

FORD 8F35/40**PRELIMINARY INFORMATION**

The Ford 8F35/40 is an eight speed front wheel drive or all-wheel drive transmission that was co-engineered with the GM 9T50. Ford engineers decided eight speeds were sufficient. The 8F35 utilizes a torque converter clutch, four planetary gearsets, a hydraulically operated Selectable One-Way Clutch, five friction elements and a main control valve body that contains eight solenoids and something new for Ford, a pressure switch assembly. The 8F35/40 is also available with an engine stop/start feature. The 8F35 is currently found in the 2018 and later Edge, the 2018 and later Ford Escape, the 2018 and later Ford Taurus and the 2019 and later Ford Transit Connect. It is also found in the 2019 and later Lincoln Aviator.

8F35/40

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Thanks to ETE for the 8F35 Transmission that made this bulletin possible

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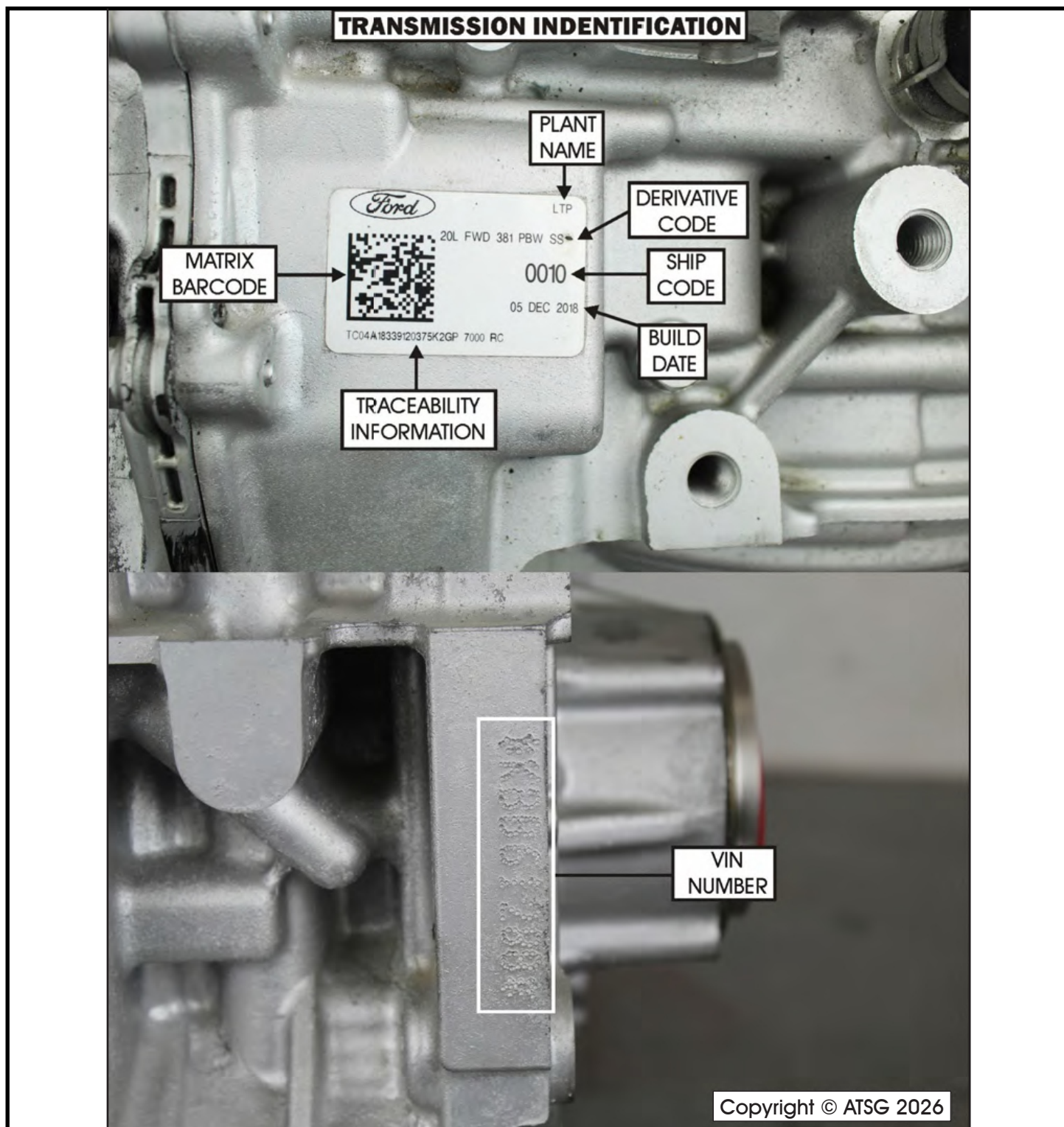


Figure 1
AUTOMATIC TRANSMISSION SERVICE GROUP

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SHIFT QUADRANT WITH GEAR SHIFT LEVER

The transmission shift quadrants are comprised of five detent positions. Those vehicles with "Selectshift™" will have P, R, N, D and M. The "Selectshift™" shift lever will have an "thumb" button in the shifter knob, pressing this button will provide the operator with manual shift capability in gears first through eighth.

Standard Shift Quadrant

- P** - Park position enables the engine to be started while preventing the vehicle from moving. For safety reasons, the vehicle's parking brake should always be used in addition to the "Park" position. Park position should not be selected until the vehicle has come to a complete stop.
- R** - Reverse enables the vehicle to be operated in a rearward direction. Engine braking will occur.
- N** - Neutral position enables the engine to start and operate without driving the vehicle. If necessary, this position should be selected to restart the engine while the vehicle is moving.
- D** - Drive range should be used for all normal driving conditions to allow maximum efficiency and fuel economy. Drive range allows the transmission to operate in each of the eight forward gear ratios. Downshifts to a lower gear are available for safe passing, by depressing the accelerator, or by manually selecting a lower gear with the shift lever.
- M** - In the "M" position the transmission will provide engine braking while providing manual shift capability from gears one through eight. The up and downshifts will occur using the "thumb" switch located on the gear select lever knob as seen on the right. The current gear will be displayed in the instrument cluster as seen on the right.



Park Detect Switch

The Park Detect Switch (PDS) is a normally open momentary contact switch that closes when the shift lever is placed in the park position. The PDS signal is used by the instrument cluster to illuminate the "P" in the PRNDM display. The PDS is an integral part of the gear select lever assembly.

Brake Shift Interlock

The Brake Shift Interlock actuator inhibits the selector lever movement from the park position by mechanically blocking the detent pawl of the selector lever mechanism. When the brake pedal is pressed with the ignition key in the run/start position and the transmission is in the park position, the BSIA is energized by the BCM, this allows the selector lever to be moved out of the park position.

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Figure 2

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SHIFT QUADRANT WITH ROTARY SHIFTER

The shift by wire system uses a rotary dial GSM, as seen on the right, to interface with the TCM to select gear positions.

The steering wheel is equipped with paddle switches which will allow the driver to manually shift through gears first through eighth when in the "S" mode by pushing the "S" button in the middle of the rotary dial.

Standard Shift Quadrant

P - Park position enables the engine to be started while preventing the vehicle from moving. For safety reasons, the vehicle's parking brake should always be used in addition to the "Park" position. Park position should not be selected until the vehicle has come to a complete stop.

R - Reverse enables the vehicle to be operated in a rearward direction. Engine braking will occur.

N - Neutral position enables the engine to start and operate without driving the vehicle. If necessary, this position should be selected to restart the engine while the vehicle is moving.

D - Drive range should be used for all normal driving conditions to allow maximum efficiency and fuel economy. Drive range allows the transmission to operate in each of the eight forward gear ratios. Downshifts to a lower gear are available for safe passing, by depressing the accelerator.

S - In the "S" position the transmission will provide engine braking while providing manual shift capability from gears one through eight. The up and downshifts will occur using the paddle switches located on the steering wheel seen on the right. The current gear will be displayed in the instrument cluster as seen on the right.



Automatic Return To Park

The vehicle has a safety feature that will automatically shift the transmission into park when the ignition is turned off, the driver door is opened with the seat belt unlatched or unlatching the seat belt when the driver door is open.

Stay In Neutral Mode

If necessary for the vehicle to stay in neutral without the driver present, such as a car wash, this mode disables Return To Park. This is done by selecting Neutral then pressing the "S" or "M" button twice. The message "Stay In Neutral" will be displayed on the instrument cluster and the GSM flashes continuously.

