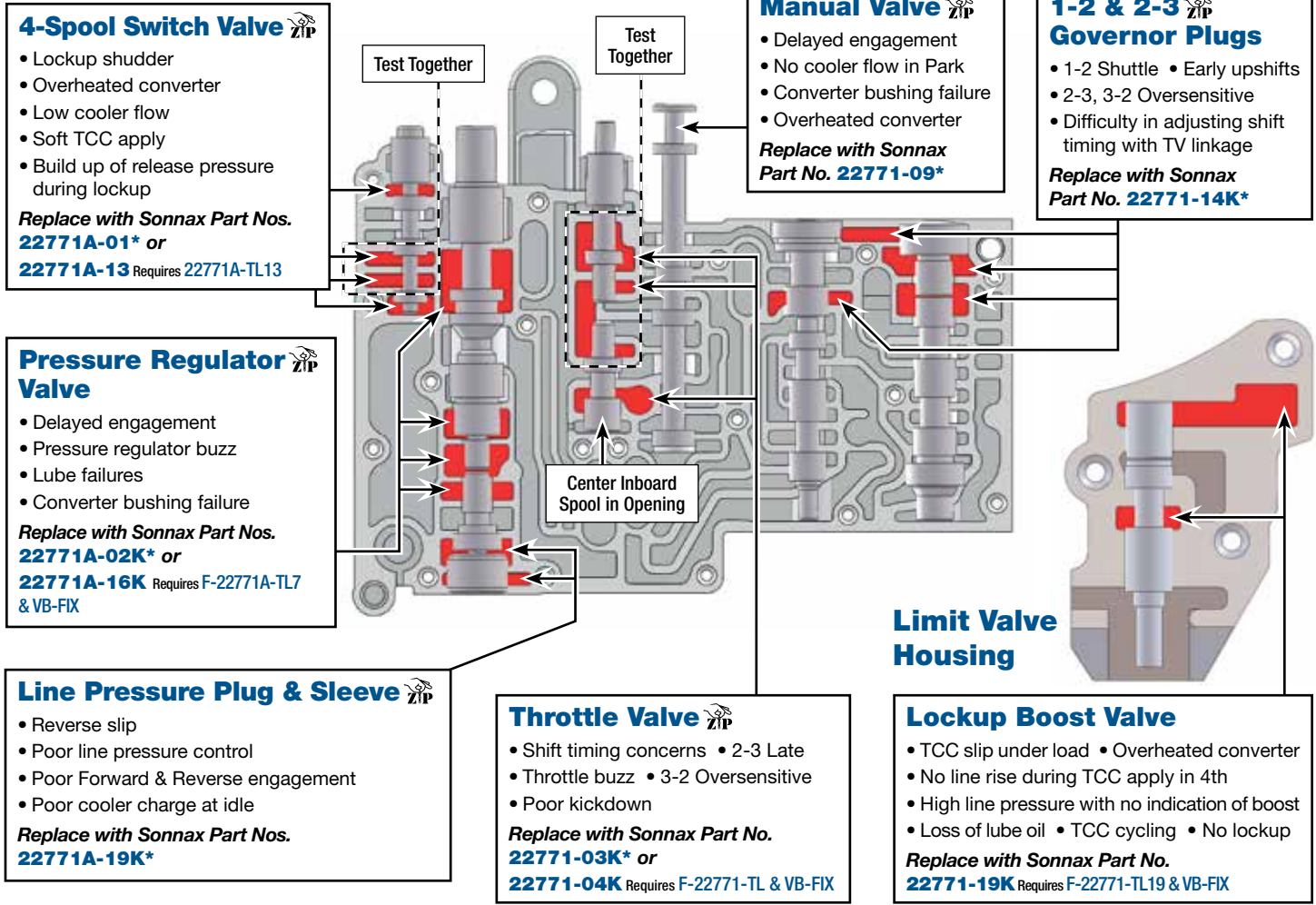


**NOTE:** OE valves are shown in rest position and should be tested in rest position unless otherwise indicated. Test locations are pointed to with an arrow. Springs are not shown for visual clarity. Low vacuum reading indicates wear and Sonnax parts are noted for replacement.

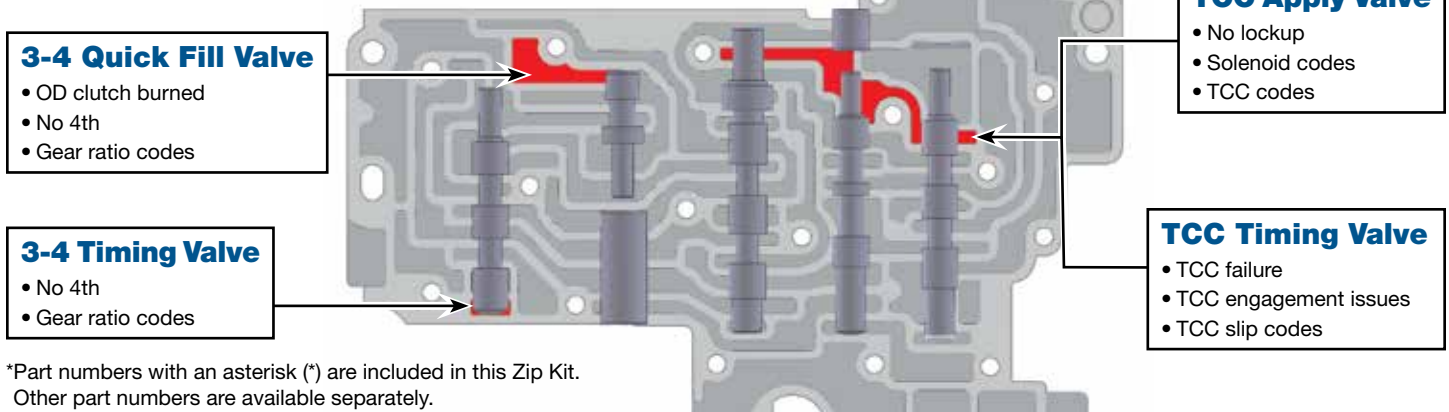
**Upper Valve Body**



For specific vacuum test information, refer to individual part instructions included in kits and available at [www.sonnax.com](http://www.sonnax.com).



