



# 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 noted for replacement.

## Lower Valve Body • ZF6HP21, Generation 2, M-Shift Shown Here

Click on Sonnax part numbers to see more information.

**Clutch B Control Pressure Regulator Valve**

- Burned B Clutch
- 3rd or 5th Shift complaints

**Clutch C Control Pressure Regulator Valve**

- Burned B Clutch
- 2nd or 6th Shift complaints

**Clutch A Control Pressure Regulator Valve**

- Delayed/Harsh forward engagement
- Flare/Neutral on 5-4 downshift
- No 4-5 shift
- VFS 1/A solenoid control code

**Test 2:** Test these ports after inserting test nut between control valve & plunger.

**Replace with Sonnax Part No.**  
**95740-28K** Boost Valve & Sleeve Kit  
**95740-66K** Oversized Valve Kit, M-Shift Only  
**95740-72K** Oversized Valve Kit, E-Shift Only  
 95740-66K: Requires F-95740-TL66 & VB-FIX  
 95740-72K: Requires F-95740-TL72 & VB-FIX

**Clutch E Control Pressure Regulator Valve**

- Bumpy 1-2 upshift
- 2-1 Downshift flare or neutral
- EDS 4 control code

**Replace with Sonnax Part No.**  
**95740-28K** Boost Valve & Sleeve Kit  
**95740-66K** Oversized Valve Kit, M-Shift Only  
**95740-72K** Oversized Valve Kit, E-Shift Only  
 95740-66K: Requires F-95740-TL66 & VB-FIX  
 95740-72K: Requires F-95740-TL72 & VB-FIX

**Bypass Clutch Control Regulator Valve**

- Converter overheat & low release pressure
- Excessive TCC slip/cycling RPM
- Firm up/downshifts
- TCC related codes

**Replace with Sonnax Part No.**  
**95740-73K** Requires F-95740-TL73 & VB-FIX

**End Plugs**

- Loss of critical line & SLT pressures
- Shift complaints
- Burnt clutches & brakes

**Replace with Sonnax Part No.**  
**95740-27K** **NOTE:** Several Locations = ★

**Clutch A Latch Valve**

- Burned A Clutch
- 4-5 Shift complaints

**End Plugs**

Inconsistent shift quality

**Replace with Sonnax Part No.**  
**95740-30K**

Vacuum test these plugs at the retainer slot. This checks both diameters of the plug.

**Clutch D2 Brake Latch Valve**

- 1st/2nd Shift complaints
- EDS 6 codes
- Burned D brake

Test part after inserting test nut into bottom of bore.

**Shift Valve 1**

No failsafe

**Clutch D1 Brake Latch Valve**

- 1st/2nd Shift complaints
- EDS 6 codes
- Burned D brake

**Converter Release Regulator Valve**

- Excessive TCC slip RPM & related codes
- Harsh lockup apply & release
- Harsh downshifts
- Converter overheat

**Replace with Sonnax Part No.**  
**95740-05K**  
 Requires F-95740-TL5 & VB-FIX

**Test 2:** Test this port with valve in inverted position. Hold valve and spring in place with enclosed testing end plug.

**Clutch Cooling Valve**

- Burned A Clutch
- Burned D Brake

**Test 2:** Test this port after inserting test nut into bottom of sleeve.

**Lubrication Control Valve**

- Excessive cooler pressure (ruptured hoses or cooler)
- Bushing and/or planet overheat

**Replace with Sonnax Part No.**  
**95740-71K** Requires F-95740-TL71 & VB-FIX

**Main Pressure Regulator Valve**

- Delayed/No reverse
- Poor shift quality
- Slip forward/reverse
- Erratic or high/low line pressure

**Replace with Sonnax Part No.**  
**95740-29K** Pressure Regulator Sleeve  
**95740-69K** Oversized PR Valve Kit  
 Requires F-95740-TL69 & VB-FIX

Converter release regulator valve and spring shown in inverted position. Use test end plug.