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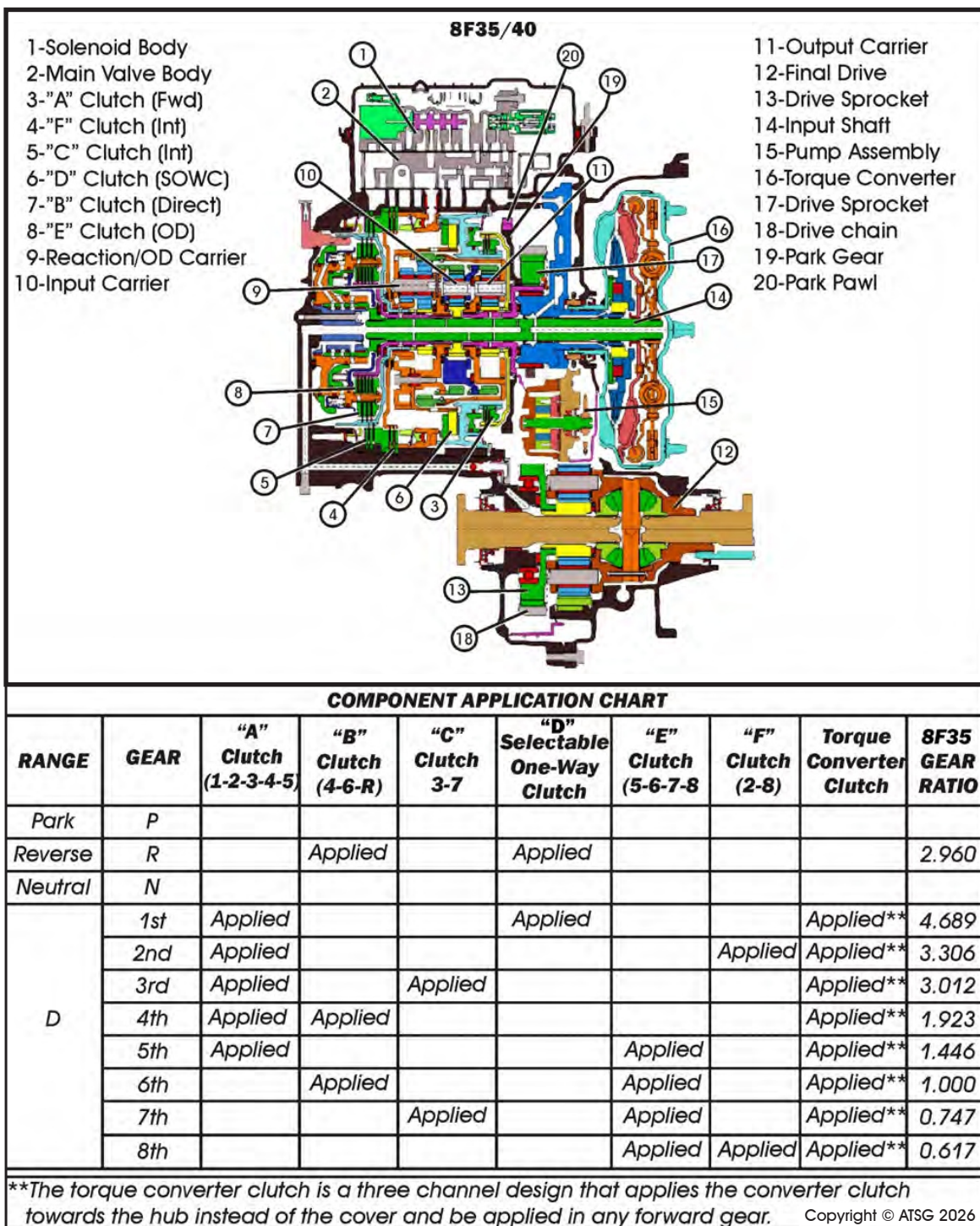


Figure 4

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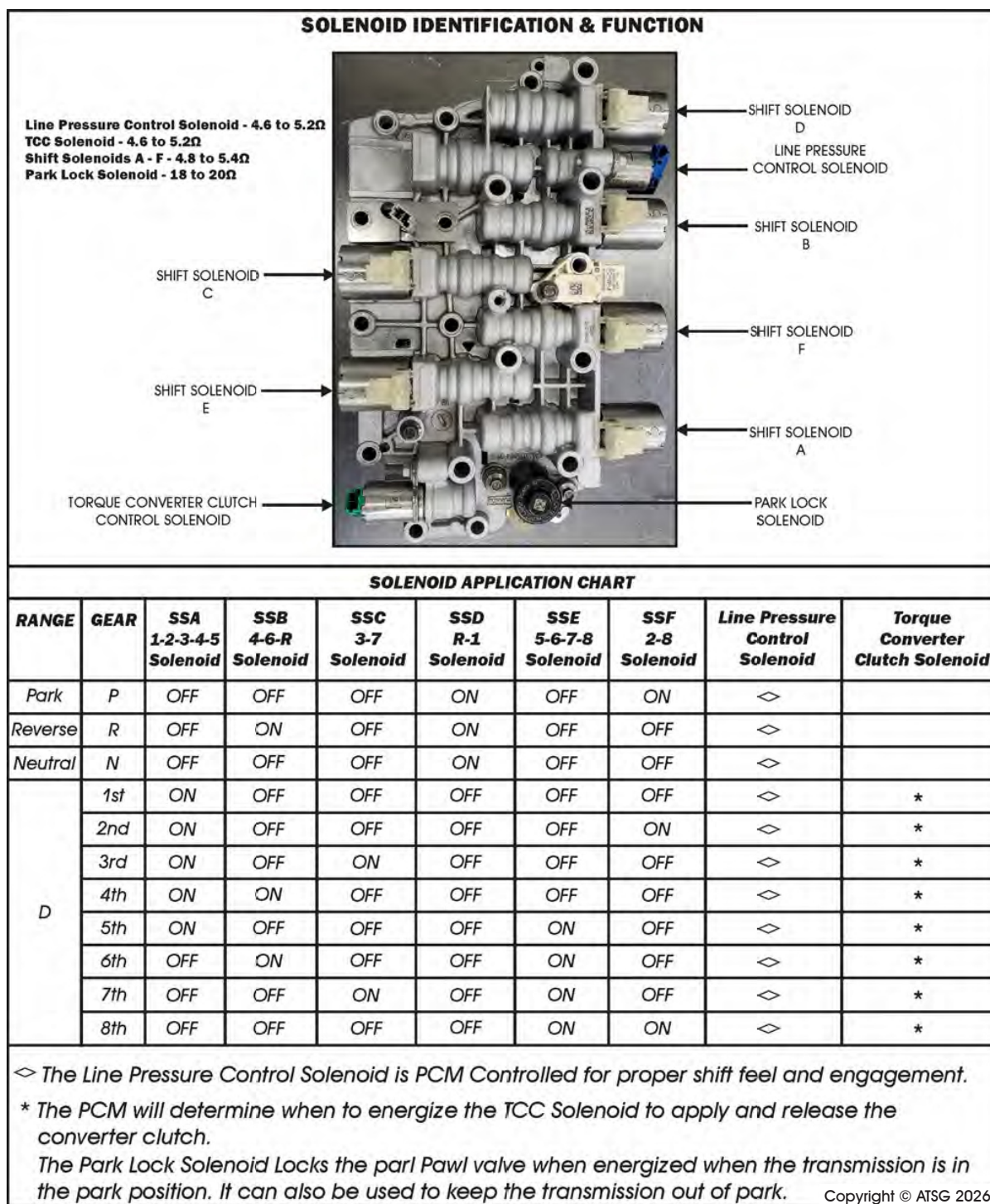


Figure 5

FORD 8F35/40**PRELIMINARY INFORMATION****SOLENOID CHARACTERIZATION & PROGRAMMING**

When ever the PCM, transmission or solenoid valve body require replacement, a capable scan tool must be used to program the transmission identification and solenoid strategy parameters into the PCM by the following procedure:

Select module programming and programable parameters under the toolbox icon and select transmission. The scan tool will require you to enter the solenoid body 12 digit identification and the 13 digit strategy recorded from the solenoid body identification tag located on top of the transmission as seen below.

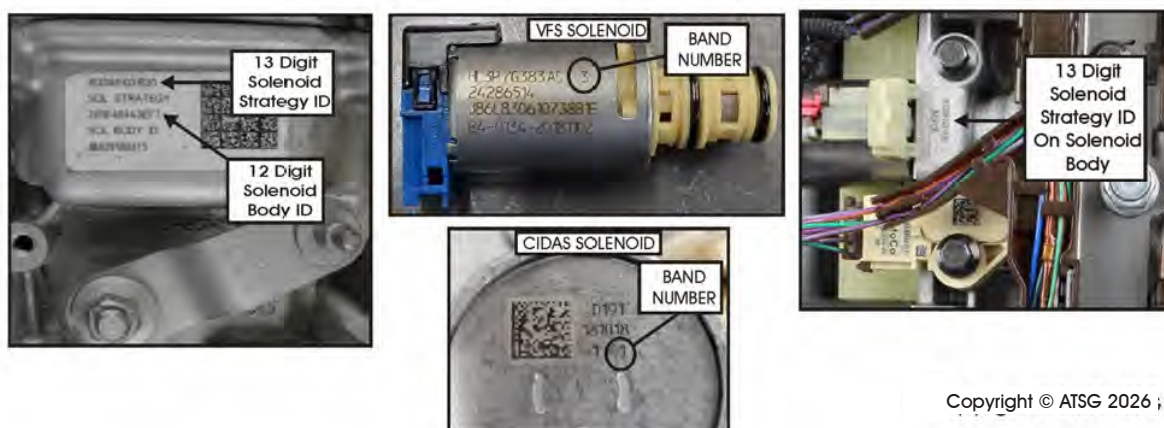
If only the solenoid body is being replaced, locate the 13 digit solenoid strategy number located on the solenoid body, as see below, and record that to be downloaded into the PCM later, The solenoid strategy identification tag on the transmission should be changed to match the new solenoid body strategy number which should be in the solenoid body service kit.

