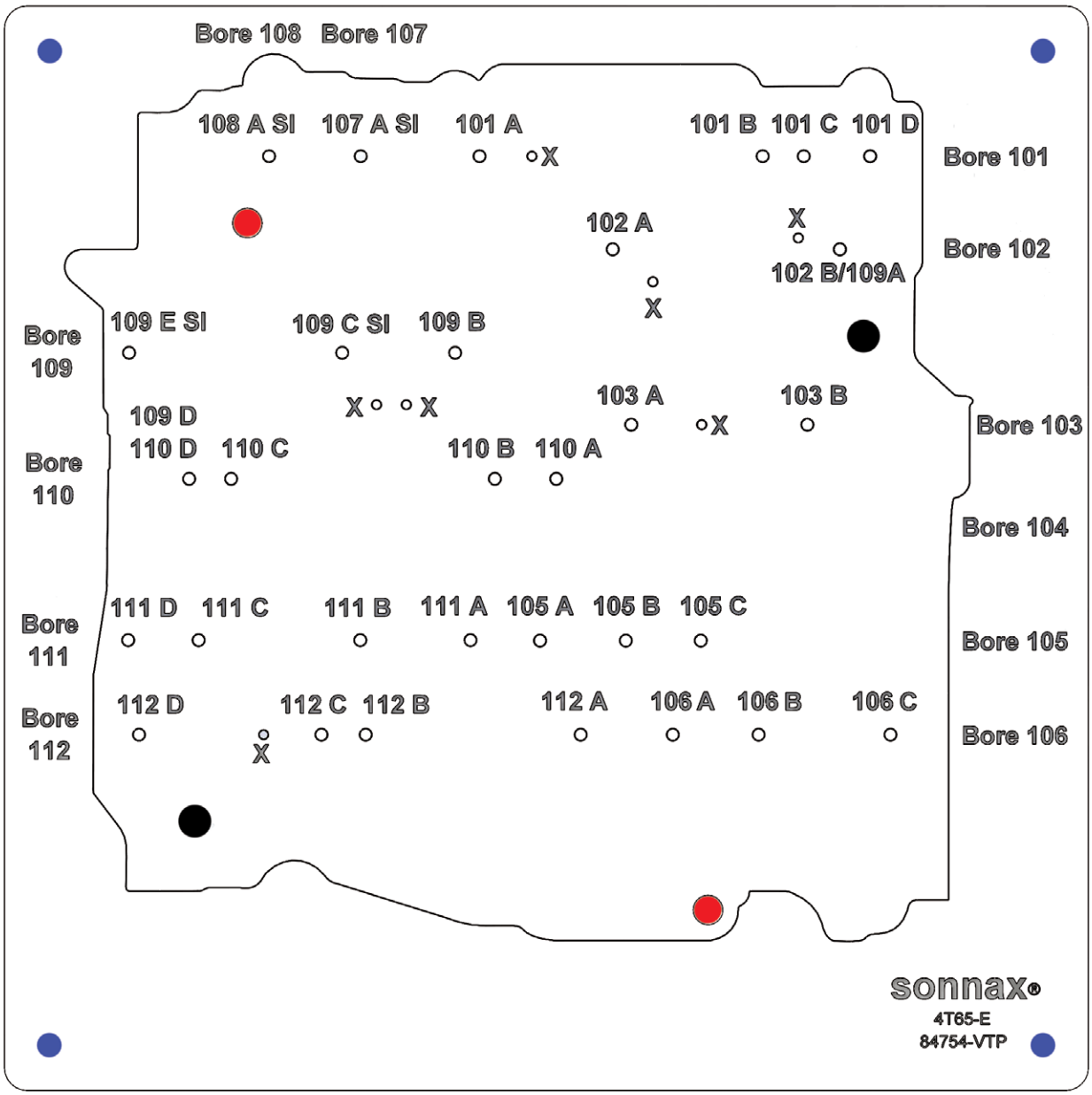
GM 4T65-E
Vacuum Test Plate Kit

PART NUMBER 84754-VTP **INSTRUCTIONS**

Alignment Hole Key

Red ● = Alignment Pins
Blue ● = Push Pin Locations
Black ● = Optional Bolt Locations



