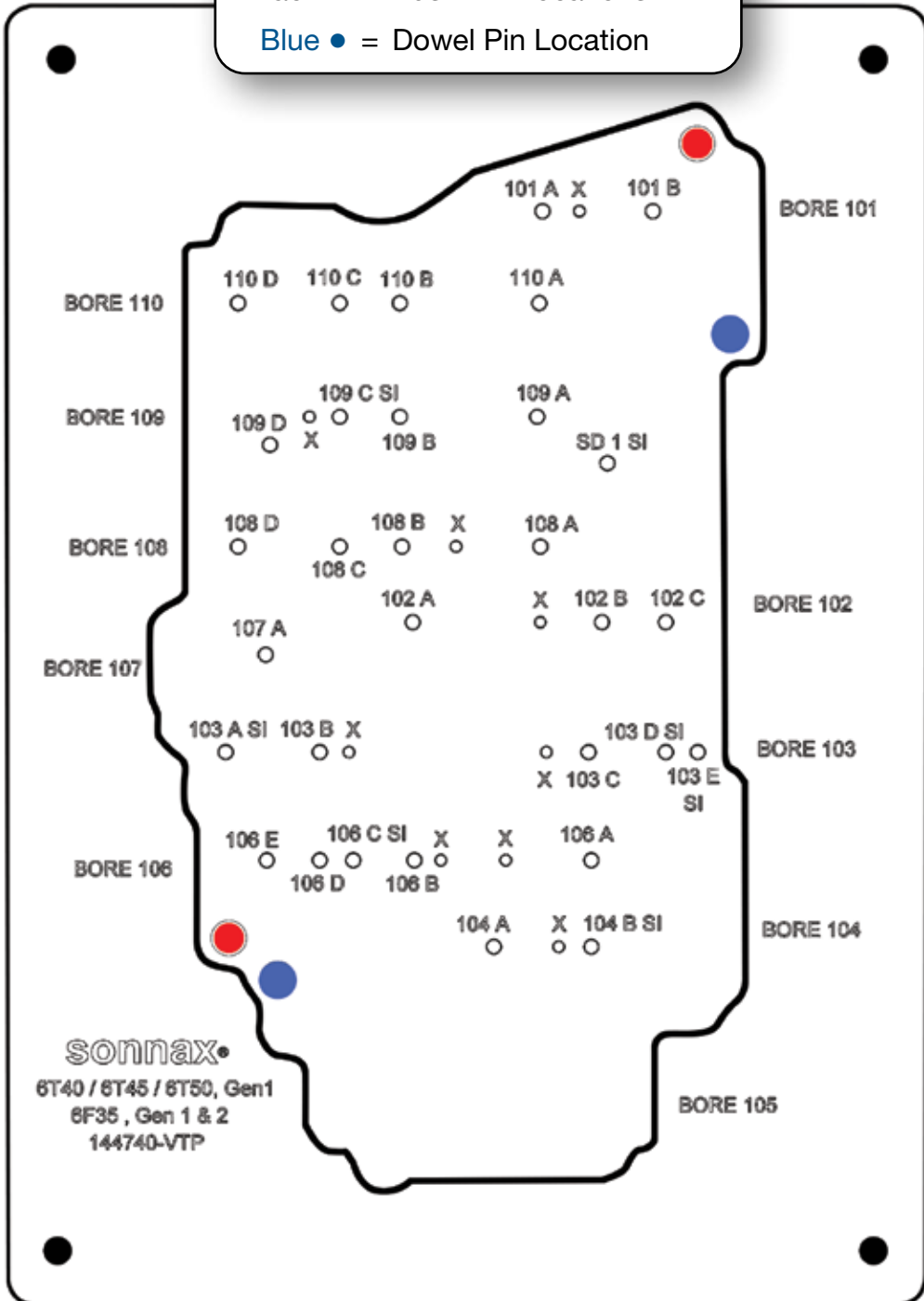


Alignment Hole Key

- Red ● = Alignment Pins
- Black ● = Push Pin Locations
- Blue ● = Dowel Pin Location



Vacuum Test Plate Kit

Part No.

144740-VTP



- Plate
- Seal
- Push Pins (6)
- Alignment Pins (2)

2 Extra

Vacuum Test Stand Kit

Part No.

VACTEST-01K

- Vacuum Test Stand
- Test Plate
- Vacuum Plate Sealing Pad
- Vacuum Test Foam Pad
- Push-to-Connect Fitting
- Assorted Testing Tips (6)
- Testing Tip Adapter Tube
- Flexible Tubing
- Flared Tubing with Flared Nut

Instructions

1. Assembly

- Ensure vacuum test plate and seal are both clean and free of debris.
- Install two alignment pins into plate at indicated threaded holes. Thread into non-engraved side of plate (**Figure 1**).
- Place seal onto non-engraved side of plate, aligning orifice holes. Remove any entrapped air between plate and seal by peeling seal up at plate edge. Gradually place seal back on plate from center toward edge.
- Push plastic push pins into seal and plate from seal side, just far enough for head to lightly contact seal.

2. Testing

- Place the casting onto the large vacuum test foam pad from the VACTEST-01K kit, with front side of casting upward.
- Place assembled vacuum test plate over casting, using engraved casting outline as guide.

NOTE: Alignment pins will enter casting bolt holes in the 6F35 (Gen. 1 & 2) applications to properly position the plate on the main control casting. The large dowel pin location holes in the vacuum test plate will align the 6T40 series castings to the plate. The alignment pins do not need to be removed for the 6T40 series castings.

- Using **VACTEST-01K** (sold separately, **Figure 2**) and small vacuum tip, vacuum test at numbered orifices on plate. These numbers correspond to the bore numbers called out in the exploded view of the valve body on page 6. The chart on page 8 provides descriptions of individual circuit checked and space to document actual vacuum readings and minimum vacuum standards.