If the strategy file is not present the scan tool will need to be connected to the Professional Technician Society server to download the file into the scan tool.

When replacing solenoids, it is important to match the solenoid band number on both the variable force solenoids and the CIDAS solenoids (Casting Integrated Direct Action), as seen below, of the replacement solenoid with that of the solenoid that is being replaced to avoid shift feel complaints.

When all the above has been completed the vehicle is now ready for the Adaptive Learning Drive Cycle:

- 1 - Make certain all DTCs and transmission adaptive tables are cleared.
- 2 - Bring transmission to operating temperature
- 3 - With the engine running and the brake pedal applied, select the gears in the following order, pausing in each gear for 4 seconds: N, R, N, D, R, D, N. Repeat this pattern two times.
- 4 - Drive the vehicle and accelerate at a moderate throttle so the upshifts occur at 2,000 rpm up to 60 mph (100 km/r) and brake moderately to a stop. repeat this pattern two times.
- 5 - Drive the vehicle and accelerate at a moderate throttle so the upshifts occur at 3,000 rpm up to 60 mph (100 km/r) and brake moderately to a stop. repeat this pattern two times.
- 6 - With the engine running and the brake pedal applied, select the gears in the following order, pausing in each gear for 4 seconds: N, R, N, D, R, D, N. Repeat this pattern two times.

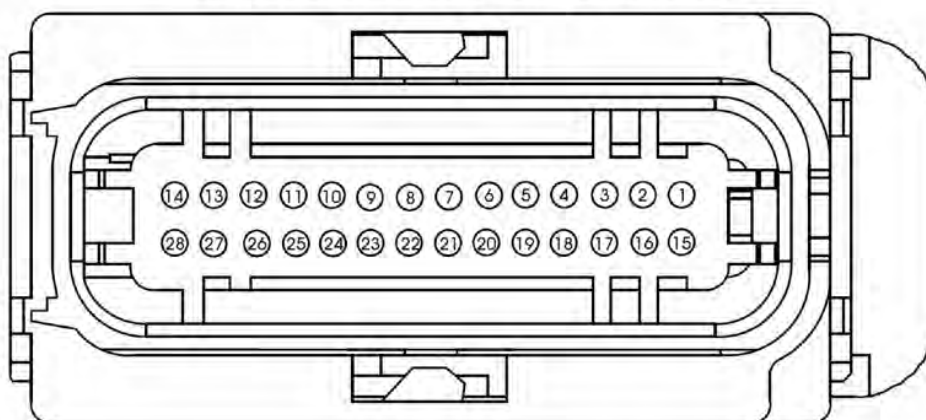


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Figure 6

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C1520A TRANSMISSION CASE CONNECTOR



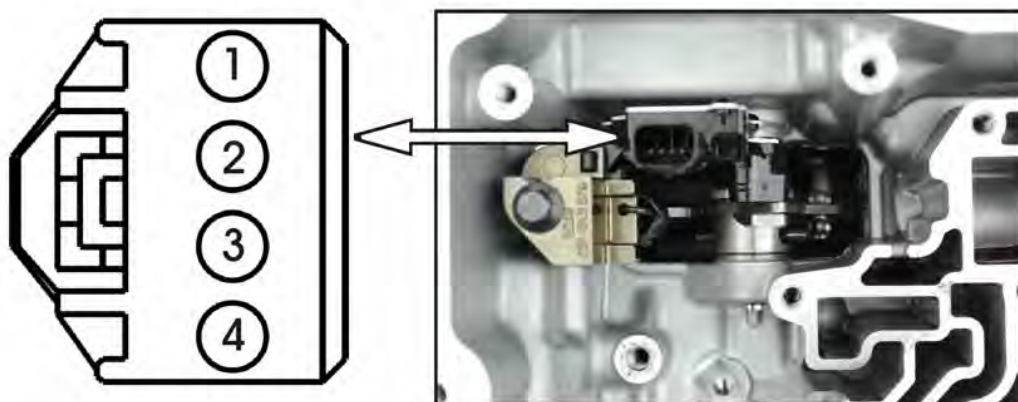
TERMINAL NUMBER	CIRCUIT DESCRIPTION	WIRE COLOR	CIRCUIT NUMBER
1	PCM Voltage Reference Engine (VREF2)	Blue/White	LE458
2	Transmission Fluid Temperature Sensor Signal	Brown/Yellow	VET27
3	Output Speed Sensor Signal	Brown/Green	VET26
4	Transmission Range Sensor PWM Output 1 (TR-P1)	Yellow/Gray	VET84
5	Transmission Range Sensor PWM Output 2 (TR-P2)	Yellow/Gray	VET81
6	Not Used	—	—
7	Transmission Range Sensor Ground Circuit	Brown/Blue	RET24
8	Not Used	—	—
9	Not Used	—	—
10	Pressure Control Solenoid 1 (PC1)	Blue/Green	CET05
11	Line Pressure Control Solenoid (LPC)	Wht/Orange	CET50
12	Pressure Control Solenoid 3 (PC3)	Gray/Orange	CET07
13	TCC Pressure Control Solenoid	White	CET51
14	Transmission Solenoid Power Control 1 (TSPC1)	Blue/Green	CET25
15	Transmission Actuator Voltage Supply	Yell/Orange	CET91
16	Not Used	—	—
17	Transmission Reference Voltage (T-VREF)	Blue/Brown	LE425
18	Shift Solenoid 3 Control (SS3)	Blue/Brown	CET44
19	Transmission Fluid Pressure Sensor 1	Vio/Orange	VET97
20	Transmission Fluid Pressure Sensor 2	Brown/Yellow	VET98
21	Transmission Signal Return (SIGRTN-B)	Gray/Violet	RE406
22	Not Used	—	—
23	Selectable One-Way Clutch Control	Wht/Orange	CET94
24	Pressure Control Solenoid 7 (PC7)	Grn/Orange	CET11
25	Not Used	—	—
26	Pressure Control Solenoid 4 (PC4)	Brown/White	CET108
27	Pressure Control Solenoid 2 (PC2)	Green/Brown	CET06
28	Transmission Solenoid Power Control 2 (TSPC2)	Brown	CET49

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TRANSMISSION RANGE SENSOR

The Transmission Range Sensor is comprised of a dual set of TR sensors. The shifter engages and disengages park and the shifter position is detected by reading TR sensors A and B. There is no manual valve. The PCM provides forward or reverse based on the dual TR sensor inputs. The 8F35/40 transmission uses dual PWM output, at 125 Hz. TR sensor A increases as the shifter is moved from Park to Sport and TR sensor B decreases as the shifter is moved from park to sport, together the sum of the two signals should add up to 100%.



PIN	CIRCUIT	WIRE COLOR	FUNCTION
1	RET24	Brown/Blue	Signal Return (TRGND)
2	VET84	Brown/Green	Transmission Range Sensor PWM Output 1 (TR-P1)
3	VET81	Yellow/Gray	Transmission Range Sensor PWM Output 2 (TR-P2)
4	LE425	Blue/Brown	Transmission Range Sensor Voltage Supply (T-VREF)

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INTERNAL MODE SWITCH VOLTAGE CHART				
SHIFT LEVER POSITION	Transmission Range Sensor A		Transmission Range Sensor B	
	Minimum %	Maximum %	Minimum %	Maximum %
PARK	7	17	93	82
REVERSE	31	47	69	52
NEUTRAL	51	64	49	36
DRIVE	67	80	33	20
SPORT/MAN	82	94	17	7

Figure 8

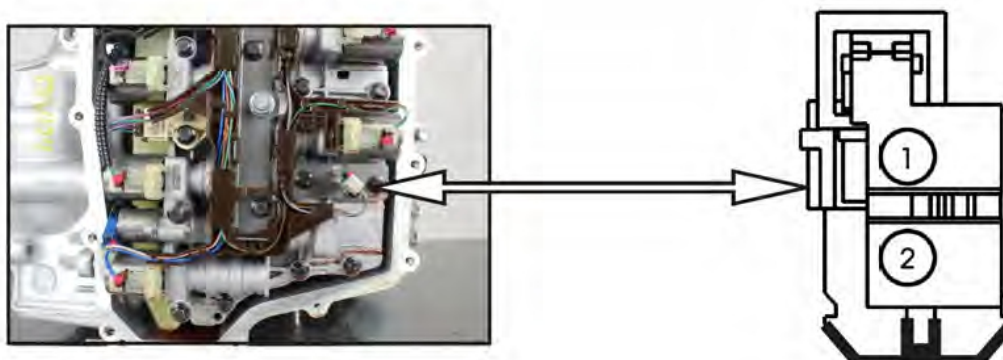
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TRANSMISSION TEMPERATURE SENSOR

The TFT sensor is a temperature dependent resistor that is in contact with transmission fluid in the transmission sump area. The PCM monitors the voltage across the TFT sensor, which changes as transmission fluid temperature varies. The PCM uses the TFT sensor signal as an input for its shifting strategy and TCC operation. The PCM also uses the TFT sensor signal for transmission fault detection and diagnostics.