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Vacuum Test Plate Kit

Part No. 84754-VTP

TOOL REQUIRED

- Plate
- Seal
- Push Pins (5) 1 Extra
- Alignment Pins (2)
- Bolts (2)
- Washers (2)
- Wing Nuts (2)

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

a. Ensure vacuum test plate and seal are both clean and free of debris.

b. Install two alignment pins into plate at indicated threaded holes. Thread into non-engraved side of plate (**Figure 1**).

c. 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.

d. Push plastic push pins into seal and plate from seal side, just far enough for head to lightly contact seal.

NOTE: Sonnax recommends starting with only four corner locations. If seal sags away from plate, other push pin locations should also be used.

2. Testing

a. Place assembled vacuum test plate over casting, using engraved casting outline as guide. Alignment pins should enter casting bolt holes.

b. Using Sonnax vacuum test stand kit **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 5. 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.

c. Light finger-tip pressure may need to be applied on plate during testing. Included bolts, washers and wing nuts can be used at indicated bolt locations for firmer seal, but are not required. If used, place bolts through casting, seal and plate from the back of casting. Tighten wing-nut against plate, finger-tight only.

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. These documents can be printed or downloaded and stored on your computer.

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Figure 1

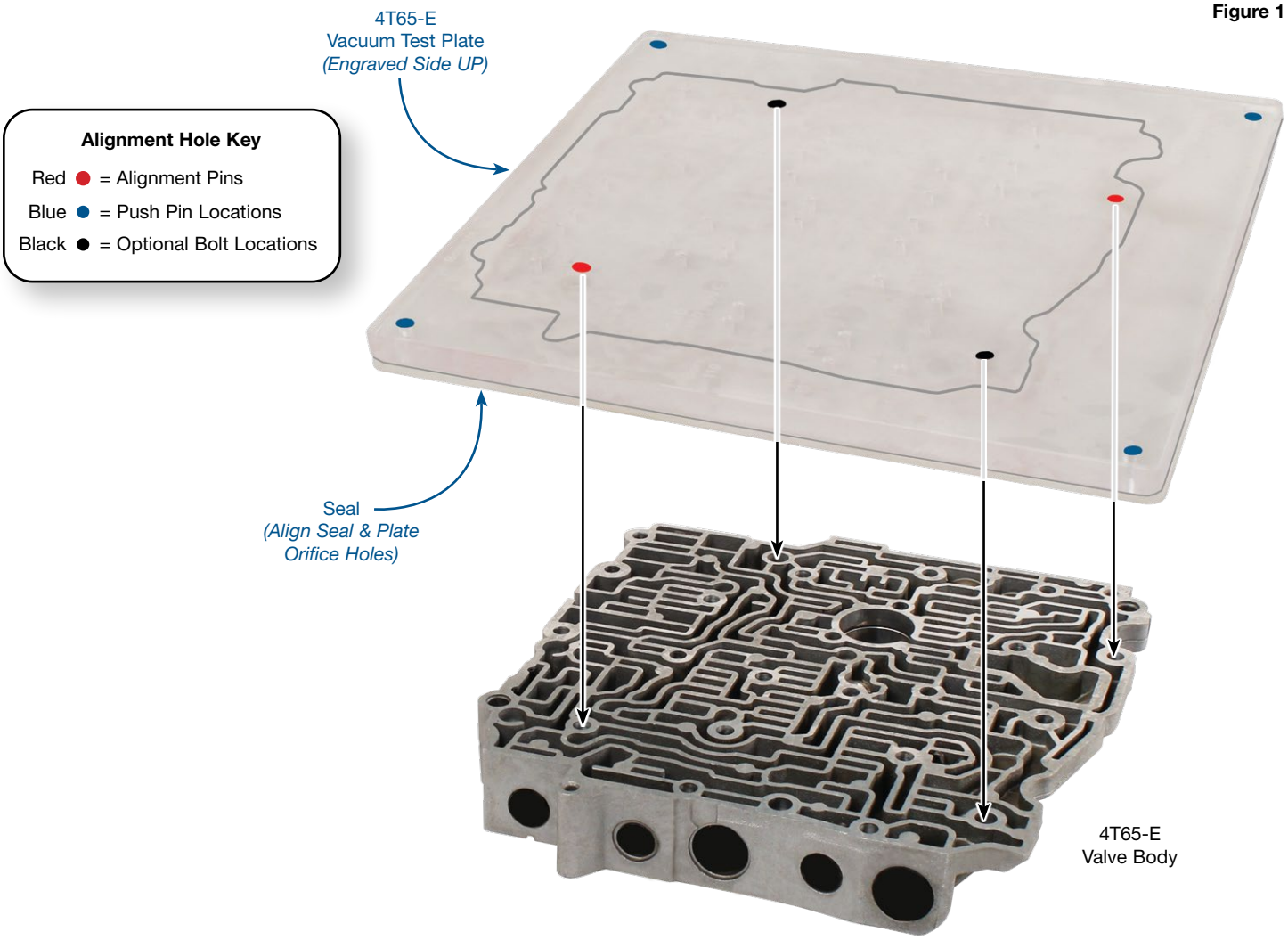
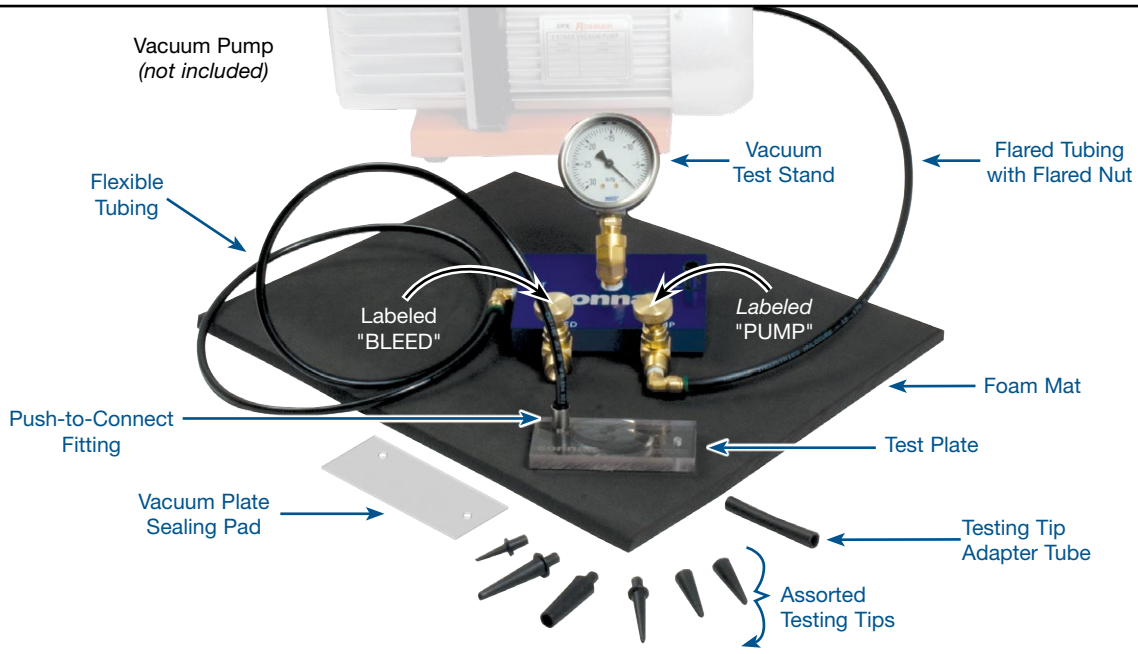


Figure 2



Critical Wear Areas & Vacuum Test Locations

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.