**Lower Valve Body • 48RE Shown**



\*Part numbers with an asterisk (\*) are included in this Zip Kit. Other part numbers are available separately.

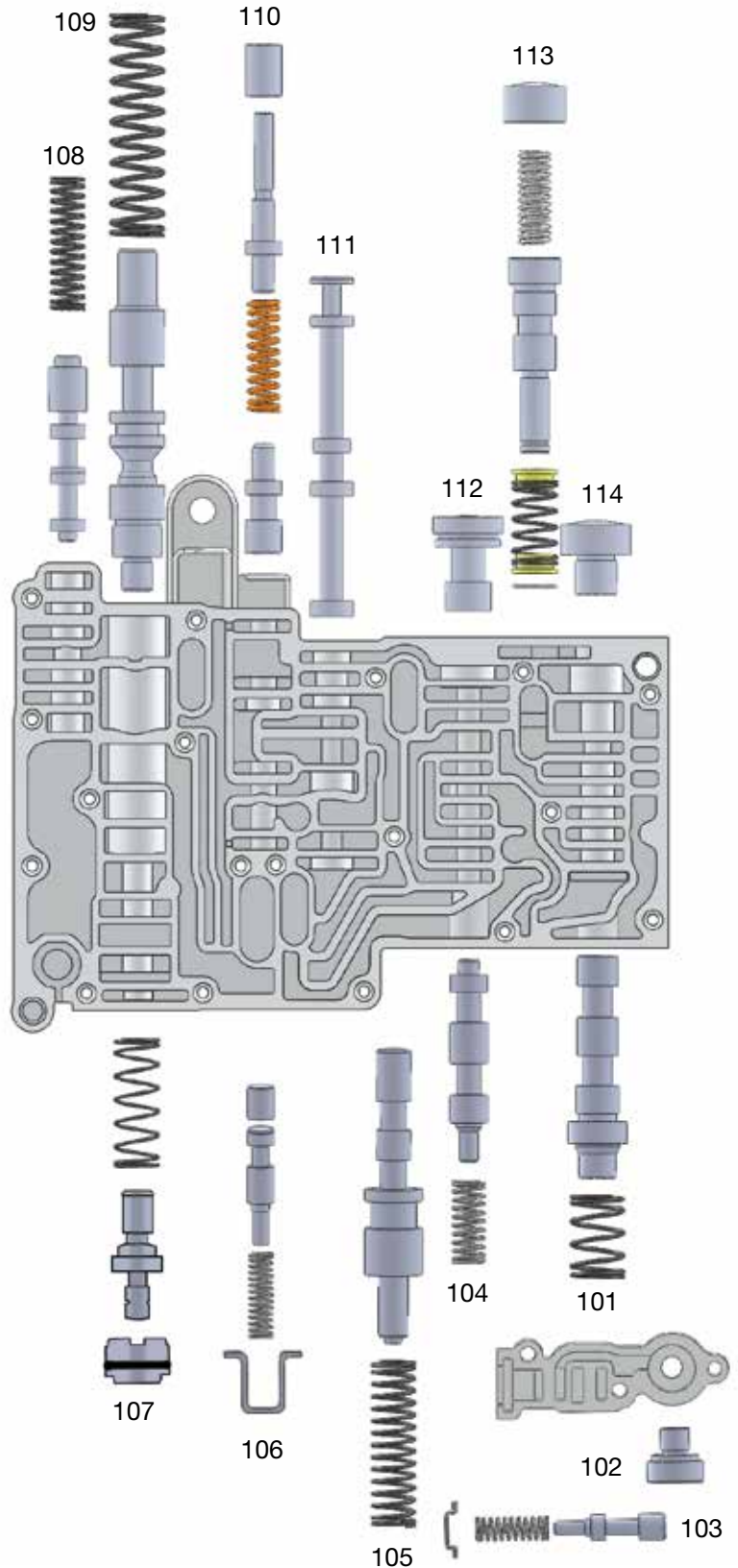


# OE Exploded View

## Upper Valve Body

### Upper Valve Body Descriptions

I.D. No.	Description
101	2-3 Shift Valve
102	2-3 Throttle Valve Plug
103	Limit Valve
104	1-2 Shift Valve
105	1-2 Shift Control Valve
106	Lockup Boost Valve
107	Throttle Pressure Valve (inboard), Line Pressure Plug & Sleeve (outboard)
108	4-Spool Switch Valve
109	Pressure Regulator Valve
110	Throttle Valve (inboard), Kickdown Valve & Sleeve (outboard)
111	Manual Valve
112	1-2 Governor Plug
113	Shuttle Valve
114	2-3 Governor Plug



# OE Exploded View

## Lower Valve Body

### Lower Valve Body Descriptions

I.D. No.	Description
201	3-4 Quick Fill Valve
202	3-4 Timing Valve
203	3-4 Shift Valve
204	TCC Apply Valve
205	TCC Timing Valve