NOTE: Vacuum test data sheet on page 7 can be used to establish minimum vacuum standards at individual bore locations.

- Light fingertip pressure may need to be applied on plate during testing.

NOTE: This vacuum test plate kit only tests the main control casting on the 6F35 (Gen. 1 & 2). For vacuum testing the few valves in the solenoid valve casting, use the small vacuum test plate from the VACTEST-01K and reference page 7 for test locations.

3. Cleaning

Seal and plate can be cleaned as needed with mild soap and water to remove debris.

4. What should my vacuum test results be?

While a properly calibrated and maintained test stand will give consistent vacuum reading results for a specific circuit and amount of wear, evaluating these results requires establishing your own pass/fail criteria. Variables which influence vacuum readings are the number of spools tested in a captive circuit, spool diameter size and contact length of the spool within the bore.

Pass/Fail standards are specific to your setup and process, but they also must be based on your experience, quality sensitivity, warranty concerns and cost/pricing structure. Sonnax recommends that you keep a record of vacuum results for each valve body at each tested circuit/port location. This lets you compare results over time to help determine for your shop what an acceptable vacuum reading is for each circuit/port location.

A chart specific to this application is provided in this booklet indicating valve and circuit checked at each orifice location. Room is provided to record results and compare to your minimum vacuum standard. A generic vacuum test data sheet also is provided that can be used to evaluate multiple cores to establish your minimum vacuum standard. If you need fresh documents, you can print or download these pages from this instruction booklet by visiting this vacuum test plate kit product page at www.sonnax.com.

Figure 1

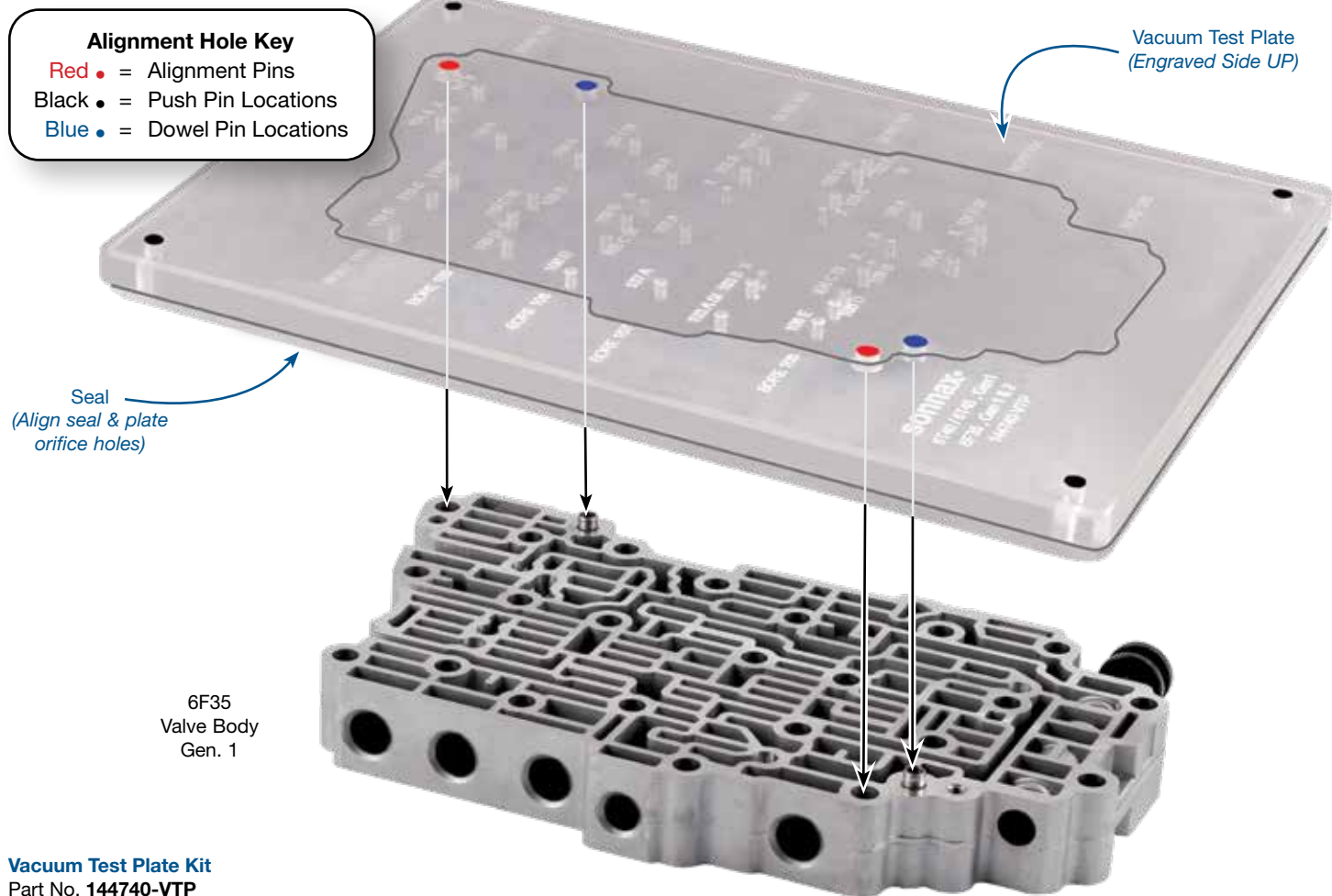
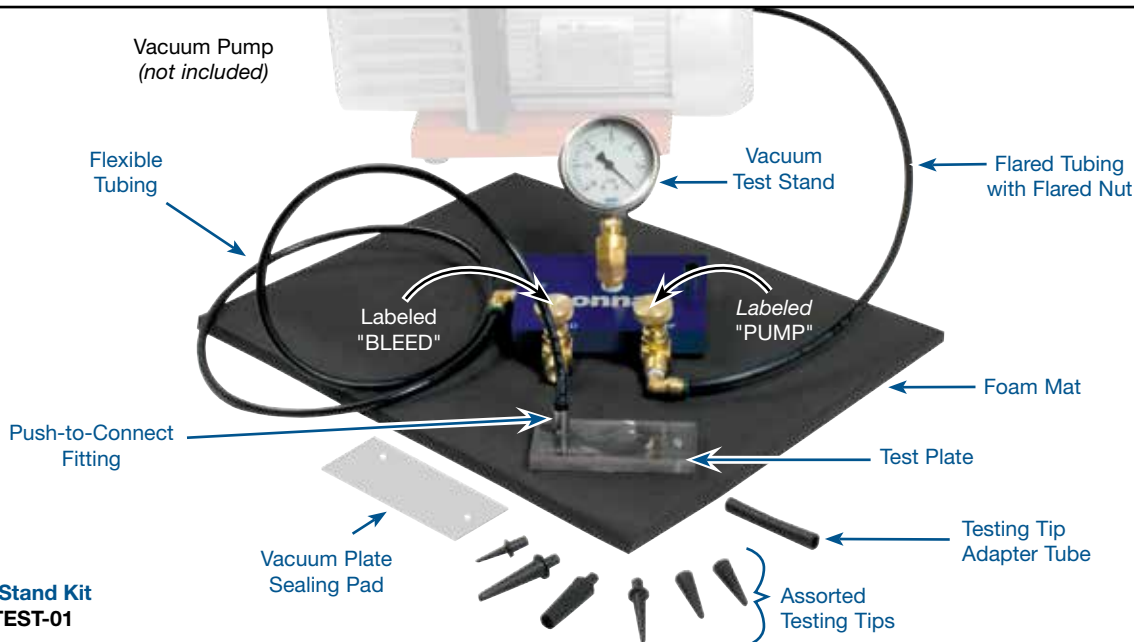


