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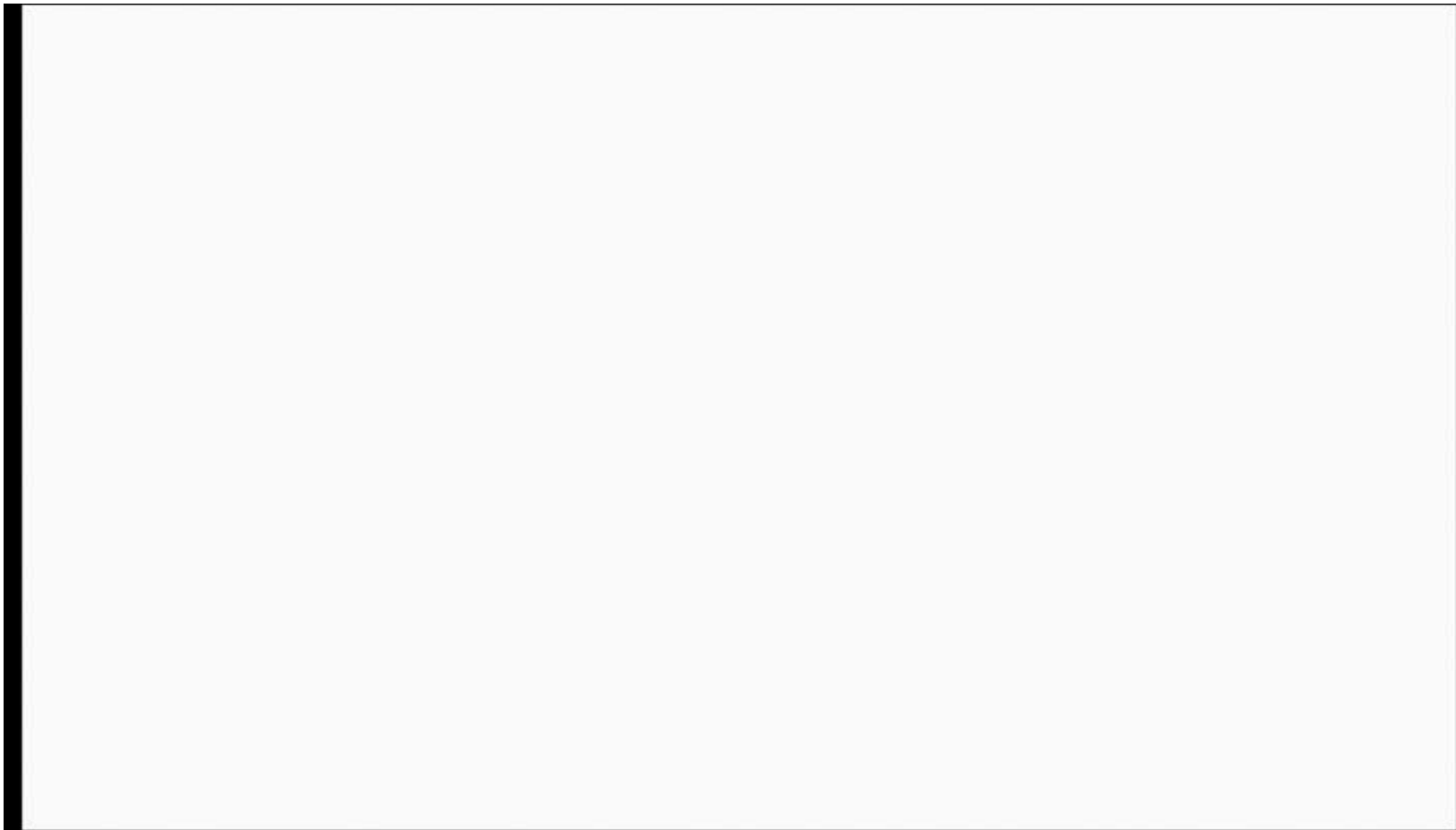
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4	5	6	7	8	9	10	8	9	10	11	12	13	14
11	12	13	14	15	16	17	15	16	17	18	19	20	21
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25	26	27	28	29	30	31	29	30					

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[11/7/15 -- Baltimore, MD](#)

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A960E/A760E/AB60E Comparison Intro



6 Speeds

***Presented by:
Mike Souza
ATRA Senior
Research Technician***



A960E-A760E-AB60 Comparison-Intro Webinar ©2015 ATRA. All Rights Reserved.





Vehicle Application A760E/A960E/AB60E 6 Speeds

Lexus

GS 300	2005-11	3.0/3.5L V6	A760E/H
GS 350	2005-11	4.3L V8	A761E
GS 430	2005-12	3.0L V6	A960E
GX 460	2009-14	4.6L V8	AB60E
IS 250	2005-12	2.5/3.0L V6	A960E
IS 350	2005-14	2.5/3.0/3.5L V6	A760/761E
LS 430	2003-06	4.3L V8	A760/761E
LX	2011	4.6L V8	A760E
LX 570	2012-14	5.7L V8	AB60E
SC	2005-10	4.3L V8	A760/761E

Mazda

Roadster	2005-14	2.0L V6	A960E
RX8	2006-12	1.3L Rotary	A761E

Rely

Master	2010-11	2.2L L4	A761
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Toyota

Celsior	2003-06	4.3L V8	A760E
Century	2005-14	5.0L V12	A760E
Coaster	2012-14	4.0L L4	AB60E
Dyna	2012-14	4.0L L4	AB60E
Land Cruiser / 200	2008-14	4.6/4.8/5.7L V8	AB60E
Mark X	2004-14	2.5/3.0L V6	A960E
Mark X	2009-14	3.5L V6	A761E
Sequoia	2009-12	4.6L V8	A760E
Sequoia	2008-14	5.7L V8	AB60E/F
Tundra	2007-14	4.0L V6 5.7L V8	AB60E/F
Tundra	2009-14	4.6L V8	A760/761E

Hongoi

HQ3	2007-12	3.0L V6 4.3L V8	A761
HQE	2010-11	6.0L V12	A761
L7	2013	2.0L 4 2.5/3.0L V6	A761



Transmission Identification Tag Locations





General Information

Although this webinar is about the six speeds. We just wanted to quickly mention the difference between the later A760E/A960E/AB60E six speed models and the earlier A650E/A750E five speed models.

If you look at the cutaway views of the A650E/A750E five speed units you will see the addition of a clutch assemblies and solenoids between the two five speeds.

You will also notice a major difference with the A650E / A750E five speeds is the exception to the general rule for Toyota/Lexus models. The general rule is the higher transmission model number is usually found behind the smaller engine and vice versa.

Not in this case the A750E found in Toyota/Lexus models goes behind the larger 4.7L V8 where as the lower model number A650E is found behind the smaller V6 and V8 engine.

Unlike the six speed units that still follow the general rule for Toyota and Lexus shown previously.





Vehicle Application A350E/A650E/A750E 5 Speeds

Isuzu Pickup	2013-14	3.0L L4	A750F
Lexus GS	1996-97	3.0L V6	A350E
GS	1998-05	3.0L V6 4.0/4.3L V8	A650E
GX 470	2003-09	4.7L V8	A750F
IS	2000-05	3.0L V6	A650E
LS	1998-03	4.0/4.3L V8	A650E
LX	2003-07	4.6L V8	A750F

Toyota Progres	2001-07	2.5/3.0L V6	A650E
Sequoia	2005-08	4.7L V8	A750E/F
Soarer	2001-05	4.3L V8	A650E
Supra	2002	3.0L V6	A650E
Tacoma	2005-14	4.0L V6	A750E/F
Tundra	2005-14	4.0L V6 4.7L V8	A750E/F
Verossa	2001-04	2.0/2.5L V6	A650E

Suzuki Escudo	2004-11	2.7/3.2L V6	A750
Grand Vitara	2009-11	2.7L V6	A750E/F

Toyota 4 Runner	2003-08	4.0L V6 4.7L V8	A750E/F
Altezza Gita	2000-05	2.0L L4 2.5/3.0L V6	A650E
Aristo	2000-04	3.0L V6 4.3L V8	A650E
Brevis	2001-07	2.5/3.0L V6	A650E
Celsior	2000-03	4.3L V8	A650E
Century	2000-04	5.0L V12	A650E
Chaser	2000-01	2.5L V6	A650E
Cresta	2000-01	2.5L V6	A650E
Crown Estate	2001-07	2.5/3.0L V6	A650E
FJ Cruiser	2007-14	4.0L V6	A750E/F
Fortuner	2007-14	3.0L L4 4.0L V6	A750E/F
Hilux	2001-05	3.4L V6	A650E
Hilux/Surf/SW4/Vigo	2002-14	3.0L L4 4.0L V6 4.7L V8	A750E/F
Land Cruiser	2000-02	3.4L V6	A650E
Land Cruiser/Prado	2000-14	3.0L L4 4.0/4.2L V6 4.7L V8	A750F
Land Cruiser/200	2012-14	4.0L V6 4.7L V8	A750F
Mark II	2000-04	2.0/2.2L L4 2.5L V6	A650E
Mark II	2004-09	2.5L V6	A750E/F





A650E/A750E 5 Speeds Component Comparison

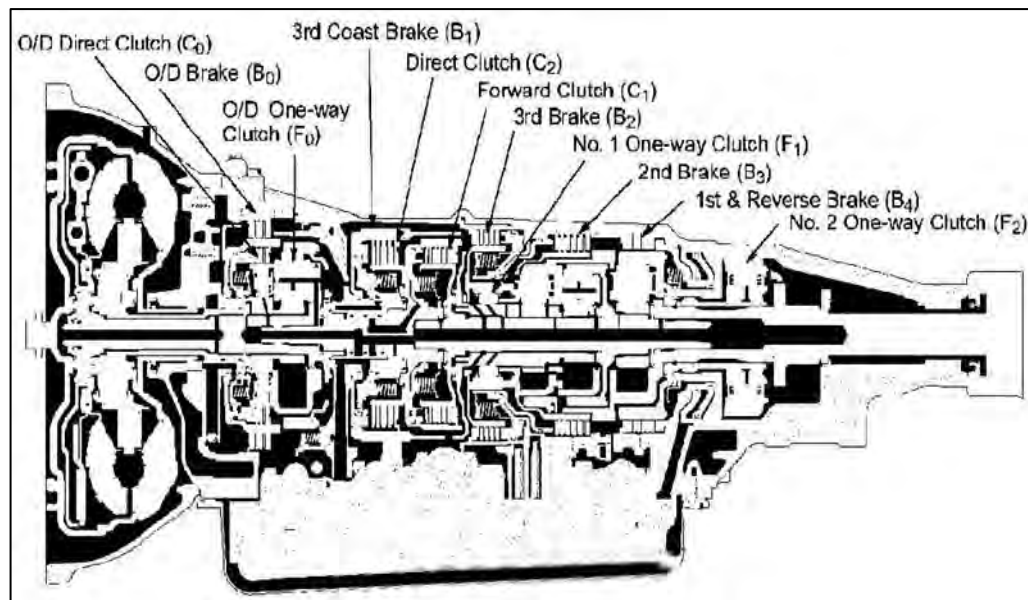
Although both units are five speeds there are differences as to how they work. For example they both have 3 sprags but they are named and work differently.

The A650E has 5 brake clutches where as the A750E has only 4 brake clutches.

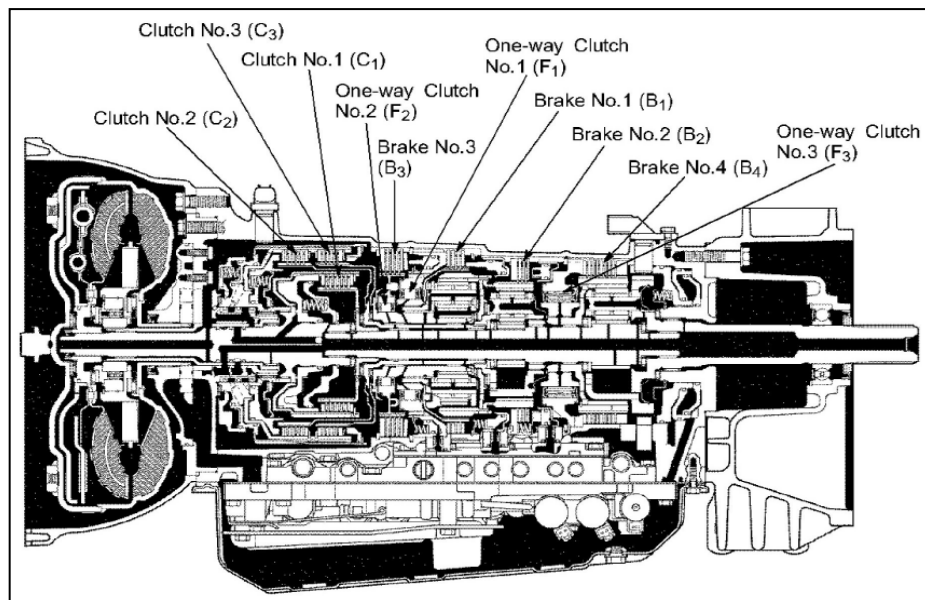
They both have 3 driving clutches.



A650E Five Speed



A750E Five Speed

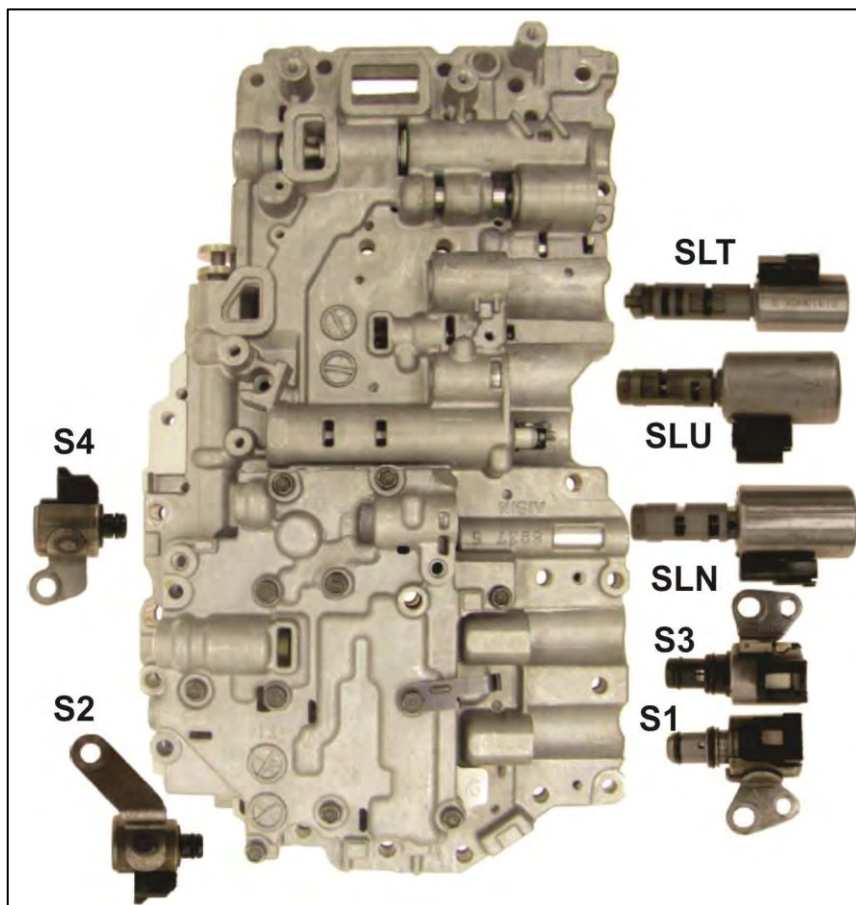




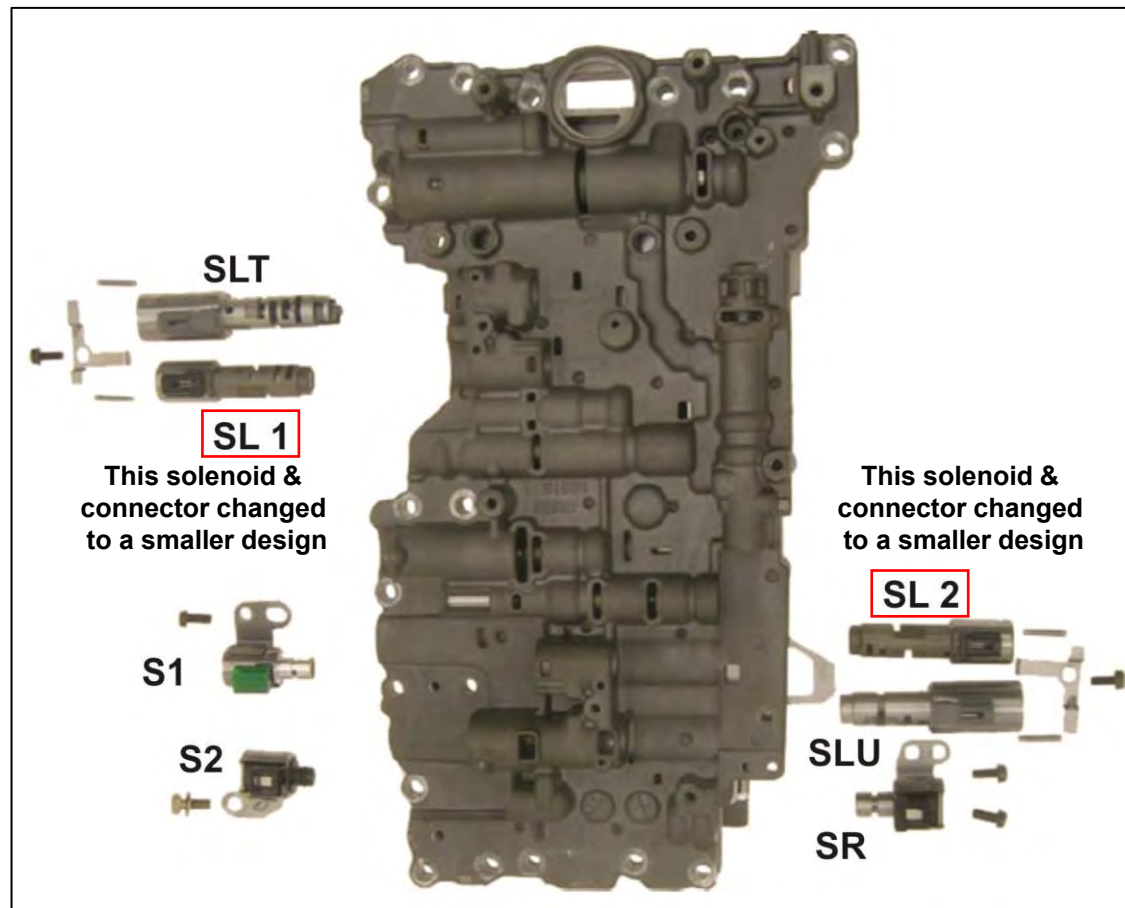
A650E/A750E 5 Speeds Solenoid Comparison

The valve body and solenoid arrangement are completely different. Even though they both have 7 solenoids.

A650E Five Speed



A750E Five Speed





A650E/A750E 5 Speeds Apply Chart Comparison

A650E	Gear Position	S1	S2	S3	S4	C ₀	C ₁	C ₂	B ₀	B ₁	B ₂	B ₃	B ₄	F ₀	F ₁	F ₂
P	Park	ON	OFF	ON	OFF	○										
R	Reverse	ON	OFF	OFF	OFF			○	○				○			
N	Neutral	ON	OFF	ON	OFF	○										
D M (5)*	1st	ON	OFF	OFF	OFF	○	○							○		○
	2nd	ON	ON	OFF	OFF	○	○					○		○		
	3rd	OFF	ON	OFF	OFF	○	○				○			○	○	
	4th	OFF	OFF	ON	OFF	○	○	○			○			○		
	5th	OFF	OFF	OFF	ON		○	○	○		○					
3	1st	ON	OFF	OFF	OFF	○	○							○		○
	2nd	ON	ON	OFF	OFF	○	○					○		○		
	3rd	OFF	ON	ON	OFF	○	○			○	○			○	○	
2	1st	ON	OFF	ON	OFF	○	○							○		○
	2nd	ON	ON	OFF	OFF	○	○					○		○		
L	1st	ON	OFF	OFF	OFF	○	○						○	○		○

As shown in the component apply charts they work differently.