TFT TEMPERATURE TO RESISTANCE		
C°	F°	RESISTANCE
-40 TO -20	-40 TO -4	967K -284K
-19 TO -1	-3 TO -31	284K -100K
0 TO 20	32 TO 68	100K -37K
21 TO 40	69 TO 104	37K -16K
41 TO 70	105 TO 158	16K -5K
71 TO 90	159 TO 194	5K -2.7K
91 TO 110	195 TO 230	2.7K -1.5K
111 TO 130	231 TO 266	1.5K -0.8K
131 TO 150	267 TO 302	0.8K -0.54K



PIN	CIRCUIT	WIRE COLOR	FUNCTION
1	VET27	Brown/Yellow	Transmission Fluid Temperature Sensor Signal
2	RE406	Gray/Violet	Transmission Fluid Temperature Sensor Ground

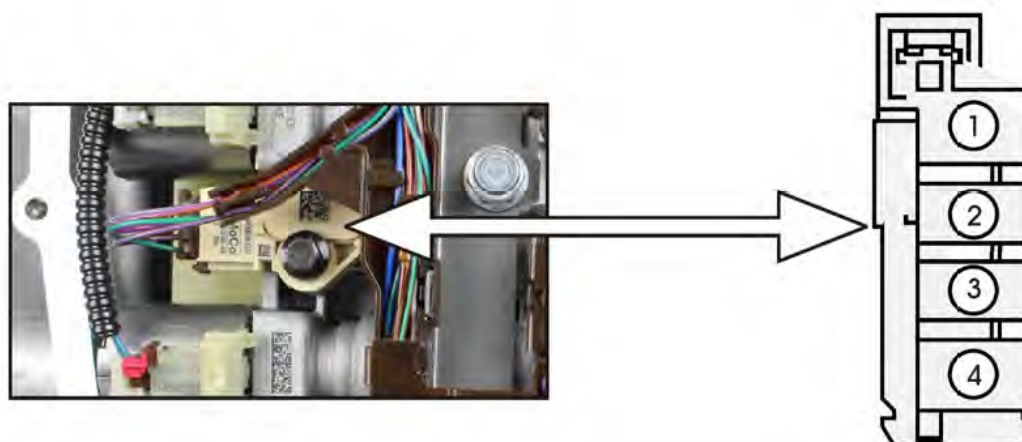
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Figure 9

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TRANSMISSION FLUID PRESSURE SWITCH A & B

Transmission Fluid Pressure (TFP) sensors for clutch A (TFP A) and B (TFP B) have been added to improve diagnostic capability for non-electrical (stuck solenoid or control valve) faults. The TFP sensors provide a voltage proportional to the absolute hydraulic pressure in the transmission clutch control circuit using a piezo-resistive silicon sensing element. Pressure readings are used to monitor the status of specified clutch systems during operation. The typical operating output range is 0.5V to 4.5V. The pressure sensor is typically mounted on the transmission main control assembly with a dedicated feed port. TFP A sensor measures A clutch pressure, TFP B sensor measures B clutch pressure. Transmission Pressure Switch A and B receive a five volt reference supply from the PCM.



PIN	CIRCUIT	WIRE COLOR	FUNCTION
1	LE423	Green/Violet	TFPS 5 Volt Reference Supply
2	VET98	Brown/Violet	Transmission Fluid Pressure 2 Signal
3	VET97	Violet/Orange	Transmission Fluid Pressure 1 Signal
4	RE406	Gray/Violet	TFPA Ground Circuit

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Figure 10

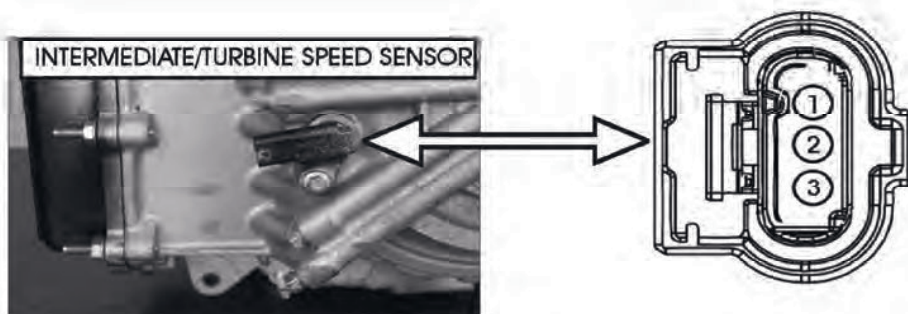
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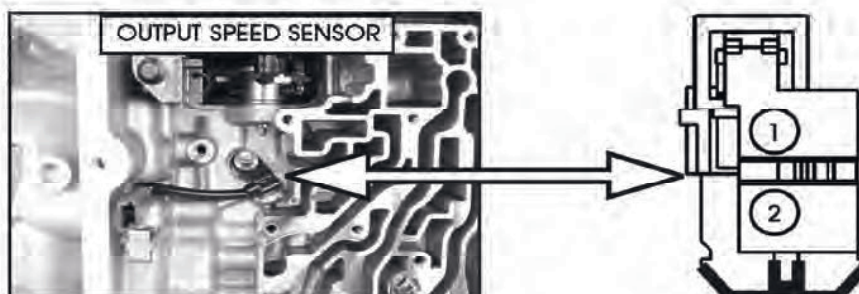
TURBINE SHAFT/INTERMEDIATE SHAFT SPEED SENSOR OUTPUT SHAFT SPEED SENSOR

The Turbine Speed Sensor and Intermediate Speed Sensor are, contained in one Hall-effect type sensor that provides a signal to the PCM. The signal it provides changes in frequency as the rotating speed of the component being monitored changes. The TSS sensor monitors the speed of the input B clutch cylinder and the ISSA monitors the speed of the reaction sun gear. The TSS/ISS receive a nine volt reference supply voltage from the PCM.

The OSS sensor is a Hall-effect type sensor that provides a signal to the PCM that changes in frequency as the rotating speed of the output shaft C1 varies. The PCM also compares the OSS sensor signal with the TSS sensor signal to determine the gear ratio provided by the rear planetary gearset. The PCM uses the OSS sensor signal as an input for its shift strategies and TCC operation. The PCM also uses the OSS sensor signal for transmission fault detection and diagnostics. The TSS/ISS receive a nine volt reference supply voltage from the PCM.



PIN	CIRCUIT	WIRE COLOR	FUNCTION
1	RET73	Violer/Green	Intermediate Shaft Speed Sensor Signal
2	LE461	Gray/Yellow	TSS/ISS 9 Volt Reference Supply
3	RET33	White/Violet	Turbine Shaft Speed Sensor Signal



PIN	CIRCUIT	WIRE COLOR	FUNCTION
1	LE425	Blue/Brown	Output Speed Sensor 9 Volt Reference Supply
2	RE404	Yellow/Orange	Output Speed Sensor Signal

