

PART NUMBER 6R80L-6R100-ZIP

IDENTIFICATION GUIDE

Valve Body Identification Valve components differ between Generation 1 (ZF6HP19/26/32), Ford 6R60, 6R75, 6R80 (2009-2014), 6R80 (2015-Later), 6R100, and Generation 2 (ZF6HP21/28/34) valve bodies. Please use this identification guide to determine which application you have to ensure correct ZIP Kit and valve kits are selected for your rebuild.

Generation 1 (ZF6HP19, 26 & 32), Ford 6R60, 6R75, 6R80 (2009)

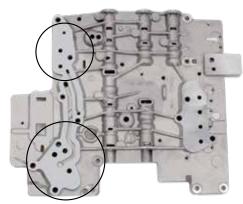
Generation 2 (ZF6HP21, 28 & 34)

1. IDENTIFY CASTING

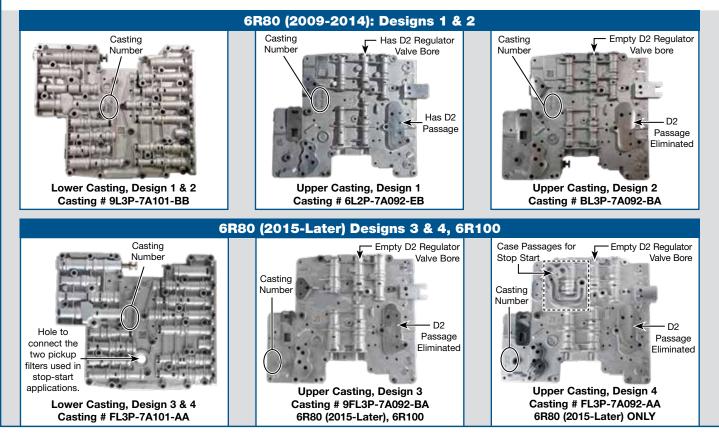
1st Generation Case Side, Includes 19, 26 & 32



2nd Generation Case Side, Includes 21, 28 & 34



Note: ZF applications will have casting numbers beginning with 1068. Ford applications will have 'Ford' or 'FoMoCo' casting emblem.



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Identification Guide

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ZF6HP19/26/32 (Gen. 1), Ford 6R60, 6R75, ZF6HP21/28/34 (Gen. 2) Blue & Yellow Connectors



2. IDENTIFY SOLENOIDS

6R80 (2009) Black & brown connectors in most locations. SSE solenoid has clear connector and white snout 2009-2011

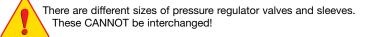


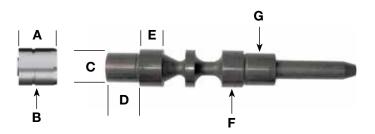


6R80 (2010-Later), 6R100 Clear connectors with black & brown snouts in most locations. SSE solenoid has clear connector and grey snout. Solenoids are banded (1-5) for flow rate.

IMPORTANT: Place solenoids back into the original locations for shift quality and quick adapts.

3. VERIFY PR VALVE & SLEEVE





Application	A	В	C	D	E	F	G
ZF6 Gen. 1, 6R60, 6R75, 6R80 ('09-'14)	.645"	.629" Dia.	.495" Dia.	.568"	.378"	.629" Dia.	.550" Dia.
ZF6 Gen. 1 w/053 Separator Plate	.725"	.657" Dia.	.511" Dia.	.649"	.378"	.657" Dia.	.586" Dia.
ZF6 Gen. 2	.804"	.629" Dia.	.511" Dia.	.725"	.418"	.629" Dia.	.562" Dia.
6R80 ('15-Later), 6R100	.645"	.629" Dia.	.511" Dia.	.568"	.378"	.629" Dia.	.550" Dia.