Figure 2



Critical Wear Areas & Vacuum Test Locations



Drop-In Zip Valve™ Parts Available



6T40-ZIP Zip Kit® Available

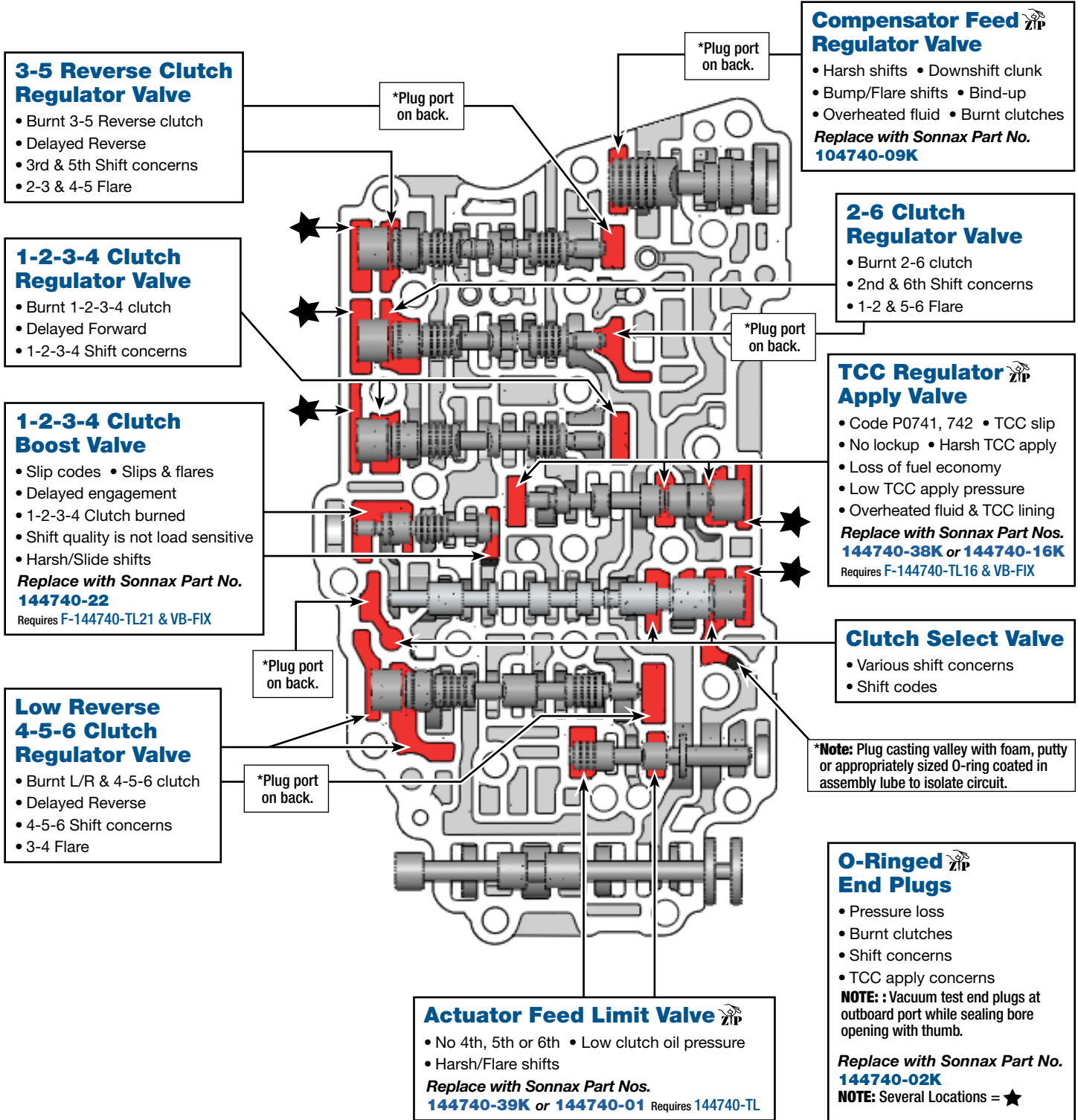
NOTE: OE valves are shown in rest position and should be tested in rest position unless otherwise indicated. Test locations are pointed to with an arrow. Springs are not shown for visual clarity. Low vacuum reading indicates wear and Sonnax parts are noted for replacement.