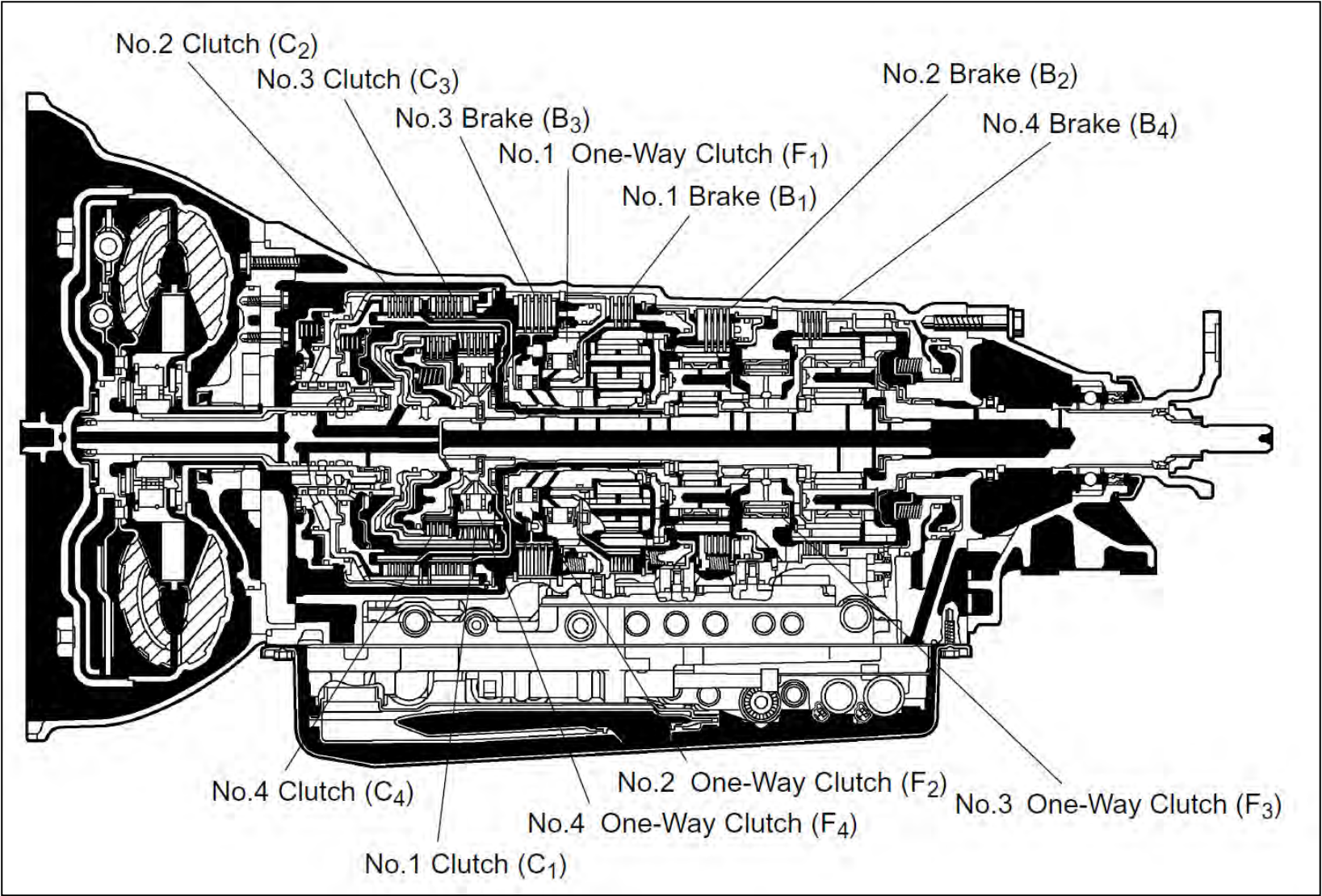
Example: The F₀ & F₂ sprags are holding in 1st gear in the A650E.

Only the F₃ sprag is holding in 1st gear on the A750E.

A750E	Gear Position	S1	S2	SR	SL1	SL2	SLU	C ₁	C ₂	C ₃	B ₁	B ₂	B ₃	B ₄	F ₁	F ₂	F ₃
P	Park	○	x	x	x	○	x	x	x	x	x	x	x	x	x	x	x
R	Reverse	○	x	x	x	○	x	x	x	○	○	x	x	○	○	x	x
N	Neutral	○	x	x	x	○	x	x	x	x	x	x	x	x	x	x	x
D	1st	○	x	x	x	○	x	○	x	x	x	x	x	x	x	x	○
	2nd	○	○	x	x	○	x	○	x	x	x	x	○	x	○	○	x
	3rd	x	○	x	x	○	x	○	x	○	x	x	○	x	○	x	x
	4th	x	x	x	x	○	○	○	○	○	x	x	○	x	x	x	x
	5th	x	x	○	○	x	○	x	○	○	○	x	○	x	x	x	x
4	1st	○	x	x	x	○	x	○	x	x	x	x	x	x	x	x	○
	2nd	○	○	x	x	○	x	○	x	x	x	x	○	x	○	○	x
	3rd	x	○	x	x	○	x	○	x	○	x	x	○	x	○	x	x
	4th	x	x	x	x	○	○	○	○	○	x	x	○	x	x	x	x
3	1st	○	x	x	x	○	x	○	x	x	x	x	x	x	x	x	○
	2nd	○	○	x	x	○	x	○	x	x	x	x	○	x	○	○	x
	3rd	x	○	x	x	x	x	○	x	○	○	x	○	x	○	x	x
2	1st	○	x	x	x	○	x	○	x	x	x	x	x	x	x	x	○
	2nd	○	○	○	x	x	x	○	x	x	x	○	○	x	○	○	x
L	1st	○	x	x	x	x	x	○	x	x	x	x	x	○	x	x	○



A760E/A960E/AB60E 6 Speed Drivetrains Are All The Same





A760E/A960E/AB60E 6 Speed Component Apply Chart



Shifter Position	Clutches				Brake				One-Way Clutch			
	C1	C2	C3	C4	B1	B2	B3	B4	F1	F2	F3	F4
Reverse ●			○		○			○	○			
D 1st gear	○			○							○	○
D 2nd gear	○			○					○	○		○
D 3rd gear	○		○	○			*		○			○
D 4th gear ●	○	○	*	○			*					○
D 5th gear ●	*	○	○		○		*					
D 6th gear ●	*	○			*	○	*					
S3 3rd gear ●	○		○	○	◇		*		○			○
S2 2nd gear ●	○			○		◇			○	○		○
S1 1st gear ●	○			○				◇			○	○

- Component is applied
- * On but not effecting power
- Engine braking occurs
- ◇ Operates during engine braking





Solenoid ID A760E/A960E/AB60E

Use the following illustration to properly identify the solenoids and their names.

Note: the AB60E will have two separate wire harnesses.

A760E/A960E/AB60E

Repair Manual Solenoid Name	Parts Catalog Part Description
S1	Solenoid Assy, Automatic Transmission 3 Way No. 1
S2	Solenoid Assy, Automatic Transmission 3 Way No. 2
S3	Solenoid Assy, Automatic Transmission 3 Way No. 1
S4	Solenoid Assy, Automatic Transmission 3 Way No. 3
SR	Solenoid Assy, Automatic Transmission 3 Way No. 4
SLT	Solenoid Assy, Line Pressure Control
SLU	Solenoid Assy, Lock Up Control
SL1	Solenoid Assy, Clutch Control No. 1
SL2	Solenoid Assy, Clutch Control No. 1





A760E/A960E/AB60E 6 Speed Solenoid Apply Chart

Shifter Position	Solenoids							
	S1	S2	S3	S4	SR	SL1	SL2	SLU
Park		on	on		on		on	
Reverse		on	on		on		on	
Neutral		on	on		on		on	
D 1st gear		on	on		on		on	
D 2nd gear	on	on	on		on		on	on
D 3rd gear	on		on		on		on	on
D 4th gear ●	on				on		on	on
D 5th gear ●	on			on		on		on
D 6th gear ●	on	on		on		on		on
S3 3rd gear ●	on		on		on		off	on
S2 2nd gear ●	on	on	on	on	on			on
S1 1st gear ●		on	on		on		off	

● Engine braking occurs





A760E/A960E/AB60E 6 Speed Internal Components

We found that most of the internal components were all basically the same in design.

The AB60E is much larger than the other two models.

Although the A960E C1/C4 clutch drum is smaller the tip was a bit longer.



Longer



A960E



A760E



AB60E





A760E/A960E/AB60E 6 Speed Internal Components

The lay out of the internal components are the same, the only difference is in the size of the components.





A760E/A960E/AB60E 6 speed Bellhousing Comparisons

As shown here the bellhousing differences due to engine application.



A760E



A761E



AB60E



A960E

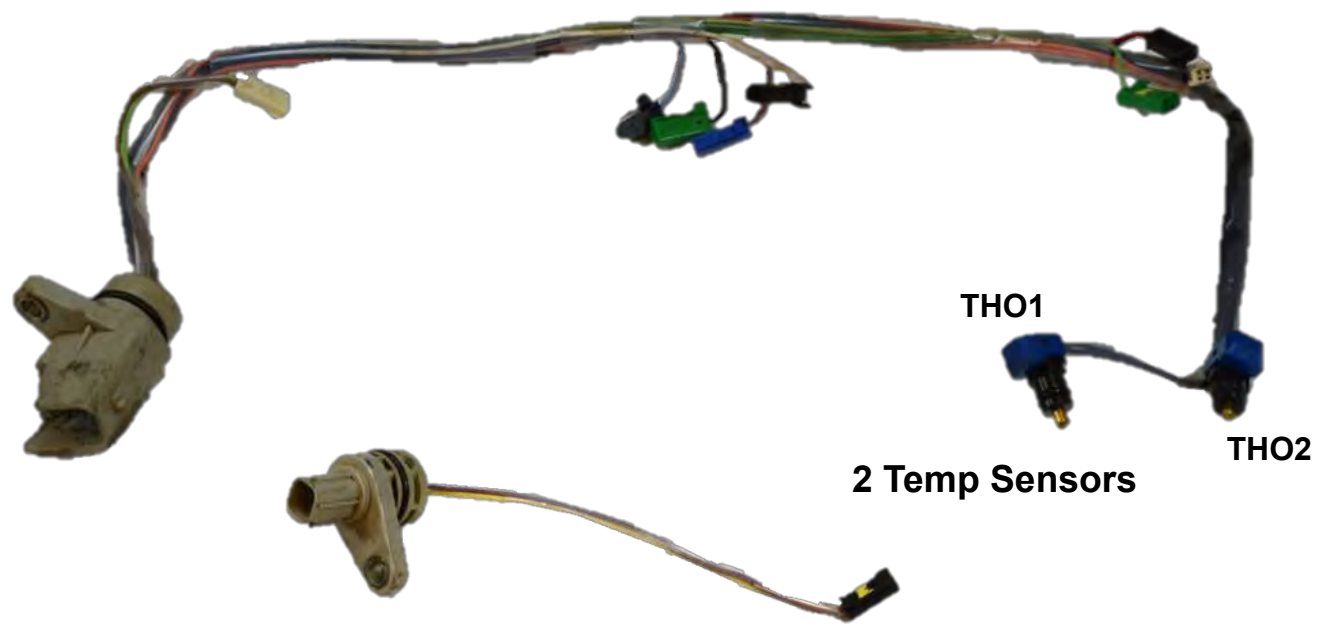




AB60E Internal Wire Harness

There are two internal wire harnesses and two temperature sensors on the AB60E. The case will have two holes one for each case connector.

15 Pin Internal Harnesses



2 Pin Internal Harnesses

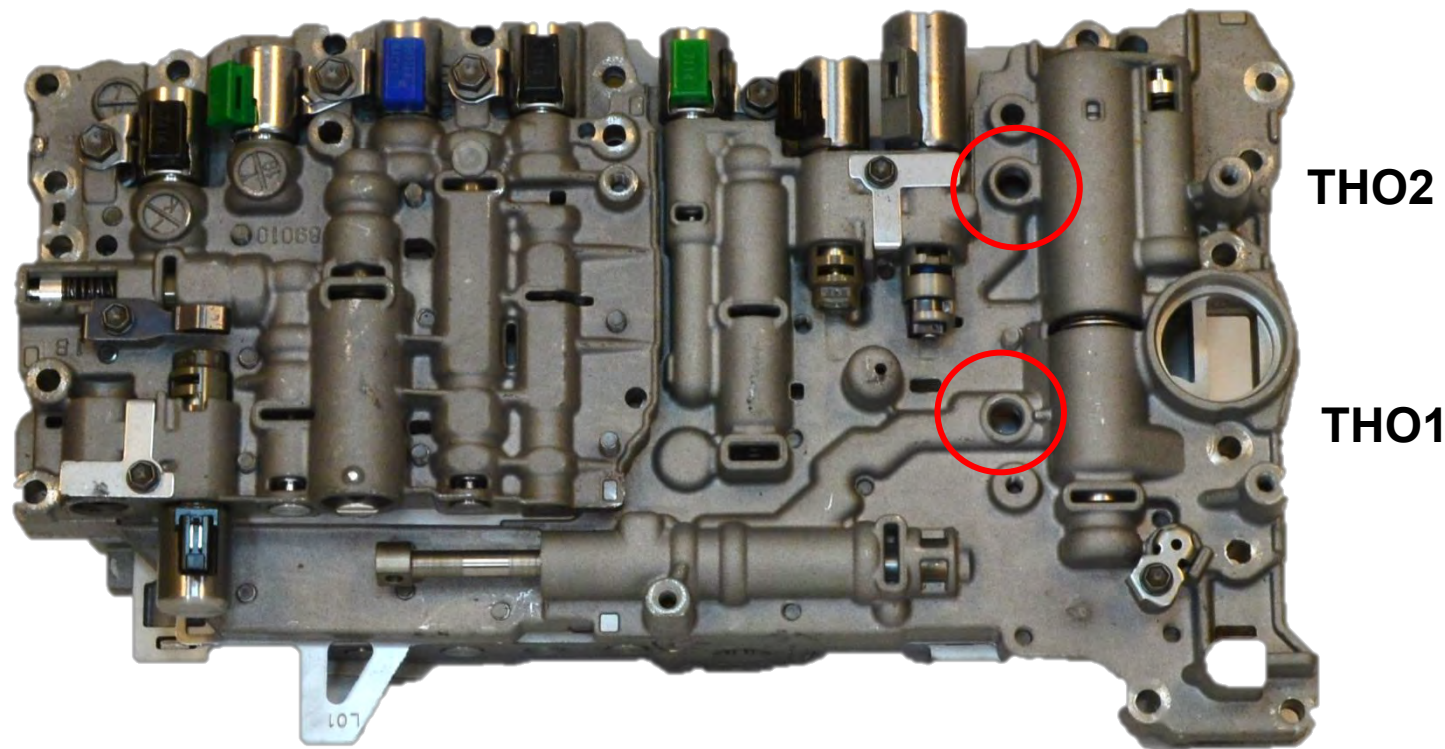
2 Temperature sensors like the A750E
with only one internal harness.





AB60E Valve Body With 2 Temperature Sensors

There are two holes in the valve body for the dual temperature sensors on the AB60E.



ATF temperature sensor No.1 (THO1) is used for hydraulic pressure control. This sensor is used to revise the apply pressure to clutches and brakes in the transmission for smooth shift quality.

ATF temperature sensor No.2 (THO2) is used as a basis for modifying the ECT shift timing control when the ATF temperature is high. It is also used for the ATF temperature warning light.





A760E/AB960E Internal Wire Harness

There is only one internal wire harness and one temperature sensor on the A760E & A960E. With only one hole in the case for the connector.



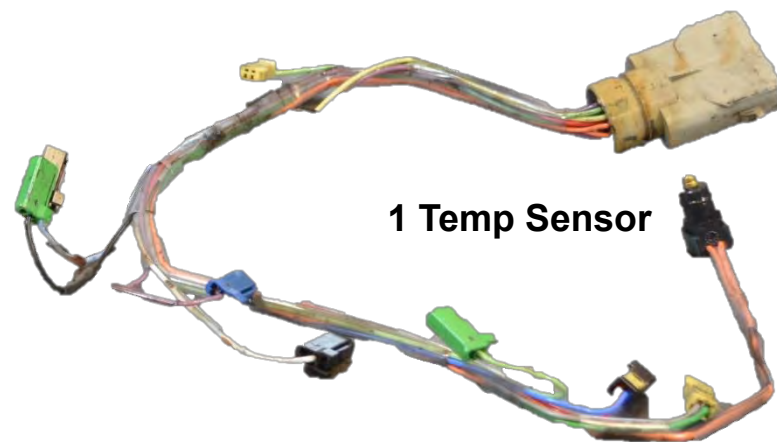
A960E



A760E



15 Pin Internal Harness



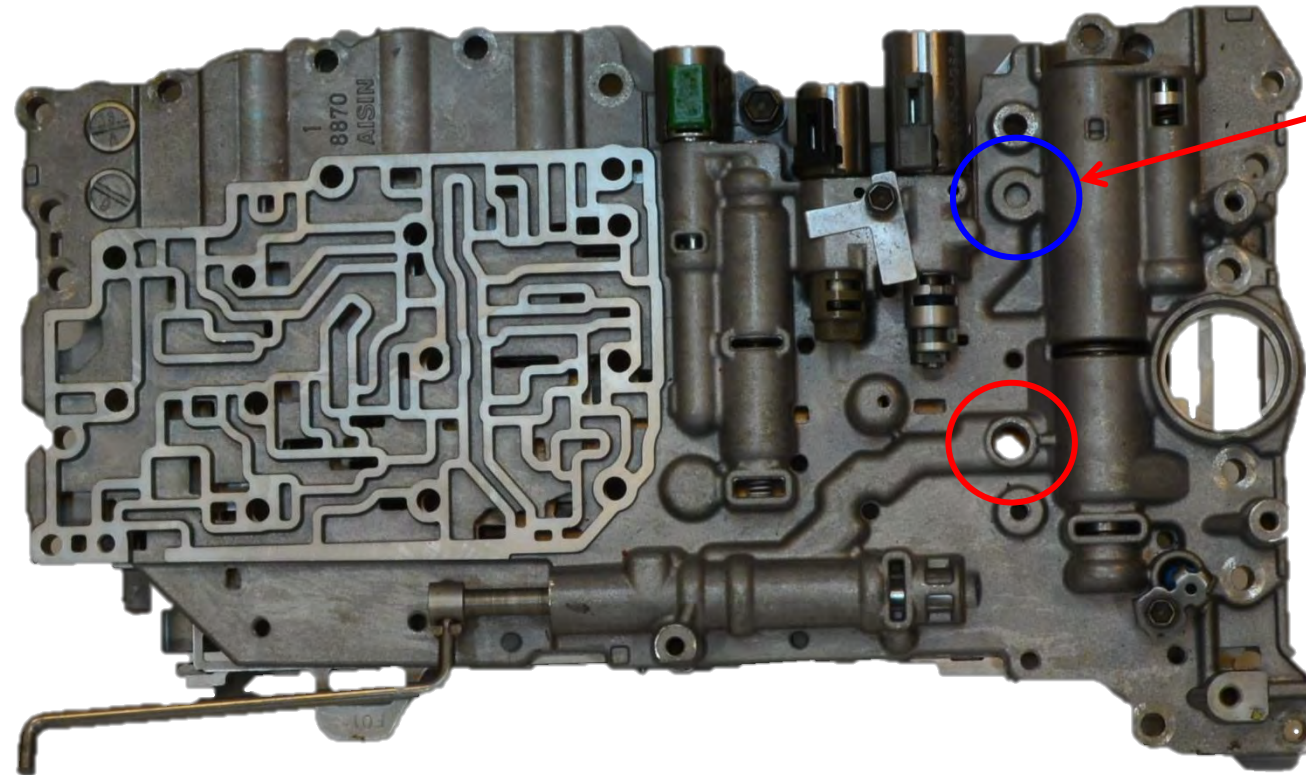
1 Temp Sensor





A760E/A960E Valve Body With 1 Temperature Sensor

There is only one hole in the valve body for the single temperature sensor on the A760E/A960E, the other hole is blocked.