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DIAGNOSTIC TROUBLE CODES

DTC	CODE DESCRIPTION	LAMP	CODE TYPE
P0657	Actuator Supply Voltage "A" Circuit Open	MIL/WRENCH	Continuous
P0702	Transmission Control System Electrical Fault	WRENCH	Continuous
P0706	Transmission Range Sensor "A" Circuit Performance	WRENCH	Contin/KOEO
P0707	Transmission Range Sensor "A" Circuit Low	WRENCH	Contin/KOEO
P0708	Transmission Range Sensor "A" Circuit High	WRENCH	Contin/KOEO
P0709	Transmission Range Sensor "A" Circuit Intermittent	WRENCH	Continuous
P0710	Transmission Fluid Temperature Sensor "A" Circuit Fault	WRENCH	Continuous
P0711	Transmission Fluid Temperature Sensor "A" Circuit Performance	MIL	Continuous
P0712	Transmission Fluid Temperature Sensor "A" Circuit Low	MIL	Contin/KOEO/R
P0713	Transmission Fluid Temperature Sensor "A" Circuit Voltage High	MIL	Contin/KOEO/R
P0715	Turbine Shaft Speed Sensor "A" Circuit Fault	MIL	Contin/KOEO/R
P0716	Turbine Shaft Speed Sensor "A" Circuit Performance	MIL	Continuous
P0717	Turbine Shaft Speed Sensor "A" Circuit No Signal	WRENCH	Continuous
P0718	Turbine Shaft Speed Sensor "A" Circuit Voltage Intermittent	MIL	Continuous
P0720	Output Shaft Speed Sensor Circuit Fault	MIL	Continuous
P0722	Output Shaft Speed Sensor Circuit No Signal	WRENCH	Continuous
P0723	Output Shaft Speed Sensor Circuit Intermittent	MIL	Continuous
P0729	Gear 6 Incorrect Ratio	WRENCH	Continuous
P0731	Gear 1 Incorrect Ratio	WRENCH	Continuous
P0732	Gear 2 Incorrect Ratio	WRENCH	Continuous
P0733	Gear 3 Incorrect Ratio	WRENCH	Continuous
P0734	Gear 4 Incorrect Ratio	WRENCH	Continuous
P0735	Gear 5 Incorrect Ratio	WRENCH	Continuous
P0736	Reverse Incorrect Ratio	WRENCH	Continuous
P073D	Unable To Engage Neutral	NONE	Continuous
P073E	Unable To Engage Reverse	NONE	NONE
P073F	Unable To Engage Gear 1	NONE	NONE
P0740	Torque Converter Clutch Solenoid Circuit Open	MIL	Contin/KOEO
P0741	Torque Converter Clutch Stuck Off	MIL	Continuous
P0743	Torque Converter Clutch Solenoid Circuit Electrical Malfunction	WRENCH	Contin/KOEO/R
P0748	Pressure Control Solenoid Electrical Malfunction	WRENCH	Contin/KOEO/R
P0751	Shift Solenoid "A" Performance (Stuck Off)	MIL	Continuous
P0752	Shift Solenoid "A" Stuck On	MIL	Continuous
P0753	Shift Solenoid "A" Electrical Malfunction	WRENCH	Contin/KOEO/R
P0754	Shift Solenoid "A" Intermittent Electrical Malfunction	MIL	Continuous
P0756	Shift Solenoid "B" Performance (Stuck Off)	MIL	Continuous
P0757	Shift Solenoid "B" Stuck On	MIL	Continuous
P0758	Shift Solenoid "B" Electrical Malfunction	WRENCH	Contin/KOEO/R
P0759	Shift Solenoid "B" Intermittent Electrical Malfunction	MIL	Continuous

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Figure 12

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DIAGNOSTIC TROUBLE CODES

DTC	CODE DESCRIPTION	LAMP	CODE TYPE
P0761	Shift Solenoid "C" Performance (Stuck Off)	MIL	Continuous
P0762	Shift Solenoid "C" Stuck On	MIL	Continuous
P0763	Shift Solenoid "C" Electrical Malfunction	WRENCH	Contin/KOEO
P0764	Shift Solenoid "C" Intermittent Electrical Malfunction	MIL	Continuous
P0766	Shift Solenoid "D" Performance (Stuck Off)	MIL	Continuous
P0767	Shift Solenoid "D" Stuck On	MIL	Continuous
P0768	Shift Solenoid "D" Electrical Malfunction	WRENCH	Contin/KOEO/R
P0769	Shift Solenoid "D" Intermittent Electrical Malfunction	MIL	Continuous
P076F	Gear 7 Incorrect Ratio	WRENCH	Continuous
P0771	Shift Solenoid "E" Performance (Stuck Off)	MIL	Continuous
P0772	Shift Solenoid "E" Stuck On	MIL	Continuous
P0773	Shift Solenoid "E" Electrical Malfunction	WRENCH	Contin/KOEO/R
P0774	Shift Solenoid "E" Intermittent Electrical Malfunction	MIL	Continuous
P077D	Output Shaft Speed Sensor Circuit High	MIL	Contin/KOEO/R
P0791	Intermediate Shaft Speed Sensor "A" Circuit Malfunction	MIL	Contin/KOEO/R
P0792	Intermediate Shaft Speed Sensor "A" Circuit Performance	MIL	Contin/KOEO
P0793	Intermediate Shaft Speed Sensor "A" Circuit No Signal	WRENCH	Contin/KOEO
P0794	Intermediate Shaft Speed Sensor "A" Circuit Intermittent Fault	MIL	Contin/KOEO
P07BF	Turbine Shaft Speed Sensor Circuit Low	MIL	Contin/KOEO
P07C0	Turbine Shaft Speed Sensor Circuit High	MIL	Contin/KOEO
P07C5	Intermediate Shaft Speed Sensor "A" Circuit Low	MIL	Contin/KOEO
P07C6	Intermediate Shaft Speed Sensor "A" Circuit High	MIL	Contin/KOEO
P07D9	Gear 8 Incorrect Ratio	WRENCH	Continuous
P07E4	Unable To Engage Park	WRENCH	NONE
P07E6	Stuck In Park	WRENCH	NONE
P0840	Transmission Fluid Pressure Switch "A" Circuit Malfunction	WRENCH	Contin/KOEO
P0841	Transmission Fluid Pressure Switch "A" Circuit Performance	MIL	Continuous
P0842	Transmission Fluid Pressure Switch "A" Circuit Low	MIL	Contin/KOEO
P0843	Transmission Fluid Pressure Switch "A" Circuit High	MIL	Contin/KOEO
P0846	Transmission Fluid Pressure Switch "B" Circuit Performance	MIL	Contin/KOEO
P0847	Transmission Fluid Pressure Switch "B" Circuit Low	MIL	Contin/KOEO
P0848	Transmission Fluid Pressure Switch "B" Circuit High	MIL	Contin/KOEO
P0868	Transmission Fluid Pressure Low	WRENCH	Continuous
P0869	Transmission Fluid Pressure High	WRENCH	Continuous
P0882	TCM Power Input Signal Low	MIL	Contin/KOEO/R
P0883	TCM Power Input Signal High	MIL	Contin/KOEO/R
P093A	Hydraulic Accumulator Solenoid Circuit Open	WRENCH	Contin/KOEO
P093B	Hydraulic Accumulator Solenoid Circuit Low	WRENCH	Contin/KOEO
P093C	Hydraulic Accumulator Solenoid Circuit High	WRENCH	Contin/KOEO

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Figure 13

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DTC	CODE DESCRIPTION	LAMP	CODE TYPE
P093D	Hydraulic Accumulator Solenoid Performance	WRENCH	Contin/KOEO
P0960	Pressure Control Solenoid Circuit Open	MIL	Contin/KOEO/R
P0961	Pressure Control Solenoid Circuit Performance	MIL	Continuous
P0962	Pressure Control Solenoid Circuit Low	MIL	Contin/KOEO/R
P0963	Pressure Control Solenoid Circuit High	MIL	Contin/KOEO/R
P0973	Shift Solenoid "A" Circuit Low	MIL	Contin/KOEO/R
P0974	Shift Solenoid "A" Circuit High	MIL	Contin/KOEO/R
P0976	Shift Solenoid "B" Circuit Low	MIL	Contin/KOEO/R
P0977	Shift Solenoid "B" Circuit High	MIL	Contin/KOEO/R
P0979	Shift Solenoid "C" Circuit Low	MIL	Contin/KOEO/R
P097A	Shift Solenoid "A" Circuit Open	MIL	Contin/KOEO/R
P097B	Shift Solenoid "B" Circuit Open	MIL	Contin/KOEO/R
P097C	Shift Solenoid "C" Circuit Open	MIL	Contin/KOEO/R
P097D	Shift Solenoid "D" Circuit Open	MIL	Contin/KOEO/R
P097E	Shift Solenoid "E" Circuit Open	MIL	Contin/KOEO/R
P097F	Shift Solenoid "F" Circuit Open	MIL	Contin/KOEO/R
P0980	Shift Solenoid "C" Circuit High	MIL	Contin/KOEO/R
P0982	Shift Solenoid "D" Circuit Low	MIL	Contin/KOEO/R
P0983	Shift Solenoid "D" Circuit High	MIL	Contin/KOEO/R
P0985	Shift Solenoid "E" Circuit Low	MIL	Contin/KOEO/R
P0986	Shift Solenoid "E" Circuit High	MIL	Contin/KOEO/R
P0998	Shift Solenoid "F" Circuit Low	MIL	Contin/KOEO/R
P0999	Shift Solenoid "F" Circuit High	MIL	Contin/KOEO/R
P1001	KOER Not Able To Complete - KOER Aborted	NONE	KOER
P1397	System Voltage Out Of Self-Test Range	NONE	KOEO
P163E	Transmission Control Module Programming Error	MIL	Continuous
P163F	Transmission ID Block Corrupted - Not Programmed	MIL	Contin/KOEO
P1705	Transmission Range Circuit Not Indicating P/N During Self-Test	NONE	NONE
P1711	Transmission Fluid Temperature Sensor Out Of Self-Test Range	NONE	KOEO
P1744	Torque Converter Clutch Solenoid Circuit Performance	WRENCH	Continuous
P1783	Transmission Over Temperature Condition	WRENCH	Continuous
P1A02	Transmission One-Way Clutch Performance	WRENCH	Continuous
P2669	Actuator Supply Voltage "B" Circuit Open	MIL	Continuous
P26C3	Internal Control Module Transmission Range Sensor Performance	WRENCH	Contin/KOEO/R
P2700	Transmission Friction Element "A" Apply Time Range Performance	WRENCH	Continuous
P2701	Transmission Friction Element "B" Apply Time Range Performance	WRENCH	Continuous
P2702	Transmission Friction Element "C" Apply Time Range Performance	WRENCH	Continuous
P2703	Transmission Friction Element "D" Apply Time Range Performance	WRENCH	Continuous
P2704	Transmission Friction Element "E" Apply Time Range Performance	WRENCH	Continuous