Control Valve Body – Front
6T40, Gen. 1



For specific vacuum test information, refer to individual part instructions included in kits and available at www.sonnax.com.

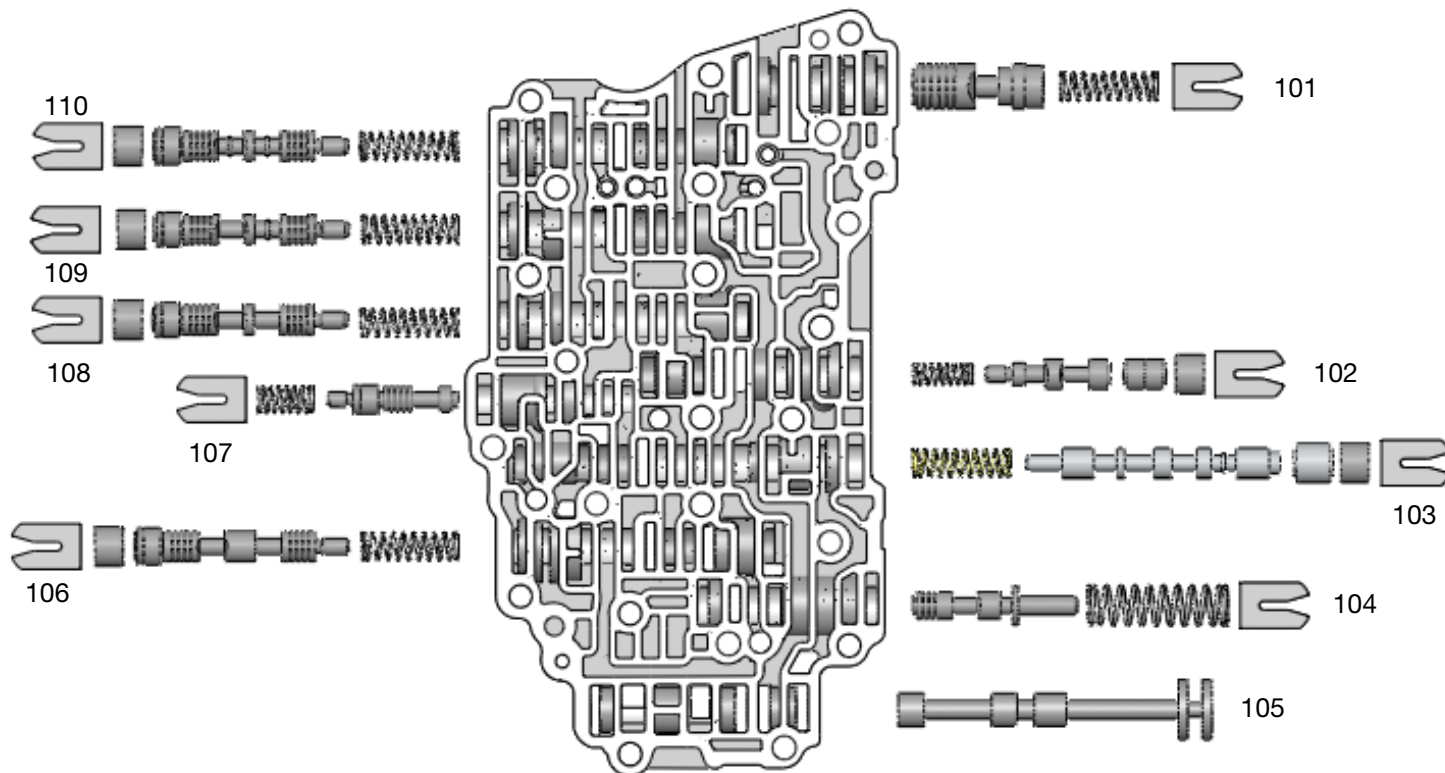
Click on Sonnax part numbers to see more information.



OE Exploded View

Control Valve Body • 6T40, Gen. 1

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



Control Valve Body Descriptions

I.D. No.	Description
101	Compensator Feed Limit Valve
102	TCC Regulator Apply Valve
103	Clutch Select Valve (inboard) Shuttle Valve (outboard)
104	Actuator Feed Limit Valve
105	Manual Valve
106	Reverse & 4-5-6 Clutch Regulator Valve
107	1-2-3-4 Clutch Boost Valve
108	1-2-3-4 Clutch Regulator Valve
109	2-6 Clutch Regulator Valve
110	3-5 Reverse Clutch Regulator Valve