Blocked

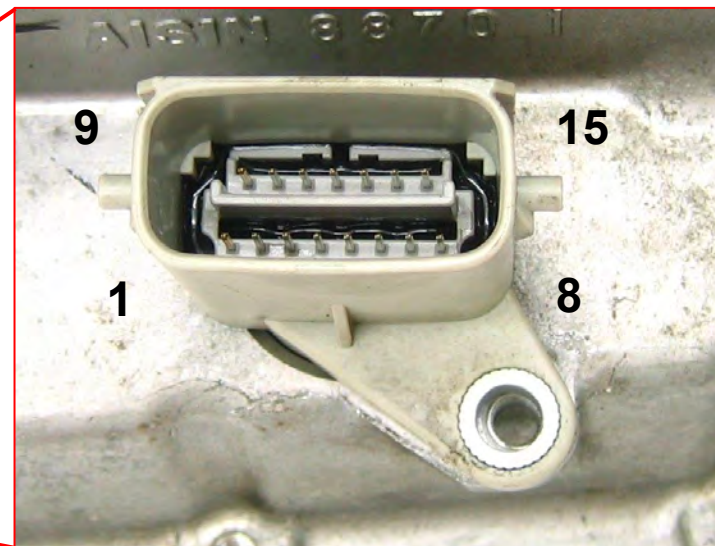
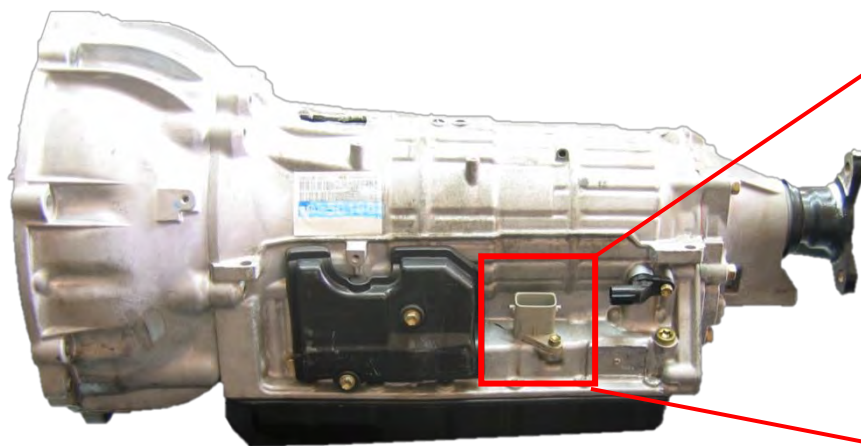
ATF Temperature Sensor Value, min.: -40°C (-40°F) max.: 215°C (419°F)





A760E/A960E Single Case Connector Pin Identification/Specification

Here are 15 pin identifications and specifications for the one internal wire harness found on both the A760E & A960E.



15 Pin Internal Harnesses

- | | |
|-------------------------------------|--------------------------------------|
| 1: OT+ (79k – 156k) | 11: SL1+ (5.0-5.6 Ohms) N/H |
| 2: SL2- (5.0-5.6 Ohms) N/H | 12: SLU+ (5.0-5.6 Ohms) N/L |
| 3: SL1- (5.0-5.6 Ohms) N/H | 13: SLT+ (5.0-5.6 Ohms) N/H |
| 4: SLU- (5.0-5.6 Ohms) N/L | 14: S4+ (11-15 Ohms) case ground N/L |
| 5: SLT- (5.0-5.6 Ohms) N/H | 15: S2+ (11-15 Ohms) case ground N/L |
| 6: SR+ (11-15 Ohms) case ground N/L | |
| 7: S3+ (11-15 Ohms) case ground N/L | |
| 8: S1+ (11-15 Ohms) case ground N/L | |
| 9: OT- (79k – 156k) | |
| 10: SL2+ (5.0-5.6 Ohms) N/H | |

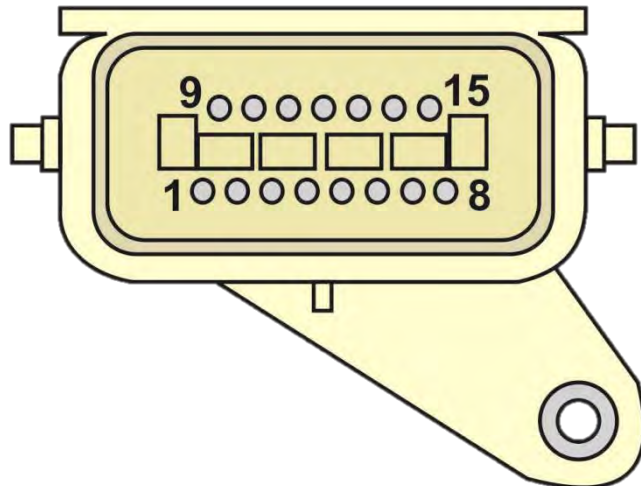




AB60E Dual Case Connector Pin Identification/Specification

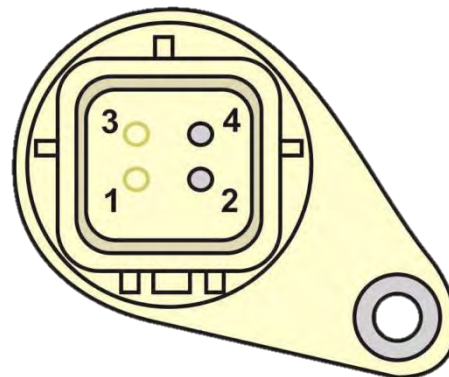
Here are pin identifications for the two internal wire harnesses found on the AB60E.

15 Pin Internal Harnesses



- 1: OT- (79k – 156k)
- 2: OT2- (79k – 156k)
- 3: SL1- (5.0-5.6 Ohms) N/H
- 4: SLU- (5.0-5.6 Ohms) N/L
- 5: SLT- (5.0-5.6 Ohms) N/H
- 6: SR+ (11-15 Ohms) case ground N/L
- 7: S3+ (11-15 Ohms) case ground N/L
- 8: S1+ (11-15 Ohms) case ground N/L
- 9: OT+ (79k – 156k)
- 10: OT2+ (79k – 156k)

2 Pin Internal Harnesses



- 1: N/A
- 2: SL2+ (5.0-5.6 Ohms) N/H
- 3: N/A
- 4: SL2- (5.0-5.6 Ohms) N/H

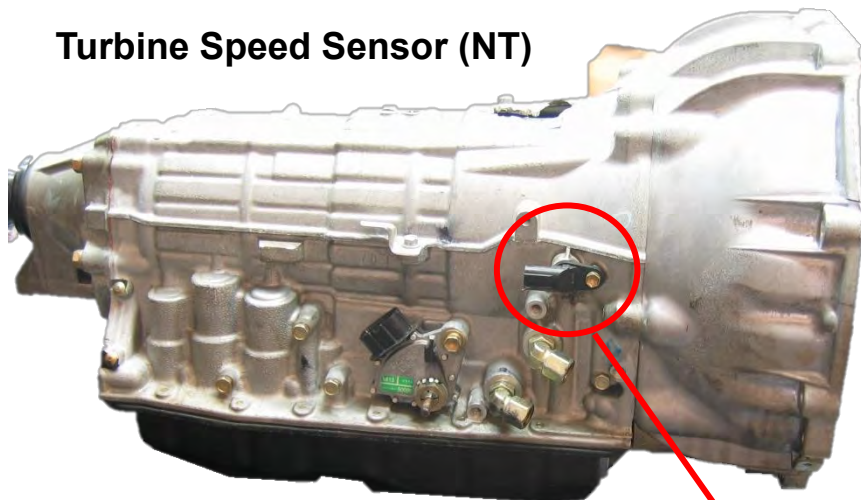
- 11: SL1+ (5.0-5.6 Ohms) N/H
- 12: SLU+ (5.0-5.6 Ohms) N/L
- 13: SLT+ (5.0-5.6 Ohms) N/H
- 14: S4+ (11-15 Ohms) case ground N/L
- 15: S2+ (11-15 Ohms) case ground N/L



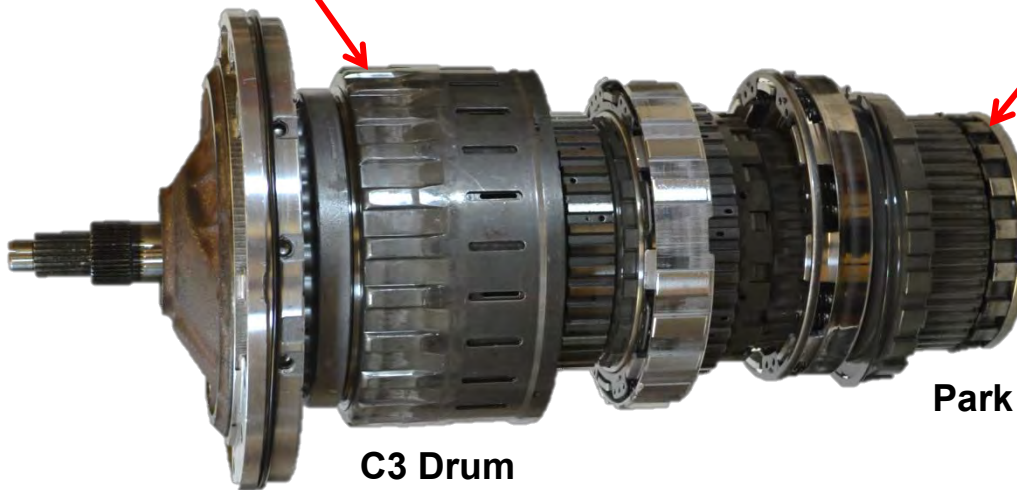
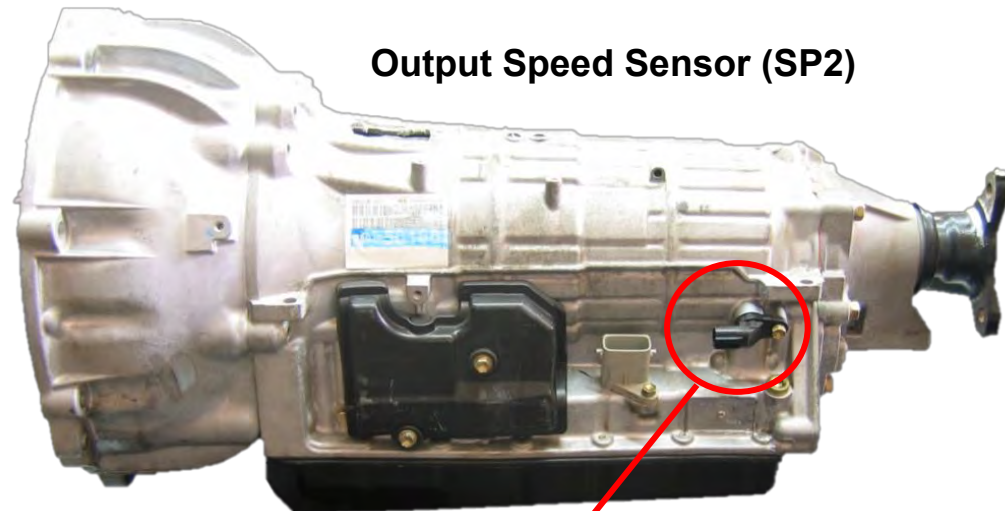
Speed Sensor Information

Both speed sensors are 2 wire permanent magnet A/C pulse generators. The Turbine Speed Sensor (NT) monitors the lugs on the C3 drum while the Output Speed Sensor (SP2) monitors the park gear.

Turbine Speed Sensor (NT)



Output Speed Sensor (SP2)



C3 Drum

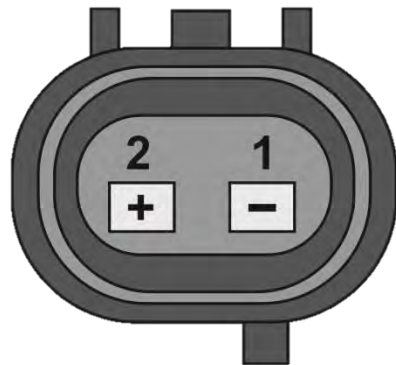
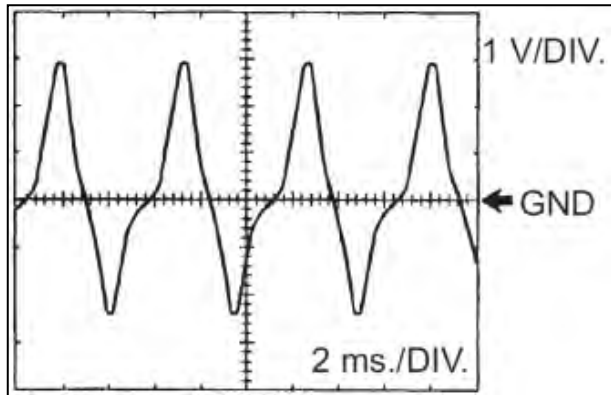
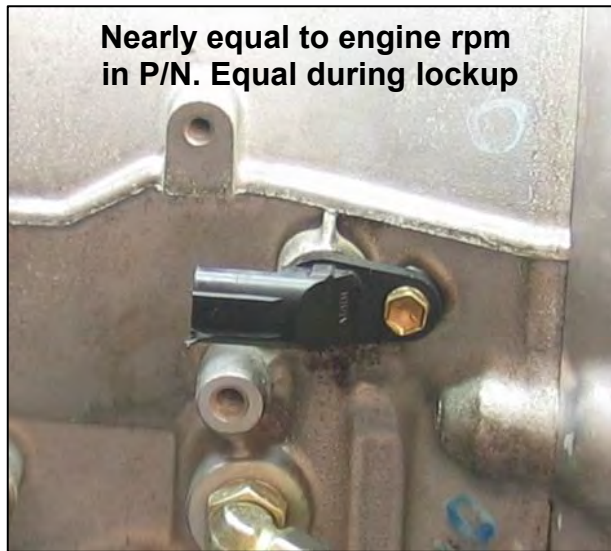
Park Gear



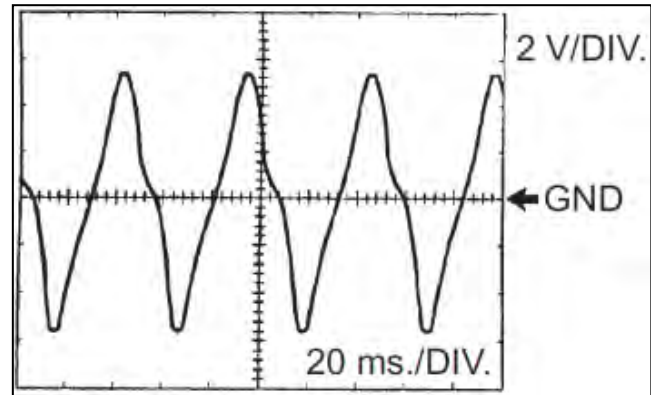
Speed Sensor Information

Both speed sensors are polarity sensitive. One pin is positive and the other negative.

The TSS (NT) produces approximately 0 - 3 volts A/C (50 r/min) and 0 – 6 volts A/C from the OSS (SP2) maximum 255 km/h (158 mph). The sensor resistance is 560 to 680 Ω at 22° C (68° F)



The ECM Detects The Shift Timing And Controls Engine Torque And Hydraulic Pressure.





Speed Sensor/TCC Information

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, up-shift to the 5th, 6th, AI-SHIFT and flex lock-up clutch control are prohibited.

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, up-shift to the 5th, 6th, AI-SHIFT and flex lock-up clutch control are prohibited.

Flex Lock-up Clutch Control

In the low-to-mid-speed range, this flex lock-up clutch control regulates the SLU solenoid to provide an intermediate mode between the ON/OFF operation of the lock-up clutch to improve efficiency.

As a result fuel economy will be improved.

The flex lock-up clutch control operates in the 3rd, 4th, 5th and 6th gears in the D position and S6 range, 3rd, 4th and 5th gears in the S5 range, 3rd and 4th gear in the S4 range.

Even when the vehicle is decelerating (accelerator pedal released), the flex lock-up clutch control operates.

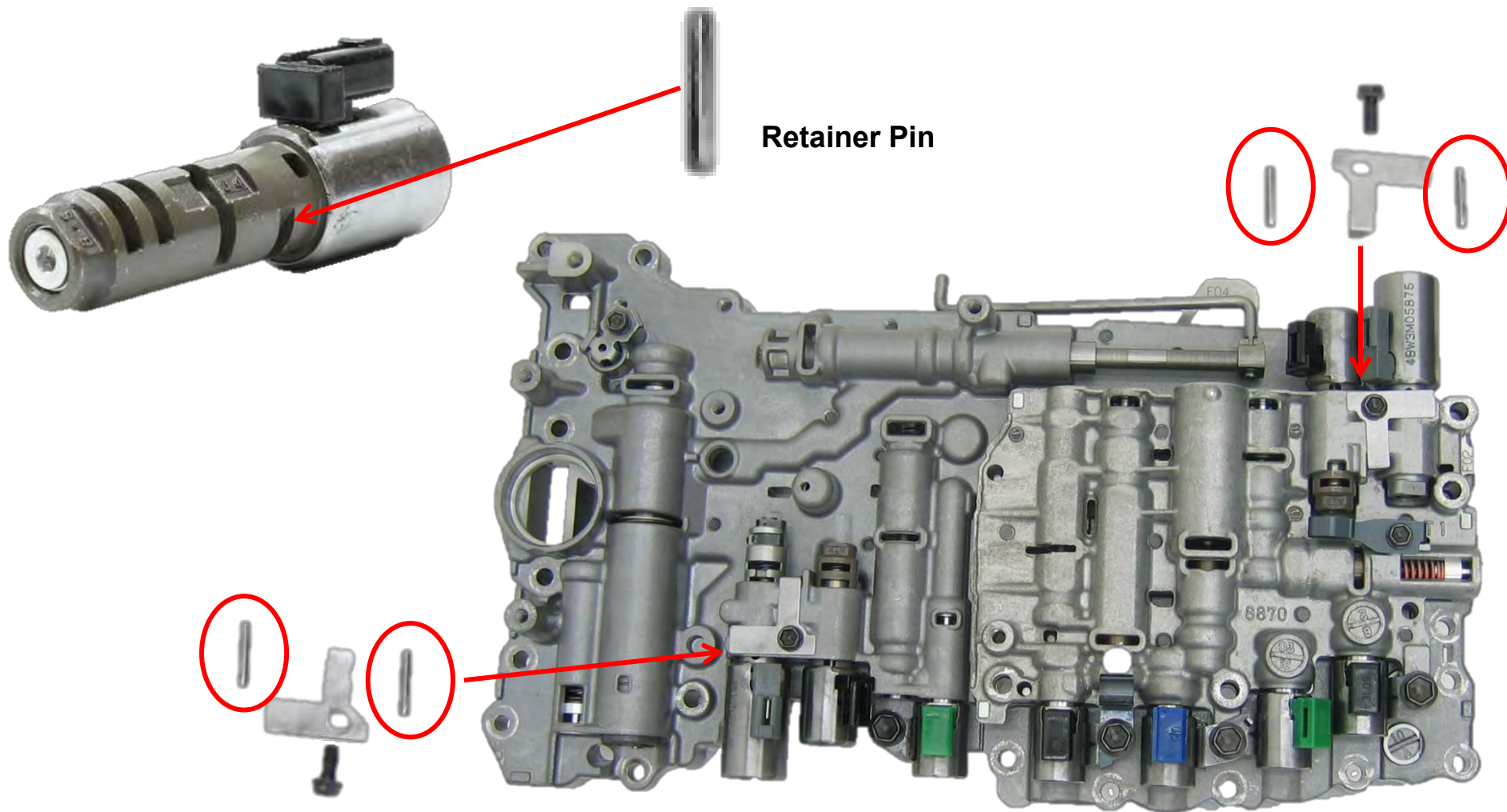
Expanding the fuel-cut of the engine and improving fuel-economy.