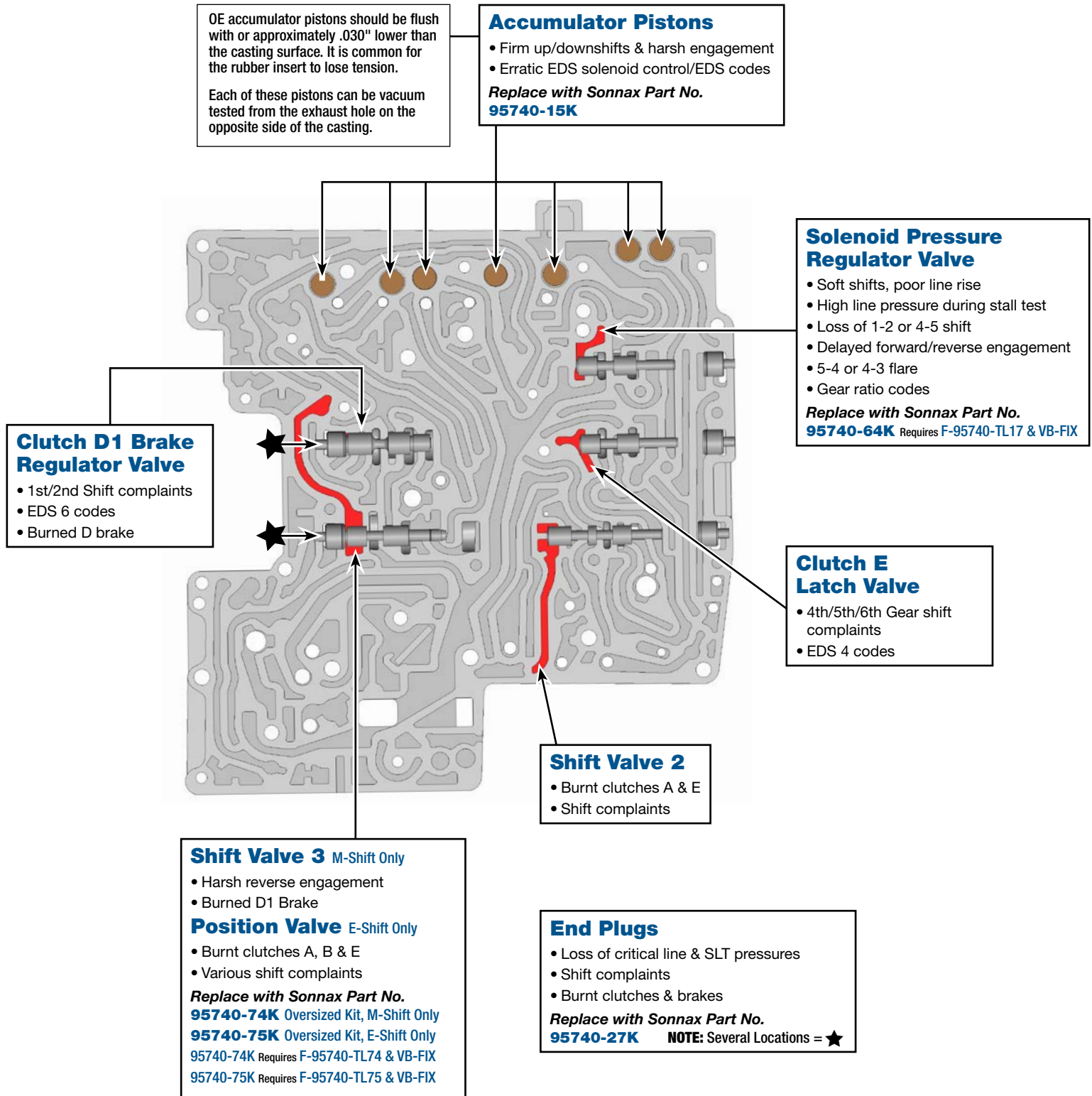
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## Upper Valve Body • ZF6HP21, Generation 2, M-Shift Shown Here

Click on Sonnax part numbers to see more information.



