ATRA WEBINAR

Toyota A750 E/F
A760 E/F
A761
Introduction

Sponsored By:

Presented by:
Steve Garrett
ATRA

Today's Presentation Sponsored By:

Lwiggins@ATRA.com

- Connections
- Handout
- Questions
- Survey

Toyota A750 E/F Common Applications
E=2wd F=4wd 5AT/A750

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2003 – 2009	4Runner	Transmission(s): 5AT
2007 – 2009	FJ Cruiser	Transmission(s): 5AT
2003 – 2007	Land Cruiser	Transmission(s): 5AT
2005 – 2008	Sequoia	Engine(s): 2UZ Transmission(s): 5AT VDS(s): BT44A, BT48A, BT64A, BT68A, ZT34A, ZT38A, ZT64A, ZT68A
2005 – 2009	Tacoma	Engine(s): 1GR Transmission(s): 5AT VDS(s): JU62N, KU72N, LU42N, MU52N, TU62N, UU42N
2005 – 2009	Tundra	Engine(s): 2UZ Transmission(s): 5AT VDS(s): BT441, BT481, BT541, BT581, CT541, DT441, DT481, DT541, DT581, ET341, ET381, ET541, ET581, JT321, JT521, KT421, KT521, LT521, MT521, RT341, RT381, RT541, RT581, ST541

A750E/F

Introduction

A750E/F Applications Toyota	
Year	Model
2003 – 2008	4-Runner
2007 – 2008	FJ Cruiser
2005 – 2008	Sequoia
2005 – 2008	Tundra
2003 – 2007	Land Cruiser
2005 – 2009	Tacoma
Lexus	
2003 – 2007	LX 470
2003 – 2008	GX 470

A750E(2WD)/A750F(4WD) Gear Ratios	
1st	3.52
2nd	2.042
3rd	1.4
4th	1
5th	0.716
Reverse	3.224

A750E/F

Application Chart

A750E/F Solenoid, Clutch, Brake and One-Way Clutch Application Chart																		
Shift lever position	Gear	Solenoid Valve						Clutch			Brake				One-Way Clutch		
		S1	S2	SR	SL1	SL2	SLU (TCC)	C1	C2	C3	B1	B2	B3	B4	F1	F2	F3
P	Park	ON				ON											
R	Reverse *	ON				ON				X	X			X	X		
N	Neutral	ON				ON											
D	1st	ON				ON		X									X
	2nd	ON	ON			ON		X					X		X	X	
	3rd		ON			ON		X		X			*X*		X		
	4th					ON	ON	X	X	*X*			*X*				
	5th			ON	ON		ON		X	X	X		*X*				
4	1st	ON				ON		X									X
	2nd	ON	ON			ON		X					X		X	X	
	3rd		ON			ON		X		X			*X*		X		
	4th					ON	ON	X	X	*X*			*X*				
3	1st	ON				ON		X									X
	2nd	ON	ON			ON		X					X		X	X	
	3rd *		ON					X		X	X		*X*				
2	1st	ON				ON		X									X
	2nd *	ON	ON	ON				X				X	X				
SHIFT-L Switch "ON"	1st*	ON						X						X			

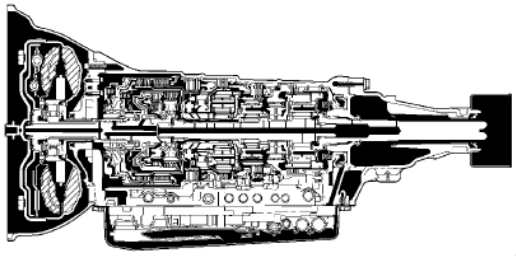
X: Applied
X: Applied but is not transmitting power transmission
*: Engine Braking

A760 E/F

Transmission Power Flow

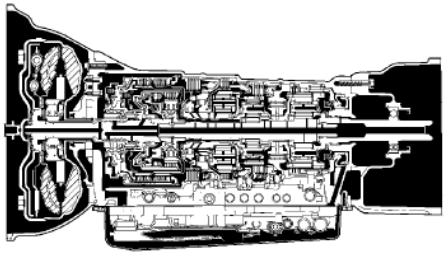
Shift Position or Shift Range		Shift Solenoid Valve								Clutch				Brake				1-way Clutch			
		S1	S2	S3	S4	SR	SL1	SL2	SLU	C_1	C_2	C_3	C_4	B_1	B_2	B_3	B_4	F_1	F_2	F_3	F_4
P			On	On		On		On													
R*			On	On		On		On				○		Δ			○	○			
N			On	On		On		On													
D, S6	1st		On	On		On		On		○										○	○
	2nd	On	On	On		On		On	On	○						○		○	○		○
	3rd	On		On		On		On	On	○		○				●		○			○
	4th*	On				On		On	On	○	○	●	Δ			●					○
	5th*	On			On		On		On	●	○	○		○		●					
	6th*	On	On		On		On		On	●	○			●	○	●					
S5	1st		On	On		On		On		○										○	○
	2nd	On	On	On		On		On	On	○						○		○	○		○
	3rd	On		On		On		On	On	○		○				●		○			○
	4th*	On				On		On	On	○	○	●	Δ			●					○
	5th*	On			On		On		On	●	○	○		○		●					
S4	1st		On	On		On		On		○										○	○
	2nd	On	On	On		On		On	On	○						○		○	○		○
	3rd	On		On		On		On	On	○		○				●		○			○
	4th*	On				On		On	On	○	○	●	Δ			●					○
S3	1st		On	On		On		On		○										○	○
	2nd	On	On	On		On		On	On	○						○		○	○		○
	3rd*	On		On		On			On	○		○	Δ	Δ		●		○			○
S2	1st		On	On		On		On		○										○	○
	2nd*	On	On	On	On	On			On	○			Δ		Δ	○		○	○		○
S1	1st*		On	On		On				○			Δ				Δ			○	○

○: Operates
●: Operates but is not related to power transmission
Δ: Operates during engine braking
*: Engine braking occurs



12DCH001Y

A760E Automatic Transmission

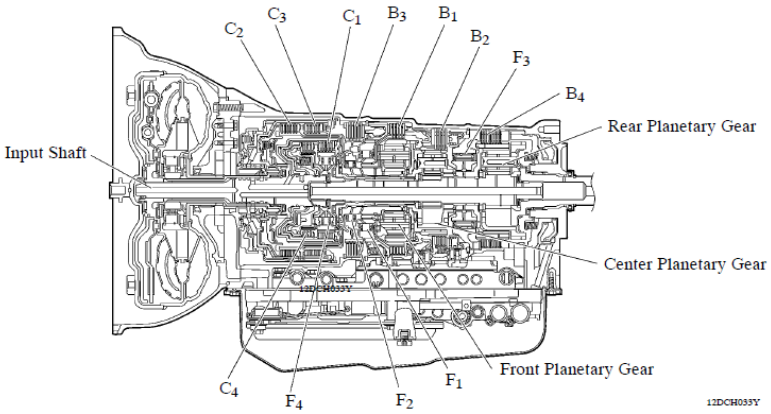


A760F Automatic Transmission 12DCH002Y

▶ Specifications ◀

Transmission Type		A760E	A760F
Engine Type		1UR-FE	←
Gear Ratio	1st	3.520	←
	2nd	2.042	←
	3rd	1.400	←
	4th	1.000	←
	5th	0.716	←
	6th	0.586	←
	Reverse	3.224	←
Fluid Type		Toyota Genuine ATF WS	←
Fluid Capacity		11.1 Liters (11.6 US qts, 9.7 Imp. qts)	10.8 Liters (11.4 US qts, 9.5 Imp. qts)
Weight (Reference)*		88.7 kg (195.1 lb)	90.5 kg (199.1 lb)

*: Weight shows the figure with the fluid fully filled.

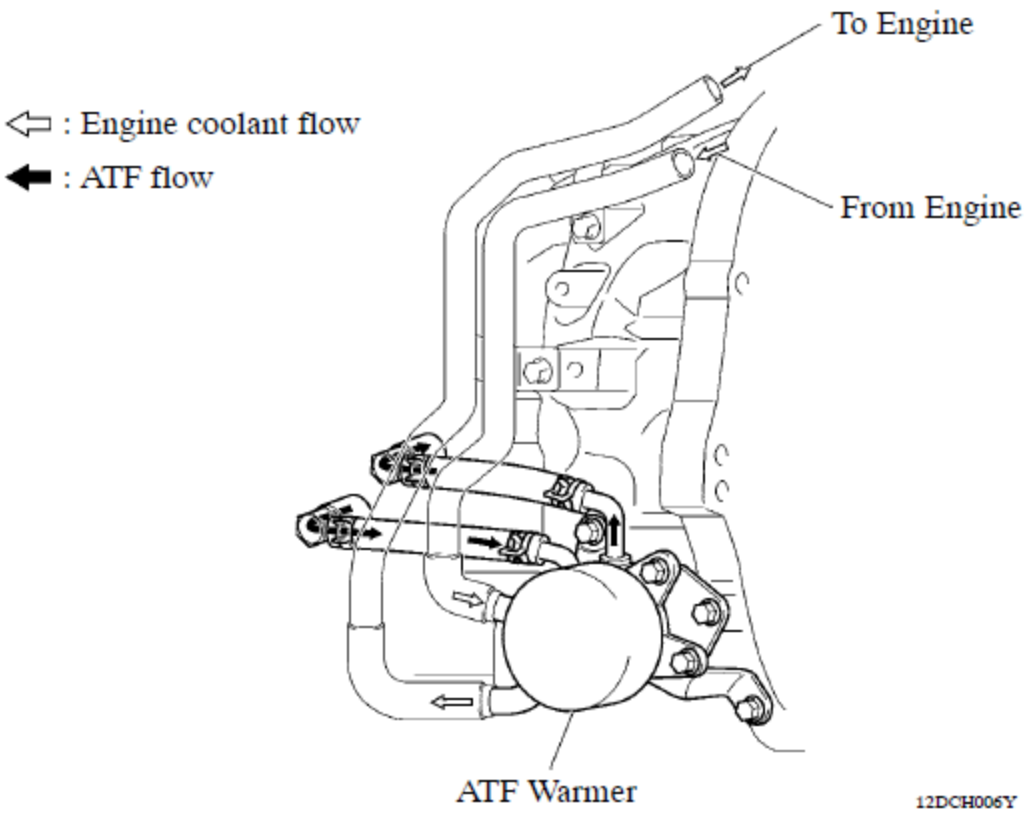


▶ **Specifications** ◀

Item				A760E	A760F
C_1	No. 1 Clutch	No. of Discs		5	←
C_2	No. 2 Clutch			6	←
C_3	No. 3 Clutch			5	←
C_4	No. 4 Clutch			3	←
B_1	No. 1 Brake			4	←
B_2	No. 2 Brake			4	←
B_3	No. 3 Brake			4	←
B_4	No. 4 Brake			8	←
F_1	No. 1 1-way Clutch	No. of Sprags		18	←
F_2	No. 2 1-way Clutch			25	←
F_3	No. 3 1-way Clutch			26	←
F_4	No. 4 1-way Clutch			27	←
Front Planetary Gear		No. of Sun Gear Teeth		40	←
		No. of Pinion Gear Teeth	Inner	22	←
			Outer	21	←
		No. of Ring Gear Teeth		91	←
Center Planetary Gear		No. of Sun Gear Teeth		31	←
		No. of Pinion Gear Teeth		23	←
		No. of Ring Gear Teeth		77	←
Rear Planetary Gear		No. of Sun Gear Teeth		25	←
		No. of Pinion Gear Teeth		19	←
		No. of Ring Gear Teeth		63	←

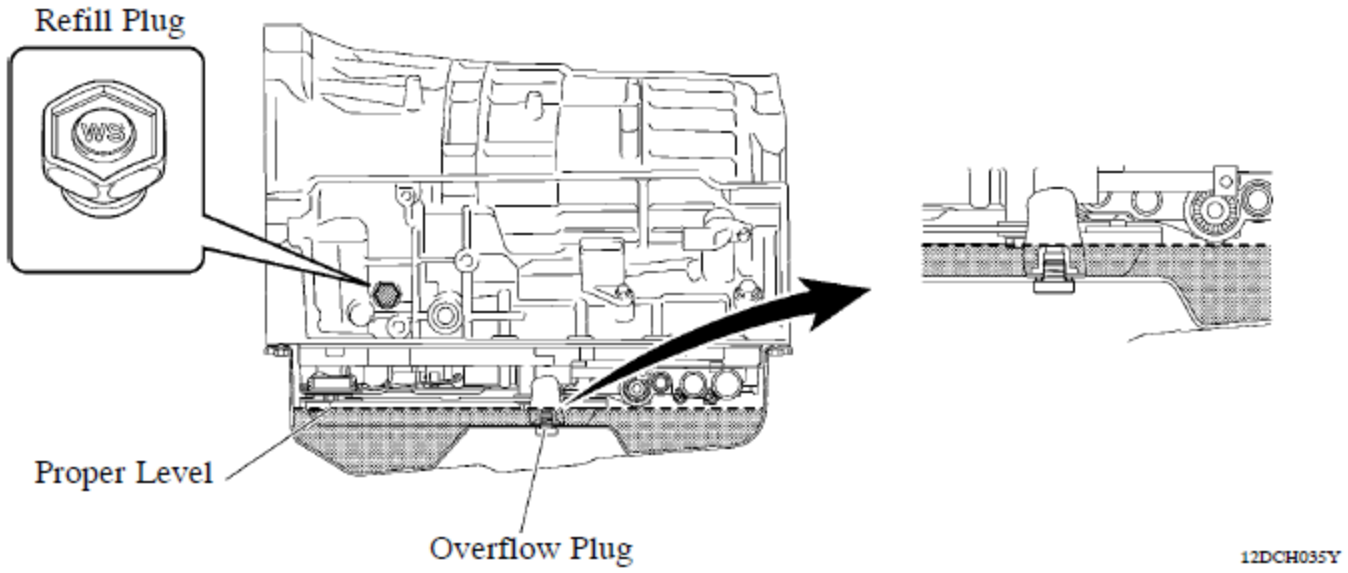
A760

The ATF warmer uses engine coolant to warm up the ATF quickly and keep the ATF temperature higher (within limits). Consequently, the friction losses of the automatic transmission are quickly reduced, thus improving fuel economy.



An ATF filling procedure is used in order to improve the accuracy of the ATF level when the transmission is being repaired or replaced. As a result, the oil filler tube and the oil level gauge used in the conventional automatic transmission have been discontinued, eliminating the need to inspect the fluid level as a part of routine maintenance.

- This filling procedure uses a refill plug, an overflow plug, an ATF temperature sensor No. 2, and a D indicator.

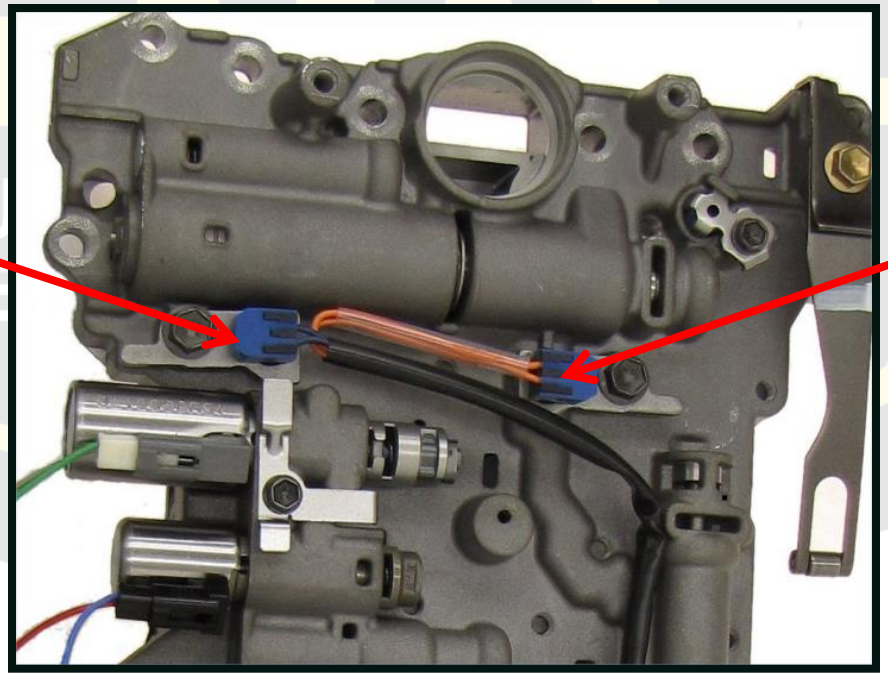


A750E/F
ATF Temperature Sensors

The A750E/F uses two temperature sensors, each with a different function.

- **ATF Temp #1 – Used by the ECM to modify pressure control of the clutches and Brakes (if failed, 5th gear up-shift and Flex lock-up are prohibited)**
- **ATF Temp #2 – Used by the ECM for shift timing control when the ATF temperature is high**

TFT #2 has two BLUE wires



TFT #1 has two ORANGE wires

A750E/F
Line Pressure Specifications

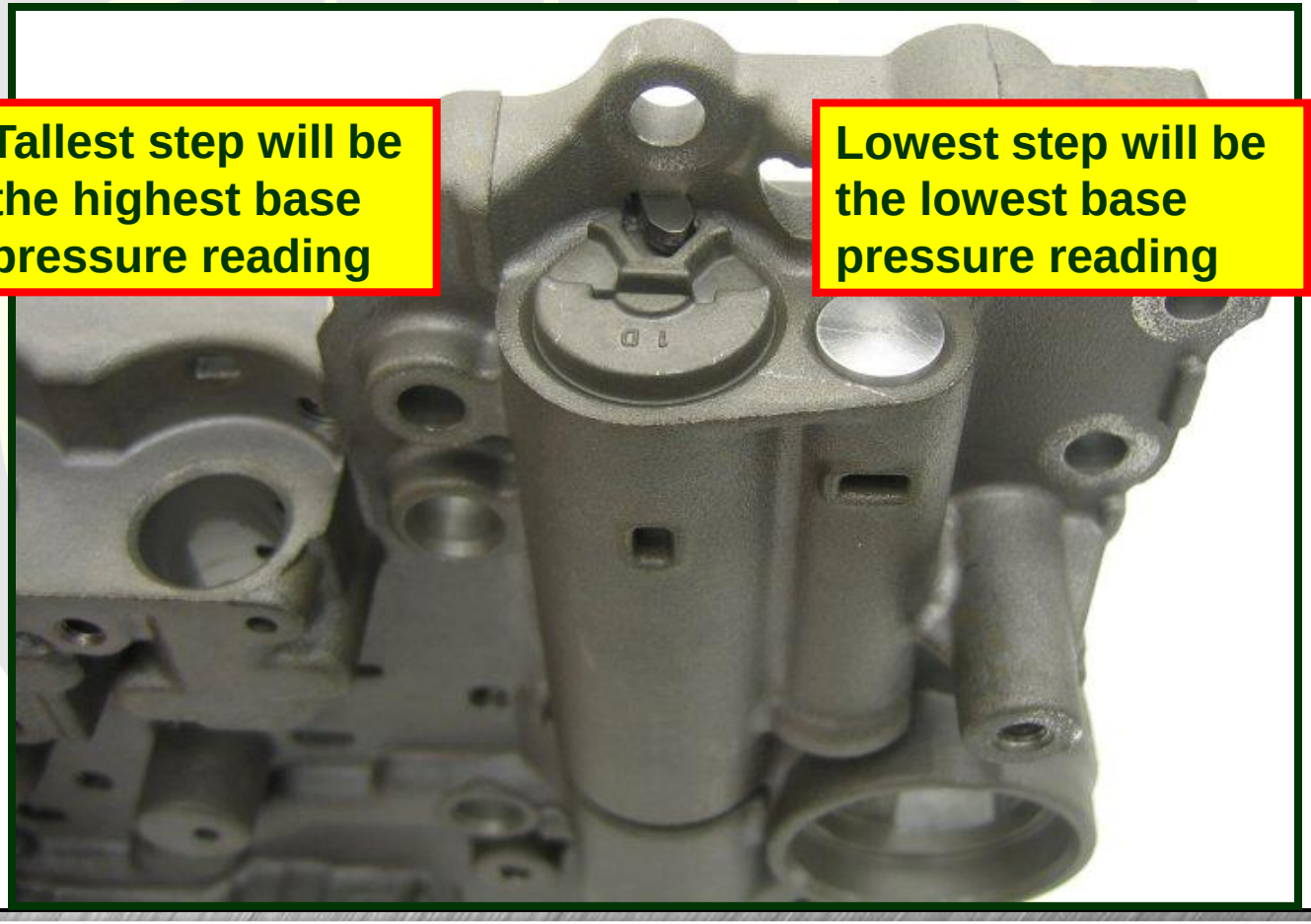
A750E/F Line Pressure Specifications		
Condition	D Position	R Position
Idling	53-59 psi	73-84 psi
Stall	196-212 psi	188-205 psi

A750E/F
Accumulator Control Pressure

Valve is factory set. Make sure when disassembling to mark for re-assembly. The tighter the spring the firmer the shifts. The looser the spring tension the softer the shifts.