All indicated locations checked using the **84754-VTP** vacuum test plate kit.

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

Valve Body

1-2 Shift Valve
- 1-2 Quality poor • Flare shifts
- Soft shifts & poor line rise

Replace with Sonnax Part No.
84754-57K Requires F-84754-TL57

Torque Signal Regulator Valve
- Erratic line pressure • Low line pressure
- Code 1811 • Code P0741, P0742
- Shudder condition • Slipping gears

Replace with Sonnax Part No.
84754-44 '97-Later Only Requires 84754-TL44

TCC Apply Valve
- No lockup • Code P0741
- Falls out of lockup when hot
- Converter shudder • High TCC slip RPM

Replace with Sonnax Part No.
84754-43K

Boost Valve Assembly
- Erratic line pressure
- Soft upshifts (especially 1-2)
- Low line rise in Forward
- Low line rise in Reverse

Replace with Sonnax Part No.
84754-30K

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

TCC Regulator Apply Valve
- TCC slip
- Code P0741
- Cycling TCC RPM

Replace with Sonnax Part No.
84754-34K
Requires 84754-TL3

Pressure Regulator Valve
- Erratic line pressure • Overheating
- Burnt clutches • Poor shift quality
- TCC apply & release concerns
- Low convert & lube flow

Replace with Sonnax Part No.
84754-46K Requires 84754-TL46

3-4 Accumulator Valve
- 3-4 Concerns
- Soft shifts
- Poor line rise

Replace with Sonnax Part Nos.
84754-55K GM Only
84754-58K Volvo Only
Both Parts Require F-84754-TL55 & VB-FIX

Forward Servo Boost Valve ('99-Earlier)
- 1-2 Flare • 1-2 Band burned
- Delayed engagement
- Low Reverse pressure

Replace with Sonnax Part No.
84754-40K Requires 84754-TL2

2-3 Accumulator Valve Assembly
- 2-3 Shift concerns
- Burnt clutches

Replace with Sonnax Part No.
84754-53K GM Only

Reverse Servo Boost Valve ('99-Earlier)
- 1-2 Flare • 1-2 Band burned
- Delayed engagement
- Low Reverse pressure

Replace with Sonnax Part No.
84754-40K Requires 84754-TL2

Test these together.

Plug orifices on back when checking these locations.

1-2 Accumulator Valve
- 1-2 Quality poor
- Flare shifts
- Soft shifts & poor line rise

Replace with Sonnax Part No.
84754-57K
Requires F-84754-TL57

3-4 Shift Valve & 4-3 Manual Downshift Valve
- Erratic shifts • 2-3 Shuttle
- No 3rd, 4th • 2nd Gear starts

2-3 Shift Valve & 3-2 Manual Downshift Valve
- Erratic shifts • 2-3 Shuttle • No 3rd, 4th
- Temperature-sensitive shifts • 2nd Gear starts

Replace with Sonnax Part Nos.
These parts do not fit Geartronic® or Tapshift® units.
84754-36K 2-3 Shift Valve
84754-37K 3-2 Manual Downshift Valve

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NOTE: These locations on the channel plate casting are NOT checked using the **84754-VTP** vacuum test plate kit. Check these using the small test plate and sealing pad included with the **VACTEST-01K**.

Channel Plate Casting

Only a portion of the channel plate casting shown here.