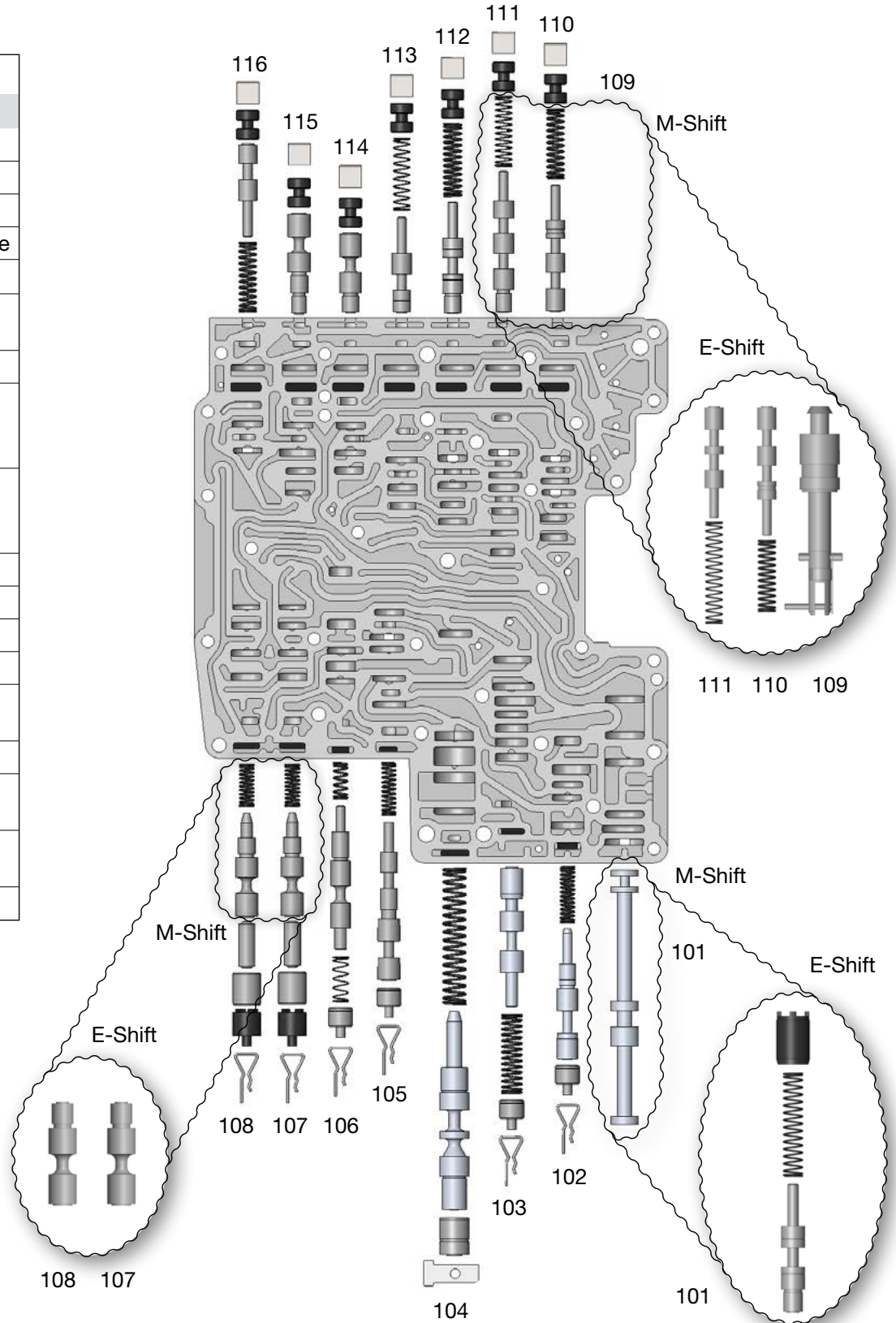


# OE Exploded View

## Lower Valve Body • ZF6HP21, Generation 2, M-Shift Shown Here

NOTE: Depending upon vehicle application, the OE springs, checkballs and worm tracks may vary.

Lower Valve Body Descriptions	
I.D. No.	Description
101	Parking Lock Valve in E-Shift
101	Manual Valve in M-Shift
102	Lubrication Control Valve
103	Converter Release Regulator Valve
104	Main Pressure Regulator Valve
105	Bypass Clutch Control Regulator Valve
106	Clutch Cooling Valve
107	Clutch E Control Pressure Regulator Valve (inboard) Boost Valve & Sleeve (outboard)
108	Clutch A Control Pressure Regulator Valve (inboard) Boost Valve & Sleeve (outboard)
109	Park Lock Cylinder in E-Shift
109	Empty in M-Shift
110	Clutch D1 Brake Latch Valve
111	Shift Valve 1
112	Clutch D2 Brake Pressure Regulator Valve
113	Clutch D2 Brake Latch Valve
114	Clutch C Control Pressure Regulator Valve
115	Clutch B Control Pressure Regulator Valve
116	Clutch A Latch Valve