Solenoid Retainer Pins

When the solenoids are installed be sure to align the retainer pin with the correct slot in the solenoid.

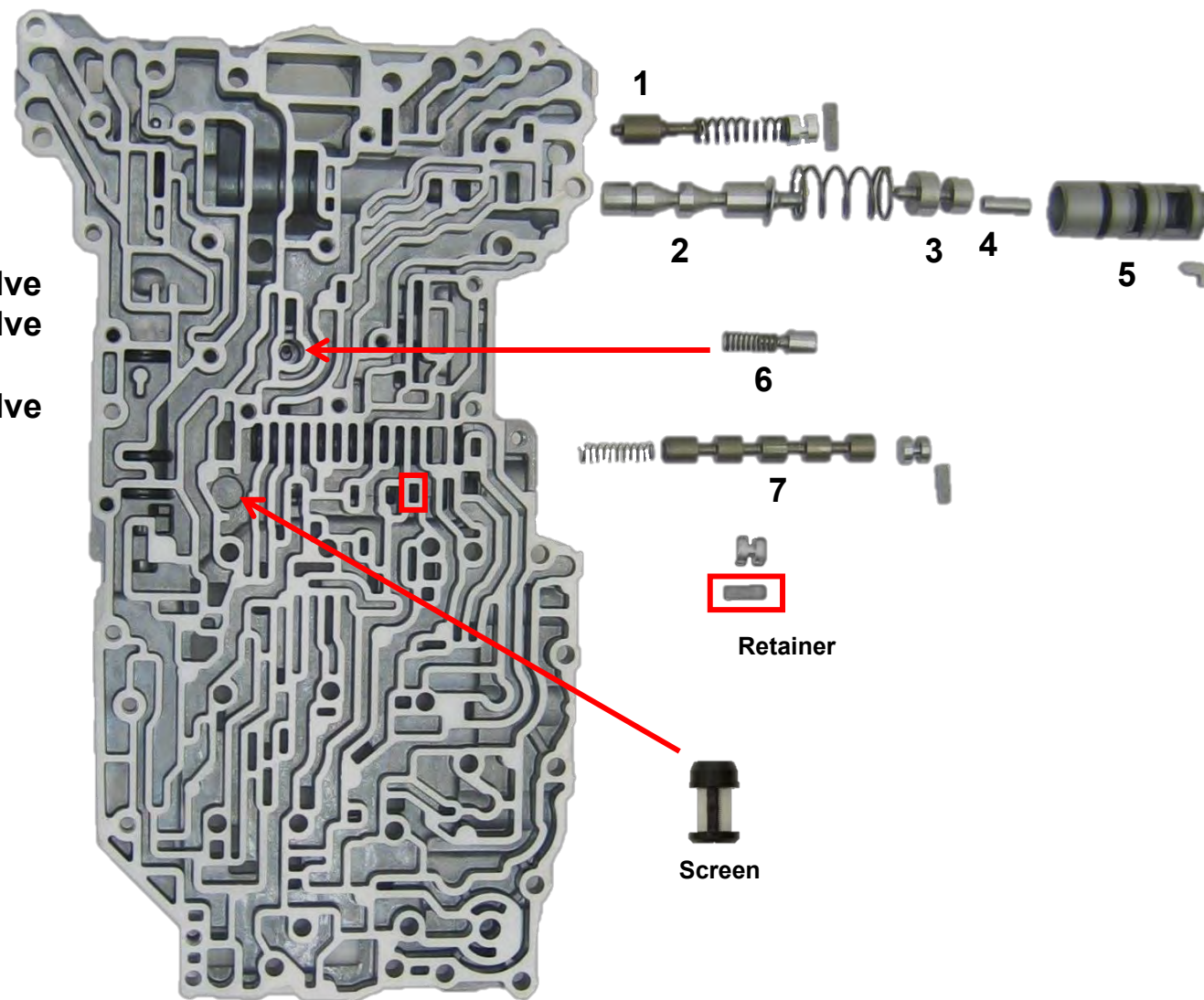




Valve Body Information

A960E/A760E/AB60E

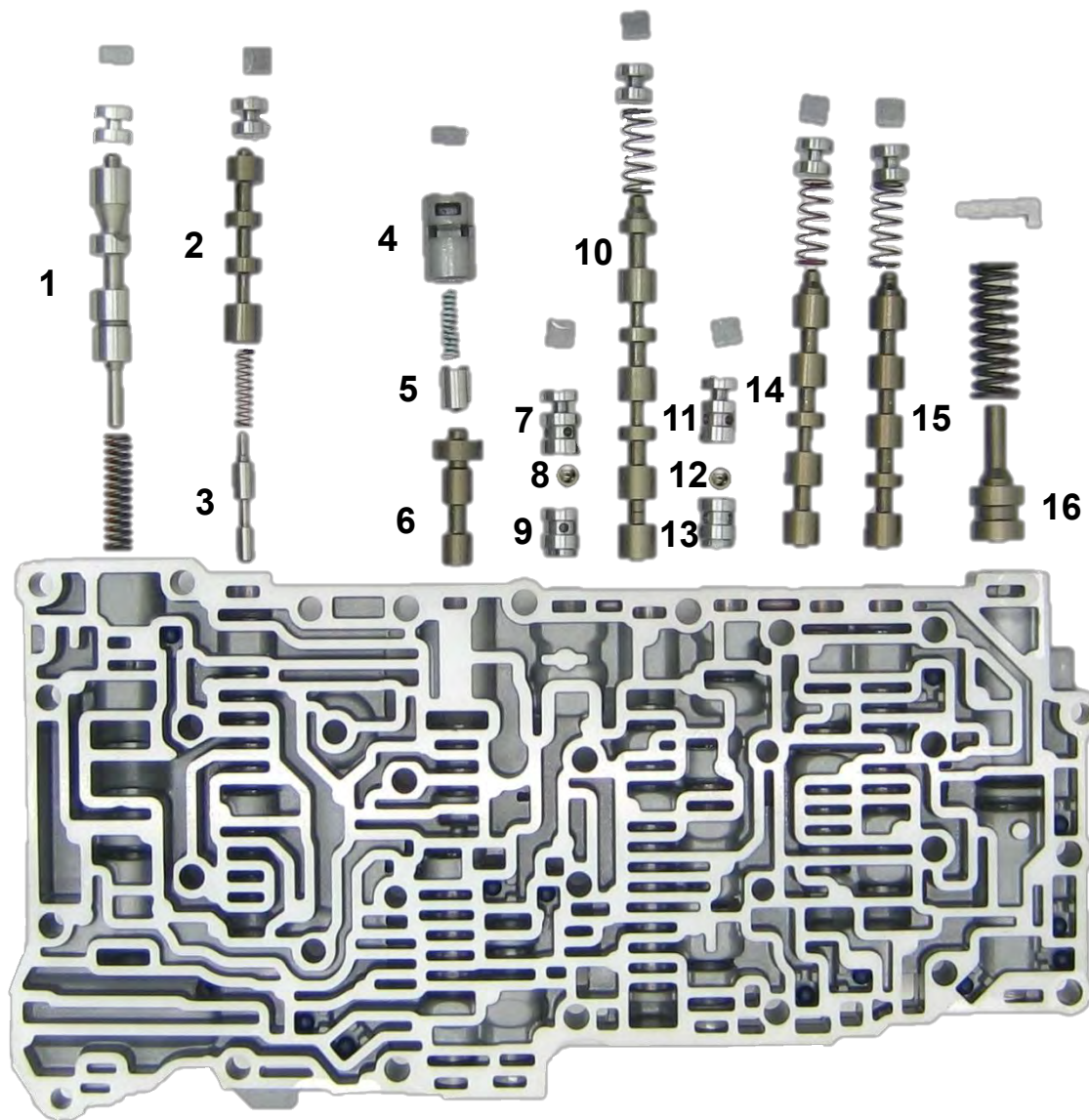
- 1 = SLT Accumulator Valve
- 2 = Main Pressure Regulator Valve
- 3 = Main Pressure Regulator Boost Valve
- 4 = Main Pressure Regulator Boost Valve Plug
- 5 = Main Pressure Regulator Boost Valve Sleeve
- 6 = Relief Valve
- 7 = S4 Control Valve





Valve Body Information

A960E/A760E/AB60E



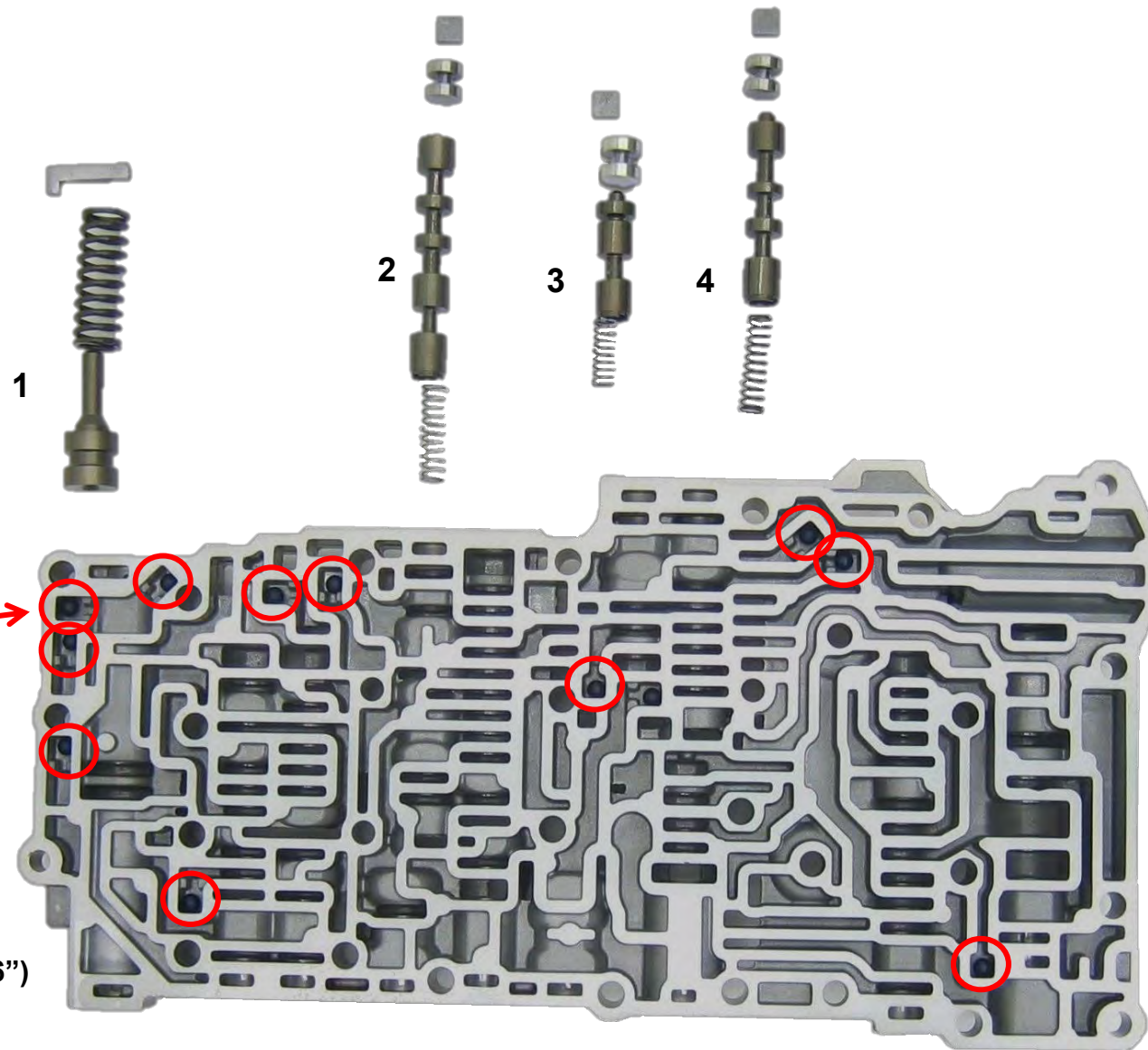
- 1 = Secondary Regulator Valve
- 2 = Lockup Relay Valve
- 3 = Lockup Relay Inner Valve
- 4 = Lockup Control Boost Valve Sleeve
- 5 = Lockup Control Boost Valve
- 6 = Lockup Control Valve
- 7 = # 2 3 Way Shuttle Ball Outer Seat C3
- 8 = Shuttle Ball (.250") Diameter
- 9 = # 2 3 Way Shuttle Ball Inner Seat C3
- 10 = S1 control Valve
- 11 = # 1 3 Way Shuttle Ball Outer Seat
- 12 = Shuttle Ball (.250") Diameter
- 13 = # 1 3 Way Shuttle Ball Inner Seat
- 14 = S2 control Valve
- 15 = S3 control Valve
- 16 = B2 Accumulator Valve A



Check Ball Locations & Valve Body Information

A960E/A760E/AB60E

- 1 = B2 Accumulator Valve B Valve
- 2 = #2 Relay Valve
- 3 = C3 Control Valve
- 4 = Solenoid Relay Valve 2

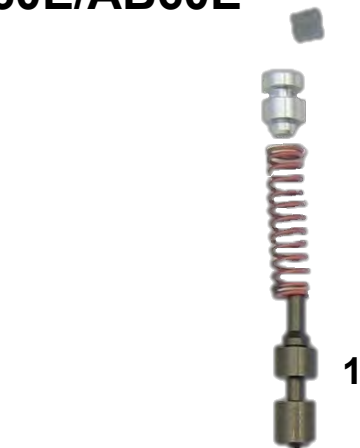


● Rubber Check Ball Diameter 5.5 MM (.216")

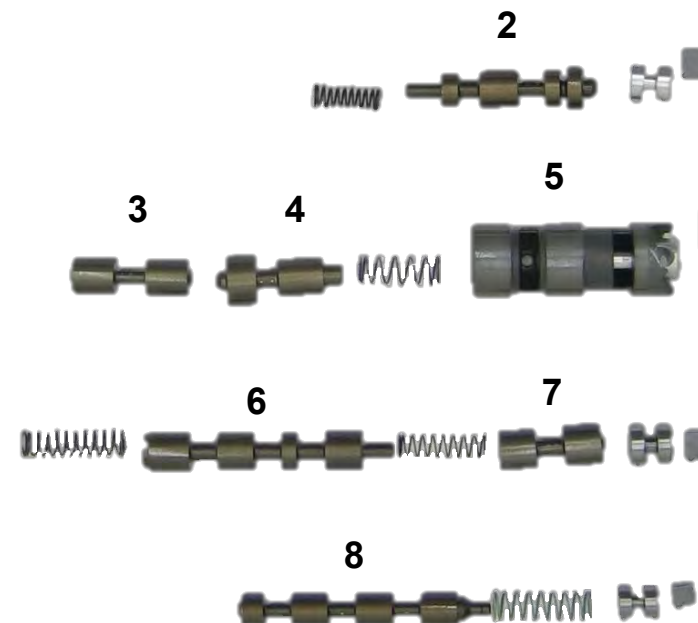


Valve Body Information

A960E/A760E/AB60E



- 1 = Solenoid Modulating Valve
- 2 = B1/B4 Control Valve
- 3 = Accumulator Regulating Valve
- 4 = Accumulator Regulating Boost Valve
- 5 = Accumulator Regulating Adjustable Sleeve
- 6 = #1 Inner Relay Valve
- 7 = #1 Outer Relay Valve
- 8 = Solenoid Relay Valve 1





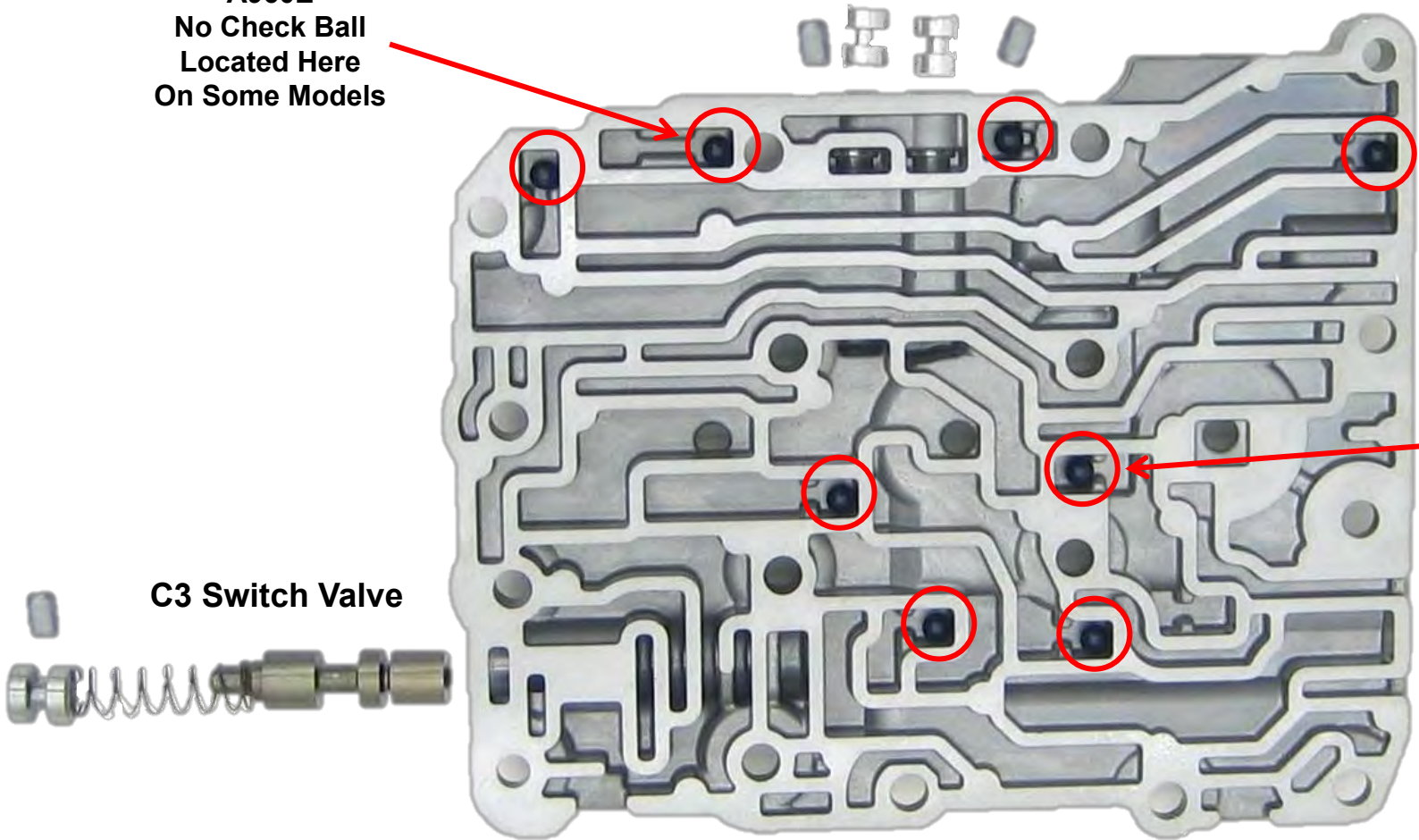
Check Ball Locations & Valve Body Information