Critical Wear Areas & Vacuum Test Locations

ZIP Drop-In Zip Valve™ Parts Available



6T40-ZIP Zip Kit® Available

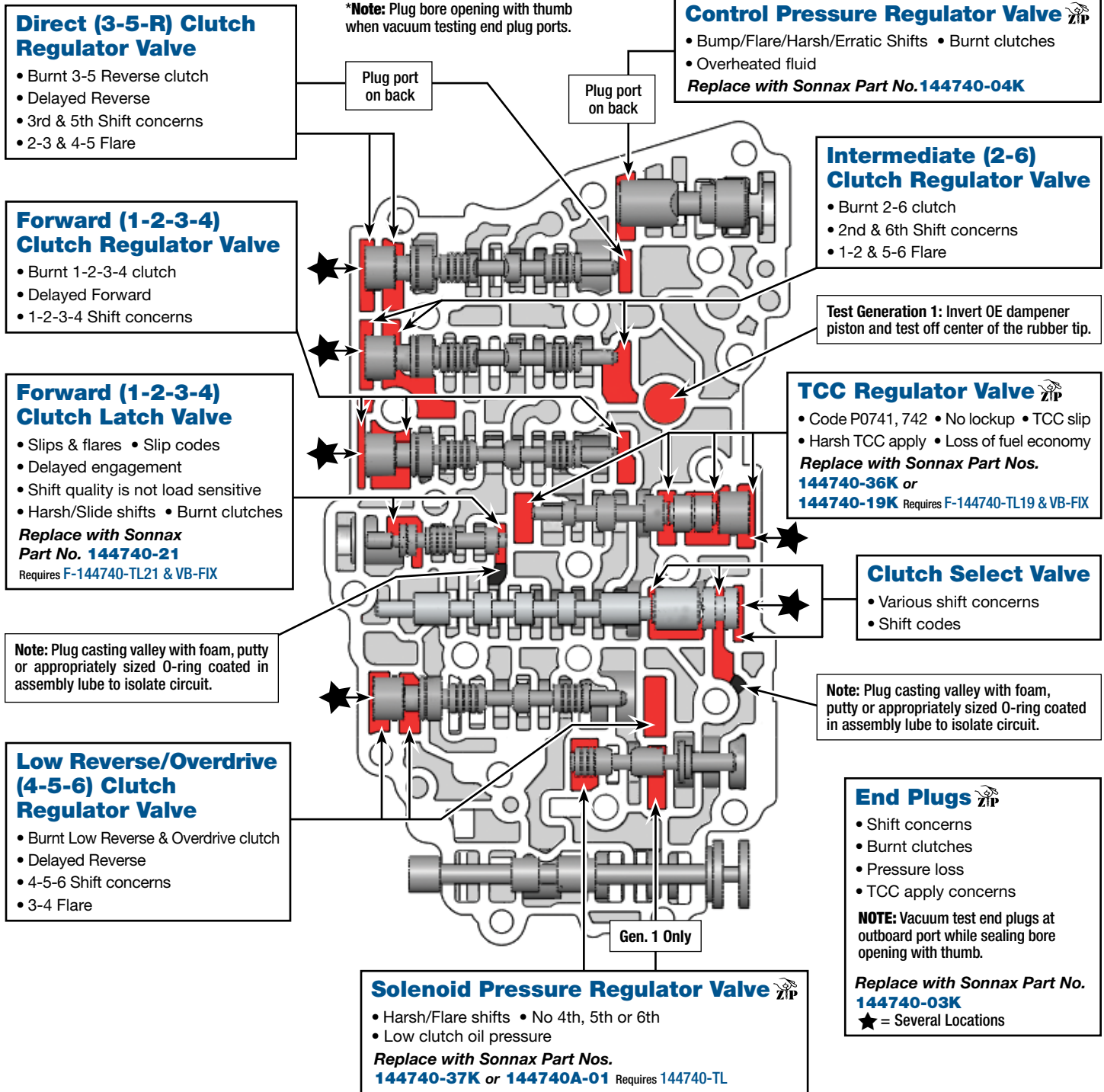
NOTE: OE valves are shown in rest position and should be tested in rest position unless otherwise indicated. Test locations are pointed to with an arrow. Springs are not shown for visual clarity. Low vacuum reading indicates wear and Sonnax parts are noted for replacement.

Main Control Valve Body – Front
6F35, Gen. 1



For specific vacuum test information, refer to individual part instructions included in kits and available at www.sonnax.com.

Click on Sonnax part numbers to see more information.



Solenoid Valve Body • 6F35, Gen. 1

Low Reverse/Overdrive (4-5-6) Clutch Latch Valve

- Slips & flares • Delayed engagement
- Shift quality is not load sensitive • Slip codes
- Harsh/Slide shifts • Burnt clutches

Replace with Sonnax Part No.

144740-21 Requires F-144740-TL21 & VB-FIX

Intermediate (2-6) Clutch Latch Valve

- Slips & flares • Delayed engagement
- Shift quality is not load sensitive • Slip codes
- Harsh/Slide shifts • Burnt clutches

Replace with Sonnax Part No.