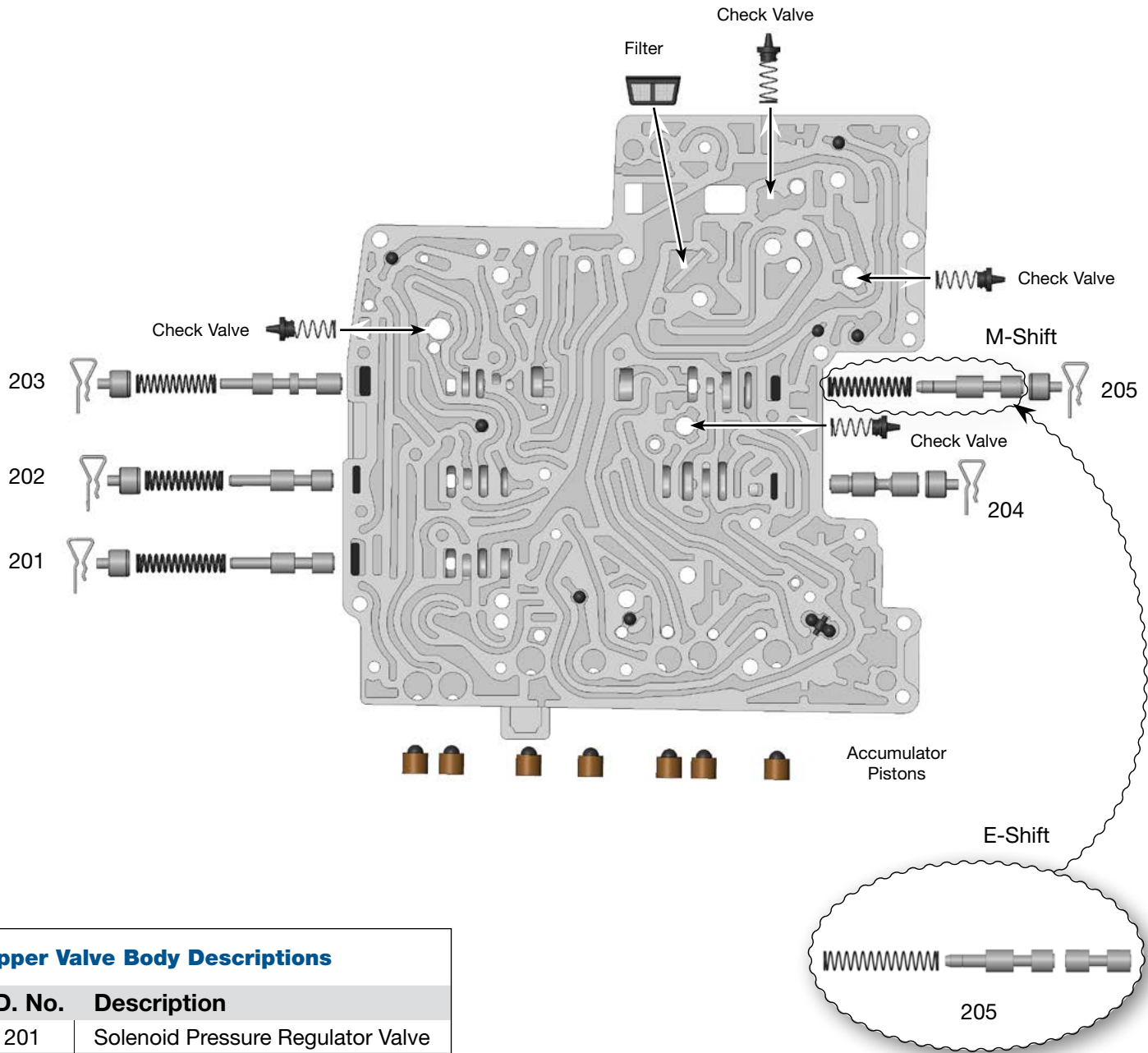




# OE Exploded View

## Upper Valve Body • ZF6HP21, Generation 2, M-Shift Shown Here

**NOTE:** Depending upon vehicle application, the OE springs, checkballs and worm tracks may vary.



Upper Valve Body Descriptions	
I.D. No.	Description
201	Solenoid Pressure Regulator Valve
202	Clutch E Latch Valve
203	Shift Valve 2
204	Clutch D1 Brake Regulator Valve
205	Shift Valve 3 in M-Shift
205	Position Valve in E-Shift