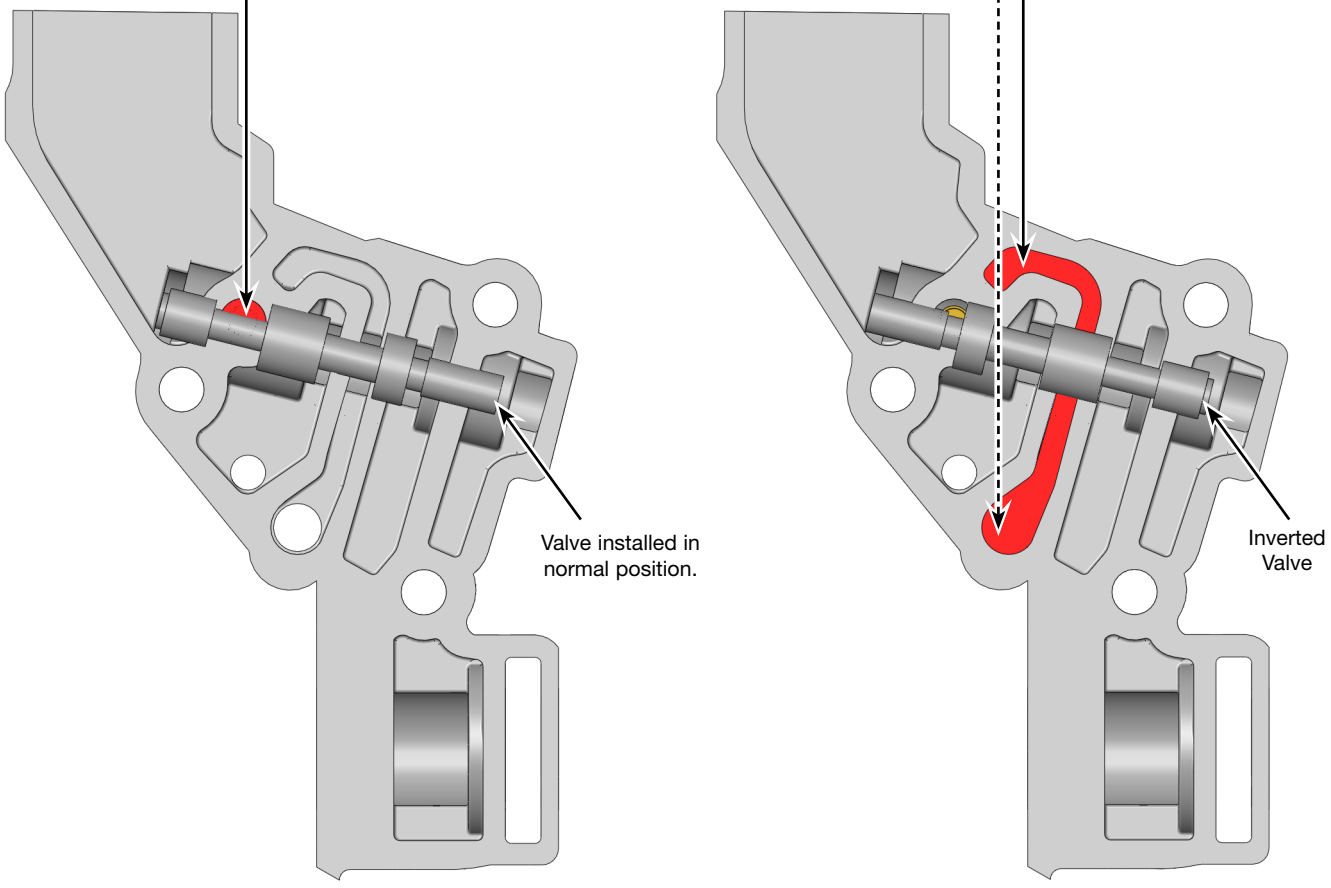
Actuator Feed Limit Valve

- Erratic line pressure
- Maximum adapt
- Code 1811
- 2nd Gear starts
- Poor EPC control
- Long Shifts
- TCC piston failure