A750E/F
Primary Regulator Valve Setting

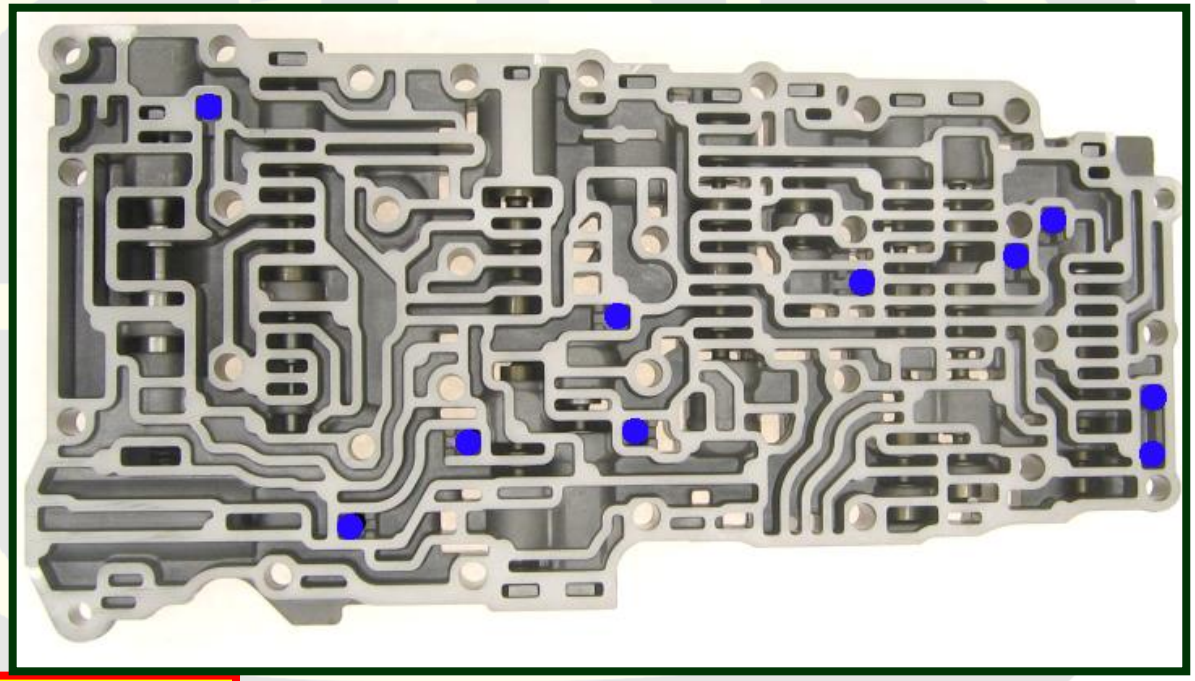
Make sure you record the setting prior to removing the Pressure Regulator boost sleeve.



A750E/F

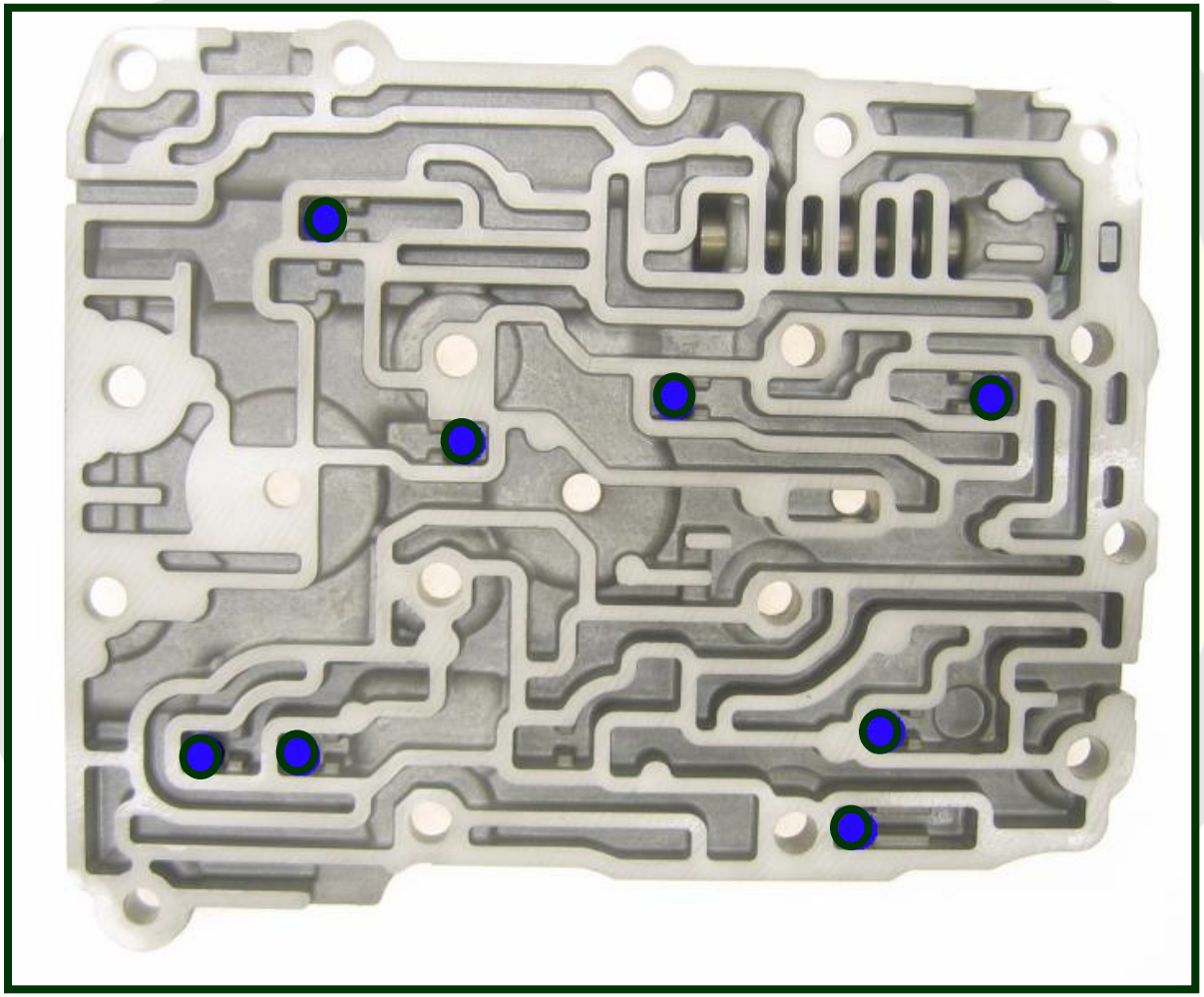
Upper Valve Body #1 Check Balls

There are three sections to the A750E/F valve body. Upper valve bodies #1 and #2 are the only valve bodies with check ball locations.



10 Check Balls are rubber 0.217” (5.5mm) in size

A750E/F
Upper Valve Body #2 Check Balls



8 Check Balls are rubber 0.217” (5.5mm) in size

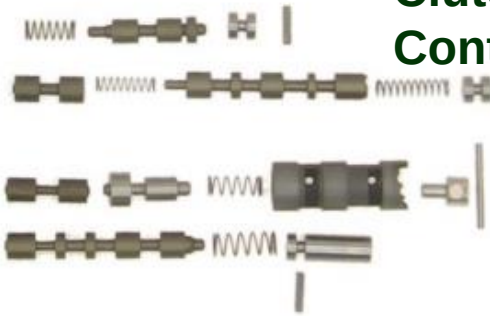
A750E/F
Lower Valve Body #1 Exploded View

SLT Damper

Primary Regulator Valve

Clutch Control Valve

Clutch Apply Control Valve

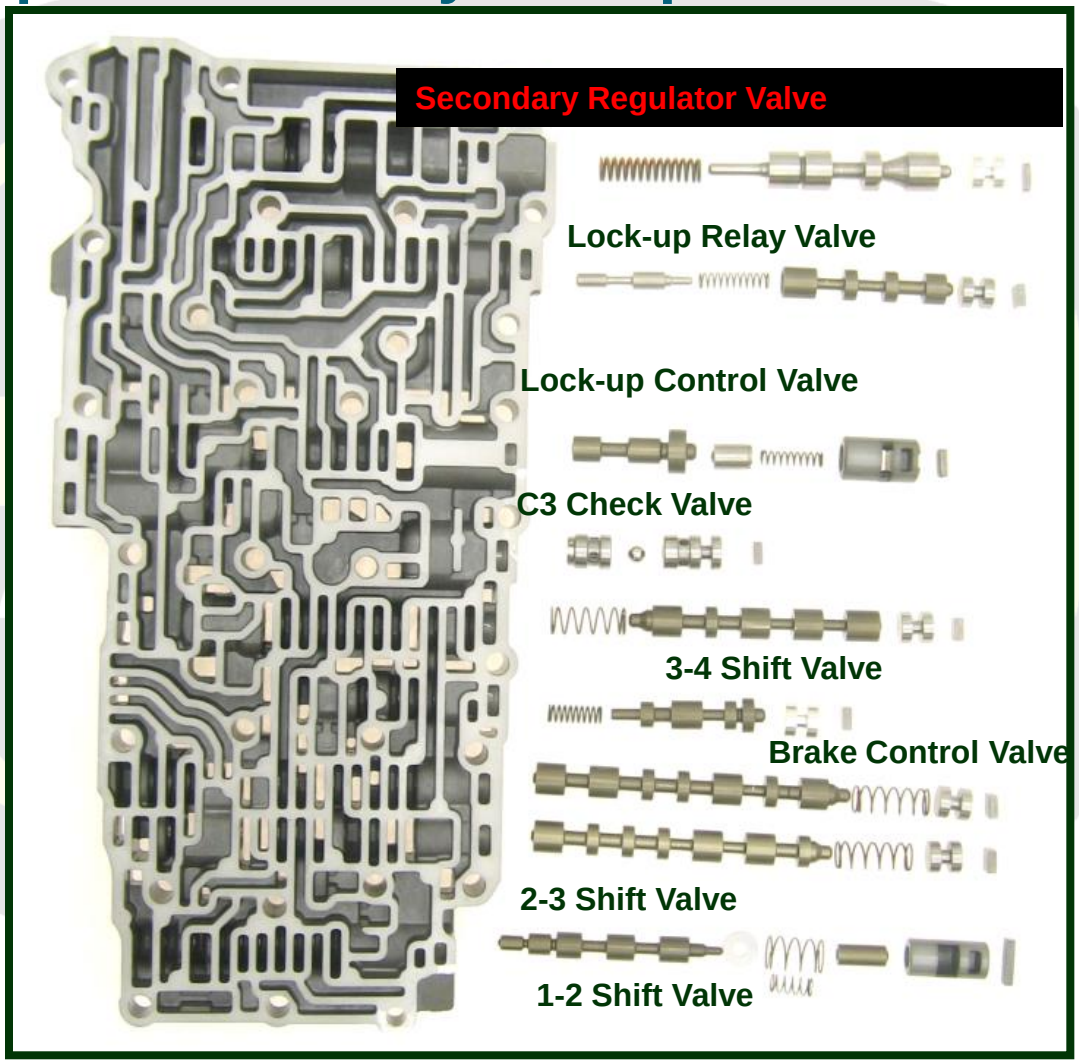


Accumulator Control Valve

Sequence Valve

A750E/F

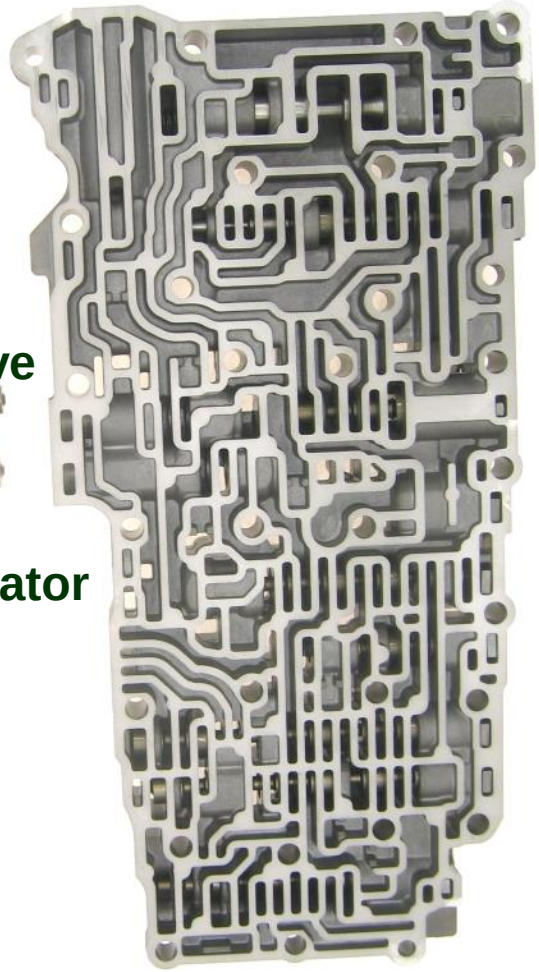
Upper Valve Body #1 Exploded View



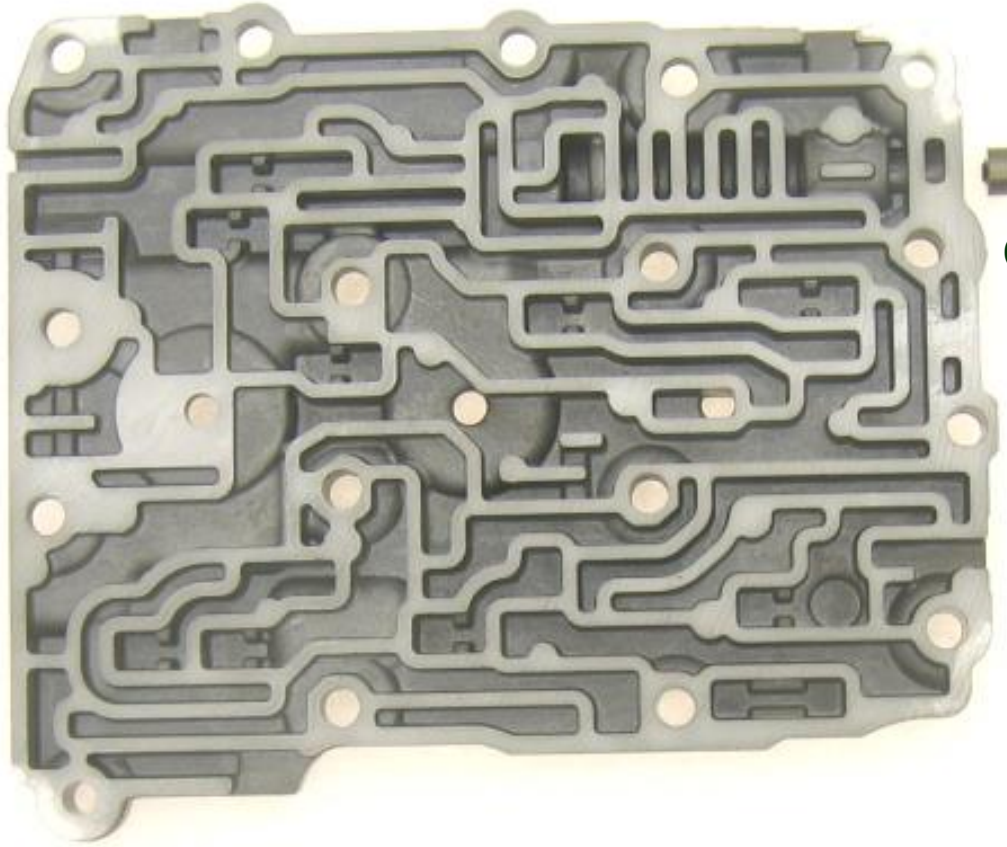
A750E/F
Upper Valve Body #1 Exploded View