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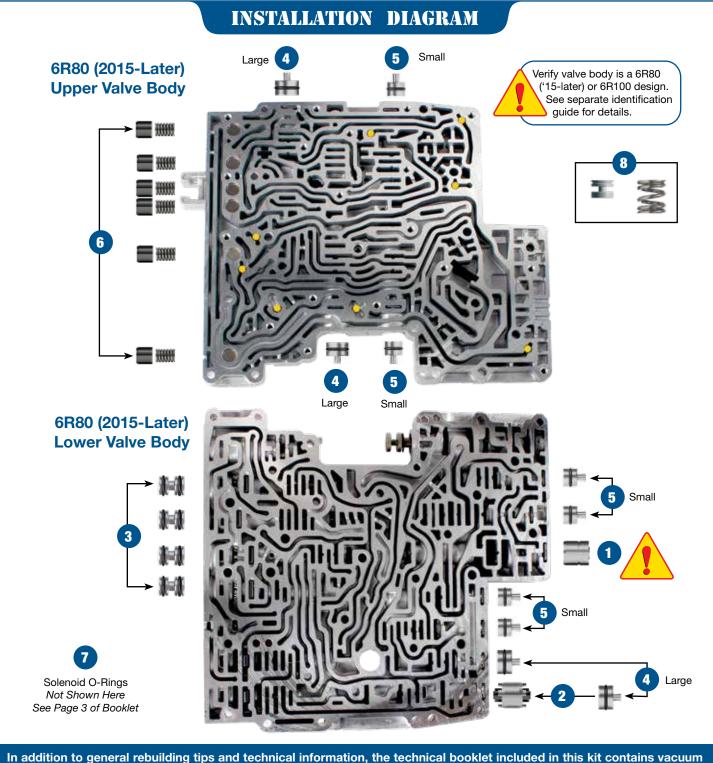
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PART NUMBER 6R80L-6R100-ZIP

QUICK GUIDE

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



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

NOTE: Some packaging pockets are pre-packaged and fit multiple Zip Kits, so may be marked with various application information.

Step 1 Replace OE Sleeve

CAUTION: Verify OE pressure regulator valve and sleeve measurements. See separate Identification Guide for details.

Packaging Pocket 1

• Sleeve (.629" dia. x .645" length)

Step 2 Replace OE Sleeve & Valve

Packaging Pocket 2

Valve Sleeve

Step 3 Replace Internal OE End Plugs

NOTE: Insert the internal end plug with the hole facing outboard.

Packaging Pocket 3

• Internal End Plugs (4)

• O-Rings (11)

3 Extra

Step 4 Replace Large OE End Plugs

Packaging Pocket 4

• End Plugs, Large (4)

• O-Rings, Large (6)

2 Extra

Step 5 Replace Small OE End Plugs

Packaging Pocket 5

- End Plugs, Small (6)
- O-Rings, Small (9)

3 Extra

Step 6 Replace OE Pistons

Packaging Pocket 6

- Accumulator Pistons (6)
- Matching Springs (6)

Step 7 Replace OE Solenoid O-Rings

Packaging Pocket 7

- O-Rings, Size 12 x 2mm thick, Smaller (4) 1 Extra
- O-Rings, Size 13.5 x 2mm thick, Larger (4) 1 Extra
- O-Rings, Size 11 x 1.5mm thick, Larger (8)
- O-Rings, Size 15.60 x 1.78mm thick, Larger (1)
- O-Rings, Size 12.95 x 1.69mm thick, Larger (1)



NOTE: See page 3 in the technical booklet included with this Zip Kit for details on replacement solenoid O-ring locations.



Packaging Pocket 12

- Testing Spring
- Testing End Plug



NOTE: See page 4 in the technical booklet included with this Zip Kit for instructions on how to vacuum test valve body castings with these two parts.

NOTE: The parts listed here may be protected by patent number 8,794,108.

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2 Extra



PART NUMBER 6R80L-6R100-ZIP

INSTALLATION & TESTING BOOKLET

This Zip Kit 6R80L-6R100-ZIP is designed for Ford 6R80 (2015-later) and 6R100 applications only. Valve Body Separate Zip Kits ZF6-6R60-ZIP for ZF6HP19, ZF6HP26, ZF6HP32 (Generation 1) units without an 053 plate, and Ford 6R60, 6R75, 6R80 (2009-2014), ZF6-Gen2-ZIP for ZF6HP21, ZF6HP28, ZF6HP34 (Generation 2), and ZF6-053-ZIP for ZF6HP19, Identification ZF6HP26, ZF6HP32 (Generation 1) units with an 053 separator plate are available. See separate identification guide for details.

Cautions **Electronics**

Do not use an Ohm meter with more than .6 voltage supply. The TCM is capable of limited solenoid adaptation without reprogramming. After any service, resetting adapts/clearing KAM is suggested. In many instances, solenoids can be replaced with new OE or with qualified used. Original solenoids, if reused, should be returned to their same location due to a learned flow rate by the TCM. Make every effort to avoid mixing up the solenoids for best and quickest computer adapts.