Replace with Sonnax Part No.
84596-02K
Requires F-84596-TL & VB-FIX

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

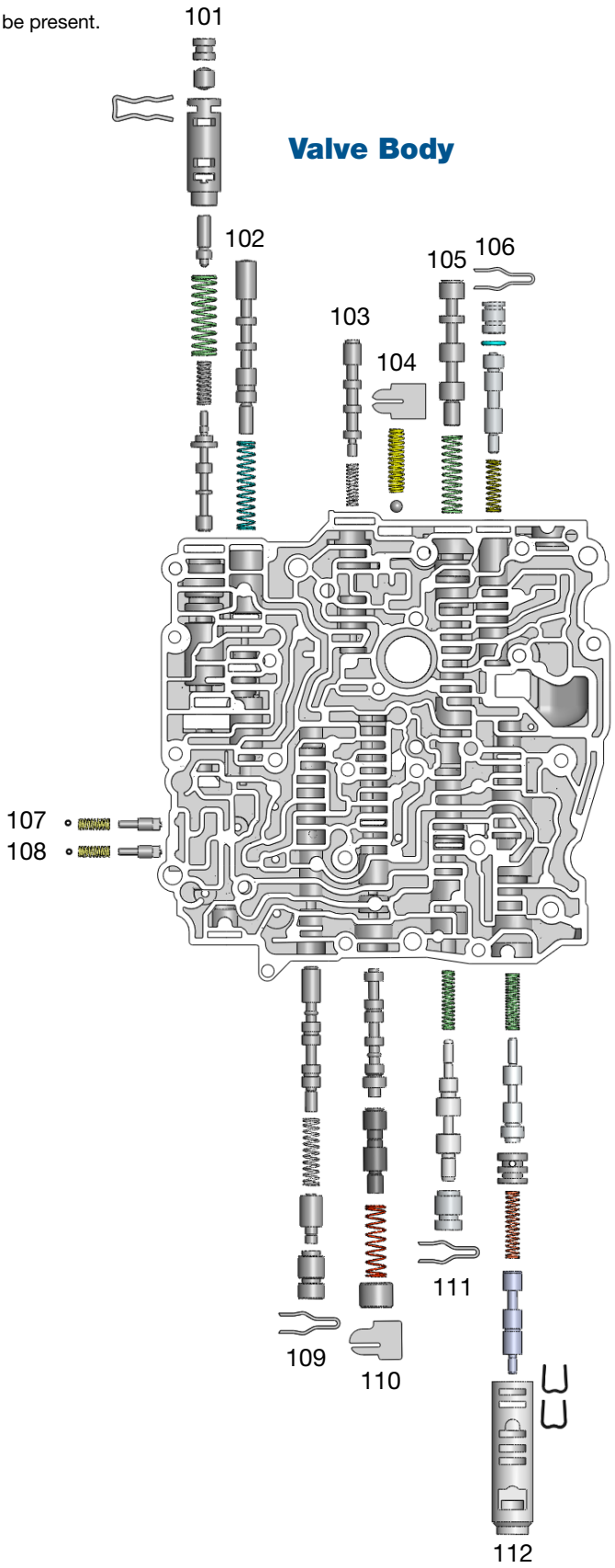
Must seal orifice on back when testing here.



OE Exploded View

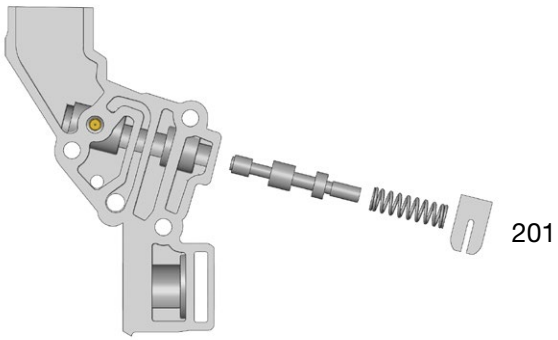
NOTE: Depending upon vehicle application, the OE springs shown may not be present. Solenoids not shown.

Valve Body Descriptions	
I.D. No.	**Description**
101	Pressure Regulator Valve (inboard) Boost Valve Assembly (outboard)
102	1-2 Shift Valve
103	Torque Signal Regulator Valve
104	Line Pressure Relief Valve
105	TCC Apply Valve
106	TCC Regulator Apply Valve
107	Forward Servo Boost Valve (‘99-Earlier)
108	Reverse Servo Boost Valve (‘99-Earlier)
109	3-4 Shift Valve (inboard) 4-3 Manual Downshift Valve (outboard)
110	2-3 Shift Valve (inboard) 3-2 Manual Downshift Valve (outboard)
111	1-2 Accumulator Valve
112	3-4 Accumulator Valve (inboard) 2-3 Accumulator Valve Assembly (outboard)
201	Actuator Feed Limit Valve



Channel Plate Casting

Only a portion of the channel plate casting shown here.