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Figure 14

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DTC	CODE DESCRIPTION	LAMP	CODE TYPE
P2705	Transmission Friction Element "F" Apply Time Range Performance	WRENCH	Continuous
P2707	Shift Solenoid "F" Performance (Stuck Off)	MIL	Continuous
P2708	Shift Solenoid "F" Stuck On	MIL	Continuous
P2709	Shift Solenoid "F" Electrical Malfunction	MIL	Contin/KOEO
P2710	Shift Solenoid "F" Intermittent	MIL	Continuous
P2758	Torque Converter Clutch Pressure Control Solenoid Stuck On	MIL	Continuous
P2760	Torque Converter Clutch Pressure Control Solenoid Intermittent	MIL	Continuous
P2769	Torque Converter Clutch Pressure Control Solenoid Low	MIL	Continuous
P2770	Torque Converter Clutch Pressure Control Solenoid High	MIL	Continuous
P2783	Torque Converter Temperature Too High	NONE	Continuous
P27B4	Internal Control Module Transmission Gear Direction Control Perf	NONE	Continuous
P27B5	Internal Control Module Transmission Gear Ratio Control Perf	NONE	Continuous
P27B6	Internal Control Module Transmission Speed Sensor Performance	MIL/Wrench	Continuous
P2801	Transmission Range Sensor "B" Circuit Range/Performance	MIL	Contin/KOEO
P2802	Transmission Range Sensor "B" Circuit Low	MIL	Contin/KOEO
P2803	Transmission Range Sensor "B" Circuit High	MIL	Contin/KOEO
P2804	Transmission Range Sensor "B" Circuit Intermittent	WRENCH	Contin/KOEO
P2805	Transmission Range Sensor "A"/"B" Correlation	MIL	Contin/KOEO
P2888	Park Lock/Pawl Actuator Circuit Open	WRENCH	Continuous
P2889	Park Lock/Pawl Actuator Circuit Low	WRENCH	Continuous
P288A	Park Lock/Pawl Actuator Circuit High	WRENCH	Continuous
P288B	Park Lock/Pawl Actuator Circuit Performance	WRENCH	Continuous

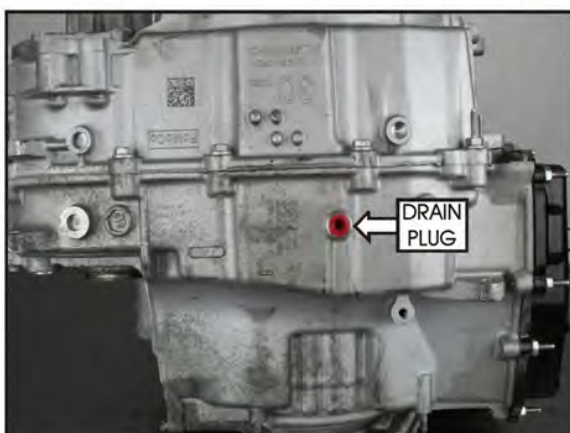
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Figure 15

FORD 8F35/40

PRELIMINARY INFORMATION

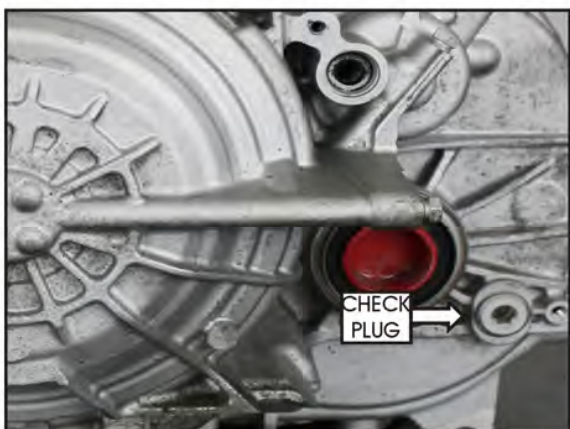
TRANSMISSION FLUID DRAIN, CHECK & FILL PROCEDURES



If the underbody shield is not yet removed, remove the retainers and the shield at this time. Position drain pan under the drain plug as seen on the left and drain all fluid. Replace the drain plug and tighten to 124 lb. in. (14Nm).



If not already removed, remove the air cleaner/intake air duct assembly at this time. Remove the fluid fill cap as seen on the left. With the transmission at 185°F to 220°F (85°C to 93°C) add transmission fluid as follows:
Service Fill - 5.28 qts. (5.0 liters).
Overhaul - 6.34 qts. (6.0 liters).
Factory recommended transmission fluid:
MERCON® ULV



The air cleaner assembly will have to be temporarily installed so the engine will run. After shifting the transmission through all ranges and with the engine running in park, CAREFULLY remove the check plug as seen on the left. Caution, the fluid is hot and injury can occur if care is not taken when removing the check plug.

With the check plug removed, transmission fluid should trickle out of the check plug hole. If fluid pours out, allow it to seek its own level. If no fluid comes out, add more fluid in 0.5 pts. (0.25 liters), through the fill cap until it trickles out of the check plug hole. Install the fluid check plug and tighten to 26 lb. ft. (35 Nm). Replace the fluid fill cap. Permanently install the air cleaner assembly and the underbody shield.

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PRELIMINARY INFORMATION



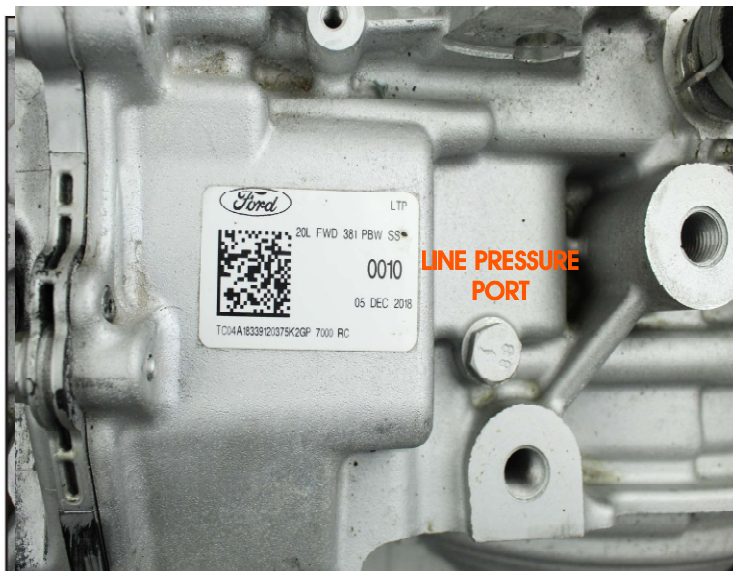
Figure 17



Figure 18

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PRELIMINARY INFORMATION

LINE PRESSURE SPECIFICATIONS

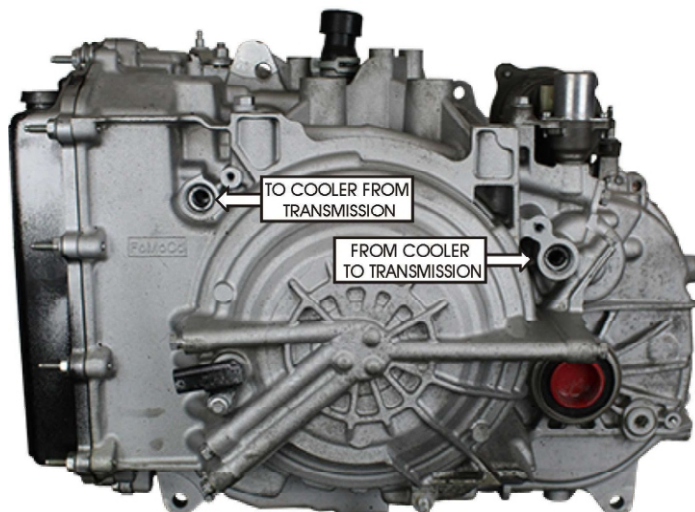


Position the air cleaner assembly aside to gain access to the line pressure service port shown above. With a line pressure gauge connected to the service port and the engine running, with a scan tool connected, compare the LINESD parameter to the line pressure gauge with the engine at idle rpm and at 2000 rpm. Actual pressure should be within 10 psi (69 kPa). Use the scan tools bidirectional control to raise and lower line pressure from a minimum of 50 psi (379 kPa) to 300 psi (2068 kPa).