A960E/A760E/AB60E



Rubber Check Ball Diameter 5.5 MM (.216")

A960E
No Check Ball
Located Here
On Some Models



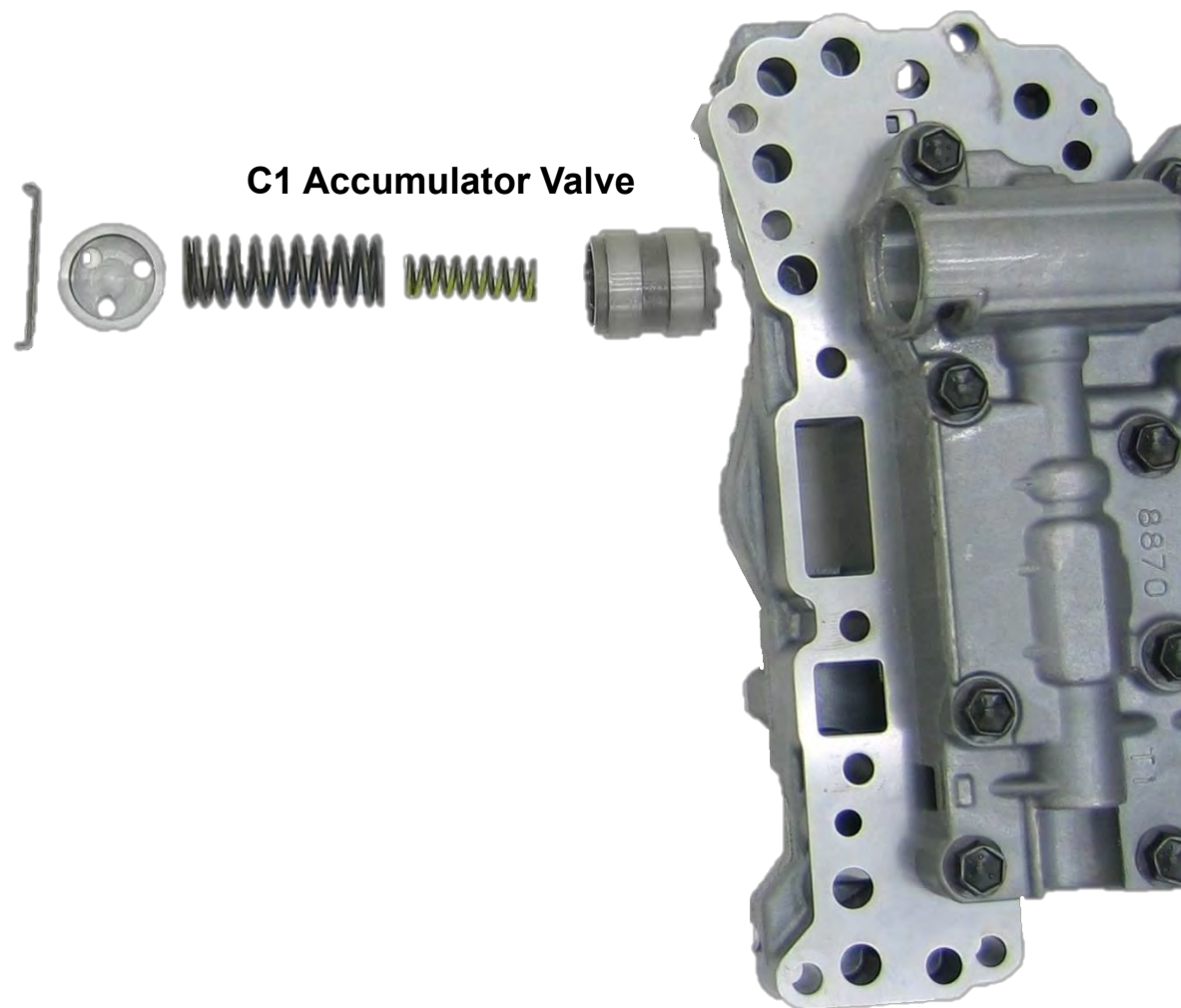
A960E
No Check Ball
Located Here
On Some Models





A960E/A760E/AB60E

Valve Body Information



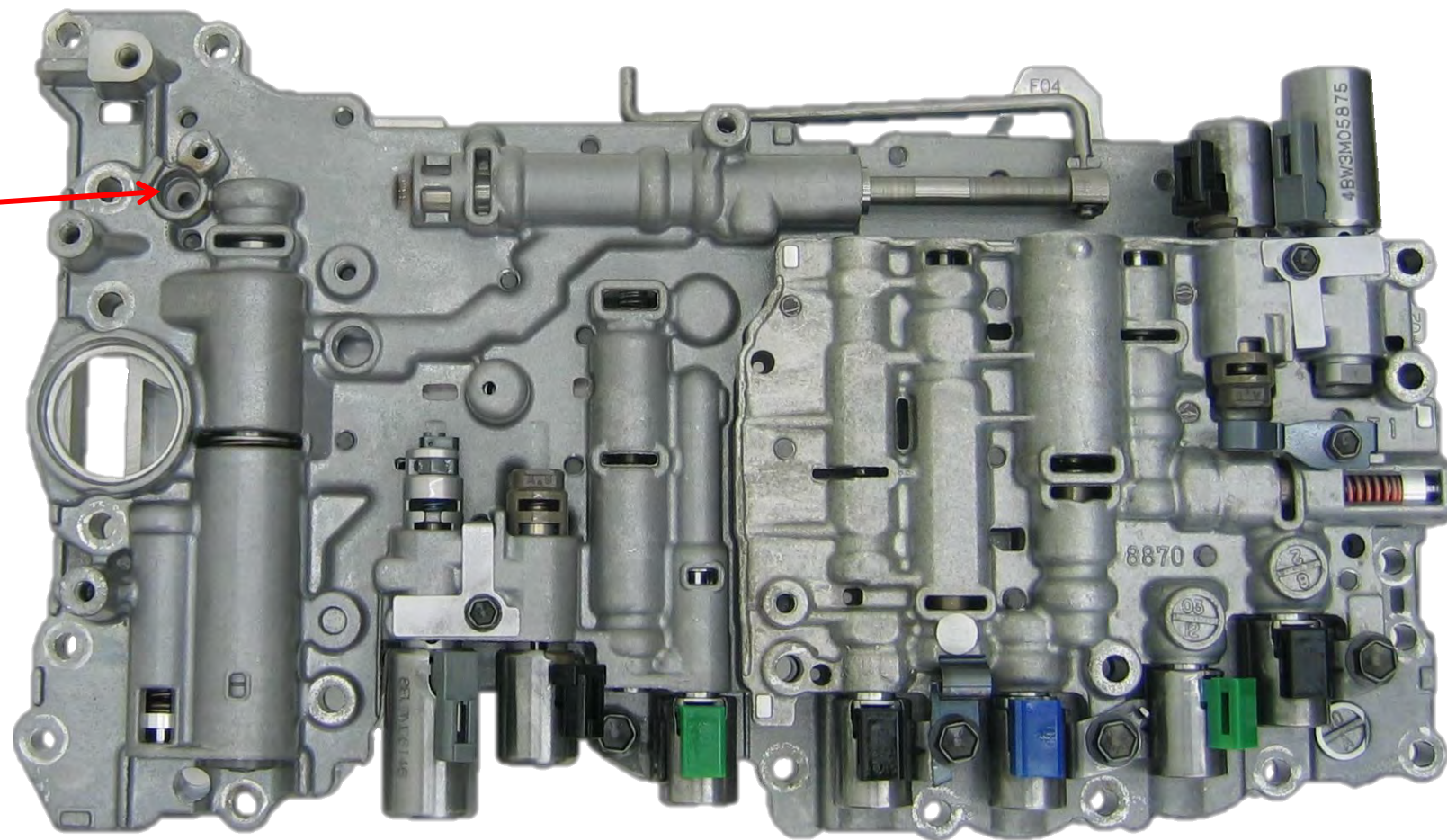


A960E/A760E/AB60E

Valve Body Information



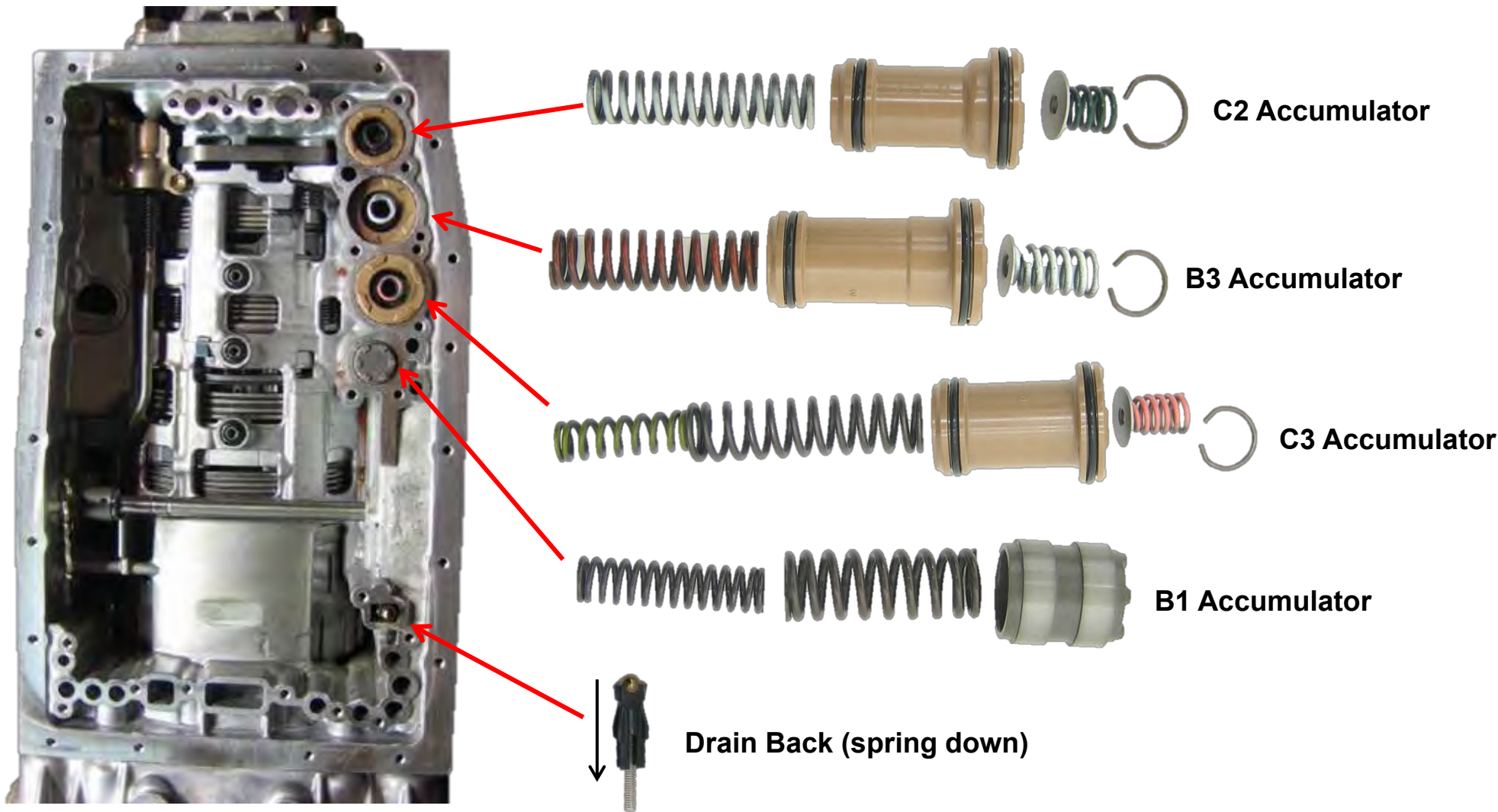
Line Pressure Blow Off Ball 8.0 MM (.315") Diameter





Accumulator Identification & Locations

Spring dimensions and color are model specific.

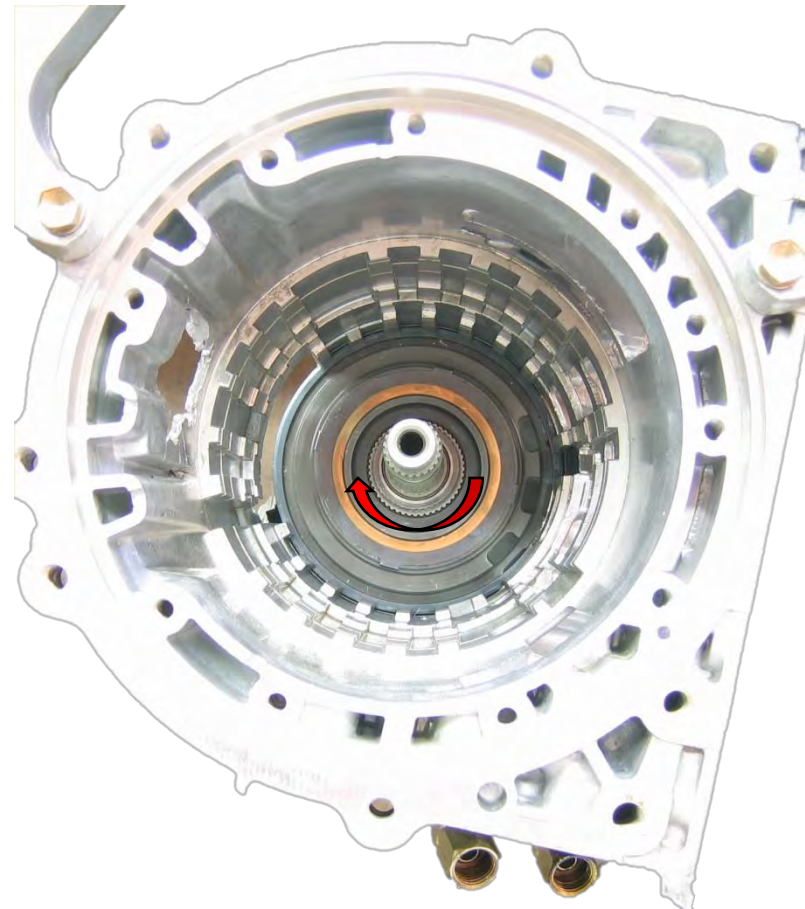
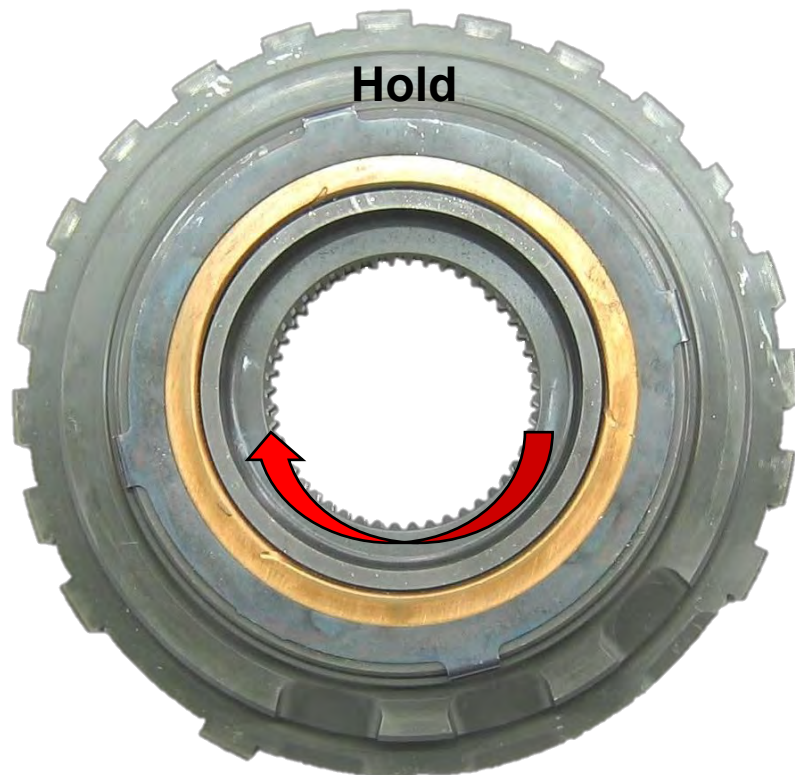




A760E/A960E/AB60E F3 Sprag Rotation

The low/reverse sprag freewheels clockwise and locks counter clockwise while holding the outer race.

If the sprag is installed incorrect a no forward gear in drive and/or a bind on the 1-2 shift.

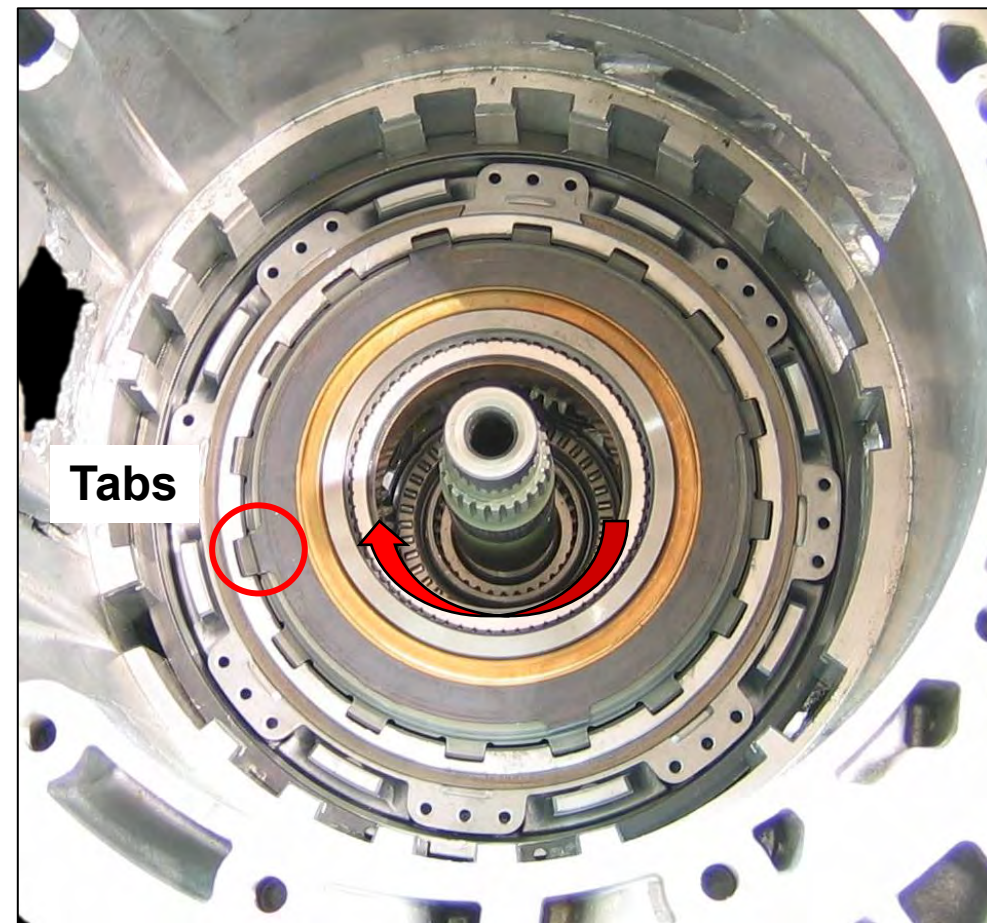
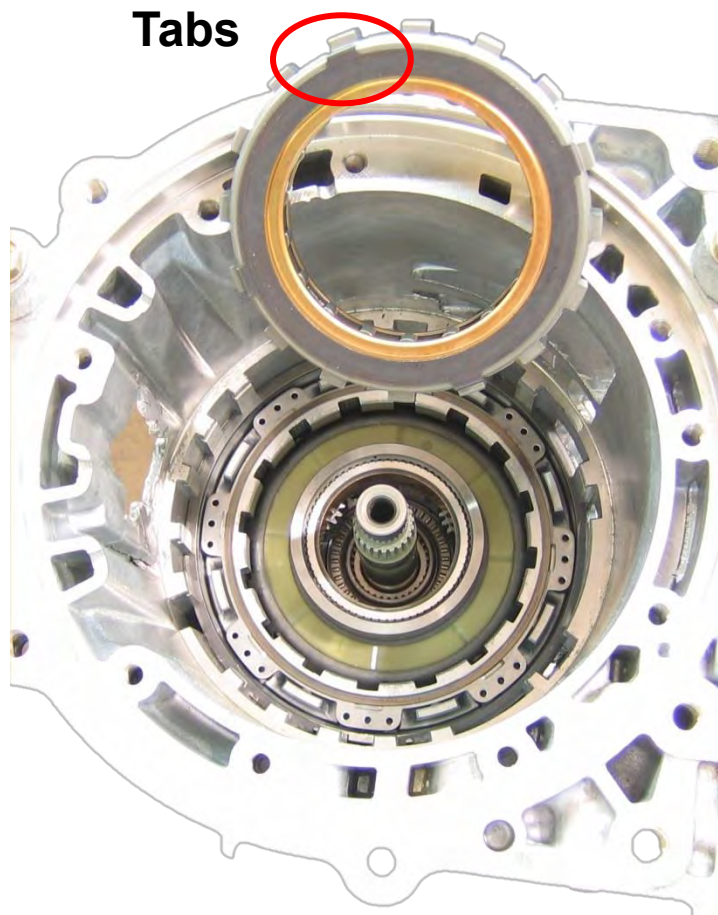




A760E/A960E/AB60E F1 Sprag Rotation

Install the 3rd brake cylinder and snap ring into the case. Check the oil pressure apply hole, make sure it lines up. Cylinder #3 aligns with the oil pressure apply hole of the transmission case.