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Application:

Vacuum Test Data Sheet

Bore Locations	Vacuum Readings, in-HG										Calculated Average Vacuum	Minimum Vacuum Standard
	Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8	Core 9	Core 10		

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The Sonnax vacuum test data sheet is a document that can be printed or downloaded and stored on your computer. This test data sheet helps to track vacuum readings in critical wear areas from up to 10 cores of the same type. Comparing results from 10 cores aids in wear pattern identification.

Recording results allows an average vacuum reading for each bore to be calculated. Your minimum vacuum standard for each bore can be established from this data. These standards should reflect your warranty requirements and customer needs.

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Orifice Legend

Unit Stock or Tag No. _____

Orifice Location	Valve/Circuit Checked	Sonnax Part Number	Special Instructions	Actual Vacuum Reading	Minimum Vacuum Standard
101A	Pressure Regulator Valve Balance End	**84754-46K**			
101B	Pressure Regulator Boost Valve Reverse Circuit	**84754-30K**			
101C	Pressure Regulator Boost Valve	**84754-30K**			
101D	Pressure Regulator Boost Valve Torque Signal Circuit	**84754-30K**			
102A	1-2 Shift Valve				
102B/109A	1-2 Shift Valve Outboard & 3-4 Shift Valve Inboard				
103A	Torque Signal Regulator Valve	**84754-44**			
103B	Torque Signal Regulator Valve	**84754-44**			
105A	TCC Apply Valve Balance End	**84754-43K**			
105B	TCC Apply Valve Balance End Second Spool	**84754-43K**			
105C	TCC Apply Valve Balance End Third Spool	**84754-43K**			
106A	TCC Regulated Apply Valve Spring End	**84754-34K**			
106B	TCC Regulated Apply Valve Inboard Spool	**84754-34K**			
106C	TCC Regulated Apply Valve Outboard Spool & Bore Plug O-Ring	**84754-34K**			
107A SI	Forward Servo Boost Valve	**84754-40K**	Fits Only '99–Earlier Models		
108A SI	Reverse Servo Boost Valve	**84754-40K**	Fits Only '99–Earlier Models		
109B	3-4 Shift Valve Between Second & Third Spool				
109C SI	3-4 Shift Valve Spring Side		Plug orifice on back when checking this location		
109D/110D	4-3 Manual Downshift Valve Inboard Spool & 3-2 Man Downshift Outboard Spool	**84754-39K** **84754-37K**			
109E SI	4-3 Manual Downshift Valve Bore Plug		Plug orifice on back when checking this location		
110A	2-3 Shift Valve Inboard Spool	**84754-36K**			
110B	2-3 Shift Valve Between Second & Third Spool	**84754-36K**			
110C	3-2 Manual Downshift Valve Between Inboard & Outboard Spools	**84754-37K**			
111A	1-2 Accumulator Valve Spring End	**84754-57K**			
111B	1-2 Accumulator Valve Inboard Spool	**84754-57K**			
111C	1-2 Accumulator Valve Outboard Spool	**84754-57K**			
111D	1-2 Accumulator Valve Bore Plug	**84754-57K**			
112A	3-4 Accumulator Valve Spring End	**84754-55K GM** **84754-58K Volvo**			
112B	3-4 Accumulator Valve Outboard Spool	**84754-55K GM** **84754-58K Volvo**			
112C	2-3 Accumulator Valve Inboard Spool	**84754-53K GM** **84754-65 Volvo**			
112D	2-3 Accumulator Valve Outboard Spool	**84754-53K GM** **84754-65 Volvo**			

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