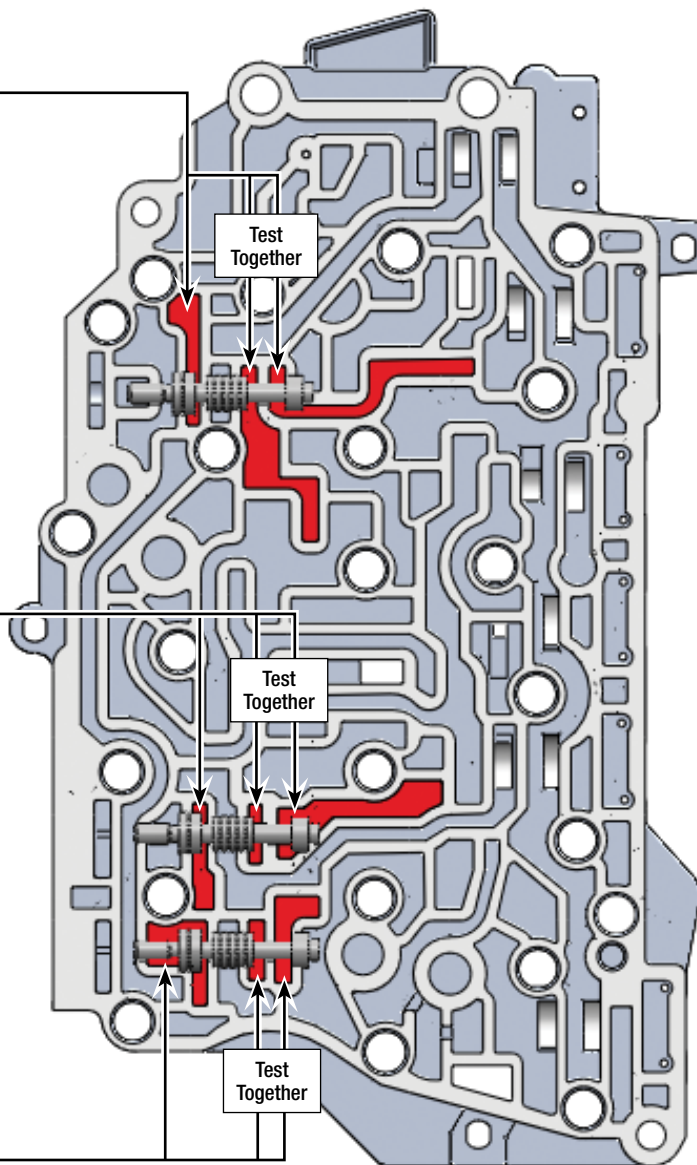
144740-21 Requires F-144740-TL21 & VB-FIX

Direct (3-5-R) Clutch Latch Valve

- Slips & flares • Delayed engagement
- Shift quality is not load sensitive • Slip codes
- Harsh/Slide shifts • Burnt clutches

Replace with Sonnax Part No.

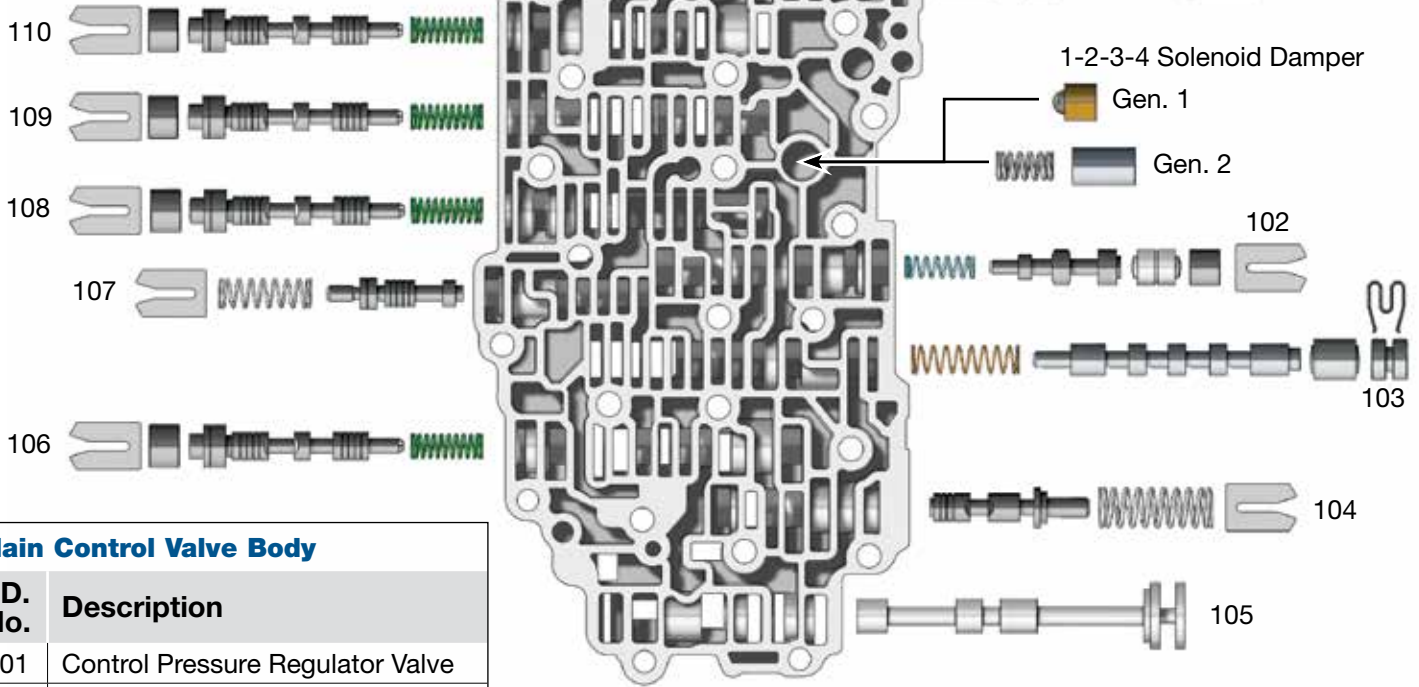
144740-21 Requires F-144740-TL21 & VB-FIX