Install the No. 3 sprag assembly into the case as shown. All four tabs must be up! The inner race should rotate freely in a clockwise rotation.

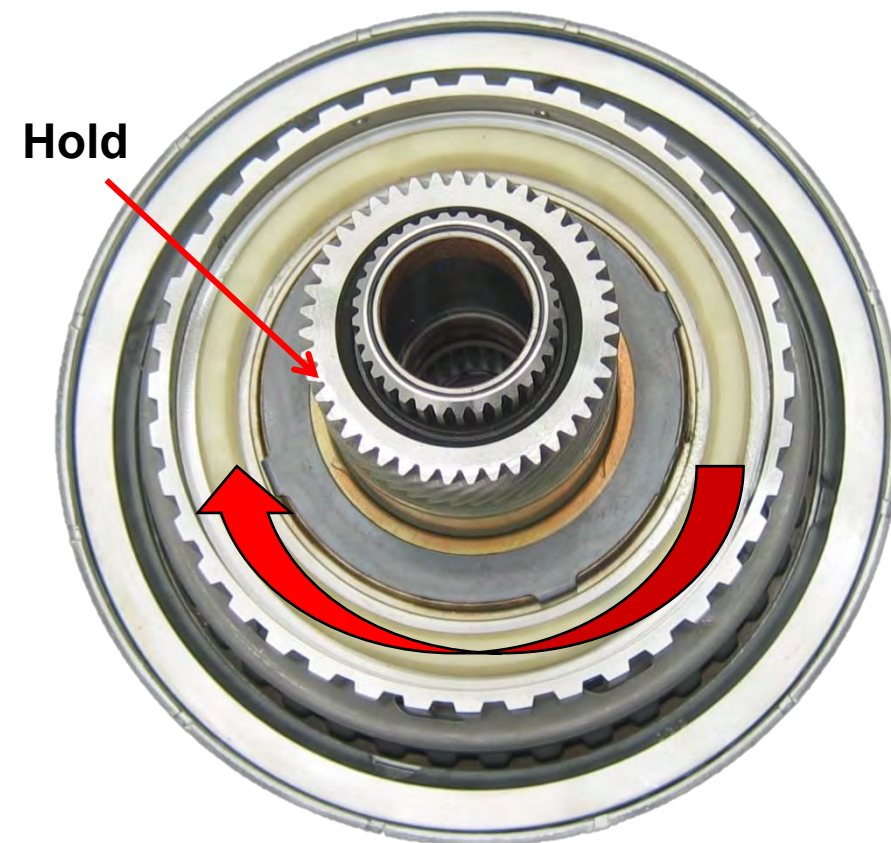




A760E/A960E/AB60E F2 Sprag Rotation

Install the No. 2 sprag assembly and thrust washers.

The No. 2 sprag assembly rotates freely clockwise and locks counter clockwise. If installed wrong will cause a no 2nd gear and/or bind on the 2-3 shift.

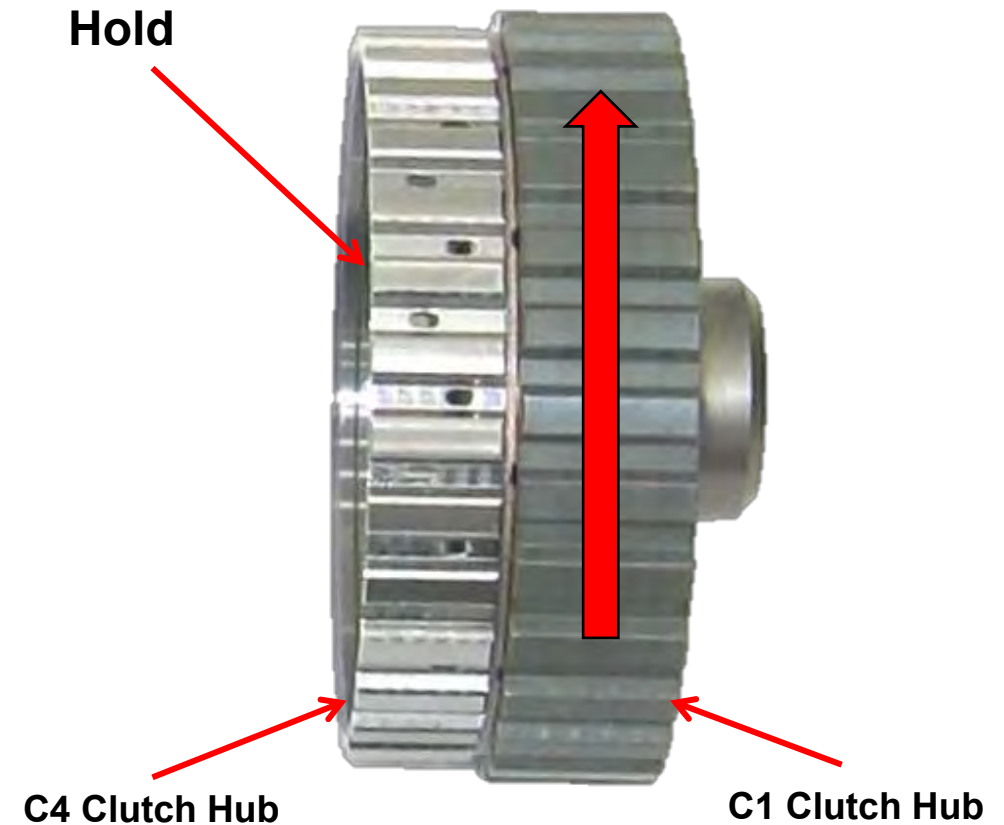




A760E/A960E/AB60E F4 Sprag Rotation

Install the input shaft assembly into the direct and the reverse clutch drum. Install the No. 4 sprag assembly into the input clutch drum.

Hold the C4 clutch hub, the sprag assembly (C1 clutch hub) should turn freely clockwise and locks counter clockwise.





A760E/A960E/AB60E 6 Speed C1/C4 Clutch Drum

A760E C1 clutch clearance is .022" to .034" and the C4 clutch clearance is .012" to .024".

Clutch clearances may vary by make and model always check with factory information.



C1/C4
Clutch Drum

C1 Clutch
Molded Piston



C4 Clutch



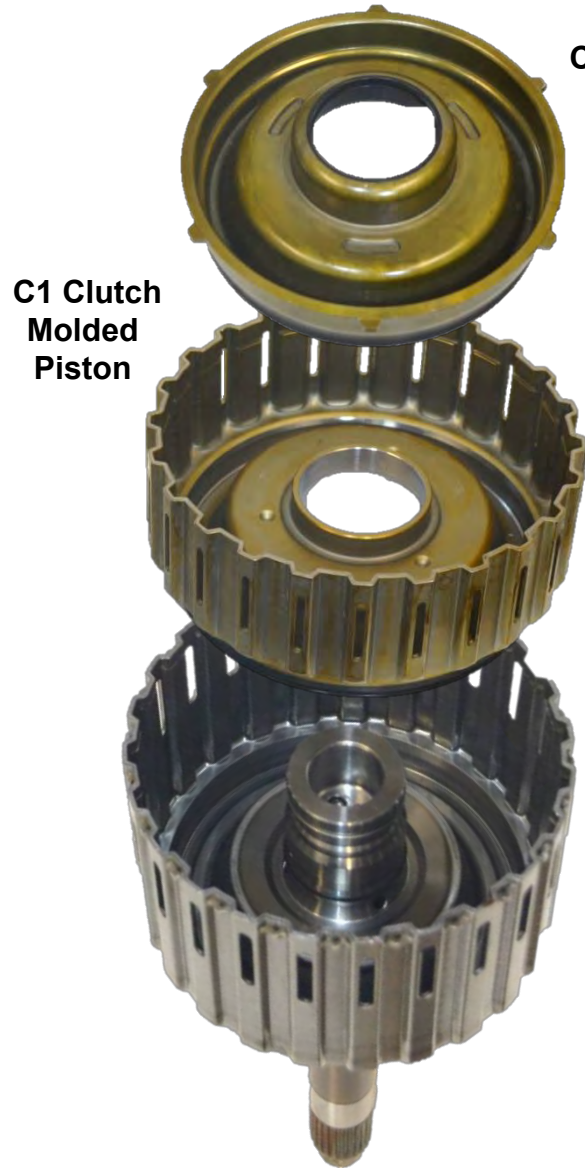
C1 Clutch



C4 Clutch
Molded Piston



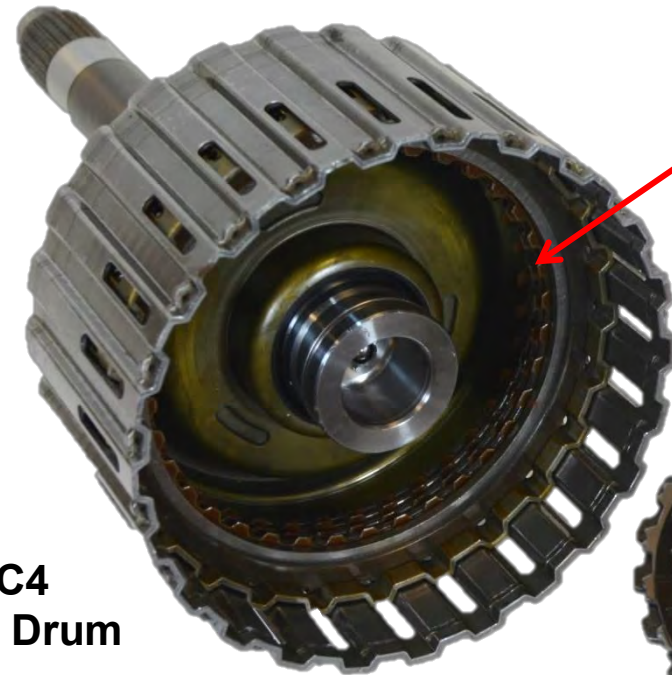
A760E/A960E/AB60E 6 Speed C1/C4 Clutch Drum



C1 Clutch
Molded
Piston

C4 Clutch
Molded
Piston

C1/C4
Clutch Drum



C4 Clutch
(Coast)



C1 Clutch
(Forward)

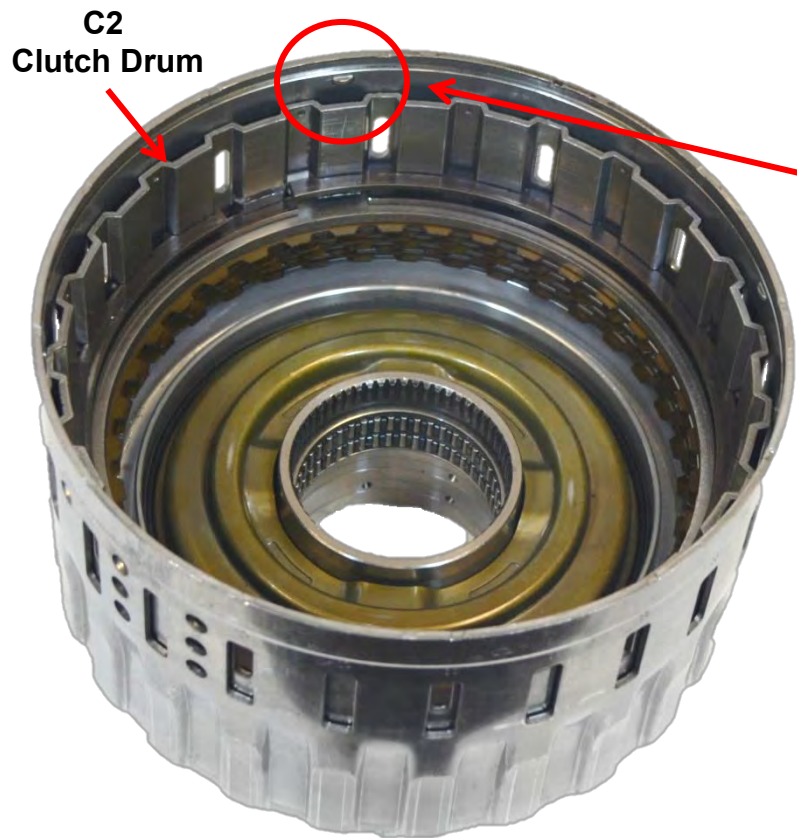


A760E/A960E/AB60E 6 Speed C2/C3 Clutch Drum

A760E C2/C3 clutch drum assembly. The notches in the C2 drum must align with the tabs in the C3 drum.

C2 clutch clearance is .020" to .030" and the C3 clutch clearance is .020" to .030".

Clutch clearances may vary by make and model always check with factory information.

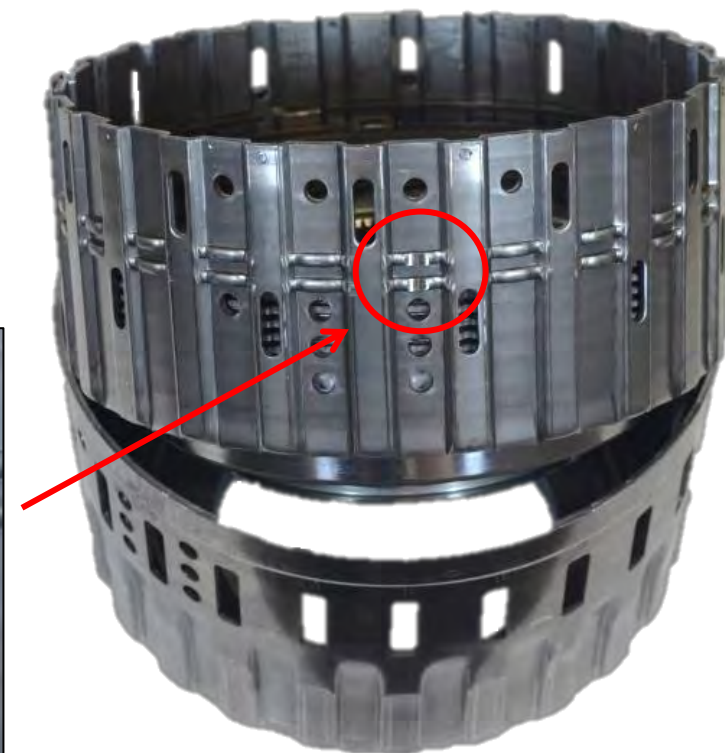


C2
Clutch Drum

C3 Clutch Drum



C2 Clutch Drum



C3 Clutch Drum





A760E/A960E/AB60E 6 Speed C2/C3 Clutch Drum

As well as the notches in the C3 cushion plate must align with the tabs in the C3 drum in order for the snap ring to fit..



C3 Cushion Plate

Dual
Snap Ring

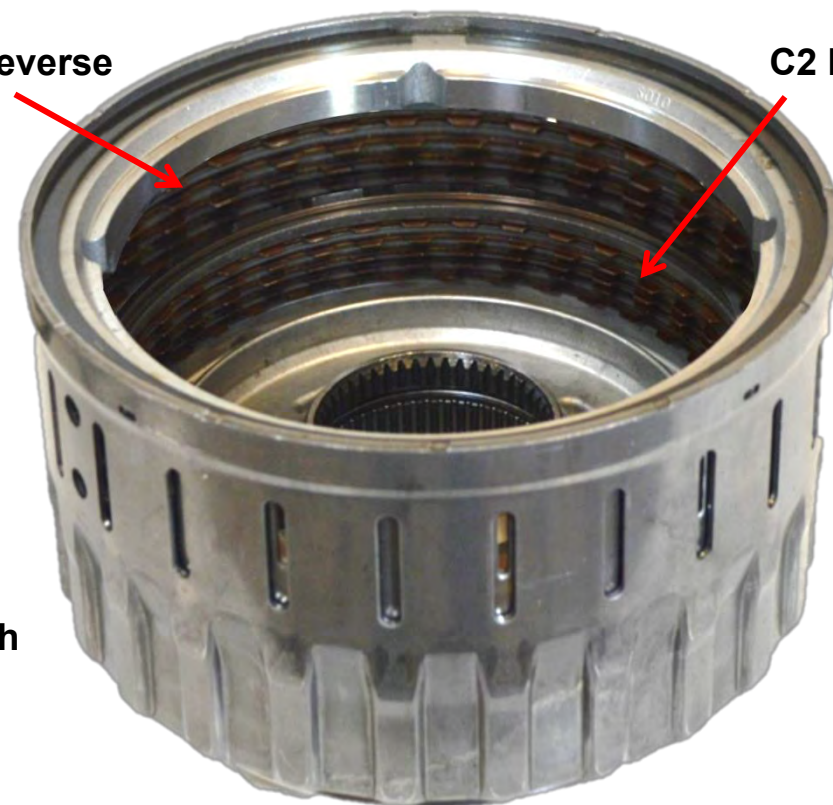
Snap Ring

C3 Reverse

C2 Direct



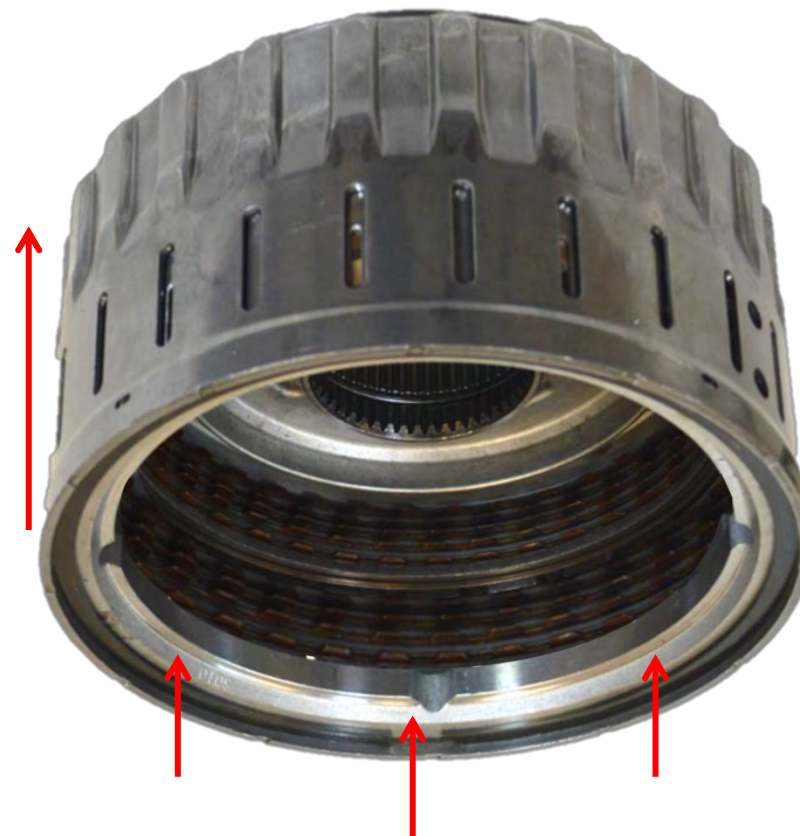
C3 Clutch
Drum





A760E/A960E/AB60E 6 Speed C2/C3 Clutch Drum

When the C3 piston rises up in the applied position; the C3 cushion plate rises up also to apply the C3 clutch.