Solenoid Ohm values can be checked through the 16 pin connector (Figure 1, 2 & 3).

Visual Identification

The 6R80 (2015-later) has gone through numerous design changes. Reference the separate identification guide to ensure this Zip Kit is being installed into a 6R80 (2015-later) or 6R100 valve body.

The 6R80 (2015-later) and 6R100 can also be identified by the groove that is visible on the pressure regulator sleeve

Figure 4

Additional Face ID Groove

Torque Specification	ons		
Mechatronic-to-Case or Valve Body Halves Bolts 8Nm/71 in-lb	Metal Oil Pan to Case 14Nm/10 ft-lb	Output Shaft Flange Nut 60Nm/44 ft-lb	Pump Bolts to Case 10Nm/89 in-lb
Clearance & Endplay			

Input Shaft Endplay Rear Unit Endplay (flanged output) 0.15-0.35mm/.006-.013" 0.2-0.4mm/.008-.015" Clutch clearance and material is critical (refer to OE clutch

travel specifications). These have fluid balanced clutch pistons.

Fluid

(Figure 4).

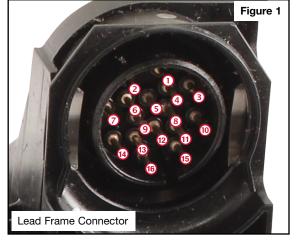
Ford 6R60 has Hex head fill plug in front corner of the case. Dipstick lives within this plug. NOTE: Thermal element must open (88°C, 190°F) to purge cooler before verifying fluid level!

Complete FillService FillRequiredApprox.9.5 qt./9 ltr.4.2 qt./4 ltr.	Ford Fluid XT-6-QSP, Mercon SP
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Drive-Cycle Relearn

Ford requires six light throttle up and coastdown shift cycles (after obtaining 80°C/175°F) for a partial relearn.

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Connector Pin Description

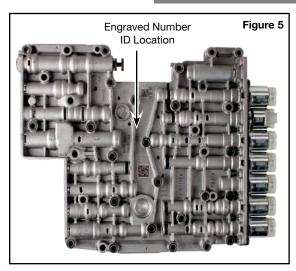
Connector Pin Description Figure 2		
Pin #	Description	
1	Turbine Shaft Speed Sensor	
2	Not Used	
3	TCC Solenoid Control	
4	Transmission Range Sensor	
5	Signal Return	
6	Transmission Fluid Temperature	
7	Ignition Voltage	
8	Shift Solenoid A Control E Control "SSE"	
9	Shift Solenoid A Control "SSA"	
10	Shift Solenoid D Control "SSD"	
11	Transmission Range Sensor	
12	Battery Voltage (TSS and OSS)	
13	Shift Solenoid C Control "SSC"	
14	Shift Solenoid B Control "SSB"	
15	Output Shaft Speed Sensor	
16	Pressure Control Solenoid A "PCA"	

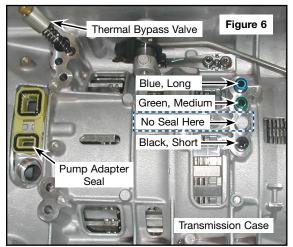
Case Connector OHM Chart

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Pin #s	Component	OHM Valve
3&7	TCC Solenoid	5.5 Ohms
5&6	Transmission Fluid Temperature	30k @ 68° - drops w/temp increase
8&7	Shift Solenoid E Control "SSE"	18 Ohms
9&7	Shift Solenoid A Control "SSA"	5.5 Ohms
10 & 7	Shift Solenoid D Control "SSD"	5.5 Ohms
13 & 7	Shift Solenoid C Control "SSC"	5.5 Ohms
14 & 7	Shift Solenoid C Control "SSB"	5.5 Ohms
16 & 7	Pressure Control Solenoid A "PCA"	5.5 Ohms

Figure 3







Technical Tips

Reprogramming

The number engraved on the 6R80 valve body is the 13 digit calibration number. 2010-later do not have a TCM internal to the transmission. The number engraved on the valve body (**Figure 5**) also will be on the tag that is on the driver side of the transmission near the bell housing. Note: If the valve body is changed, the number will need to be programmed into the PCM for correct calibration. This calibration number helps the PCM set adapts quicker. The number indicates which band number solenoids are in which positions on the valve body.