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Figure 19

8F35 COOLER FLOW



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Figure 20

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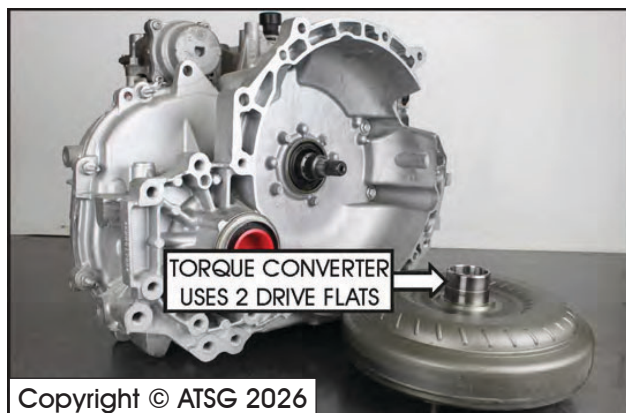


Figure 21

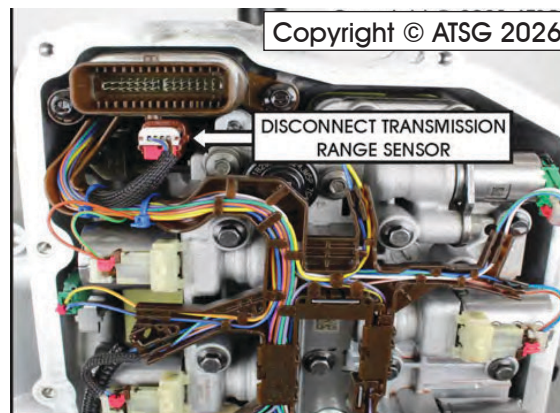


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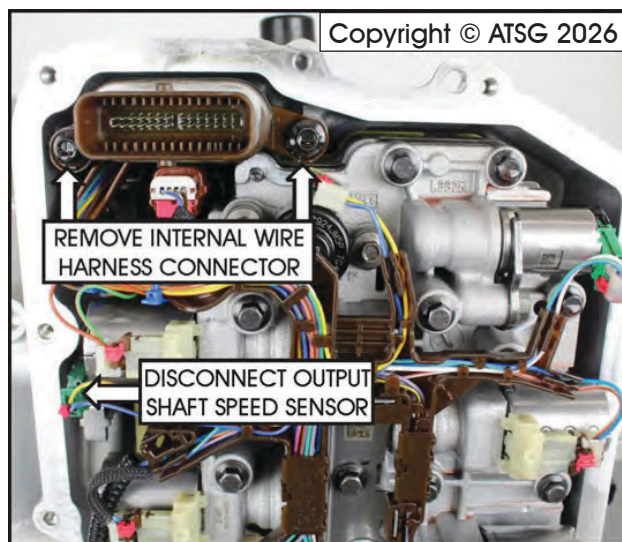


Figure 22

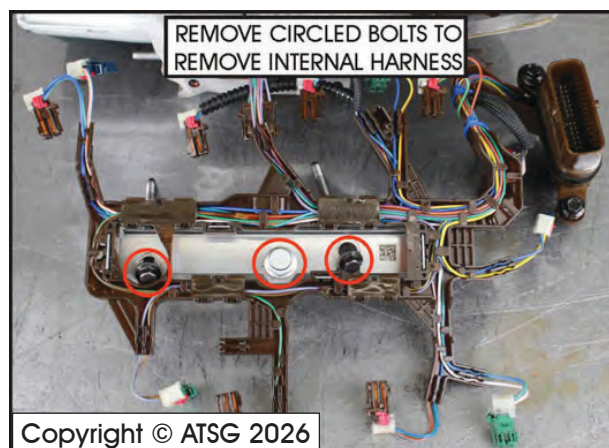


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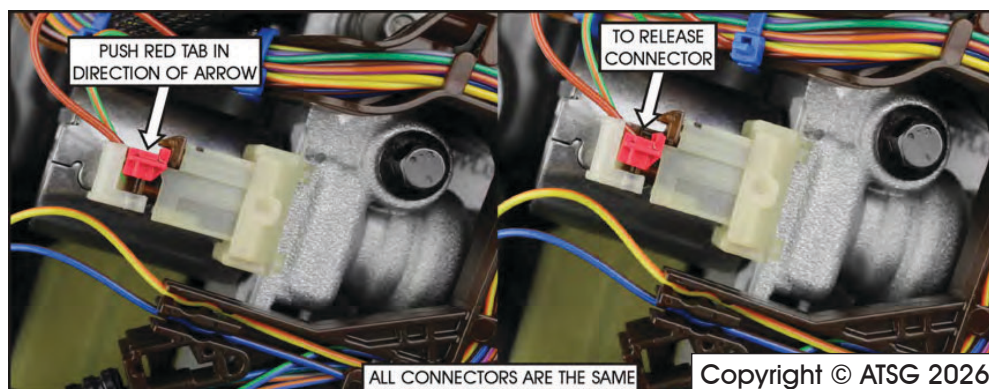


Figure 23

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PRELIMINARY INFORMATION

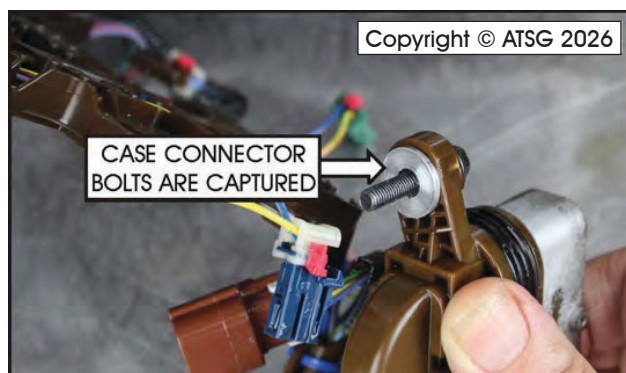


Figure 26

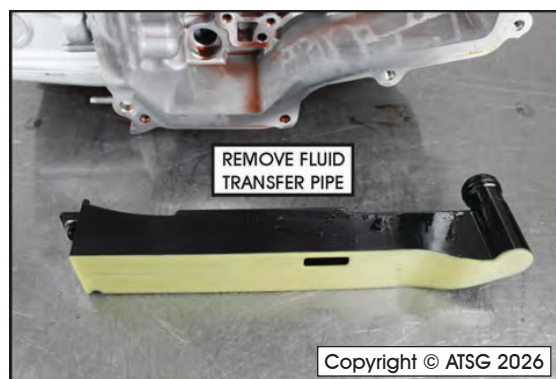


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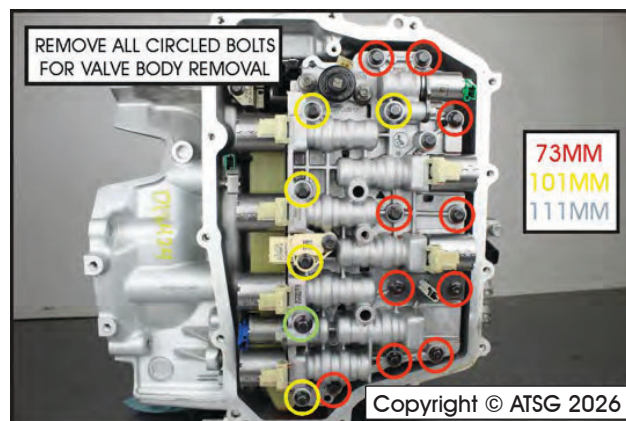


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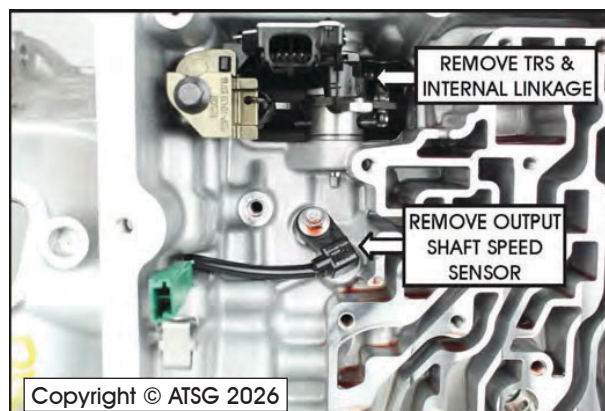