OE Exploded View

Main Control Valve Body • 6F35, Gen. 1 Shown

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



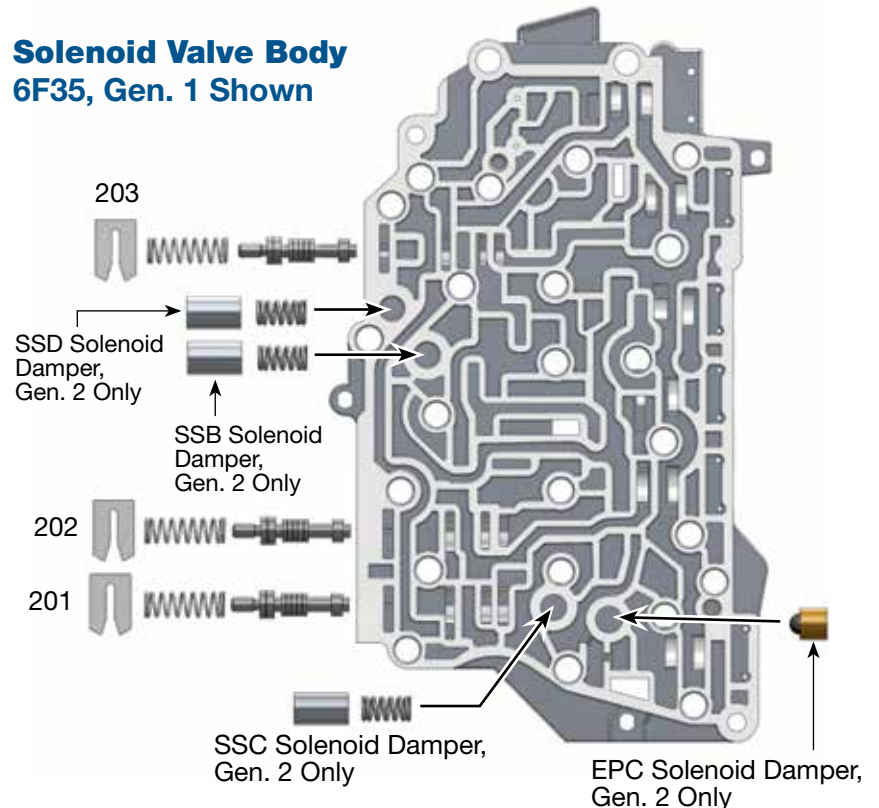
Main Control Valve Body

I.D. No.	Description
101	Control Pressure Regulator Valve
102	TCC Regulator Valve
103	Clutch Bypass Valve
104	Solenoid Pressure Regulator Valve
105	Manual Valve
106	Low Reverse/Overdrive (4-5-6) Clutch Regulator Valve
107	FWD (1-2-3-4) Clutch Latch Valve
108	FWD (1-2-3-4) Clutch Reg. Valve
109	Intermediate (2-6) Clutch Reg. Valve
110	Direct (3-5-R) Clutch Reg. Valve

Solenoid Valve Body

I.D. No.	Description
201	Direct (3-5-R) Clutch Latch Valve
202	Intermediate (2-6) Clutch Latch Valve
203	Low Reverse/Overdrive (4-5-6) Clutch Latch Valve

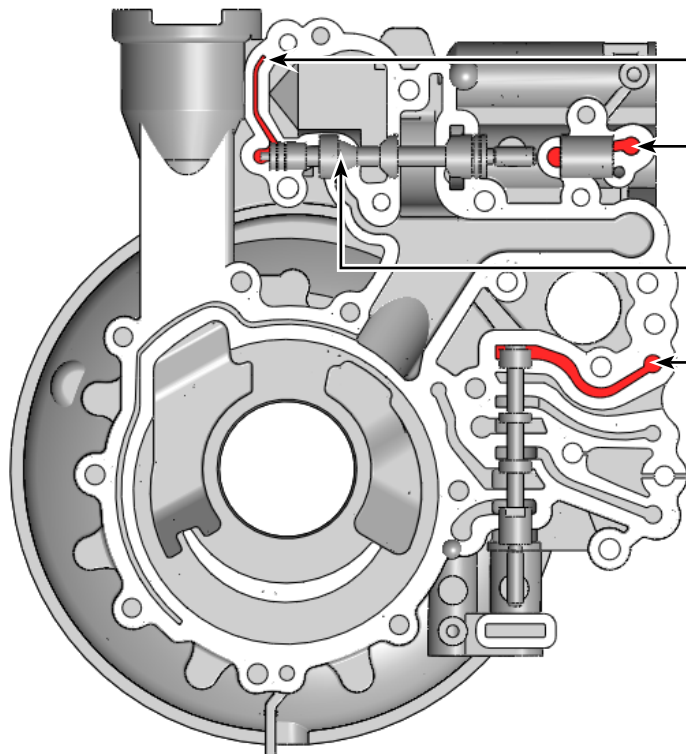
Solenoid Valve Body 6F35, Gen. 1 Shown



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.

Pump Body • 6T40 Gen. 1 Shown



Pressure Regulator Valve

- Harsh/Soft shifts
- High/Low line pressure
- Burnt clutches

Replace with Sonnax Part No.

144510-01K Requires F-144510-TLC & VB-FIX

Plug casting valley with foam, putty or appropriately sized O-ring coated in assembly lube to isolate circuit.

TCC Control Valve

- Incorrect TCC apply/release
- Inadequate lube & cooling
- Transmission overheat
- Converter codes

Replace with Sonnax Part No.

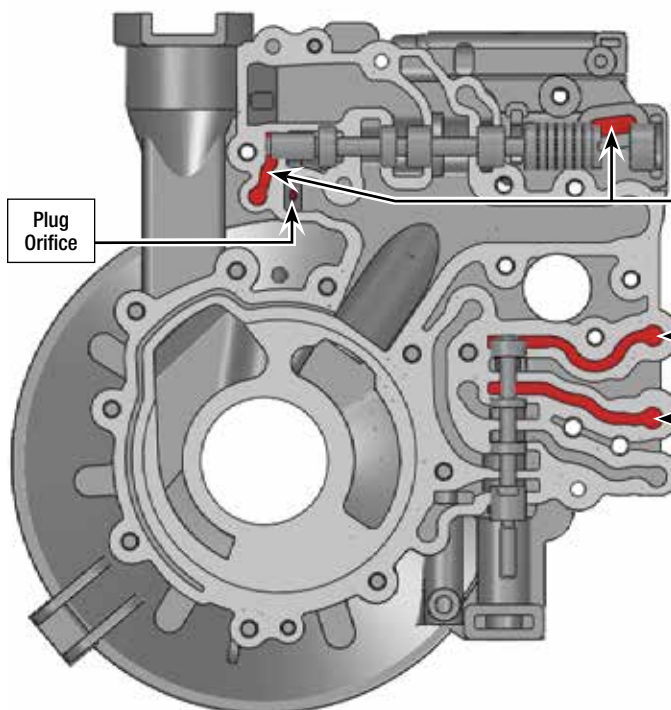
144510-05K Requires F-144510-TL5C & VB-FIX