Transmission Specifications & Reassembly Tips

The valve body-to-case, pump in/out adapter seal must be replaced on every valve body R-R (**Figure 6**). The overall seal height on these vary depending on application. Make sure you have the correct size.

There are three valve body-to-case center support seals. The longest (blue) resides next to the manual linkage, medium (green) next to it. The shortest one (black) is furthest from the linkage (**Figure 6**).

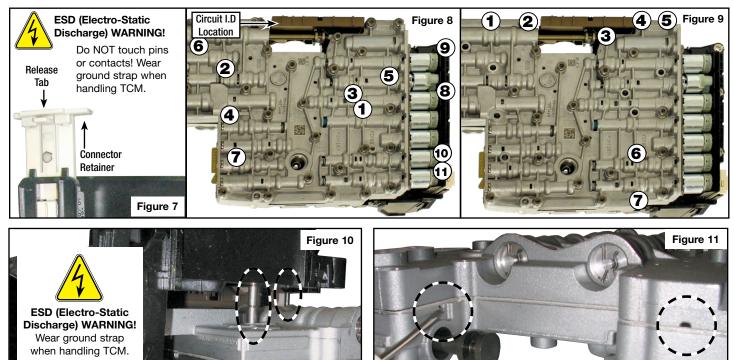
The Ford 6R80 thermal bypass valve lives in the front corner, between case and valve body. The spring installs into the case, followed by the thermal valve - small tip end up.

Zip Kit Instructions

1. Valve Body Removal from Case

a. Press release tab and lift connector retainer (Figure 7).

- b. Pull connector sleeve out of case.
- c. Remove 10 or 11 bolts to drop valve body from case (Figure 8).



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2. Valve Body Disassembly

- a. Remove seven bolts to remove TCM from valve body (Figure 9).
- b. Remove TCM (Figure 10).
- c. Pry valve body halves from separator plate where indicated (Figure 11).

NOTES: The separator plate has a bonded gasket which may delaminate during disassembly (**Figure 12**). If any damage or delamination to the gasket is present, a new Sonnax separator plate should be used.

These separator plates are specifically calibrated.

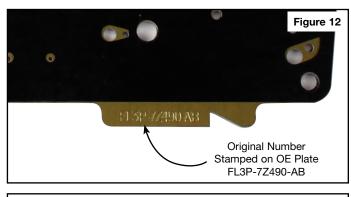
The part number for the plate can be identified by converting the engineering number FL3P to FL3Z (**Figure 12**). This converted FL3P TO FL3Z-7Z490-AB can be purchase from Ford parts.

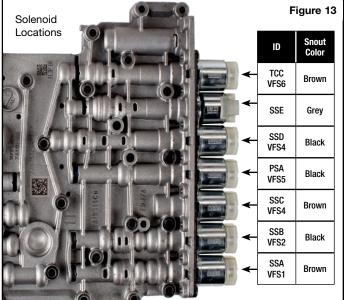
There are different part numbers for these plates based on vehicle application. Be sure to verify the number on the plate you are working on. This part number can also be supersceded to another number which typically changes the last two digits or the suffix.

3. Installation

Install Zip Kit parts as shown on diagram of separate quick guide sheet included in this Zip Kit. The locations of the replacement solenoids O-rings are shown at left (**Figure 13**). For additional solenoid information see Solenoid O-Ring Sizes and Solenoid Function charts (**Figures 14–16**) of this booklet.

NOTE: Sonnax recommends vacuum testing critical wear areas not covered by this kit to determine whether additional Sonnax parts are required (see pages 4–5).





Ford 6R80 (2015-Later), 6R100

Solenoid O-Ring Sizes				
Connector Color	Snout Color	O-Ring Size	Outboard O-Ring Size	
Tan/Clear	Brown	11mm x 1.5 mm	12mm x 2mm	
Tan/Clear	Black	11mm x 1.5 mm	13.5mm x 2 mm	
Tan/Clear (2012-Later)	Gray	12.95mm x 1.69 mm	15.60mm x 1.78mm	

Ford 6R80 (2015-Later), 6R100

Solenoid Function				
Snout Color	Location	Output	Resistance at 68° (20°C)	Function
Brown	SSA, SSC, TCC, VFS1, CFS3, VFS6	0 psi @ 0 mA	5.05 ohms	1 – A Clutch; 3 – C Brake; 6 – TCC
Black	SSB, SSD, PCA, VFS2, VFS4, VFS5	67 psi (4.6 bar) at 0 mA	5.05 ohms	2 – B Clutch; 4 – D & E Clutch; 6 – EPC
Gray ('12-Later)	SSE/SS1	Open/Closed	18 ohms	Solenoid Multiplex/ Drive Enable Valve
NOTE: 2010–Later 6R80 solenoids are banded. It is important to install the same band number back into the OE location on the valve body.				