Clutch Lock Valve

Solenoid Modulator Valve



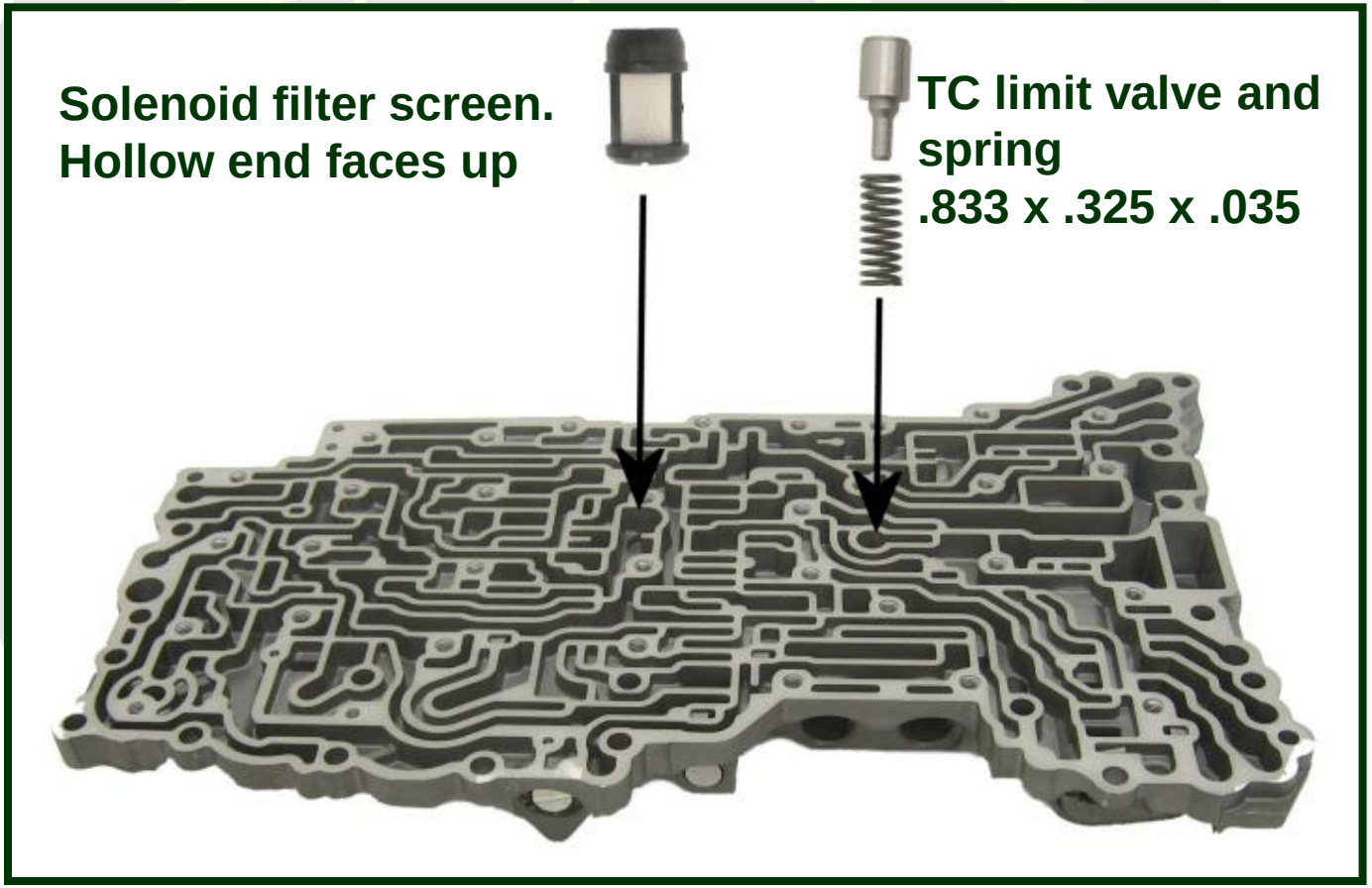
A750E/F
Upper Valve Body #2 Exploded View



Coast Brake Relay Valve

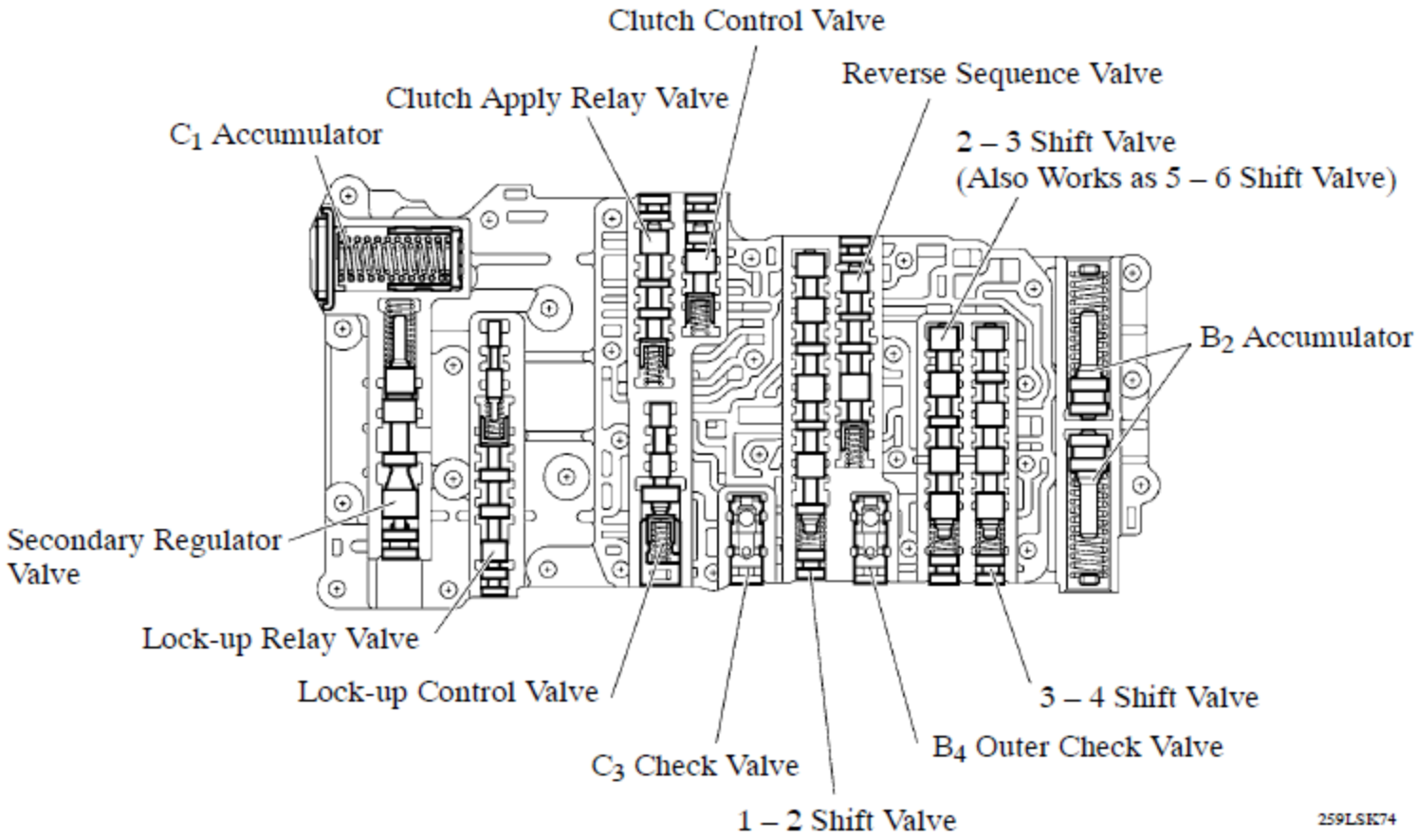
A750E/F
Upper Valve Body #1

The Solenoid filter screen must be installed open end UP (snaps into separator plate. TC Limit valve must be installed as shown.



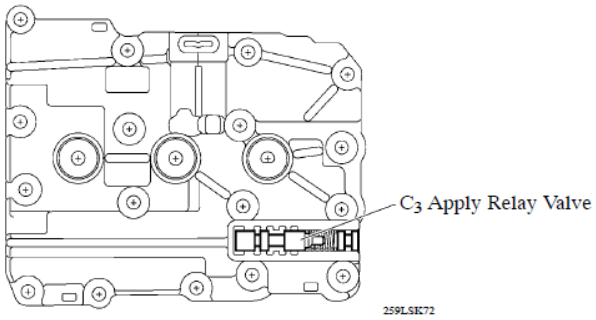
A760

▶ No. 1 Upper Valve Body ◀

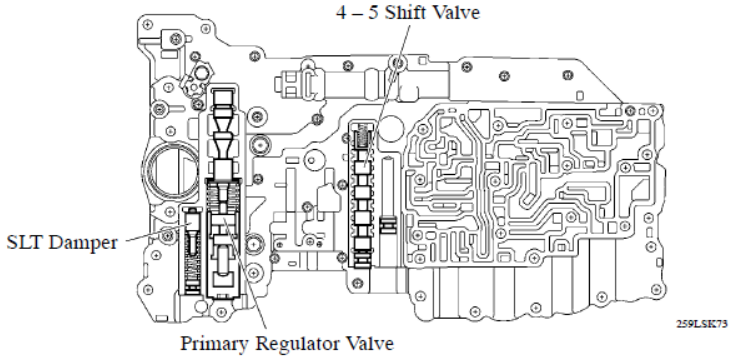


A760

▶ No. 2 Upper Valve Body ◀

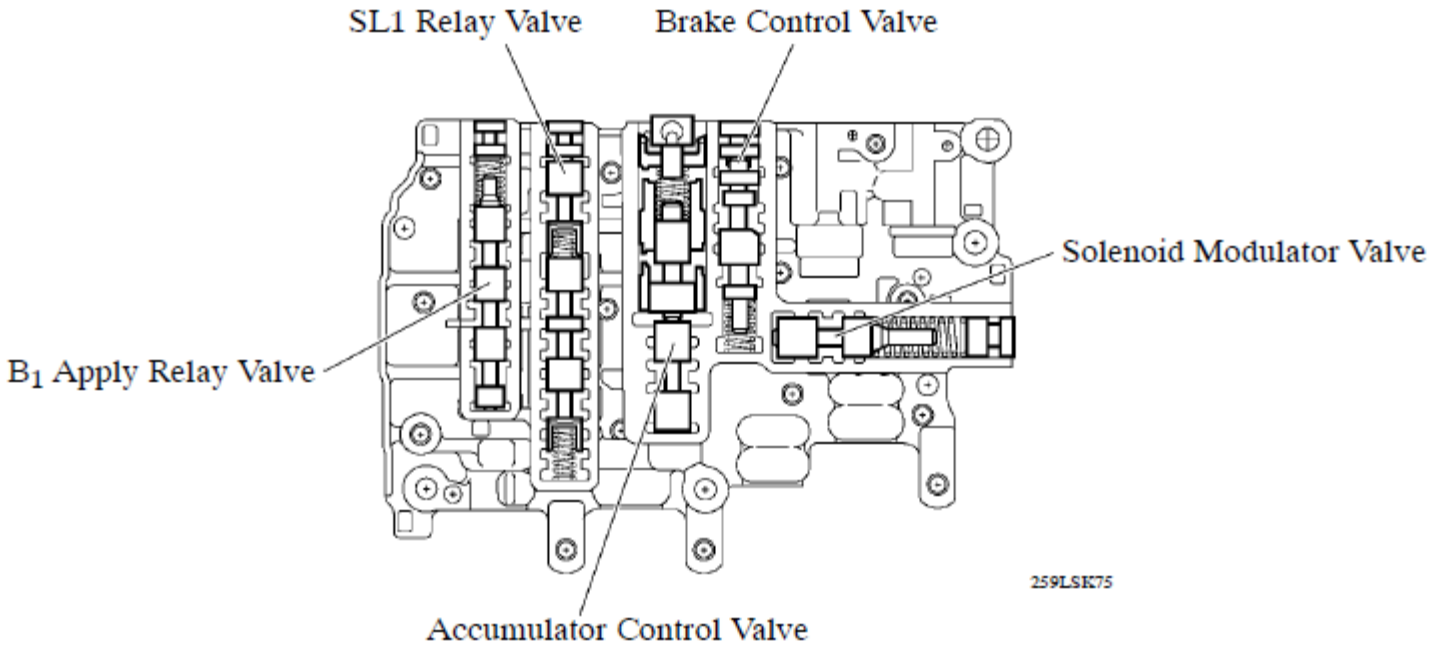


▶ No. 1 Lower Valve Body ◀



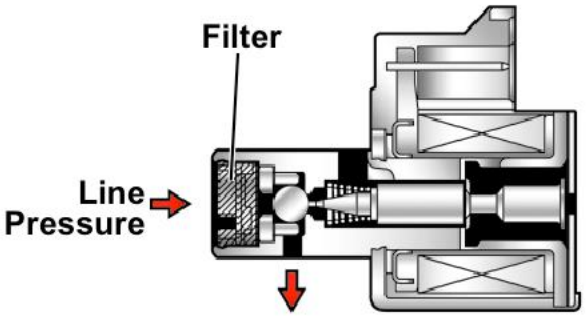
A760

▶ No. 2 Lower Valve Body ◀



ON/OFF Solenoids
Designation "S"

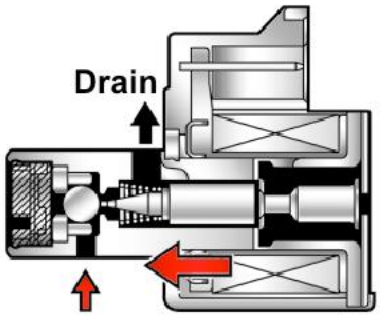
On/Off Solenoids



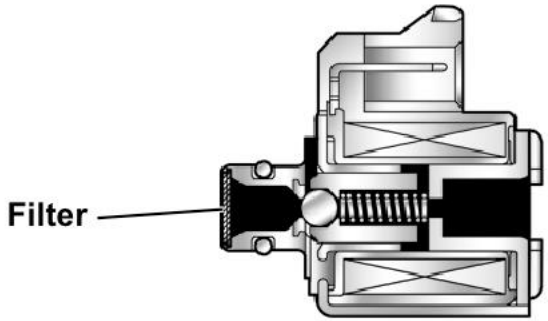
Solenoid Valve OFF

2 types Used

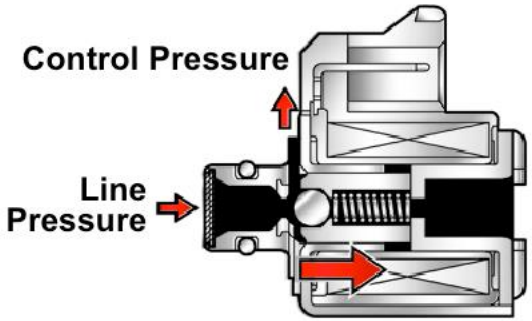
- 2 way
- 3 way



Solenoid Valve ON



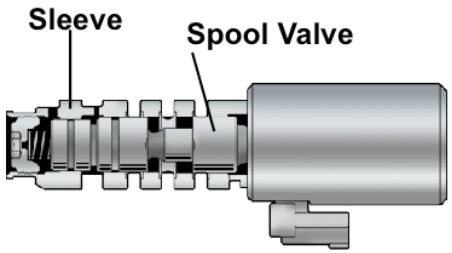
Solenoid Valve OFF



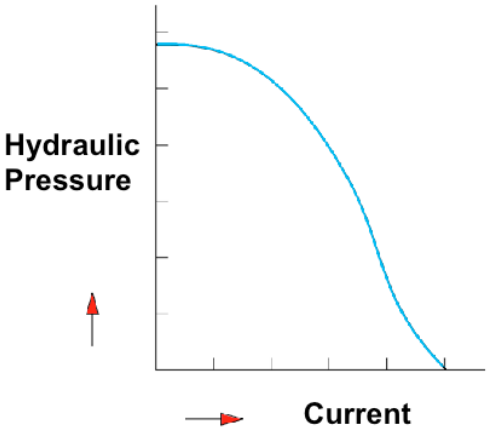
Solenoid Valve ON

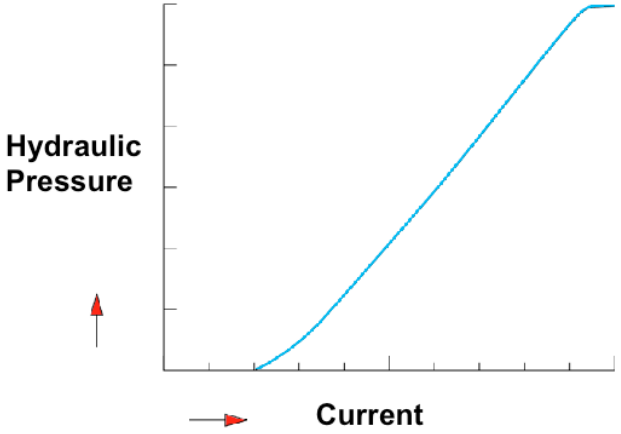
Linear Solenoids
Designation "SL"

Linear Solenoids



High Pressure = Low Voltage *- or -* *High Pressure = High Voltage*





Solenoids

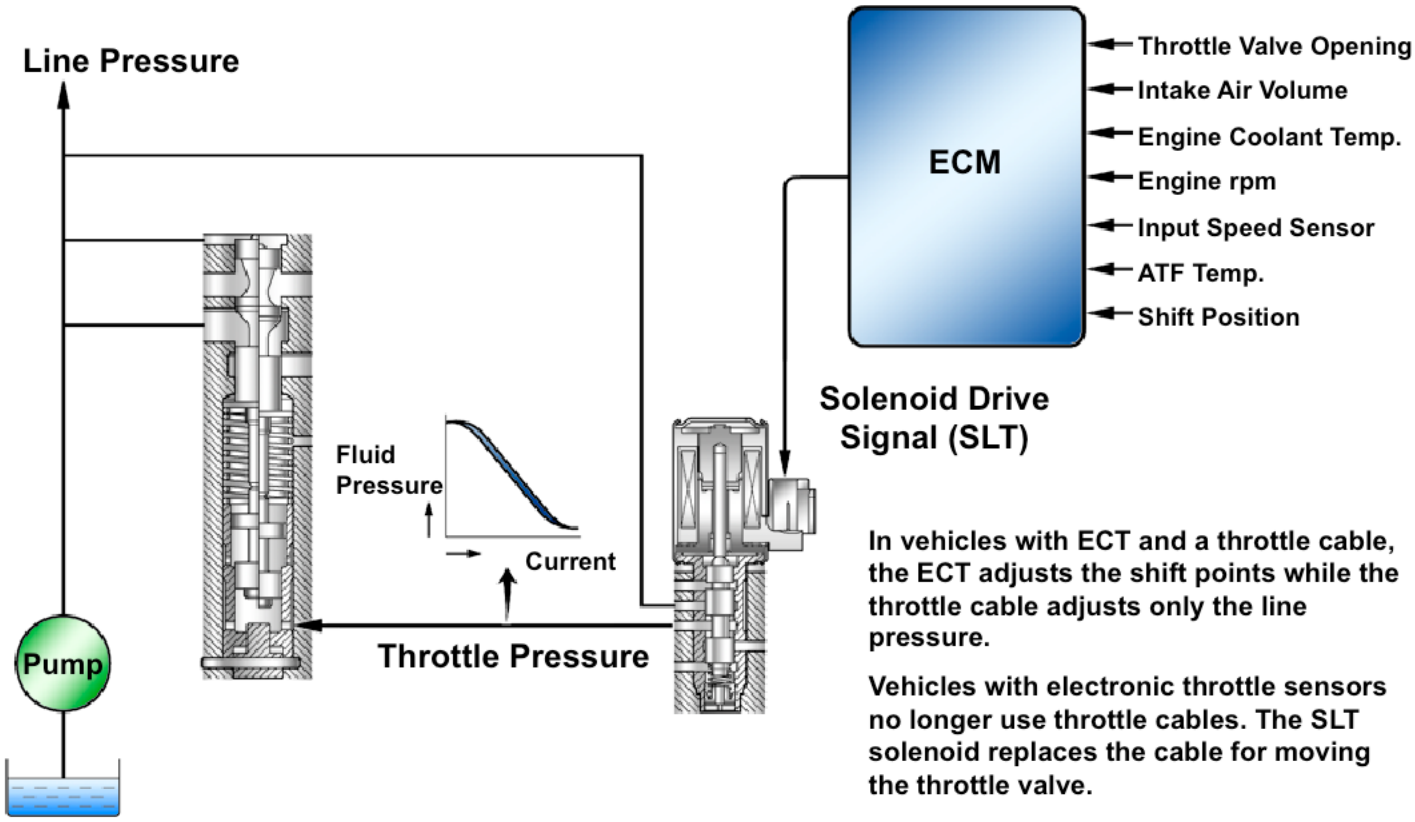
A750 has three ON/OFF solenoids:

- S1 and SR are 3-way valves that switch hydraulic pressure from one passage to another.
- S1 switches the 2-3 shift valve.
- SR switches the clutch apply control valve.
- S2 is a 2-way valve that opens and closes a passage to switch the 1-2 and 3-4 shift valves.