Similar To The Way The U660E Works

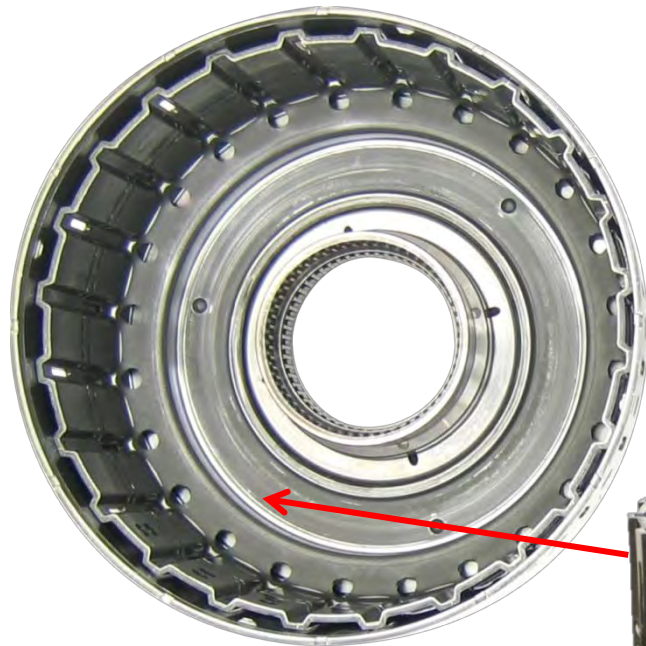


A760E/A960E/AB60E 6 Speed C2/C3 Clutch Drum

The C2 Direct clutch applies like any normal clutch drum.



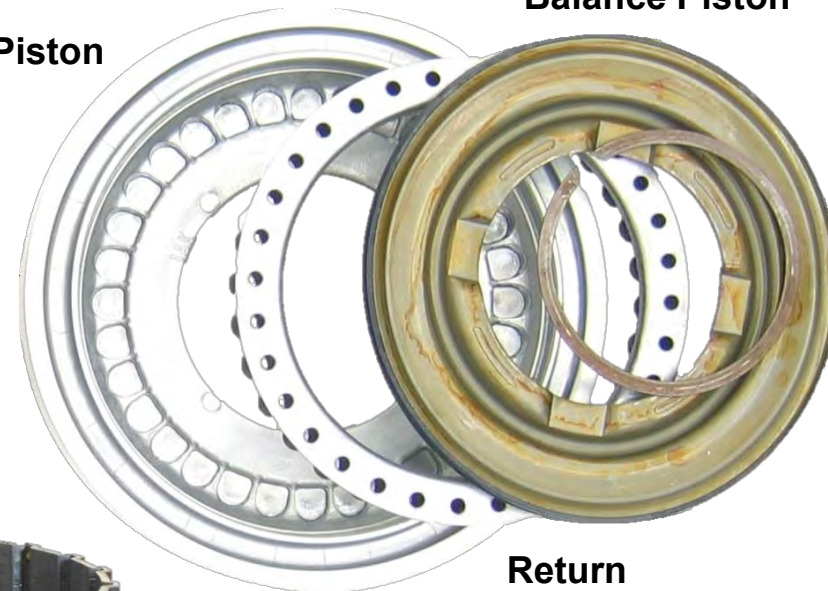
C2/C3 Clutch Drum



C2 Clutch Drum



C2 Piston

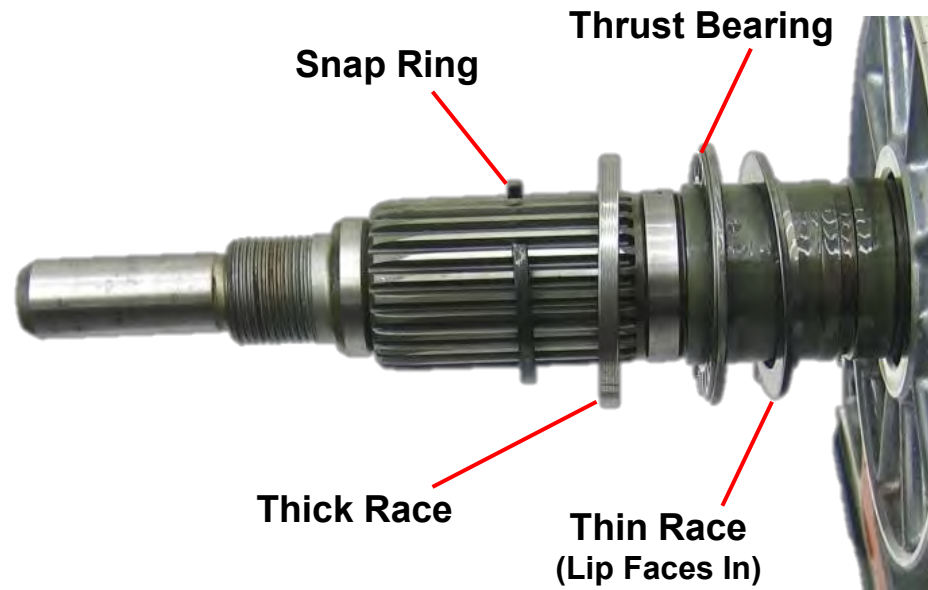
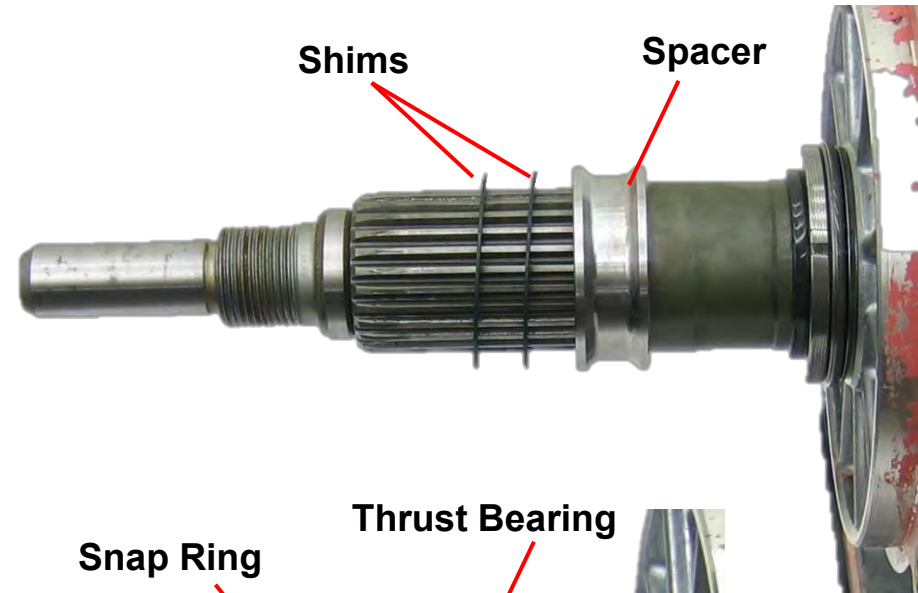


C2 Molded Balance Piston

Return Spring



Output Shaft Assembly





Pump Air Checks

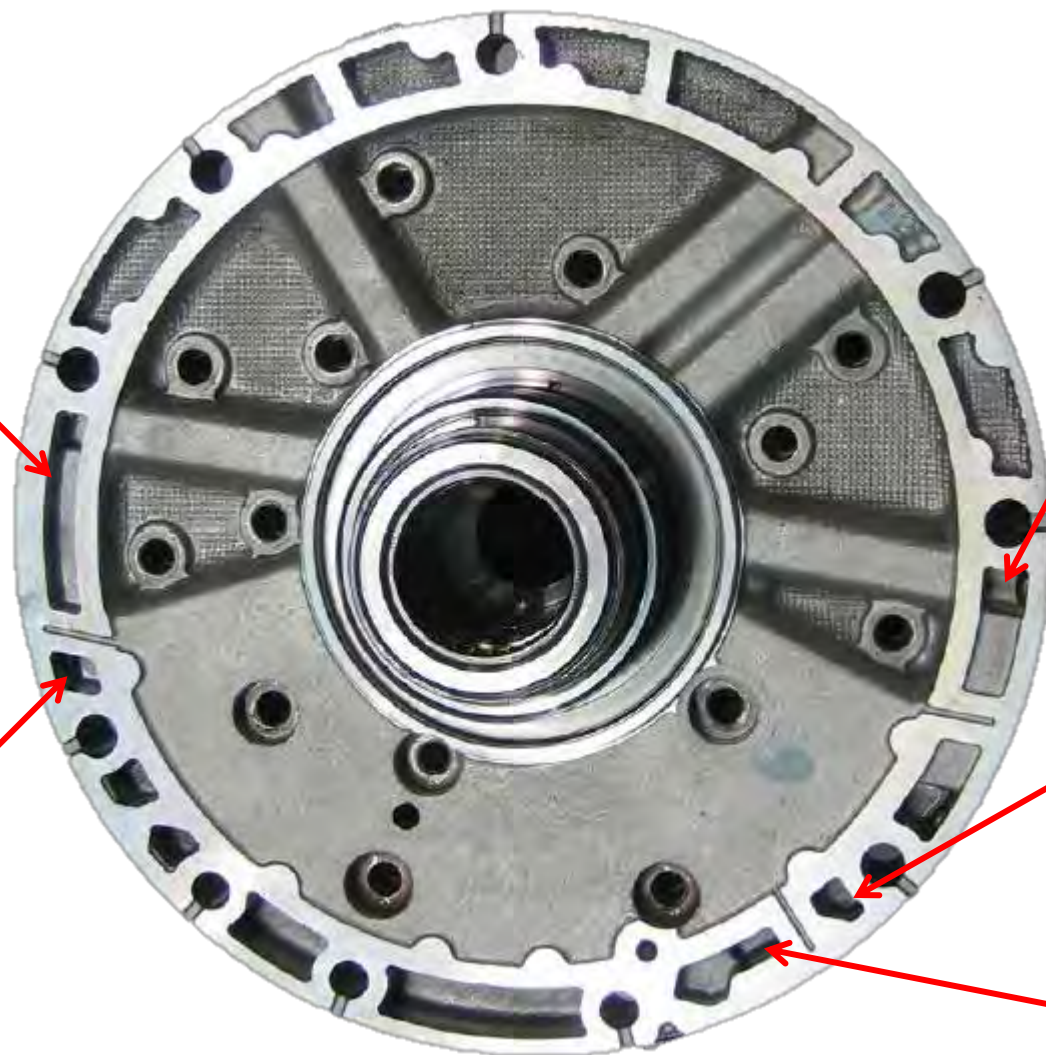
C3 3rd &
Reverse Clutch

C2 4th &
Direct Clutch

C4 Coast
Clutch

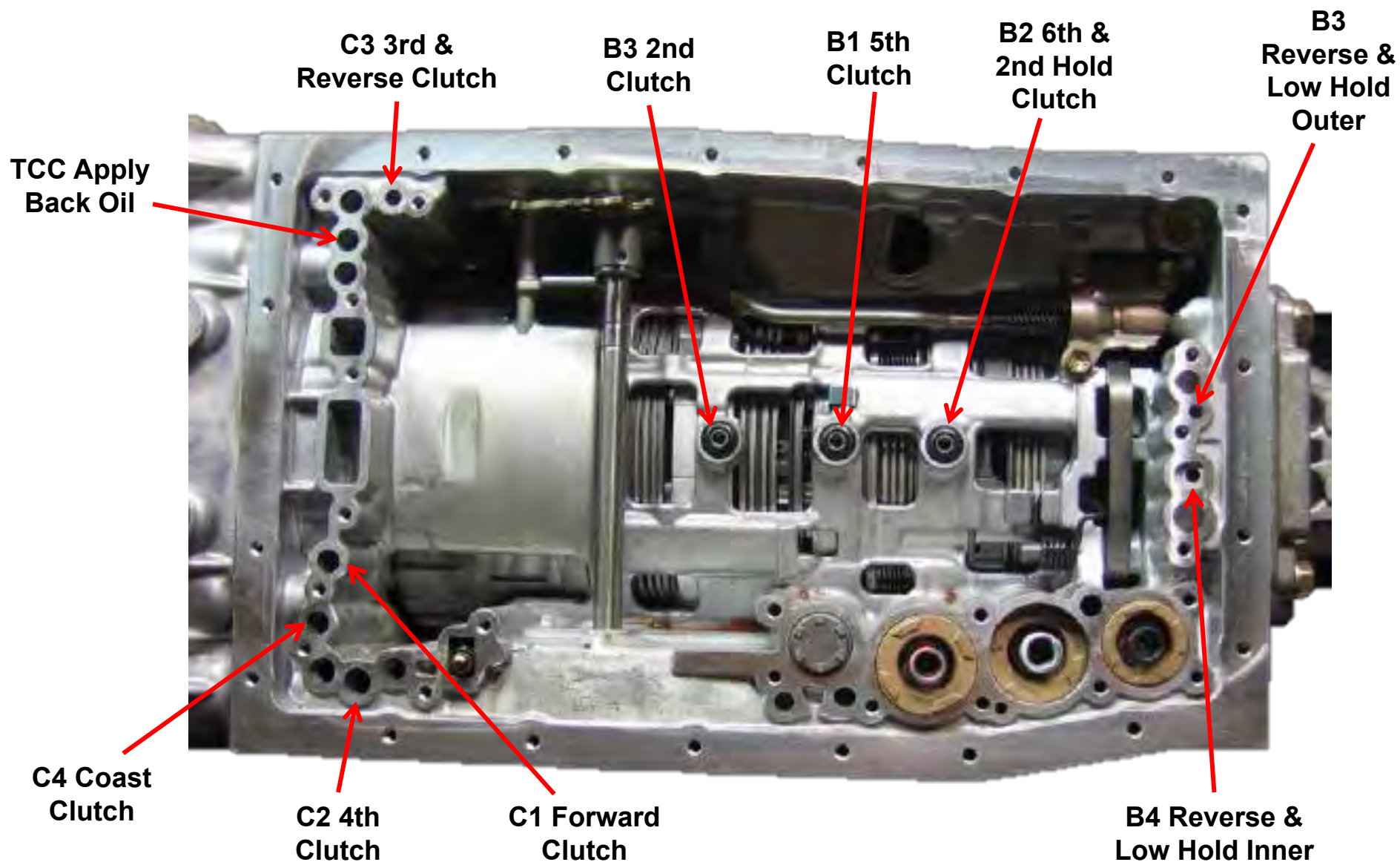
C1 Forward
Clutch

TCC Apply
Back Oil





Case Air Checks

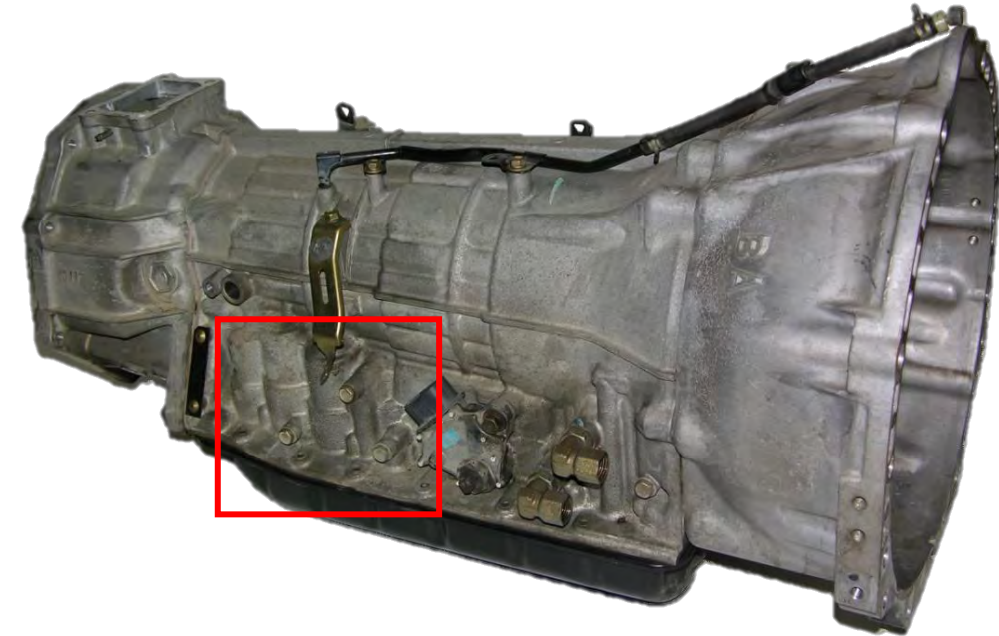




Line Pressure Test

A special adapter or equivalent may be necessary to access the line pressure tap shown below.

Line pressure can be checked using bidirectional controls with a capable scan tool or software.



	RPM	Drive	Reverse
Idle		50-60 psi	70-80 psi
Stall		180-195 psi	210-235 psi





Transmission Fluid Service & Fill Procedure

Checking the fluid level without the intelligent tester

- (1) Connect terminals CG-4 and TC-13 on the DLC3 using SST (or equivalent jumper tool).
- (2) Move the selector shift lever back and forth between N and D every 1.5 seconds for 6 seconds.
- (3) The D shift indicator on the combination meter comes on for 2 seconds. This indicates that the fluid temperature check mode has been activated and started.
- (4) The shift indicator will come on again when the fluid temp reaches 46° C (115°F) and will blink when exceeds 56° (133°F). Always allow engine to come up to temperature of (115°F).

Check Fluid Level

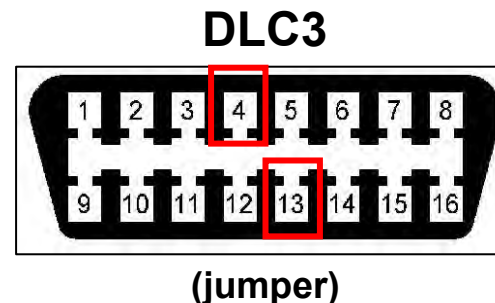
- (a) The fluid temperature must be between 39° (102°F) and 49° (120°F) to accurately check the fluid level.
- (b) Remove the overflow plug with the engine running and check and see if fluid comes out the overflow tube. If fluid does not come out, proceed to step number (5). If fluid comes out then wait till the fluid just trickles down then proceed to step number (5).