Sonnax Bonus Tech

NOTE: This vacuum test plate kit **144740-VTP** does not check these pump locations. However, they can, and should be checked with the Sonnax small vacuum plate included in the vacuum test stand kit **VACTEST-01K** (shown on page 3).

Pump Body • 6F35 Gen. 1 Shown



Pressure Regulator Valve

- Poor shift quality
- Erratic line pressure
- TCC apply & release concerns
- Burnt clutches
- Overheating
- Low converter & lube flow

Replace with Sonnax Part No.

144510-03K Requires F-144510-TL3C & VB-FIX

TCC Control Valve

- Excess TCC slip
- TCC codes
- TCC lining failure
- Shudder
- TCC apply & release concerns
- Low cooler flow
- Overheating
- Low converter & lube flow

Replace with Sonnax Part No.

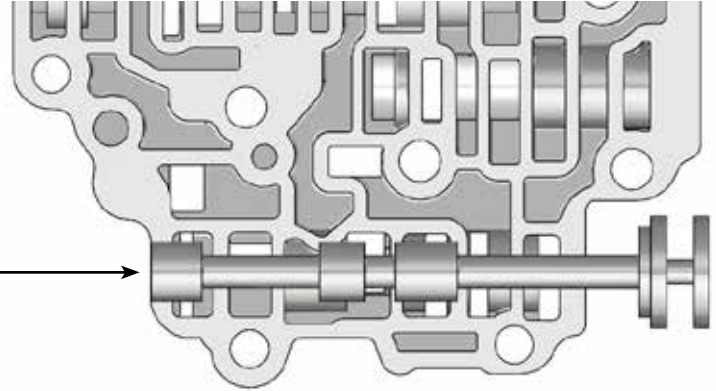
144510-07K Requires F-144510-TL7C & VB-FIX

Special Instructions

Main Control Valve Body • Testing

Manual valve position when testing port 103D SI (page 12).

**End of valve flush
with casting bore**



Sonnax Zip Kits®

The First Step in Correcting Common Shift Problems

Installing gimmicky parts or tinkering with shortcuts that ruin the integrity of the valve body will never truly repair a transmission. Fast, safe and effective shift repairs are EASY with Sonnax Zip Kits.

- No Reaming Required
- Stops Hydraulic Leaks
- In-Depth Tech Booklet

6F35-ZIP & 6T40-ZIP AVAILABLE!

Choose from 18 Zip Kits for domestic and import units
and learn more at www.sonnax.com/zip-kits.

Orifice Legend

 Unit Stock or Tag No.

Orifice Location	Valve / Circuit Checked	Sonnax Part Number	*Special Instructions	Actual Vacuum Reading	Minimum Vacuum Standard
101A	6T40: Compensator Feed 6F35: Control Pressure Regulator	6T40: 104740-09K 6F35: 144740-04K			
101B	6T40: Compensator Feed 6F35: Control Pressure Regulator	6T40: 104740-09K 6F35: 144740-04K			
102A	TCC Regulator Valve	6T40: 144740-16K 6F35: 144740-19K			
102B	TCC Regulator Valve	6T40: 144740-16K 6F35: 144740-19K			
102C	TCC Regulator Valve	6T40: 144740-16K 6F35: 144740-19K			
103A SI*	Clutch Select Valve		6T40 Only		
103B	Clutch Select Valve				
103C	Clutch Select Valve				
103D SI*	Clutch Select Valve		Manual valve set in indicated position (see Page 10).		
103E SI*	Clutch Select Valve		6F35 Only		
104A	6T40: AFL Valve 6F35: Solenoid Pressure Regulator	6T40: 144740-01 6F35: 144740A-01			
104B SI*	AFL Valve	6T40: 144740-01	6T40 Only		
106A	Low/Reverse 4-5-6 Clutch Regulator				
106B	Low/Reverse 4-5-6 Clutch Regulator				
106C SI*	Low/Reverse 4-5-6 Clutch Regulator		6T40 Only		
106D	Low/Reverse 4-5-6 Clutch Regulator				
106E	Low/Reverse 4-5-6 Clutch Regulator				
107A	1-2-3-4 Clutch Boost/Latch	6T40: 144740-22 6F35: 144740-21			
108A	1-2-3-4 Clutch Regulator				
108B	1-2-3-4 Clutch Regulator				
108C	1-2-3-4 Clutch Regulator & 1-2-3-4 Clutch Boost/Latch	6T40: 144740-22 6F35: 144740-21			
108D	1-2-3-4 Clutch Regulator				
109A	2-6 Clutch Regulator				
109B	2-6 Clutch Regulator				
109C SI*	2-6 Clutch Regulator		6T40 Only		
109D	2-6 Clutch Regulator				
110A	3-5-Reverse Clutch Regulator				
110B	3-5-Reverse Clutch Regulator				
110C	3-5-Reverse Clutch Regulator				
110D	3-5-Reverse Clutch Regulator				
SD 1 SI*	1-2-3-4 Solenoid Damper	6F35: 95740-15K	6F35 Only		

*SI = Special Instructions