A750 has four linear solenoids that control:

- Line pressure (SLT)
- Holding device apply pressure (SL1 and SL2)
- Accumulator back-pressure (SL1, SLU, and SLT)
- Lock-up clutch pressure (SLU)

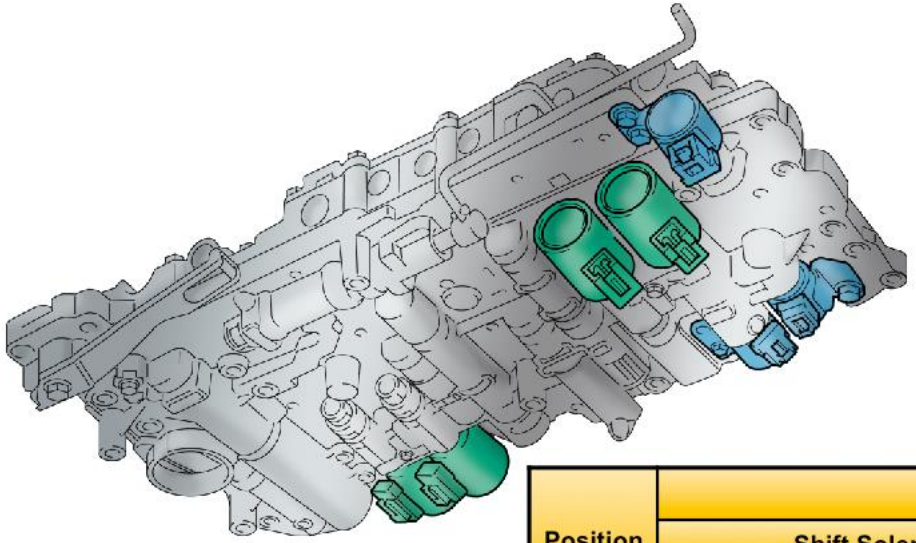
Primary Regulator Valve (SLT)



In vehicles with ECT and a throttle cable, the ECT adjusts the shift points while the throttle cable adjusts only the line pressure.

Vehicles with electronic throttle sensors no longer use throttle cables. The SLT solenoid replaces the cable for moving the throttle valve.

A750 Shift Control



Position	NORMAL					
	Shift Solenoid Valve					Gear
	S1	S2	SR	SL1	SL2	
D	ON	OFF	OFF	OFF	ON	1st
	ON	ON	OFF	OFF	ON	2nd
	OFF	ON	OFF	OFF	ON	3rd
	OFF	OFF	OFF	OFF	ON	4th
	OFF	OFF	ON	ON	OFF	5th

A750 Fail-safe Operation

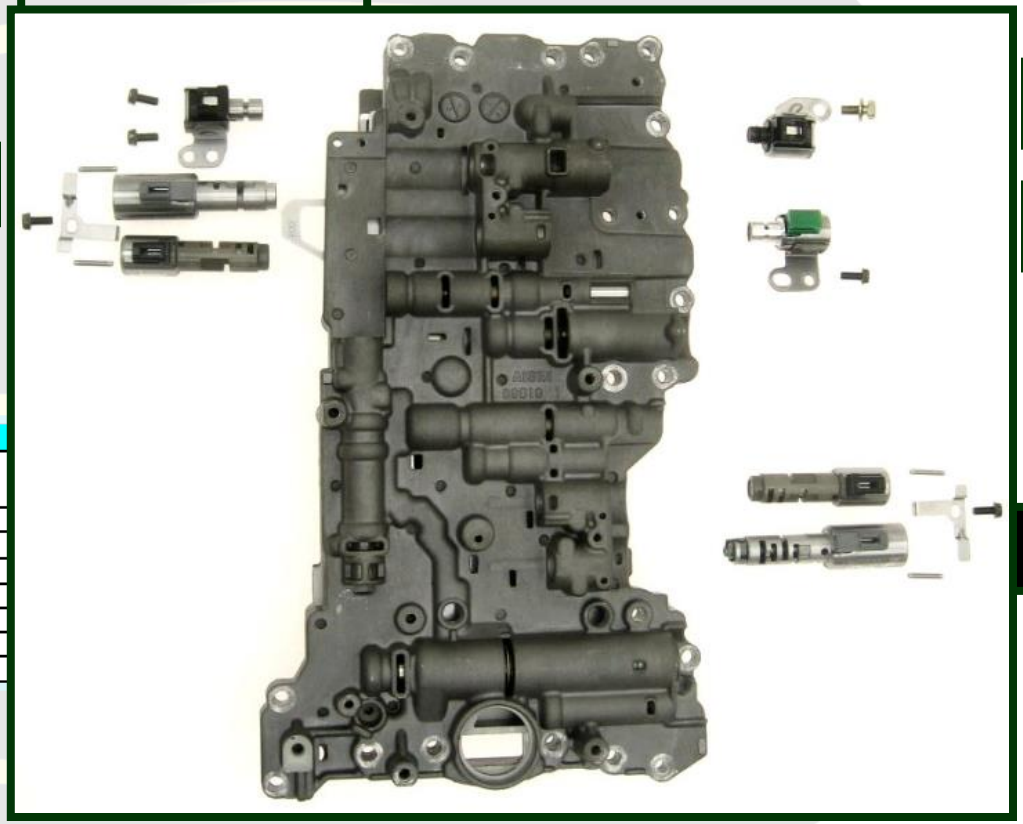
Position	Shift Solenoid Valve S1 Malfunction					
	Shift Solenoid Valve					Gear
	S1	S2	SR	SL1	SL2	
D	X	OFF → ON	OFF	OFF	ON	4th → 3rd
	X	ON	OFF	OFF	ON	3rd
	X	ON	OFF	OFF	ON	3rd
	X	OFF	OFF	OFF	ON	4th
	X	OFF	ON	ON	OFF	5th

A750E/F

SR Solenoid

SLU Solenoid

SL2 Solenoid



S2 Solenoid

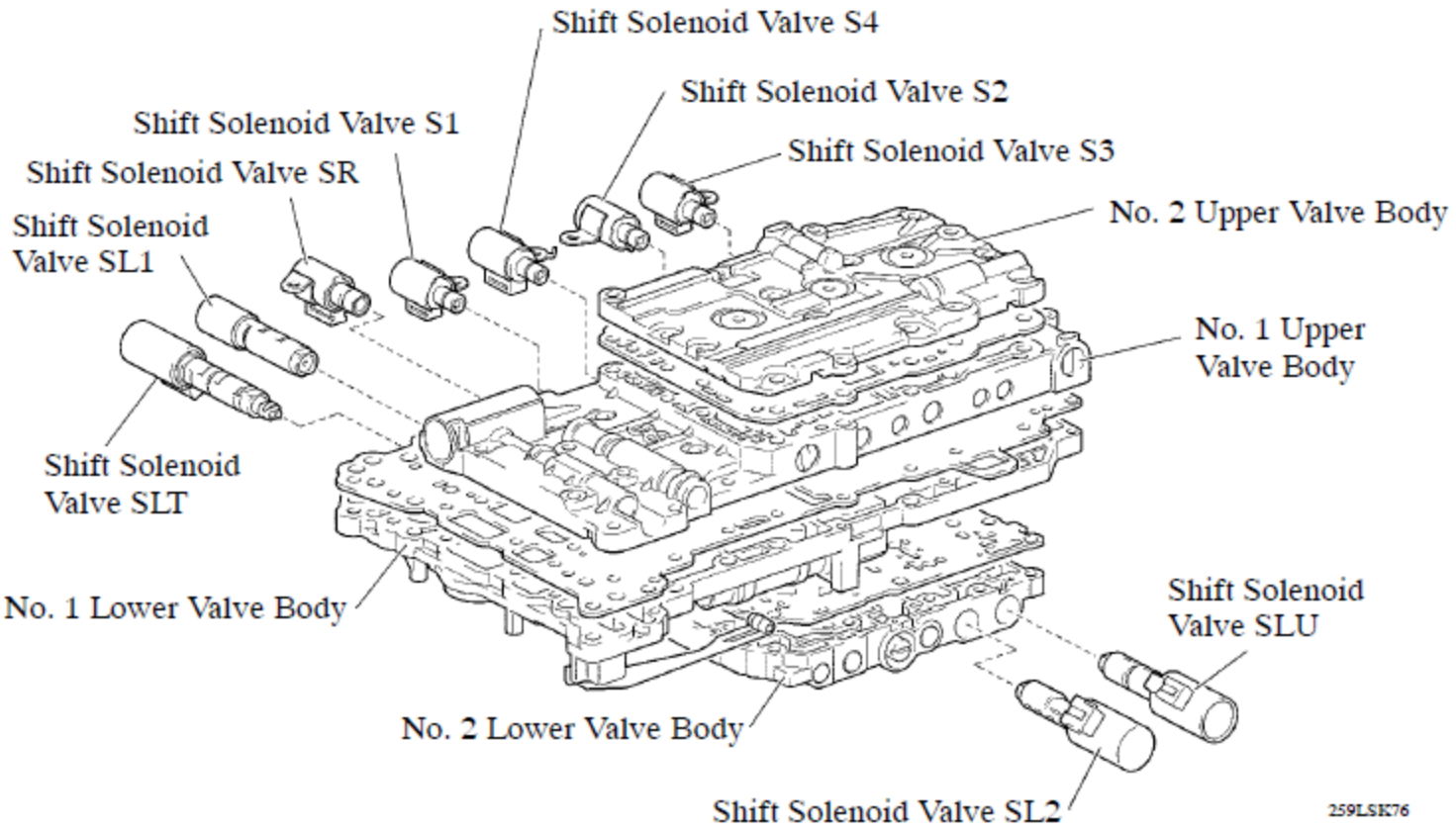
S1 Solenoid

SLT Solenoid

Solenoid Location		
Repair Manual	Solenoid Name	Parts Catalog Part Description
S1	Shift Solenoid A	3 Way Transmission Solenoid
S2	Shift Solenoid B	Transmission Solenoid #3
SR	Shift Solenoid E	3 Way Transmission Solenoid #2
SL1	Pressure Control Solenoid A	Clutch Control Solenoid #1
SL2	Pressure Control Solenoid B	Clutch Control Solenoid #2
SLT	Pressure Control Solenoid D	Line Pressure Control Solenoid
SLU	TCC Pressure Control Solenoid	Lockup Control Solenoid

A760 E/F

The valve body consists of the upper (No. 1 and No. 2) and lower (No. 1 and No. 2) valve bodies and 9 shift solenoid valves.



A760

▶ **Function of Solenoid Valves S1, S2, S3, S4 and SR** ◀

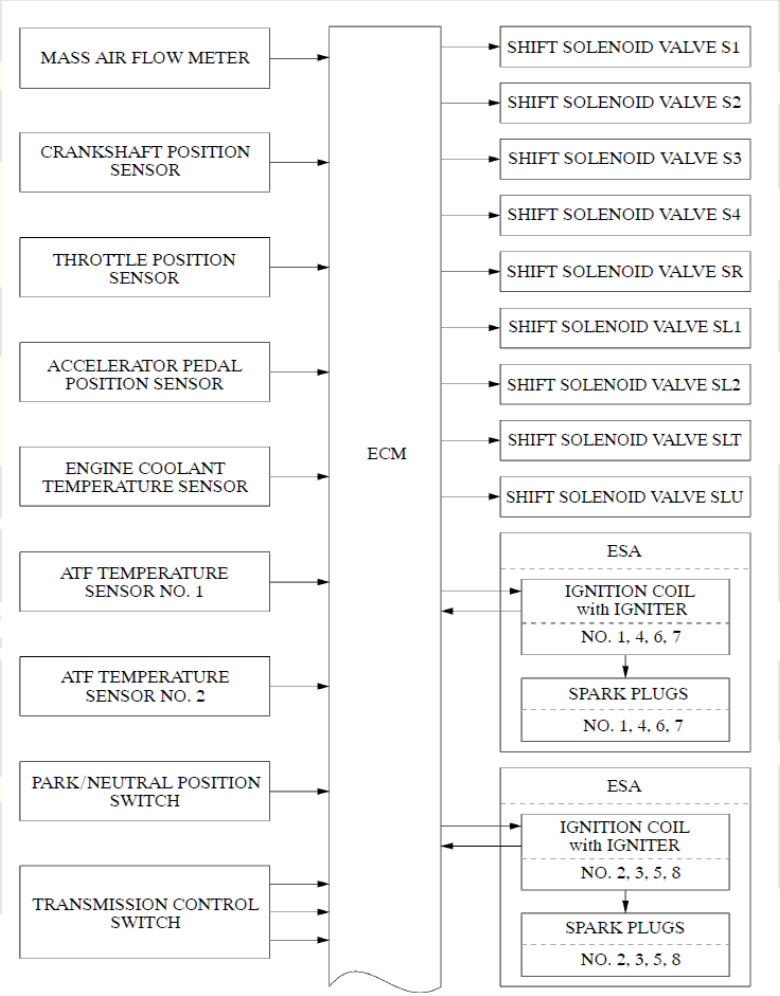
Shift Solenoid Valve	Type	Function
S1	3-way	● Switches the 1 – 2 shift valve. ● Switches the SL1 relay valve.
S2	3-way	● Switches the 2 – 3 shift valve. ● Switches the 5 – 6 shift valve.
S3	3-way	Switches the 3 – 4 shift valve.
S4	3-way	● Switches the 4 – 5 shift valve. ● Switches the SL1 relay valve. ● Switches the reverse sequence valve.
SR	3-way	● Switches the clutch apply relay valve. ● Switches the B_1 apply relay valve.

A760

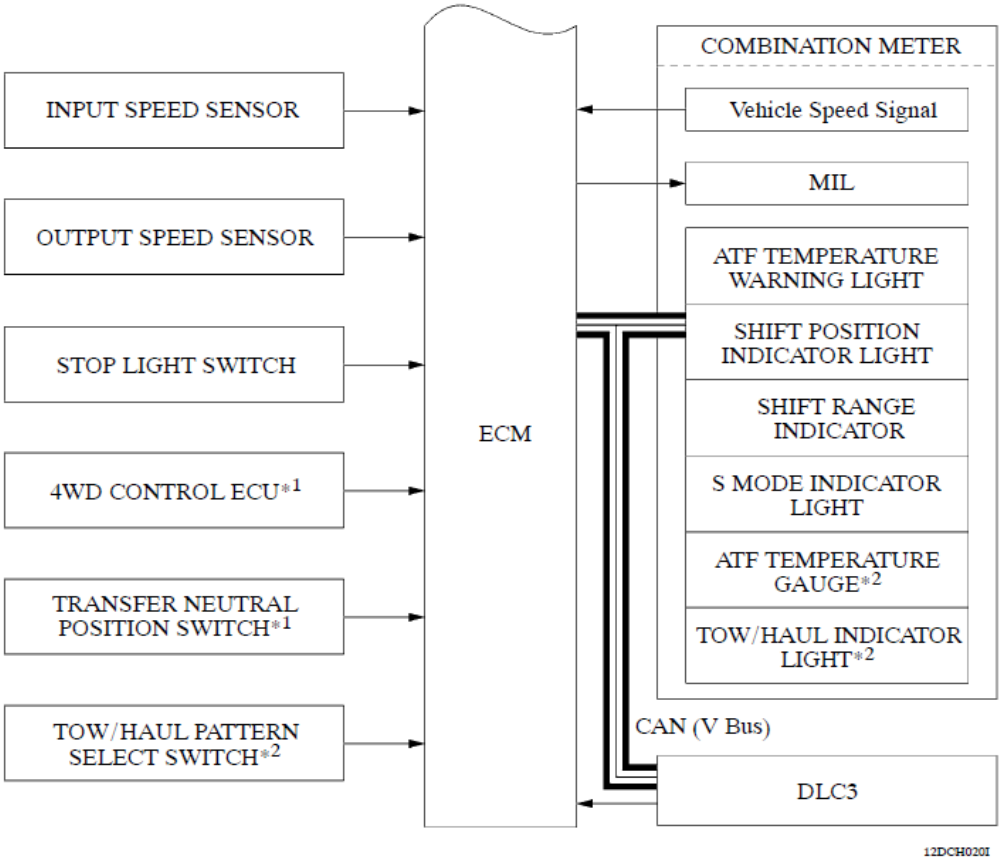
▶ **Function of Solenoid Valves SL1, SL2, SLT and SLU** ◀

Shift Solenoid Valve	Function
SL1	● Clutch pressure control ● Accumulator back pressure control
SL2	Brake pressure control
SLT	● Line pressure control ● Accumulator back pressure control
SLU	Lock-up clutch pressure control

A760



A760



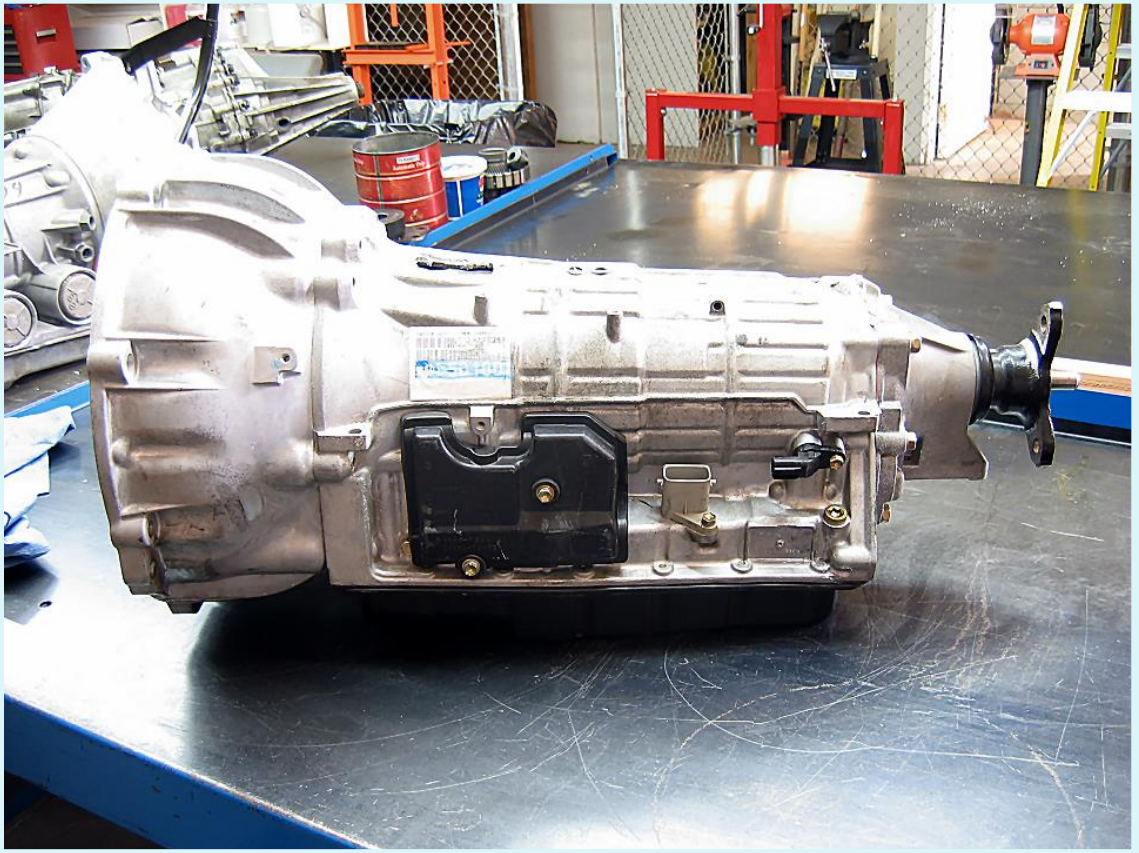
*1: 4WD models
*2: Models with towing package

A760

Malfunction Part	Function
Input Speed Sensor (NT)	When the input speed sensor malfunctions, shift control is effected using the information from the output speed sensor signal (SP2). During an input speed sensor malfunction, upshifting to the 5th and 6th, AI-shift and flex lock-up clutch control are prohibited.
Output Speed Sensor (SP2)	When the output speed sensor malfunctions, shift control is effected using the information from the input speed sensor signal (NT). When the output speed sensor malfunctions, upshifting to the 5th and 6th, AI-shift and flex lock-up clutch control are prohibited.
ATF Temperature Sensor No. 1 (THO1)	When the ATF temperature sensor No. 1 malfunctions, upshifting to the 5th and 6th and flex lock-up clutch control are prohibited.
Shift Solenoid Valves S1, S2, S3, S4 and SR	When a shift solenoid valve listed at left fails, the current to the failed shift solenoid valve is cut off. Shift control is changed to a fail-safe mode to shift gears using the normal shift solenoid valves to allow for continued driving. Refer to the table on the next page for an operation example.
Shift Solenoid Valves SL1 and SL2	During a shift solenoid valve SL1 or SL2 malfunction, upshifting to the 5th and 6th and flex lock-up clutch control are prohibited.
Shift Solenoid Valve SLU	During a shift solenoid valve SLU malfunction, the current to the shift solenoid valve is stopped. Because this stops the lock-up control and flex lock-up control, fuel economy decreases.
Shift Solenoid Valve SLT	During a shift solenoid valve SLT malfunction, the current to the shift solenoid valve is stopped. Because this stops the line pressure optimal control, the shift shock increases. However, shifting is effected through normal clutch pressure control.