Figure 15

Figure 16



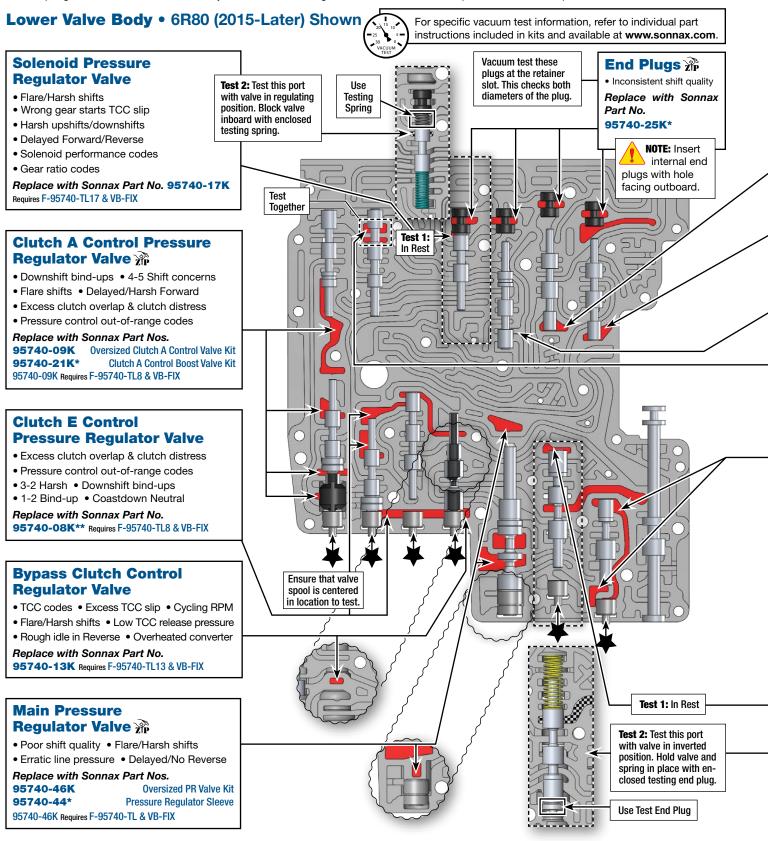
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Installation & Testing Booklet

Critical Wear Areas & Vacuum Test Locations ZP Drop-In Zip Valve[™] Parts Available

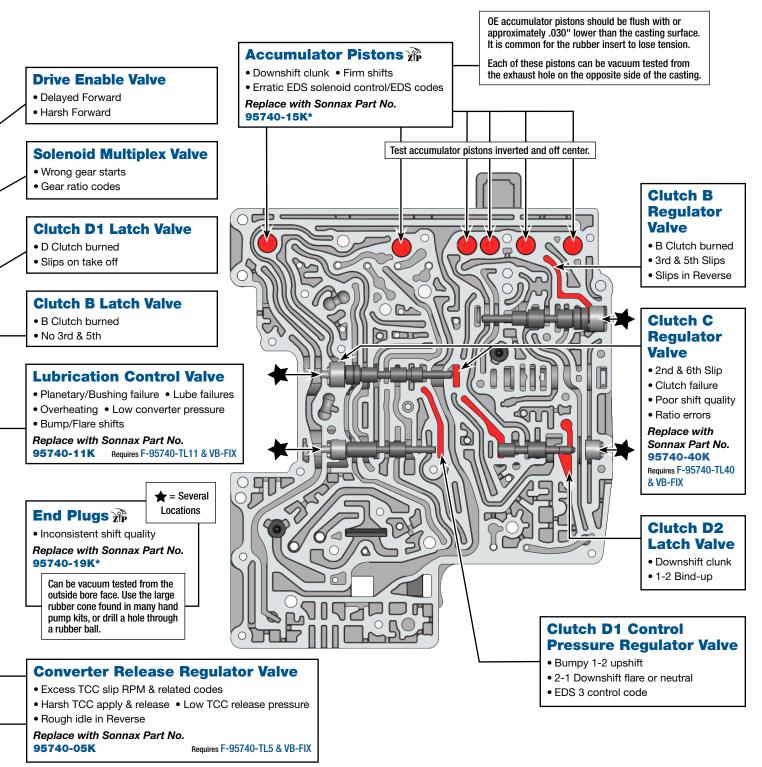
NOTE: OE valves are shown in rest position and should be tested in rest position unless otherwise indicated. Test locations are pointed to with an arrow. Springs are not shown for visual clarity. Low vacuum reading indicates wear and Sonnax parts are noted for replacement.