Refilling with fluid

- (5) Install the over flow plug.
- (6) Stop the engine.
- (7) Remove the refill plug.
- (8) Add (0.42 us qts of fluid.
- (9) Allow the engine to idle and wait 10 seconds.
- (10) Go back to Checking the fluid level above.

After filling the transmission

- (a) Install the overflow plug with a new gasket and torque to 15 FT lbs.
- (b) Stop the engine.
- (c) Install the refill plug with a new O ring and torque to 29 FT lbs.
- (d) Install case cover.



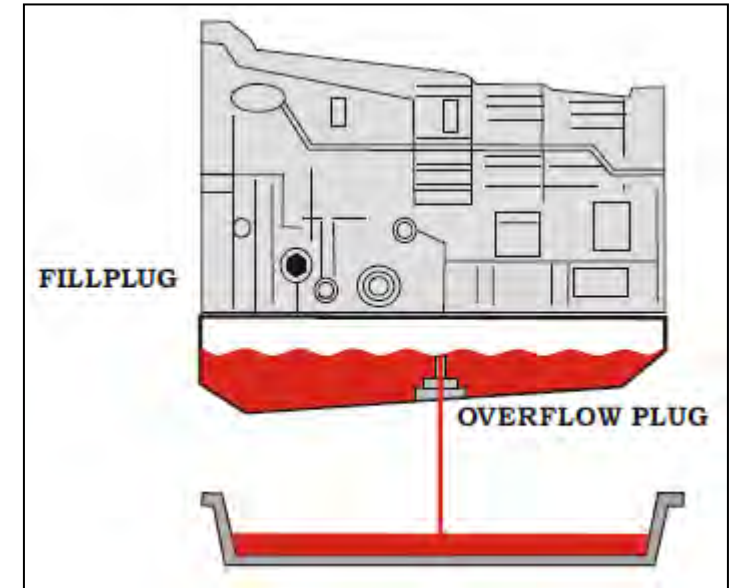
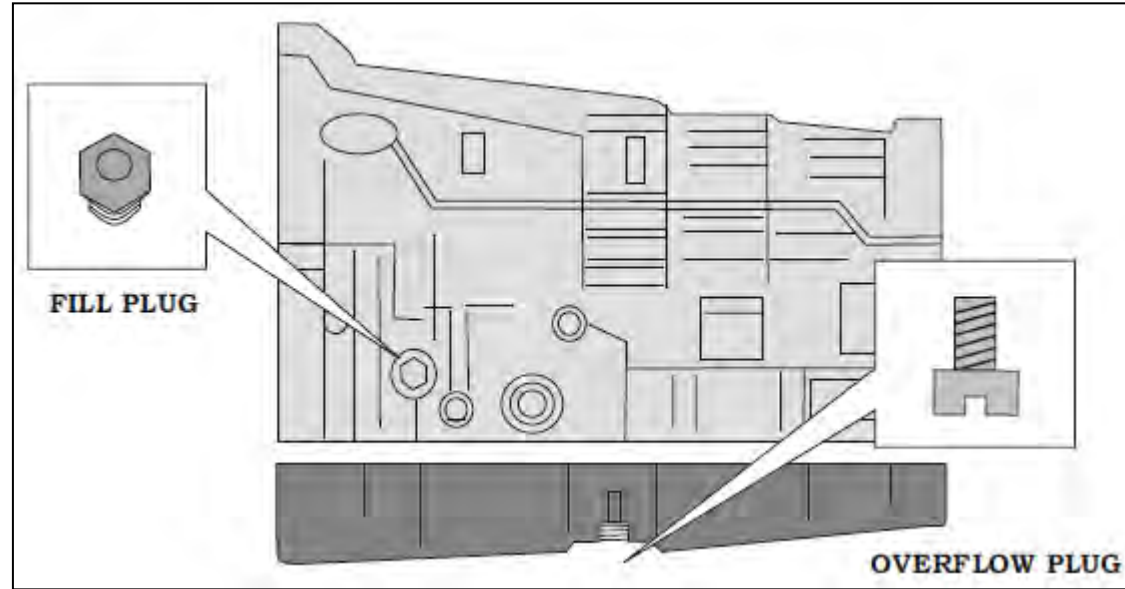
\$10.17



World
Standard



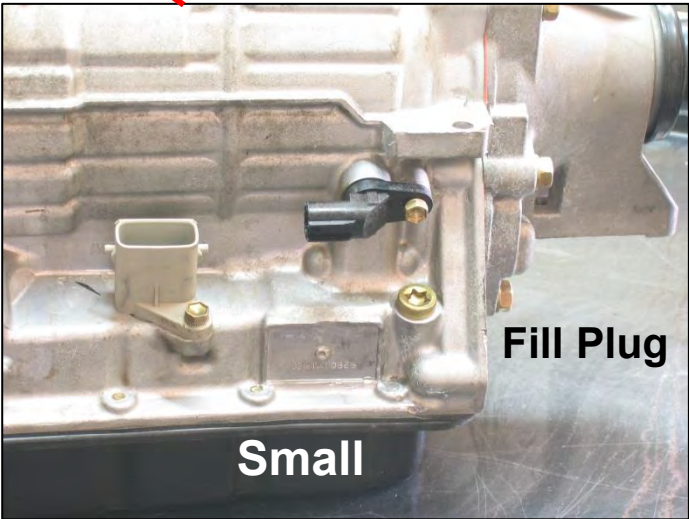
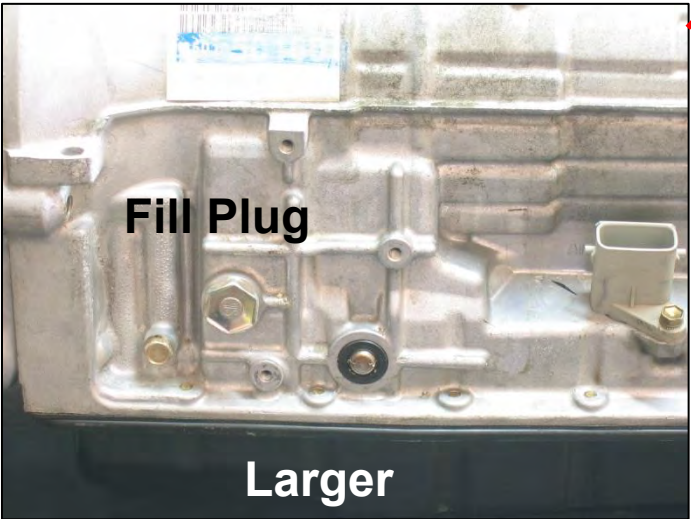
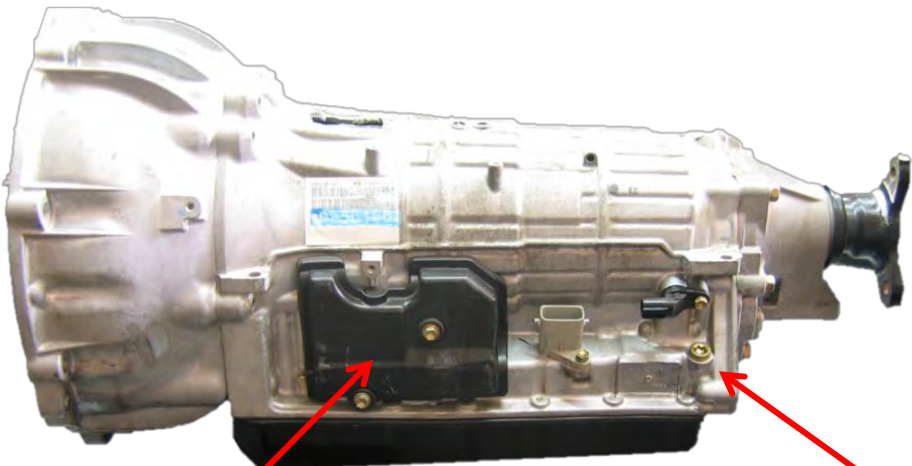
Transmission Fluid Service & Fill Procedure





Transmission Fluid Service & Fill Procedure

A760E/A960E/AB60E Fill plug locations.



Transmission Fluid Service & Fill Procedure



AB60E



A760E



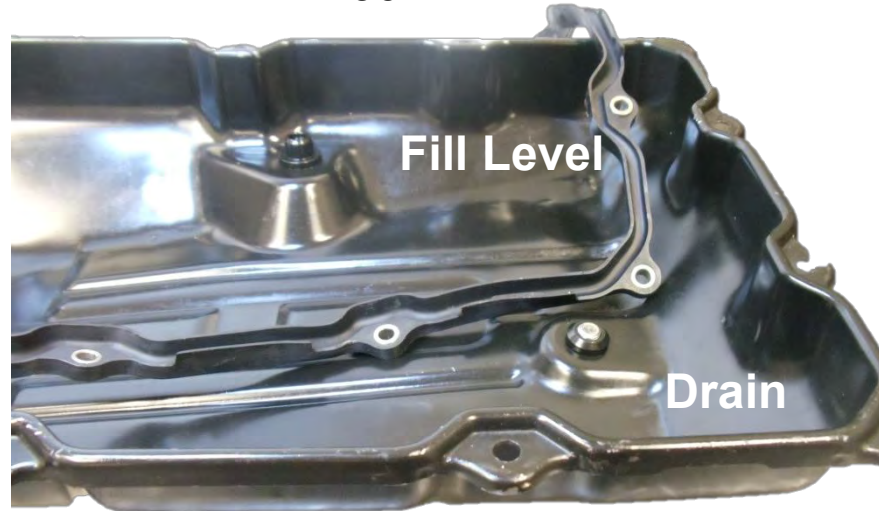
A960E



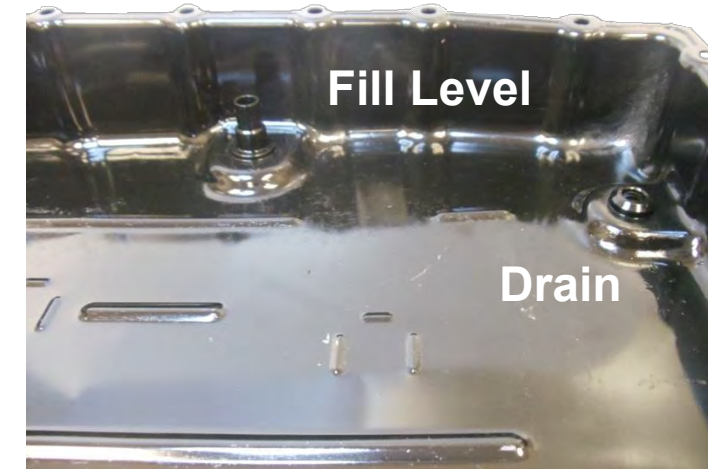
Transmission Fluid Service & Fill Procedure



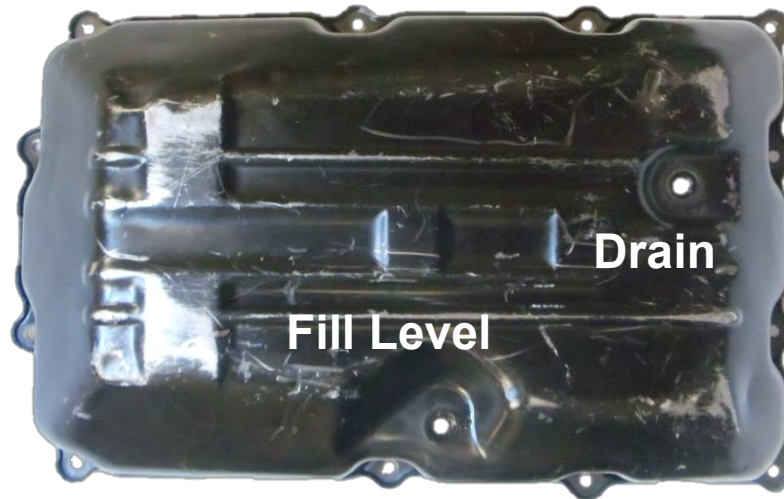
AB60E



A760E



Over Flow & Drain Plugs



A960E Similar





Transmission Fluid Service & Fill Procedure

A760E/A960E/AB60E Filter and rubber pan gasket will vary from unit to unit.





Common Problems

The sealing rings of course is the first item everyone has on their mind. Which to use O.E. or after market or simple reuse the original rings if not worn. Even if you reuse the original rings or purchase new from the dealer.

If the rings become distorted during installation, because of the material they are made from will not seal properly. This is not only common on this transmission but many others (example RE5R05A) that use this type of Vespel material. The rings have poor memory and will not conform back to original shape easily.

So let's compare the O.E. ring to the aftermarket plastic ring which by the way work just fine also. The O.E. ring is tapered which only allows less area to seal but is designed for less drag in the ring groove. Which will allow the ring to turn easier with the drum and help prevent cutting into the drum.

The aftermarket are cut straight and fill the groove much better for more sealing area, as far as cutting into the drum it has not been an issue. It's a matter of builder preference.

Another issue with the rings that come in the kit is when being shipped other heavier parts are laid onto the kits and the rings become distorted. Check the rings before installing.





Common Problems

One of the biggest problem with this unit appears when someone doesn't use the right type of transmission fluid. This transmission requires ATF WS.

Using the wrong type of transmission fluid can cause many types of problems, such as a shift flare, harsh shifts, and TCC shudder.

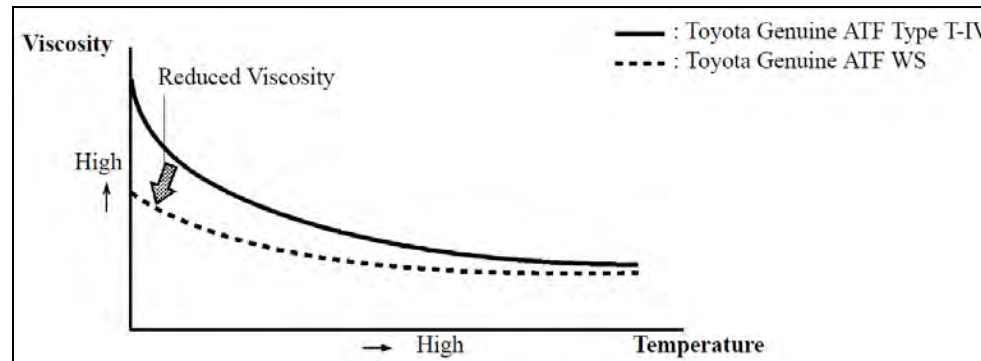
Similar to ZF, Mercedes, Honda and Chrysler units.

Most common complaint is the transmission runs hot.

Toyota genuine ATF WS is used to reduce the resistance of the ATF and improve fuel economy by reducing its viscosity in the practical operating temperature range.

At higher-fluid temperatures, the viscosity is the same as that of Toyota genuine ATF Type T-IV, to ensure the durability of the automatic transmission.

There is no interchangeability between the Toyota genuine ATF WS and other types of ATF (Toyota Genuine ATF Type T-IV, D-II).





Common Problems

Electrical connections, especially at the case connector, internal harness failure and of solenoid failure. The PWM solenoid are failing mechanically more so than electrically.

There are aftermarket fixes for repairing the solenoid.

Valve body wear. The three most common failures in any valve body in today's market would be Solenoid Modulating Valves, TCC Regulating Valves and Pressure Regulating Valves.

There several aftermarket repairs for valve body wear.



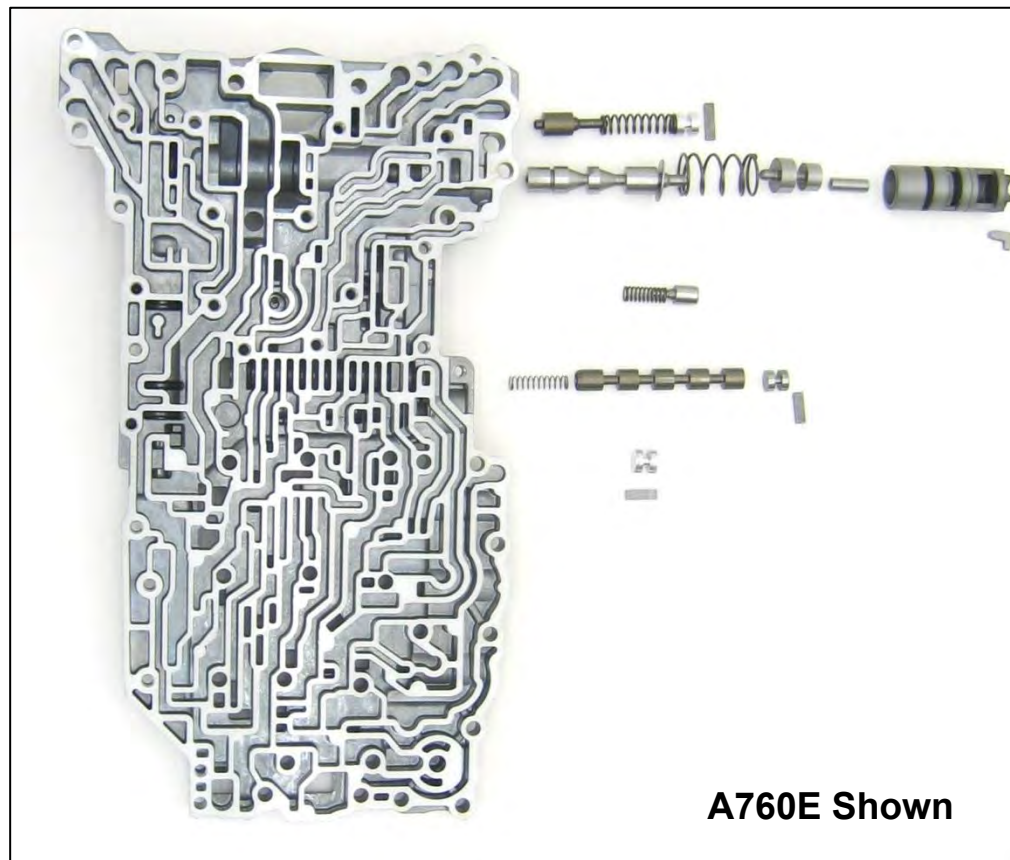


TCC Shudder & Flared Shift Complaints

TCC shudder between 30-50 mph and/or shift flare complaints have been fixed with an EPC solenoid adjustment.

If there are no problems found with the valve body or solenoids. The correct fluid is being used for this vehicle.

Turn the boost sleeve to the next highest step to increase spring tension raising pressure.





Harsh Downshift Complaint

Some 2004-05 Lexus IS430, 4.3 RWD equipped with an A760E transmission may experience a harsh downshift complaint.

This can be caused by a failed ECU. Several of these vehicles have been fixed with a new ECU with the latest reflash.

There is no TSB available at this time. Always check all power and grounds to the ECU before replacing.





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Honda/Acura Advantages

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- Belt pins
- All main shaft, intermediate shaft and counter shaft seals
- Valvetrain worm gears
- Pistons
- Prothane Lip Washers

General Motors Advantages

- Isuzu valvetrain seals that fit all 4.3L 4-cyl. separate or pistons
- Prevents shagging problem from the 4L design
- Additional 3-cyl. springs
- Additional 3-cyl. springs

Chrysler Advantages

- Parts for rebuilding 5-speed blocks
- Seals for the oil cooler
- Extra design clutch seals
- Plastic oil retainer reinforcement parts
- Extra high bleed screws filters
- Custom filter grommets

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Key for every make and model




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Star Viewer



62TE Clutch Volume Index

This information can be found on the ATRA website to members in the repair center by typing in 62TE CVI in the search box. If you're a non member take a moment and write these specifications down.

62TE Clutch Volumes	(Preliminary)
UD	26-74
2/4	16-54
OD	42-143
L/R	16-63
LC	16-25
DC	26-34



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