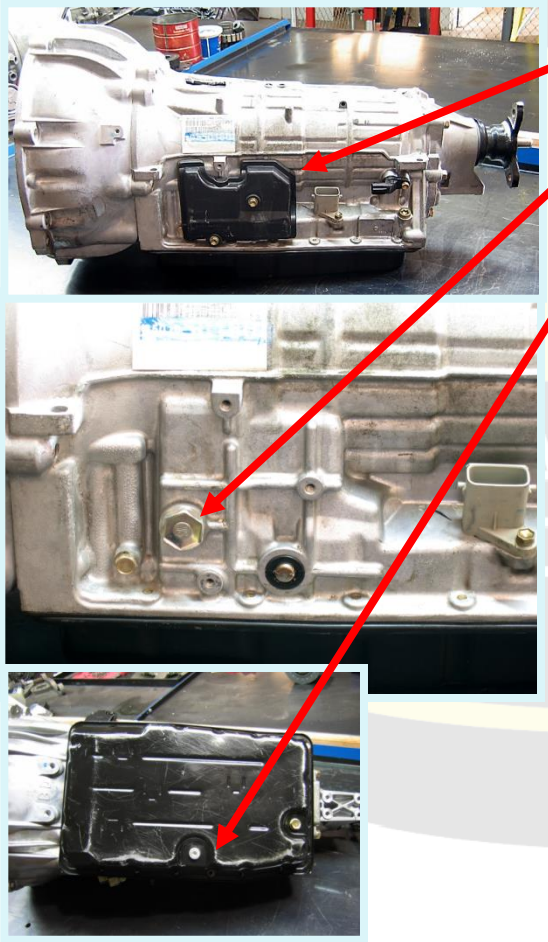
A761
Introduction

The A761 Transmission is Toyota's first six speed automatic. It is said to be the lightest six speed automatic transmission in the world, weighing in at 187 pounds wet. Introduced in the 2004 model year Toyota Truck/SUV series and 2004 Lexus LS430 series.

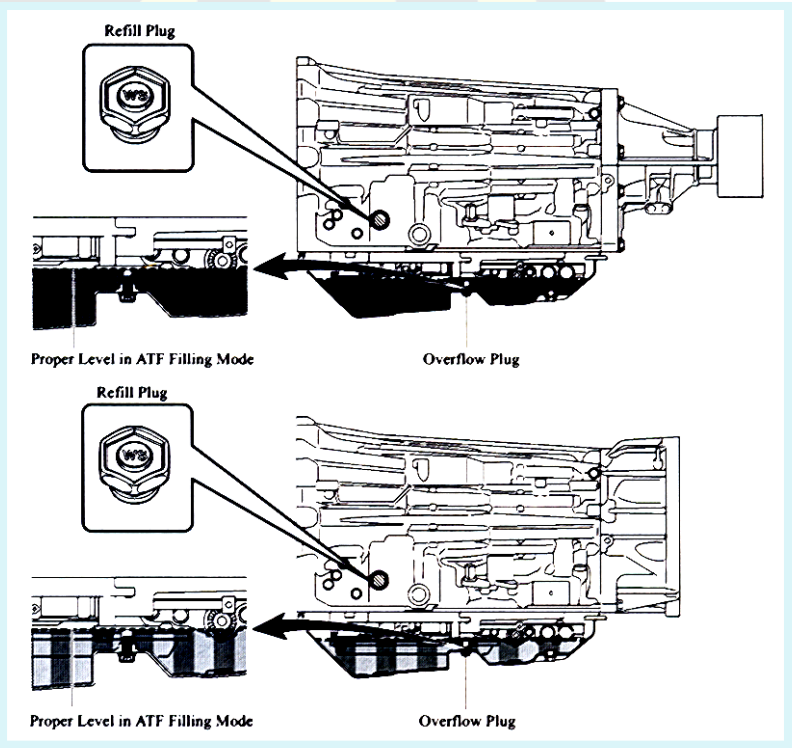


A761
Fluid and Fill Procedure

This transmission requires genuine Toyota ATF WS. The fill level is critical and the vehicle must remain level while filling.



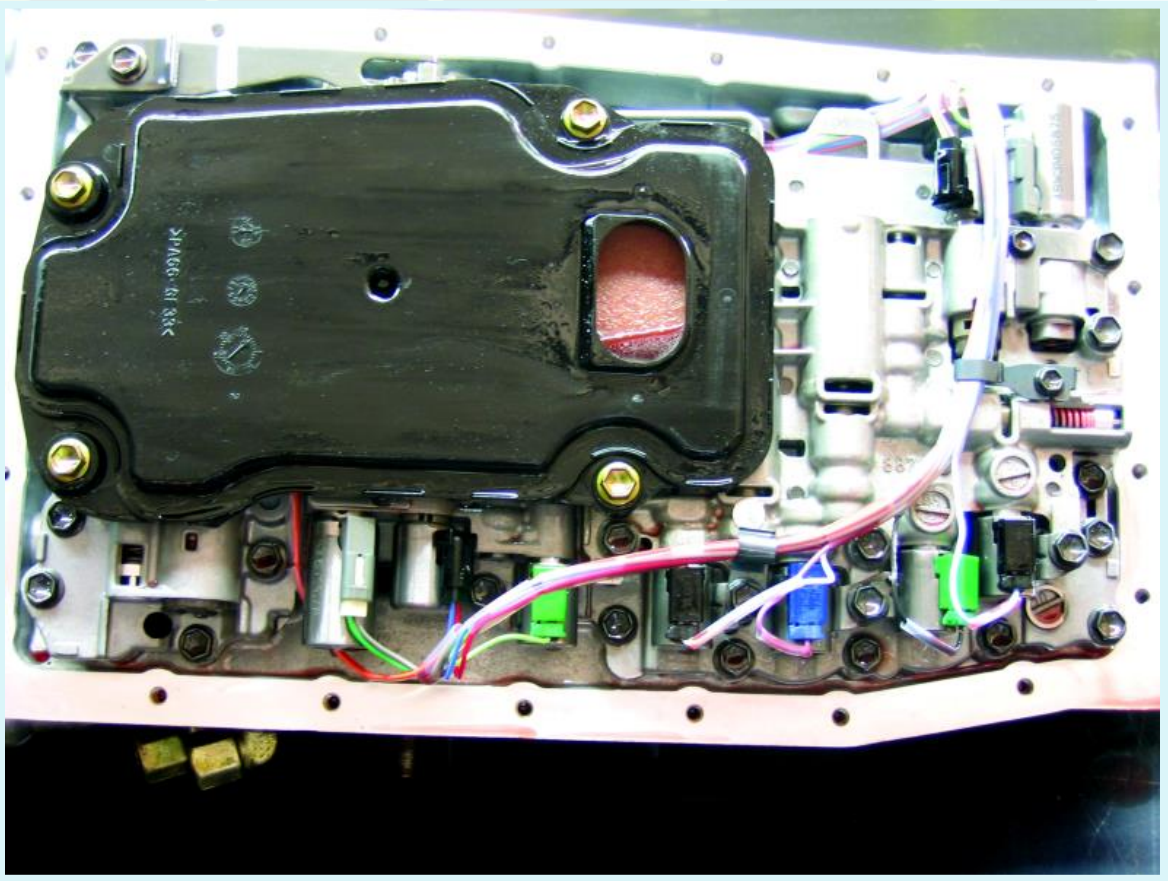
Remove Cover
Remove Fill Plug
Fill to top of Overflow Plug in the pan



A761

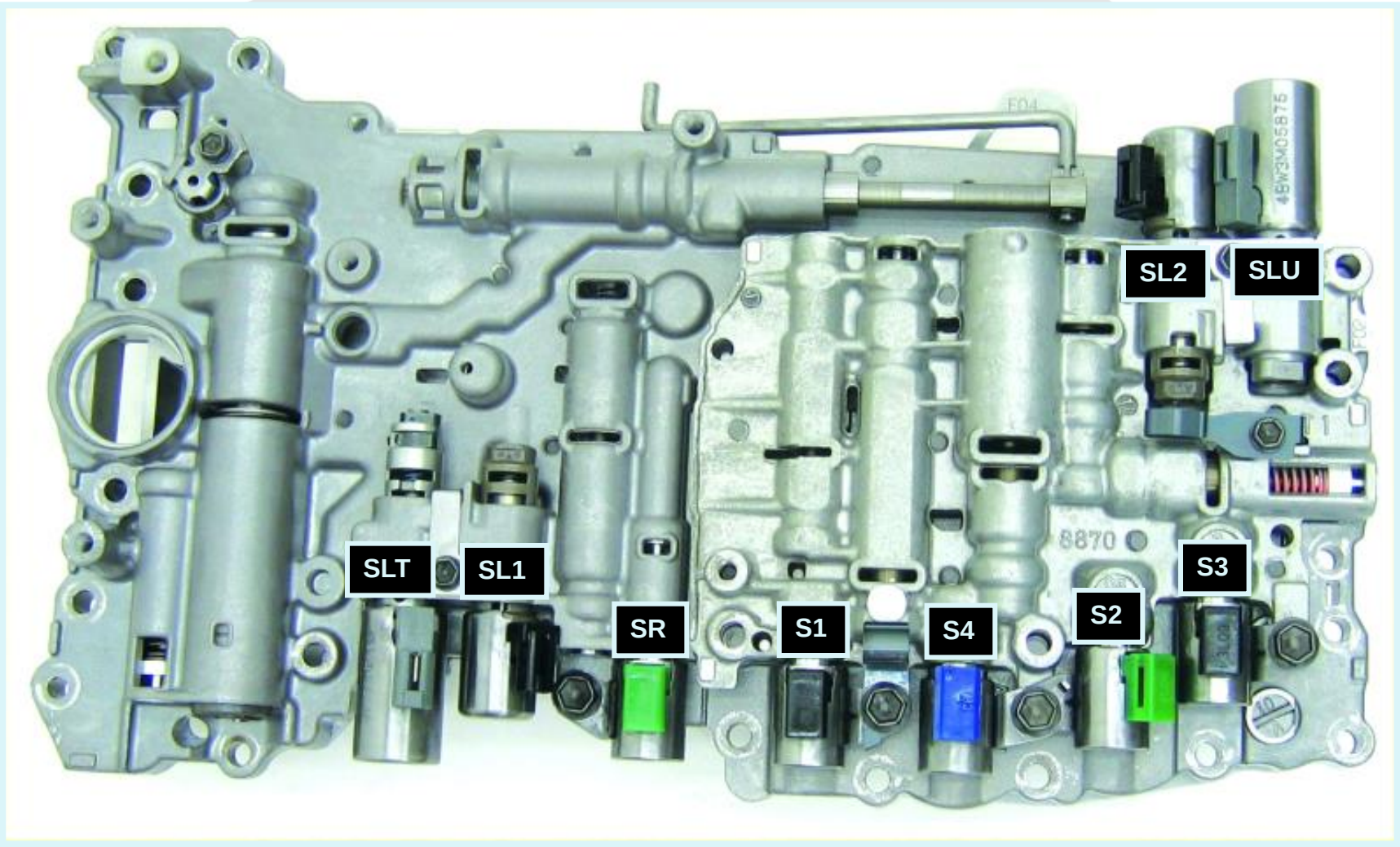
Contamination vs. Valve Body for Repairs

There are no magnets in the oil pan to prevent metal from going into the valve body during bench repair. Take care to remove valve body first if the transmission is to be turned over (probably before pulling out of the vehicle for repairs). The contaminate very easily and the valves end up sticking.



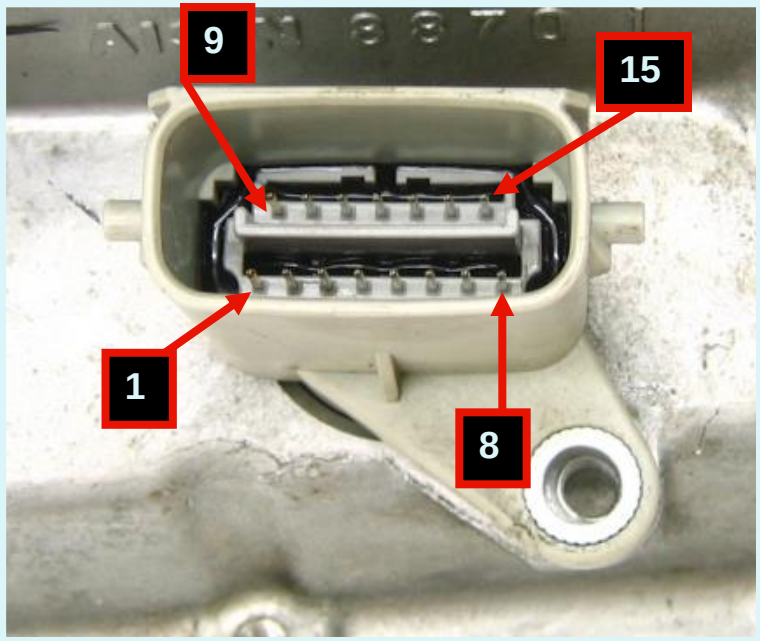
A761

Solenoid Identification



A761

Connector Pin Identification

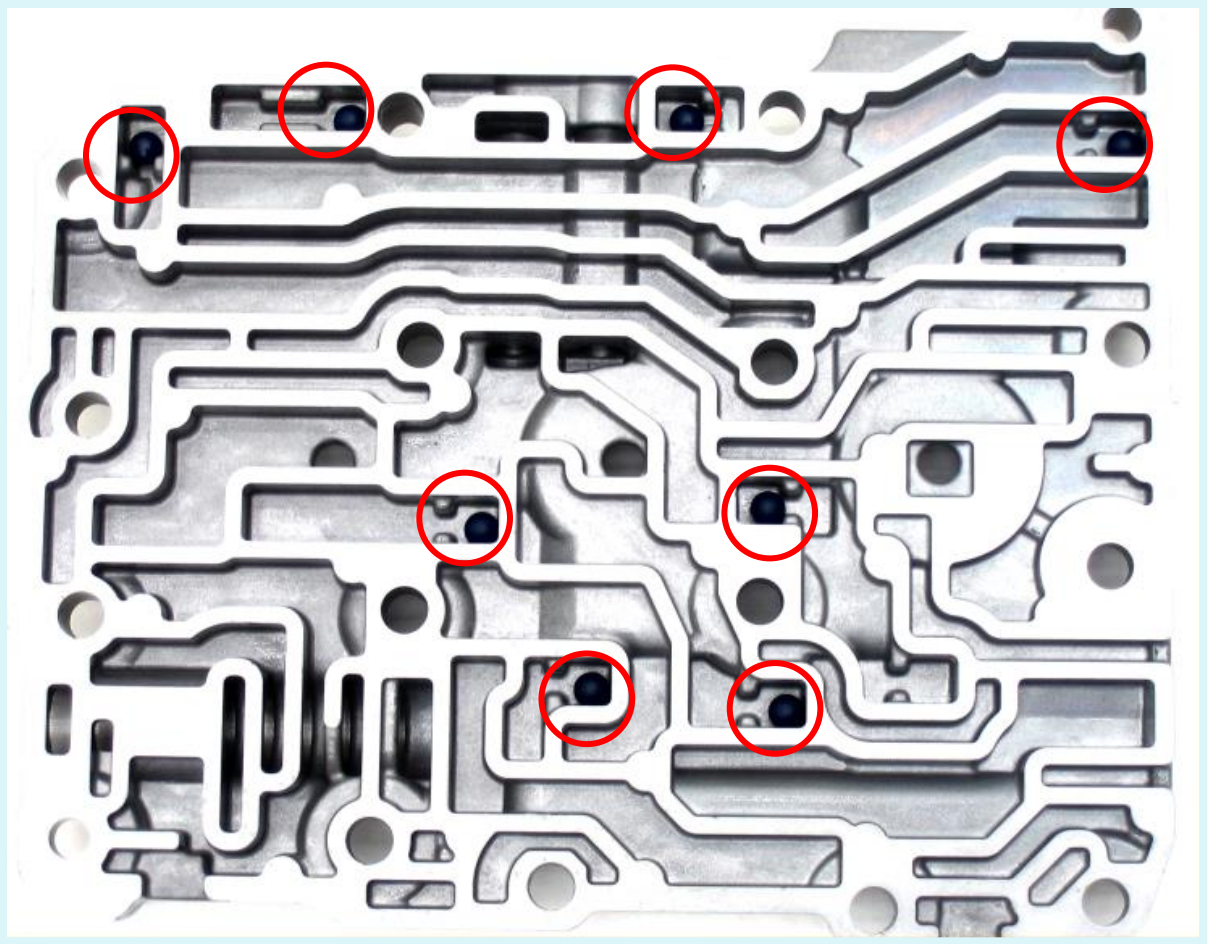


Connector Pin Identification			
Solenoid	Wire Color	Case Connector	Resistance
S1	Pin 8 WHT	Ground	11 - 15
S2	Pin 15 BLK	Ground	11 - 15
S3	Pin 7 Lt BLU	Ground	11 - 15
S4	Pin 14 PPL	Ground	11 - 15
SR	Pin 6 Lt GRN	Ground	11 - 15
SL1	Pin 11 RED	Pin 3 Blu	5 - 5.6
SL2	Pin 10 YEL	Pin 2 PPL	5 - 5.6
SLU	Pin 12 t GRN	Pin 4 BRN	5 - 5.6
SLT	Pin 13 GRN	Pin 5 GRY	5 - 5.6
TFT	Pin 9 ORN	Pin 1 ORN	79k – 156k