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Upper Valve Body • 6R80 (2015-Later) Shown



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

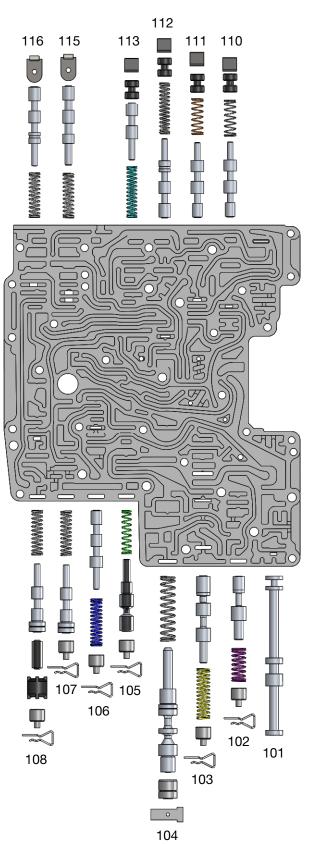
SONNAX 6R80 (2015-LATER), 6R100 ZIP KIT®

OE Exploded View

Lower Valve Body • 6R80 (2015-Later) Shown

NOTE: Depending upon vehicle application, the OE springs shown may not be present.

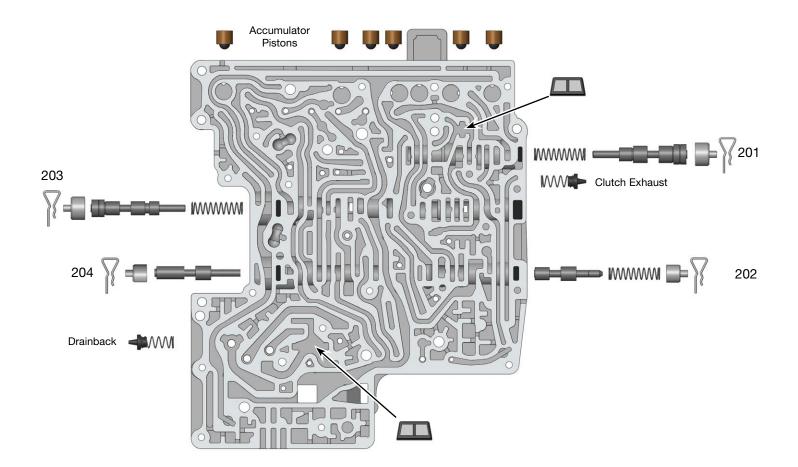
Lower Valve Body Descriptions			
I.D. No.	Description		
101	Manual Valve		
102	Lubrication Control Valve		
103	Converter Release Regulator Valve		
104	Main Pressure Regulator Valve		
105	Bypass Clutch Control Regulator Valve		
106	Clutch E Latch Valve		
107	Clutch E Control Pressure Regulator Valve		
108	Clutch A Control Pressure Regulator Valve		
110	Solenoid Multiplex Valve		
111	Drive Enable Valve		
112	Clutch D1 Latch Valve		
113	Solenoid Pressure Regulator Valve		
115	Clutch B Latch Valve		
116	Clutch A Latch Valve		



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Upper Valve Body • 6R80 (2015-Later) Shown



Upper Valve Body Descriptions			
I.D. No.	D. No. Description		
201	Clutch B Regulator Valve		
202	Clutch D2 Latch Valve		
203	Clutch C Regulator Valve		
204	Clutch D1 Control Pressure Regulator Valve		

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