A761

Upper Valve Boy Check Ball Locations

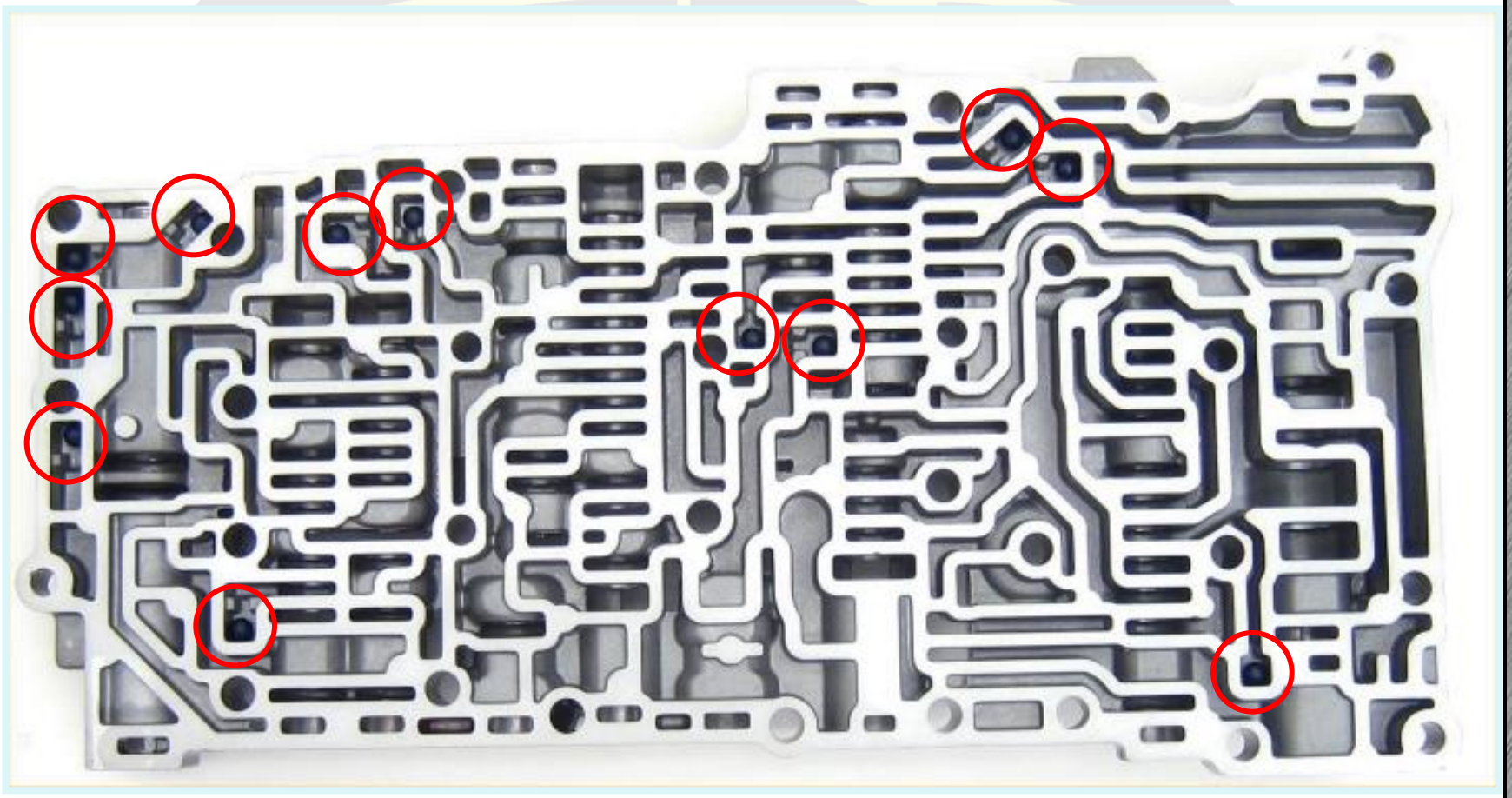
There are eight (8) check balls in the Upper Valve Body. All are the blue material ball.



A761

Main Valve Body Check Ball Locations

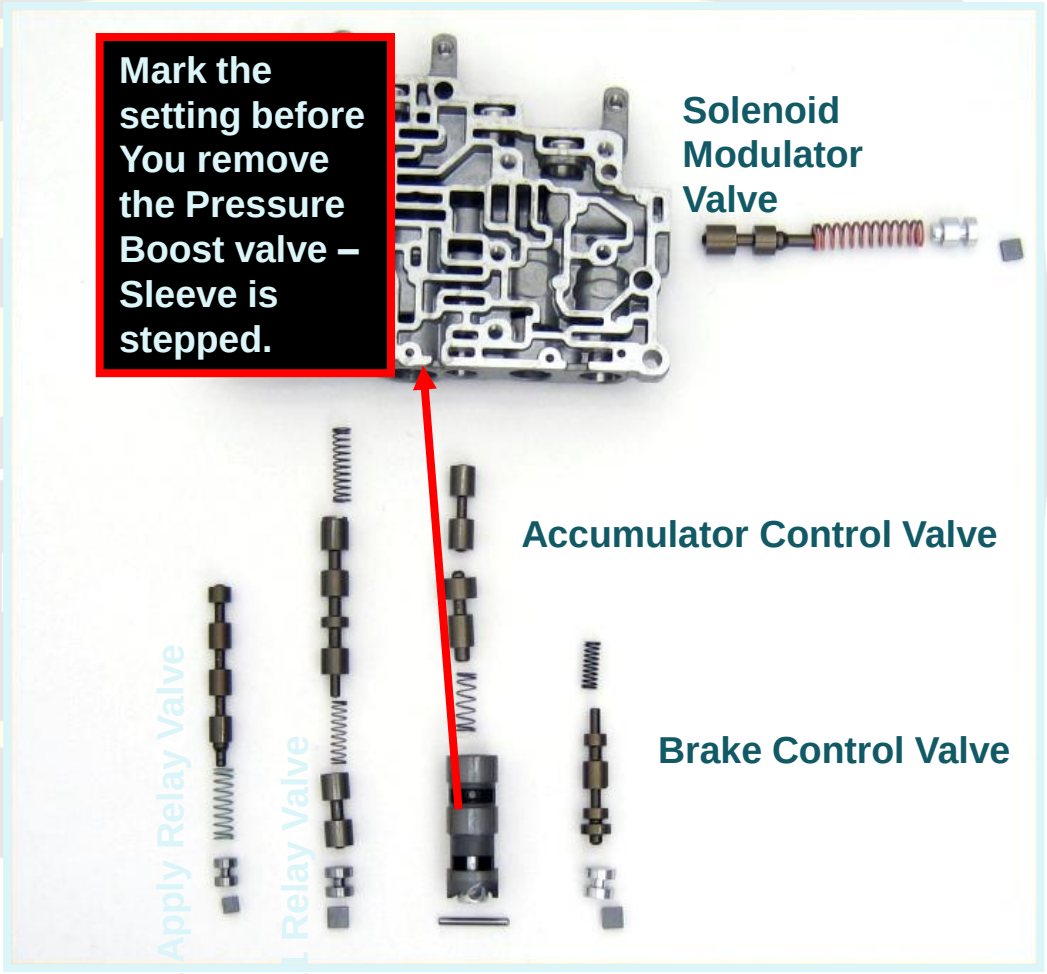
There are Twelve (12) check balls in the Main Valve Body. All check balls are the blue composite



A761

Valve Body Exploded View

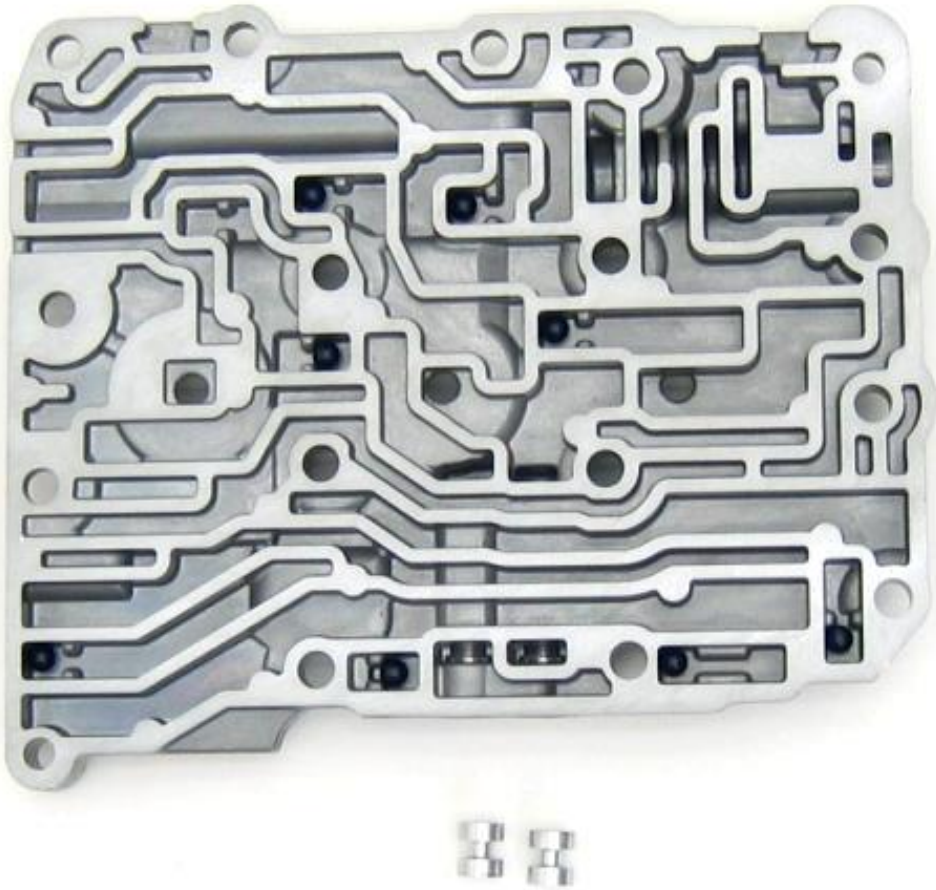
Lower #2 Valve Body



A761

Valve Body Exploded View

Upper #2 Valve Body

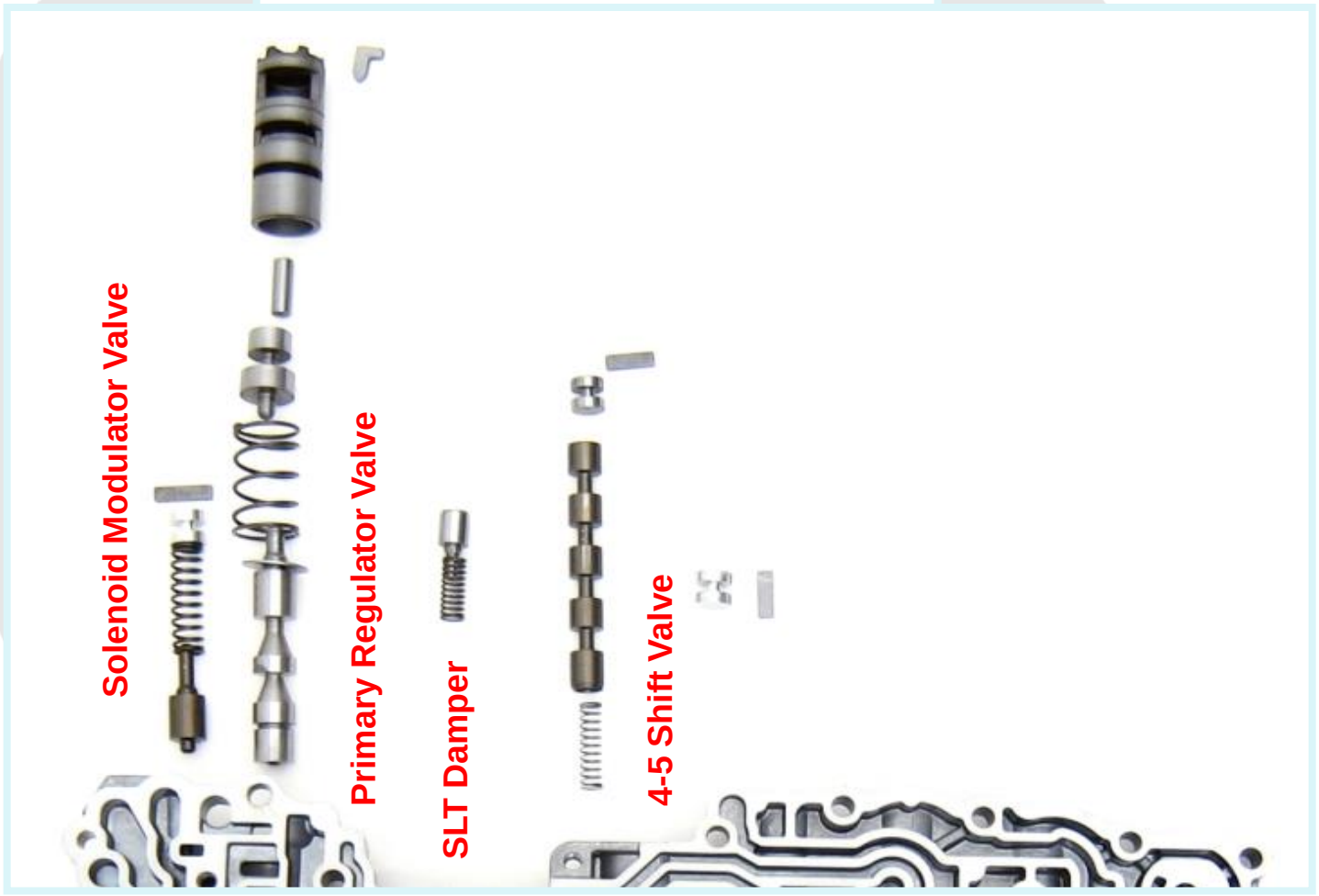


C3 Apply Relay Valve

A761

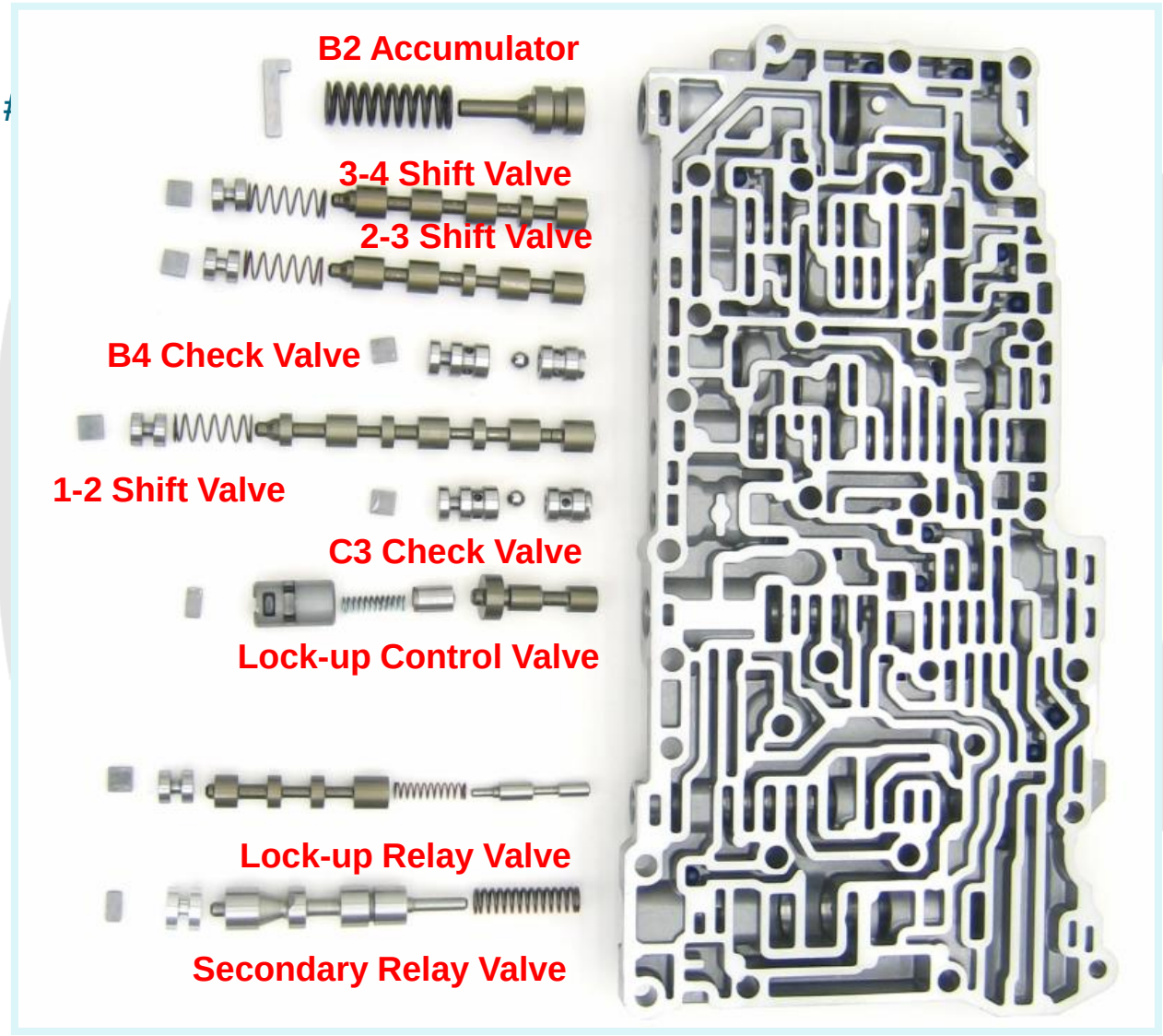
Valve Body Exploded View

Lower #2 Valve Body



A761

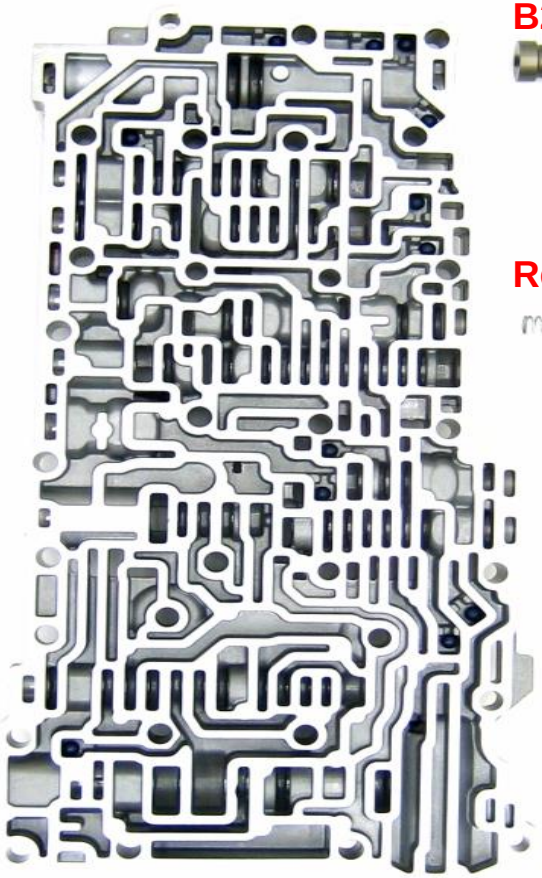
Upper #



A761

Valve Body Exploded View

Upper #1 Valve Body



B2 Accumulator

Reverse Sequence Valve

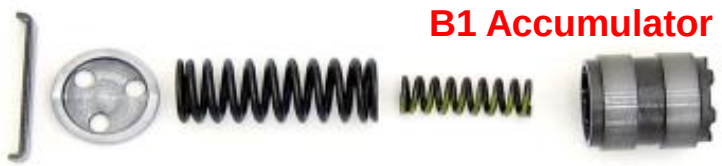
Clutch Control Valve

Clutch Apply Relay Valve

A761

Valve Body Exploded View

Upper #1 Valve Body

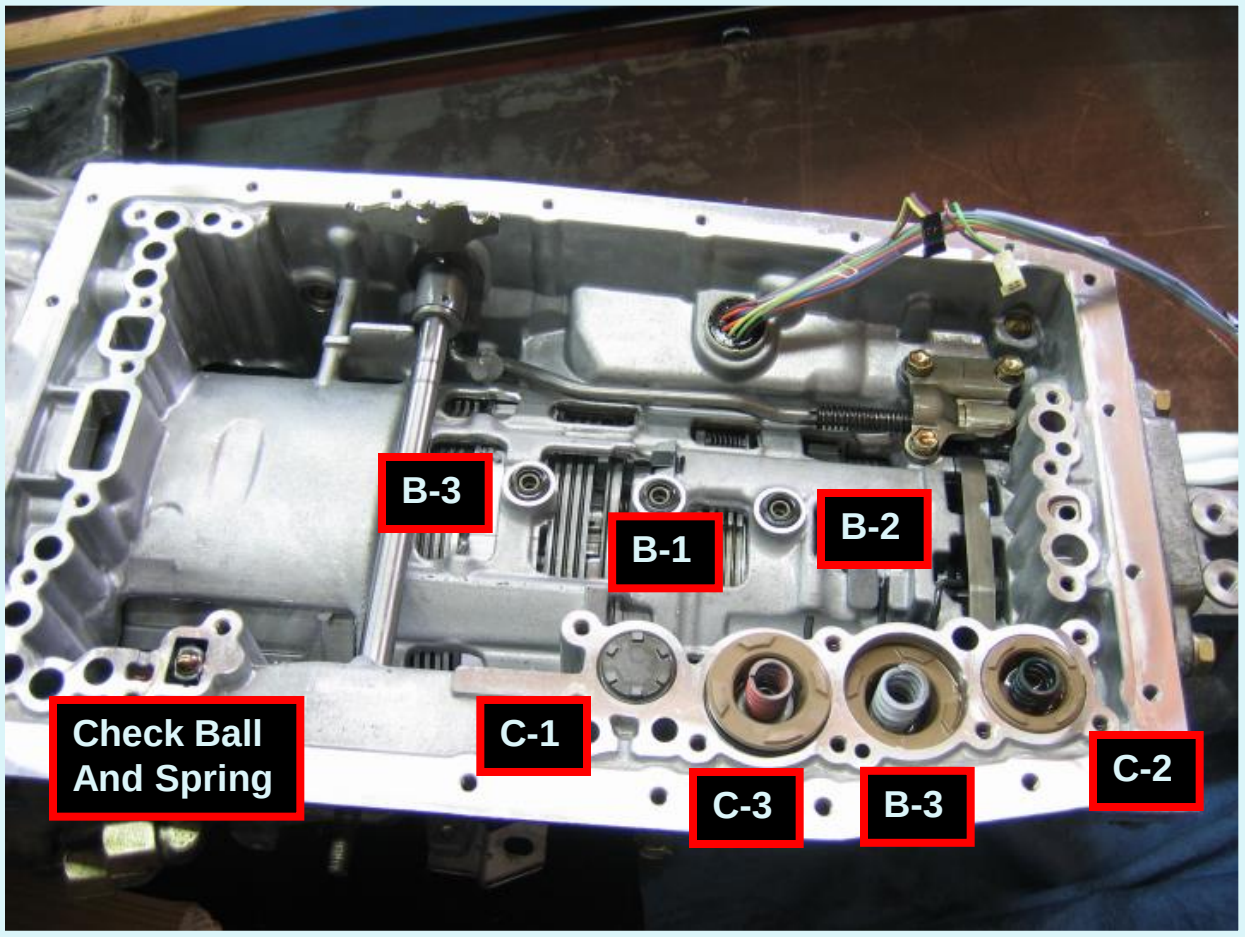


B1 Accumulator

A761

Accumulator Piston Identification

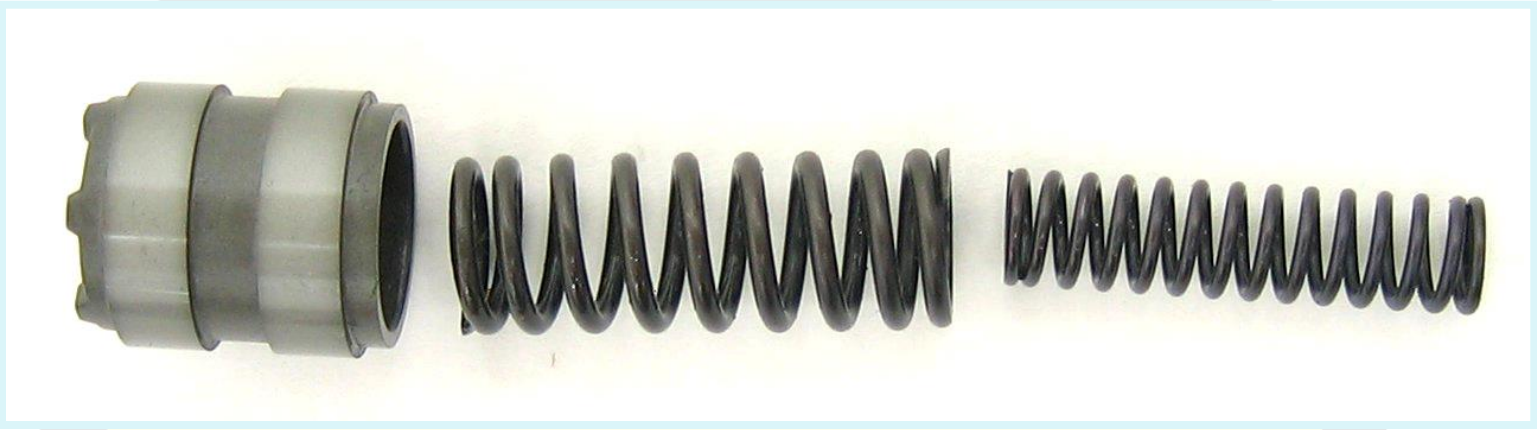
Case Seals B-1, B-2, and B-3 are 1 time use seals. Replace if Valve Body is removed



A761

Accumulator Identification

C1 Accumulator Piston and Springs



Inner spring		
Free length	Outer diameter	Color
44.98 mm	11.30 mm	Natural
Outer spring		
Free length	Outer diameter	Color
46.36 mm	17.10 mm	Natural

A761

Accumulator Identification

C3 Accumulator Piston and Springs

Inner spring	bottom	
Free length	Outer diameter	Color
44.O mm	14.0 mm	Yellow
Outer spring	bottom	
Free length	Outer diameter	Color
76.65 mm	20.10 mm	Natural
Acc. spring	top	
Free length	Outer diameter	Color
22.06 mm	14.05 mm	Pink

A761

Accumulator Identification

B3 Accumulator Piston and Springs

Acc. Spring	bottom	
Free length	Outer diameter	Color
64.5 mm	19.5 mm	Orange/Red
Acc. Spring	Top	
Free length	Outer diameter	Color
29.75 mm	16.15 mm	White

A761

Accumulator Identification

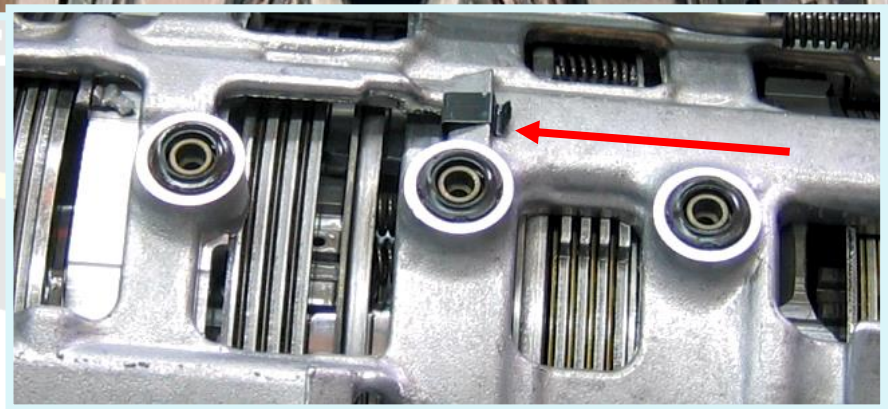
C2 Accumulator Piston and Springs

Acc. Spring	Bottom	
Free length	Outer diameter	Color
63.14 mm	16.0 mm	Gray/White
Acc. Spring	**Top**	
Free length	Outer diameter	Color
17.57 mm	14.04 mm	Green

A761

Brake Plate Stopper (anti-rattle)

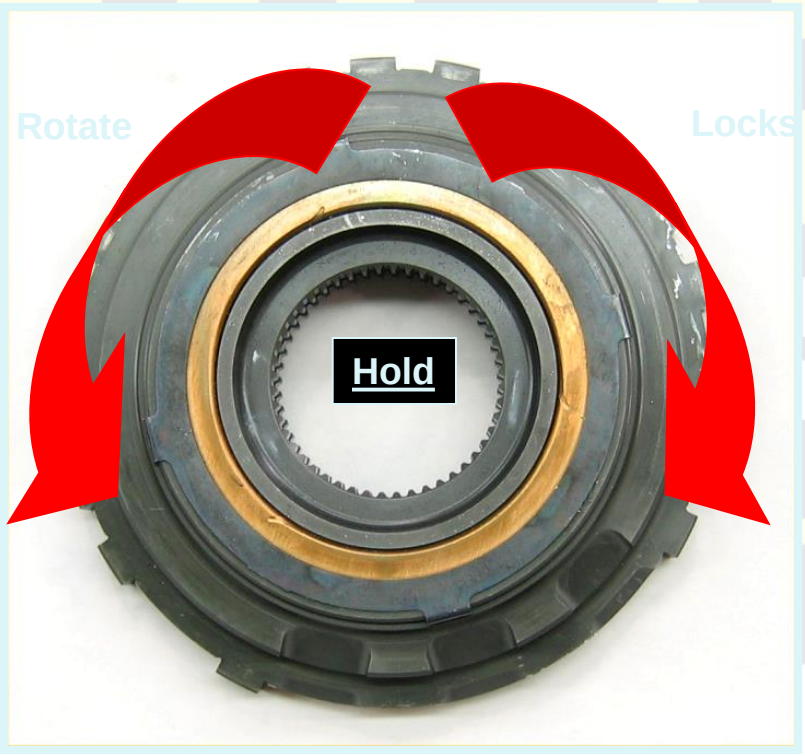
This anti-rattle spring load plate clips into the case and prevents rattling of the B4, B2, and B1 (Brakes). Install this plate first before loading the clutch's into the case. Note the assembled location.



A761

Low/Reverse Sprag Assembly (F3)

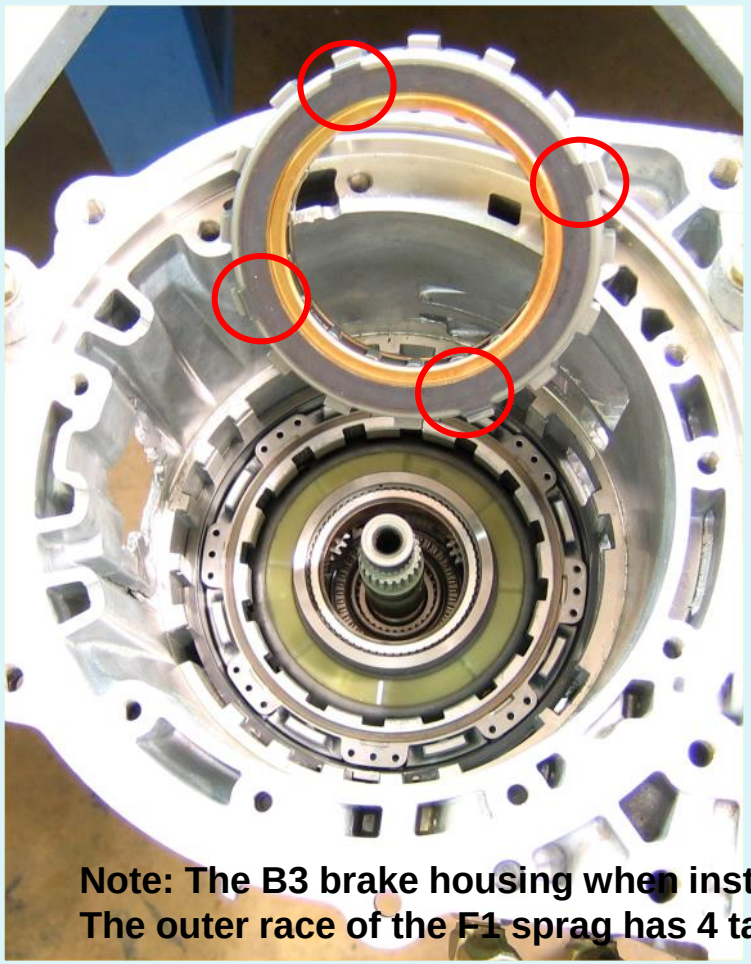
F3 is the holding brake used in 1st gear.
Before assembling into the case confirm proper rotation. Holding the inner race, the outer race will freewheel counter clockwise and lock clockwise (with rough surface facing up)

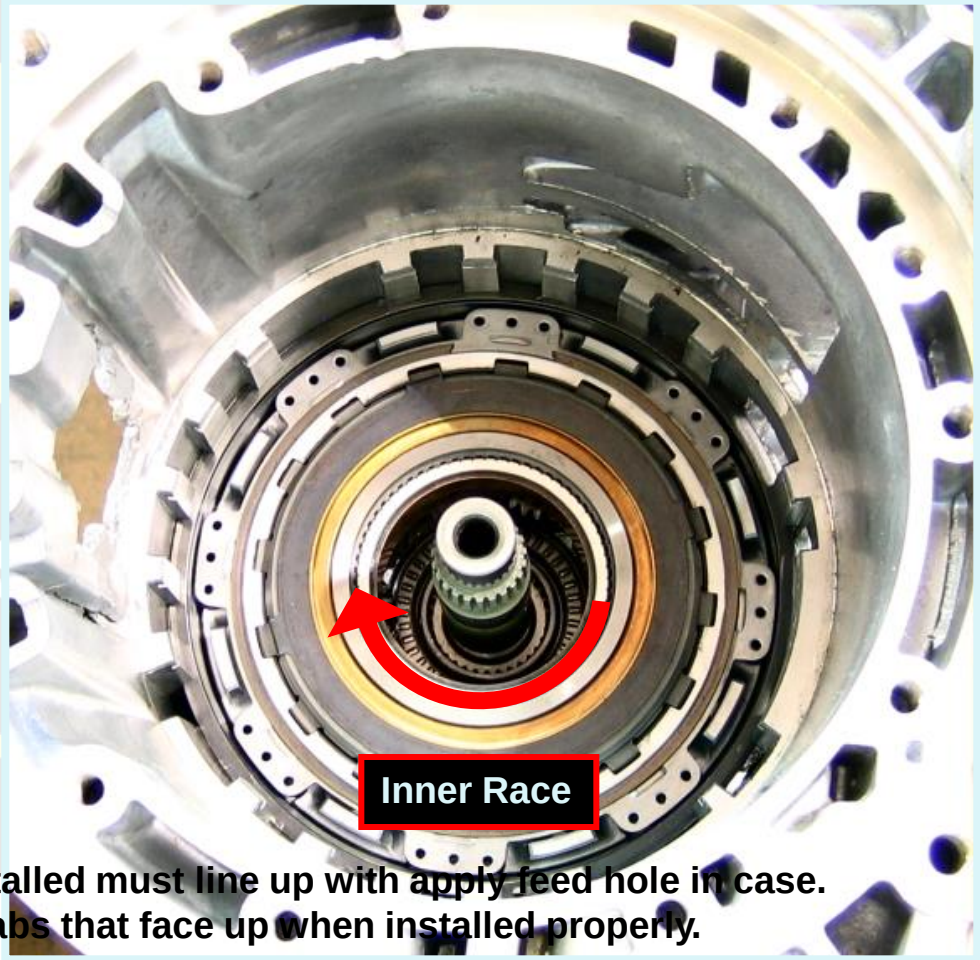


A761

No. 3 Brake Assembly and (F1)

The F1 sprag holds in Reverse, 2nd, and 3rd gear. The outer race index's into the B3 brake when assembled. The inner race will rotate clockwise and lock counter clockwise.



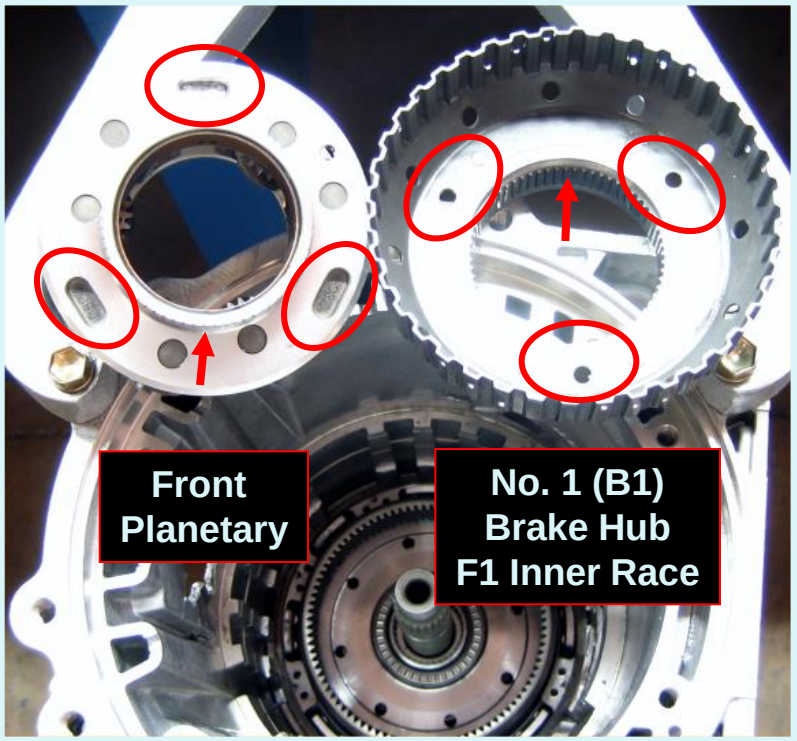


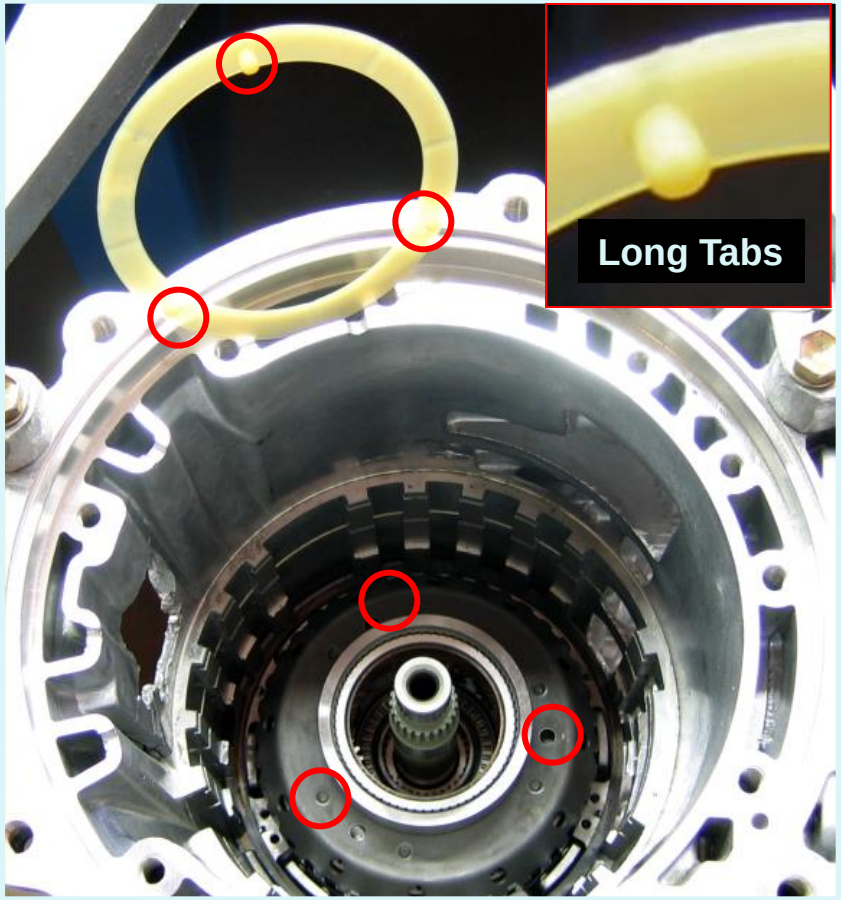
Note: The B3 brake housing when installed must line up with apply feed hole in case. The outer race of the F1 sprag has 4 tabs that face up when installed properly.

A761

Front Planetary Assembly

The inner race of the F1 one-way splines directly onto the front planetary. Important: the alignment holes for the front thrust washer must line up with the open slots of the planetary. If improperly assembled the washer will not set flat onto the hub.



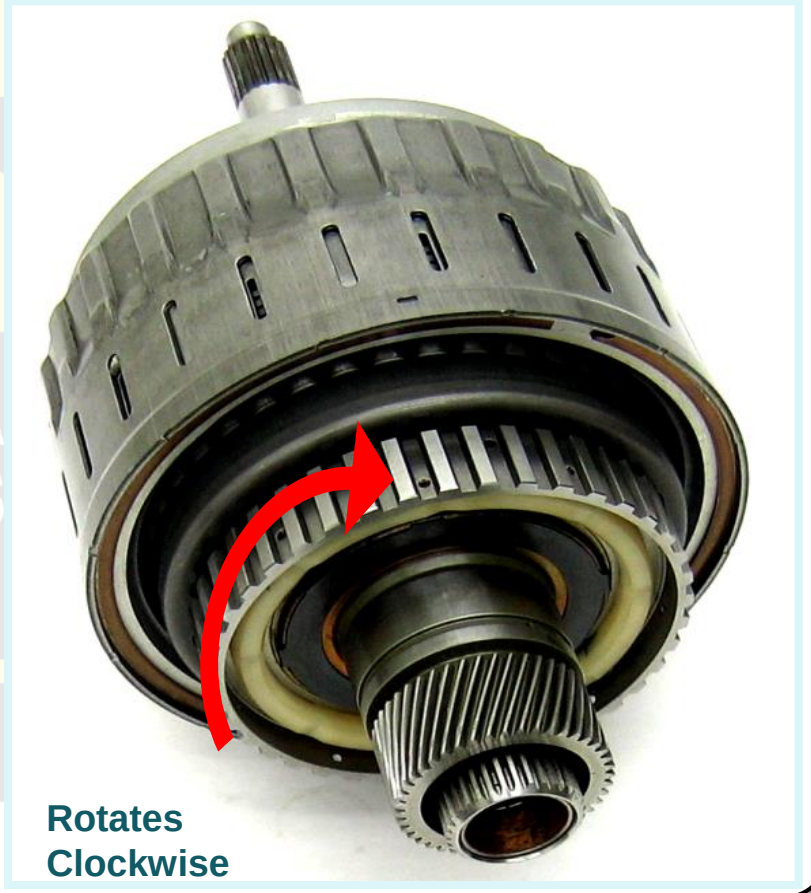


Note: The B1 clutch hub faces down covering the planetary when assembled and the F1 inner race faces up.

A761

No. 2 Sprag Assembly (F2)

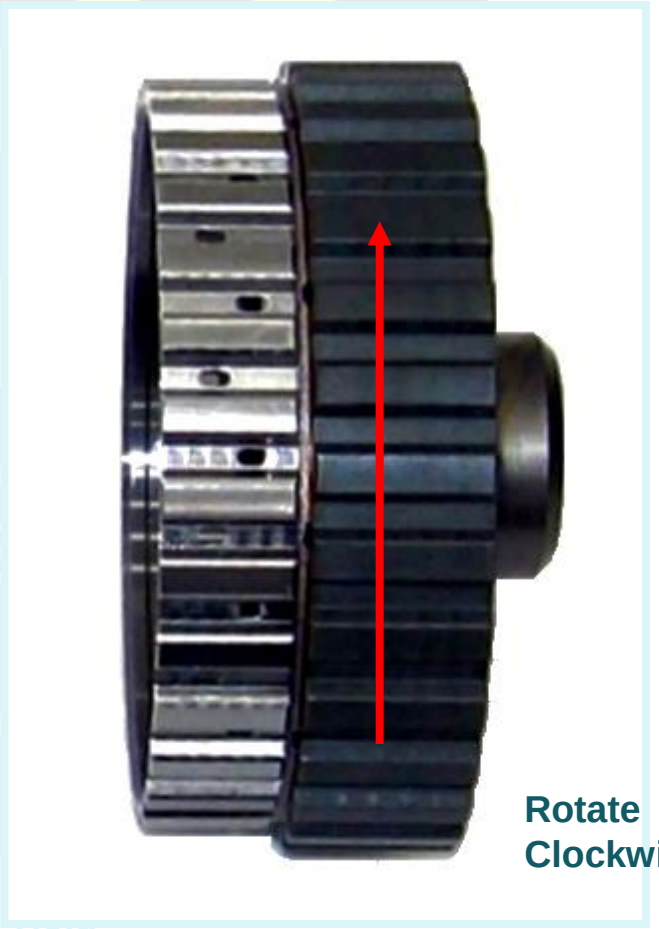
The F2 sprag when assembled will rotate clockwise as shown. The F2 is used in 2nd gear.



A761

No. 4 Sprag Assembly (F4)

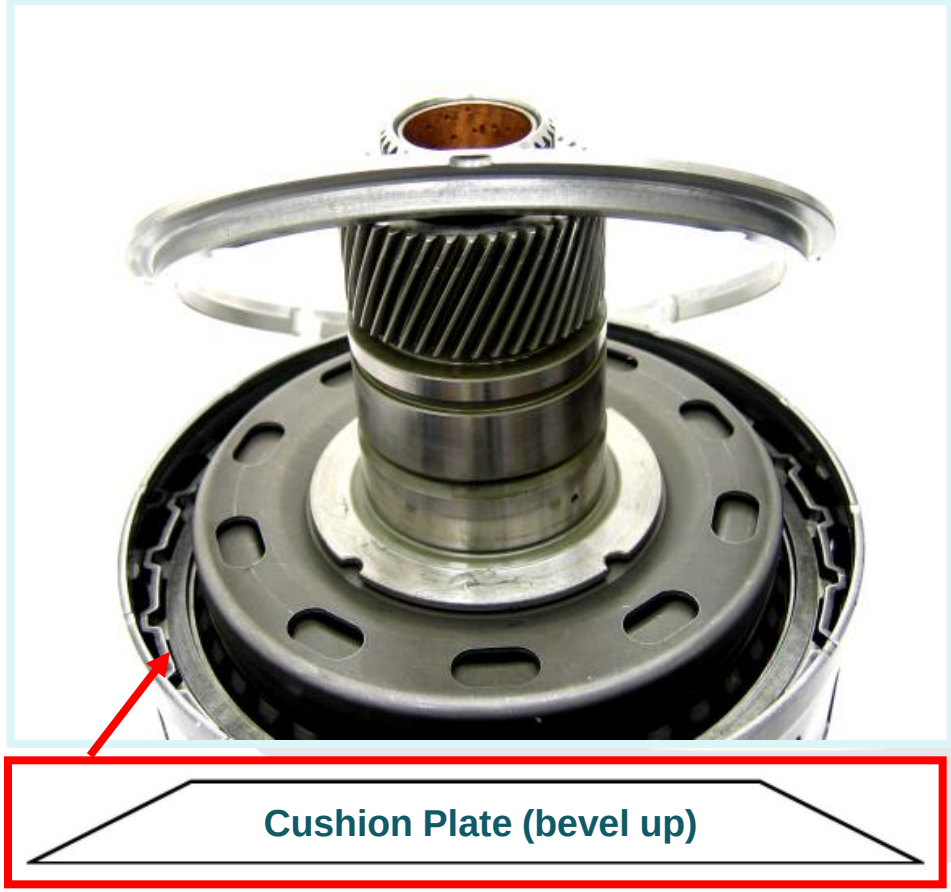
The F4 sprag holds in 1st, 2nd, 3rd, and 4th gear. When installed holding the coast clutch hub, the sprag assembly should turn freely clockwise and lock counter clockwise.



A761

Reverse Clutch Reaction Sleeve

Installation of the reverse clutch reaction sleeve and snap ring. During assembly make sure the cushion plate is installed “bevel up”. Install reaction sleeve and retain with snap ring as shown



Adapts

When the automatic transaxle assembly, valve body assembly, shift solenoid valve SL3, shift solenoid valve SL4, or TCM has been replaced, it is necessary to reset the memory so that the TCM can learn the new adapt information.

Adapts

Road Test TCM Learn

PERFORM ROAD TEST TO ALLOW TCM TO LEARN

- **NOTICE:**
  - Perform the following procedures while strictly observing all traffic laws and speed limits.
    a) Warm up the engine.
    b) From a standstill, achieve highest possible speed with the accelerator pedal opened 15% or less. Keep the accelerator pedal angle steady while driving the vehicle.
    c) Repeat the previous step until shift shock no longer occurs.
    d) From a standstill, achieve highest possible speed with the accelerator pedal opened 25% or more. Keep the accelerator pedal angle steady while driving the vehicle.
    e) Repeat the previous step until shift shock no longer occurs.

P2742

Introduction

Some 2004 and 2005 model year vehicles equipped with the A750 ATM may experience an intermittent M.I.L. "ON" condition with DTC P2742 (Transmission Fluid Temperature Sensor "B" Circuit Low). Replacement of the transmission wire harness will eliminate the condition.

Applicable Vehicles

- **2004** model year **4Runner (V8)** and **Land Cruiser** vehicles equipped with the **A750 automatic transmission**.
- **2005** model year **4Runner, Land Cruiser, Sequoia, Tacoma (V6),** and **Tundra** vehicles equipped with the **A750 automatic transmission**.

Parts Information

MODEL YEAR	MODEL	PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
2004	4Runner (V8)	82125–35130	Same	Wire Harness, Transmission	1
	Land Cruiser				
2005	4Runner	82125–35150	Same		1
	Land Cruiser				
	Sequoia				
	Tacoma (V6)				
	Tundra				
Both	All	N/A	08886–02305	ATF WS	1.7 liters

05-12 Tacoma Clunk

Introduction

Some 4WD 2005 – 2012 model year Tacoma vehicles equipped with an automatic transmission may exhibit a clunk/thunk noise from the rear of the vehicle or a "bump-from-behind" sensation just before a stop or when accelerating from a stop. Improvements have been implemented on the rear propeller shaft (driveshaft) to reduce this condition. Utilize the following repair procedure to address this condition.

Parts Information

ATM	WHEEL BASE*	PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
A340F	Short	37110-04220 37110-04221	37110-04222	Shaft Assy, Propeller	1
	Long	37100-04390 37100-04391	37100-04392	Shaft Assy, Propeller w/Center Bearing	1
A750F		37100-04340 37100-04341	37100-04342		1
	Super Long	37100-04360 37100-04361	37100-04362		1

* Wheel Base Length: Short = 2785 mm (109.6 in.), Long = 3235 mm (127.4 in.), Super Long = 3570 mm (140.6 in.)

07-13 FJ Clunk

Introduction

Some 2007 – 2013 model year FJ Cruiser vehicles equipped with automatic transmission and 4WD may exhibit a clunk/thunk noise from the rear of the vehicle, or a "bump-from-behind" sensation just before a stop, or when accelerating from a stop. Improvements have been implemented on the rear propeller shaft (driveshaft) to reduce this condition. Utilize the following Repair Procedure to address this condition.

Production Change Information

This bulletin applies to vehicles produced **BEFORE** the Production Change Effective VIN shown below.

MODEL	TRANSMISSION	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
FJ Cruiser	5AT	4WD	JTEBU4BF#DK164240

Parts Information

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
37110-35A00	37110-35B00	Propeller Shaft Assembly	1

PRNDL SW

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2003 – 2012	4Runner	Transmission(s): 5AT
2007 – 2012	FJ Cruiser	Transmission(s): 5AT
2003 – 2012	Land Cruiser	Transmission(s): 5AT, 6AT
2005 – 2012	Sequoia	Transmission(s): 5AT, 6AT
2005 – 2012	Tacoma	Transmission(s): 5AT
2005 – 2012	Tundra	Transmission(s): 5AT, 6AT

Introduction

The purpose of this TSB is to provide information regarding transmission and/or Park Neutral position switch installation. If the manual shift lever is rotated prior to installing the Park Neutral position switch, the detent spring may become detached from the manual shift lever. Use the information in this bulletin when installing an automatic transmission and/or Park Neutral position switch assembly.

PRNDL SW

Installation Tips (Continued)

- If the manual shift level is rotated without the Park Neutral position switch installed, the detent spring may become detached from the manual shift lever. See Figures 1 and 2 below.

Figure 1. Detent Spring Detached from Manual Shift Lever (Transmission Oil Pan Removed for Clarity)

Figure 2. Detent Spring in Place on Manual Shift Lever (Transmission Oil Pan Removed for Clarity)

- If the detent spring becomes detached from the manual shift lever, remove the detent spring and reinstall on the manual shift lever. See Figures 1 and 2.

1-2 Shudder

Introduction

Some 2010 – 2012 model year 4Runner vehicles equipped with the A750 transmission may exhibit a shudder condition during the 1–2 upshift. The Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) calibration and the transmission assembly have been revised to address this condition.

Leak From Yoke

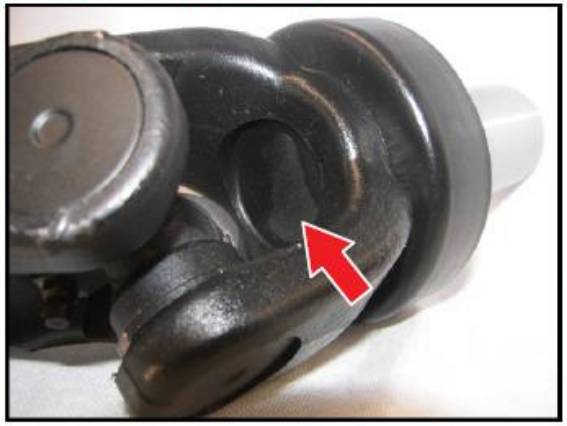
Introduction

Some 2007 – 2012 model year 2WD FJ Cruiser vehicles may display a small automatic transmission fluid leak through the propeller shaft (driveshaft) slip yoke plug in the center of the yoke. Utilize the following repair procedure to address this condition.

Repair Procedure

1. Confirm source of automatic transmission fluid leak is through the propeller shaft (driveshaft) slip yoke plug in the area indicated in Figure 1.
   - If transmission fluid leak is NOT originating in this area, this bulletin does not apply. Please continue diagnosis per the Repair Manual.
   - If leak originates from the propeller shaft (driveshaft) yoke, **go to step 2.**

Figure 1. Area of Transmission Fluid Leak in Propeller Shaft (Driveshaft) Slip Yoke Plug



2. Replace the rear propeller shaft (driveshaft).

Hard Shifts 4 Runner
FJ Cruiser

Introduction

Some vehicles may exhibit a harsh shift on acceleration below 20 mph during the 2-1 downshift on vehicles equipped with an A750 transmission. The Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) calibration has been revised. Use the following repair procedure to address this condition.

C1 Clutch

Introduction

Some Sequoia or Tundra vehicles with AB60 (6 speed) transmissions may exhibit transmission slipping, MIL "ON" with transmission shift performance DTCs such as P2714, P0751, P0756, P0761, P0766, P0729, P0781, P0894, or P0776, or harsh shifting due to damage to the C1 clutch assembly. Installation of revised Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) software logic may be required to repair the vehicle. Follow the repair procedure in this bulletin to address customer concerns.

NOTE

The DTC that is stored first will have 5 frames of Freeze Frame Data. If P2714 is set first, the transmission fluid level may be incorrect.

Tundra P0705

Introduction

Some customers of 2007 model year Tundra trucks equipped with a floor-mounted shift lever may complain of a M.I.L. “ON” with DTC P0705 (Transmission Range Sensor Circuit Malfunction [PRNDL input]) combined with any of the following customer complaints after towing a trailer using the 7-pin trailer harness connector:

- Concerns with the PRNDL display on instrument cluster
- Transfer case cannot be shifted into or out of 4WD Low
- Delayed or harsh shifting into or out of Reverse or Drive

Replacement of the back-up lamp fuse and installation of a new sub-wire harness will prevent this condition from recurring. The new sub-wire harness changes the power supply from the back-up lamp circuit to the IG1 circuit. Follow the procedures detailed in this bulletin to addresss customer concerns.

Tundra Oil Temp Light On

Introduction

Some 2010 – 2011 model year Tundra vehicles equipped with the AB60E/F transmission and towing package may illuminate the A/T oil temperature warning light when towing in sub-freezing ambient temperatures. The Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) logic has been modified to address this condition.

Land Cruiser Hard Shifts

Introduction

Some 2008 – 2011 model year Land Cruiser vehicles may exhibit a harsh shift on acceleration below 20 mph during the 2-1 downshift. The Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) calibration has been revised. Use the following repair procedure to address this condition.

Land Cruiser Shudder

Introduction

Some 2004 and 2005 model year Land Cruiser vehicles may exhibit a shudder (or vibration) sensation, usually accompanied by a cyclic droning noise, when lightly accelerating (less than 15% throttle) after the transmission shifts into 5th gear (usually between 35 and 45 mph). This condition may be caused by water entering the transmission breather, contaminating the transmission fluid. The transmission breather has been changed to prevent water intrusion.

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
35123–60040	35123–60060	Skirt, Transmission Breather	1
–	35010–60A00–84	ATM with Torque Converter	1

Tacoma shift Concerns

Introduction

To enhance shifting performance and smoothness below 20 mph during the 2-1 downshift on vehicles equipped with an A750 transmission, the Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) calibration has been revised. Use the following repair procedure to address this condition.

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