Figure 30

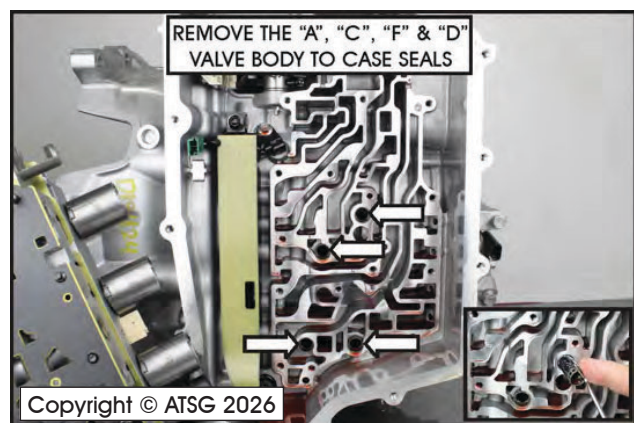


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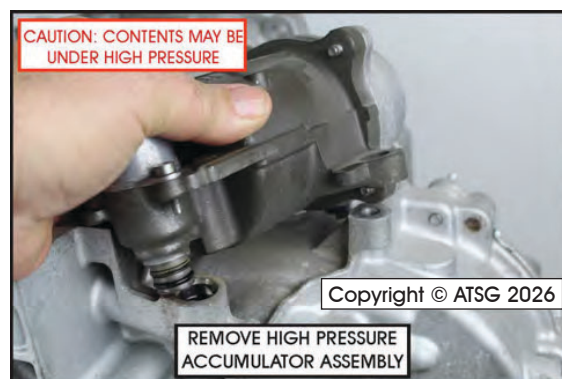


Figure 31

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PRELIMINARY INFORMATION

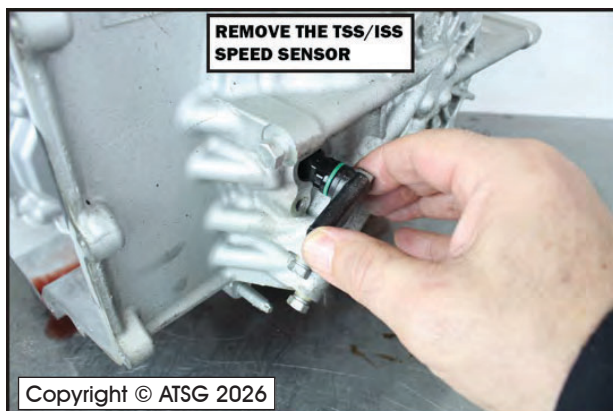


Figure 32

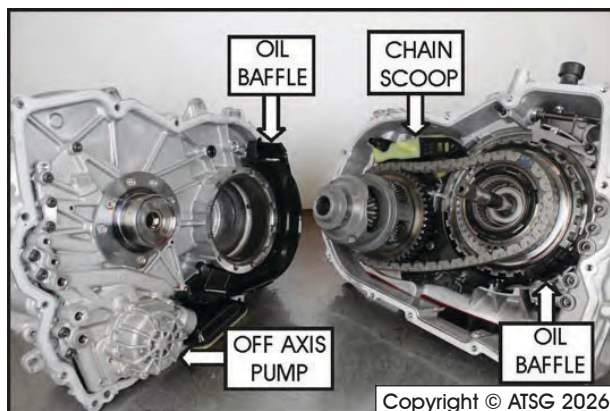


Figure 35

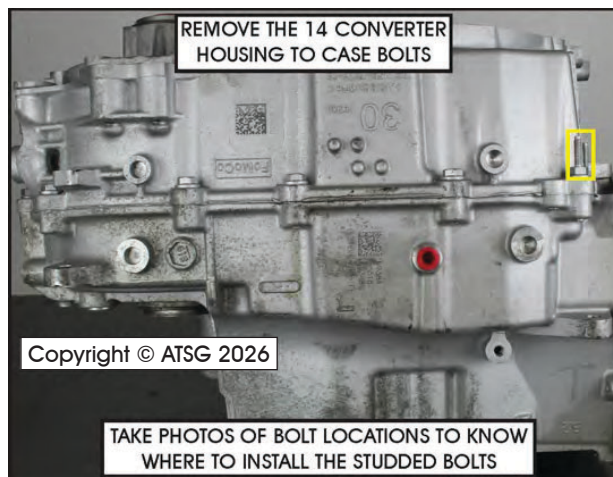


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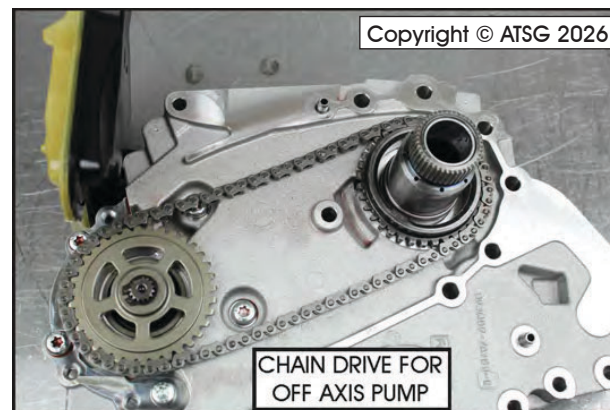


Figure 36

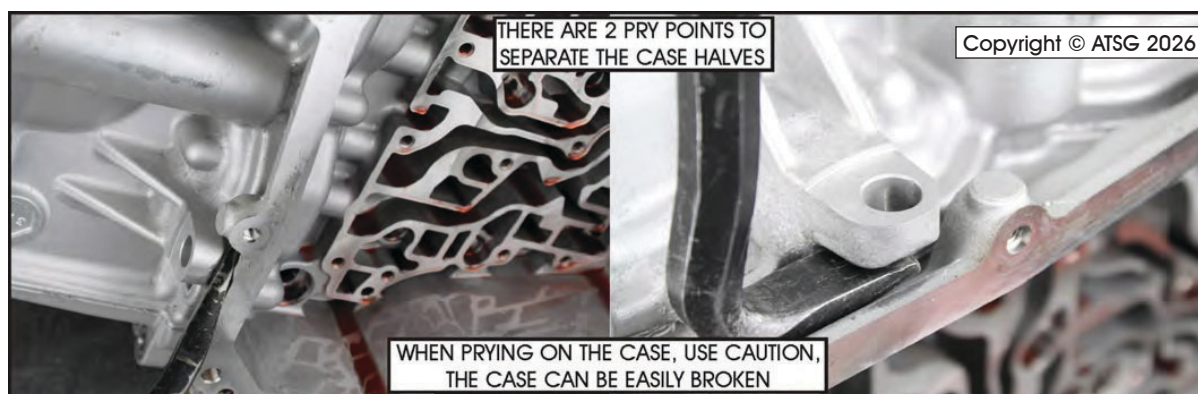


Figure 34

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PRELIMINARY INFORMATION

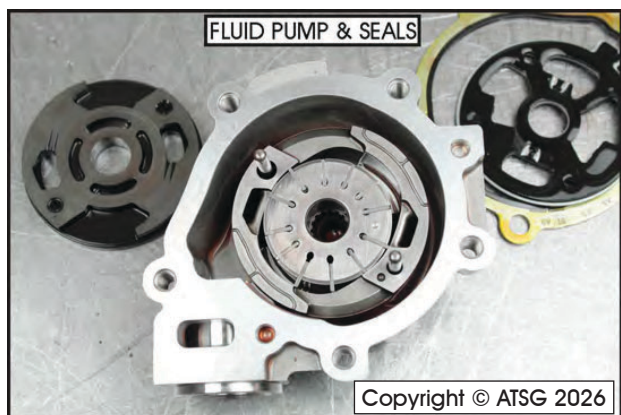


Figure 37



Figure 40



Figure 38

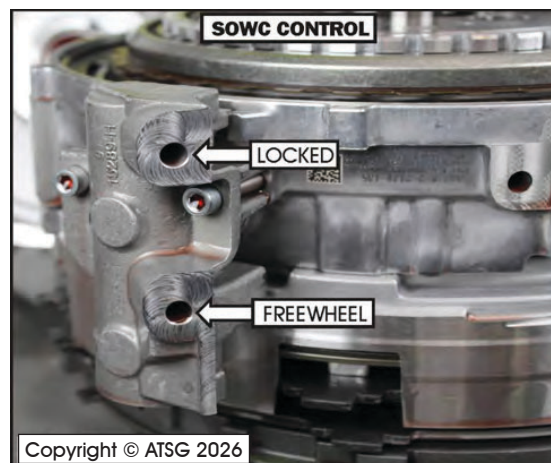


Figure 41



Figure 39

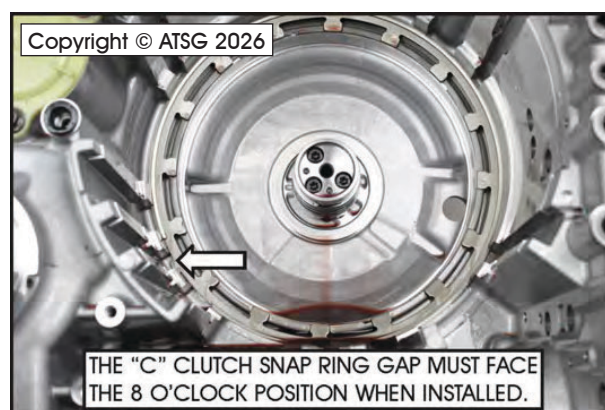


Figure 42

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PRELIMINARY INFORMATION

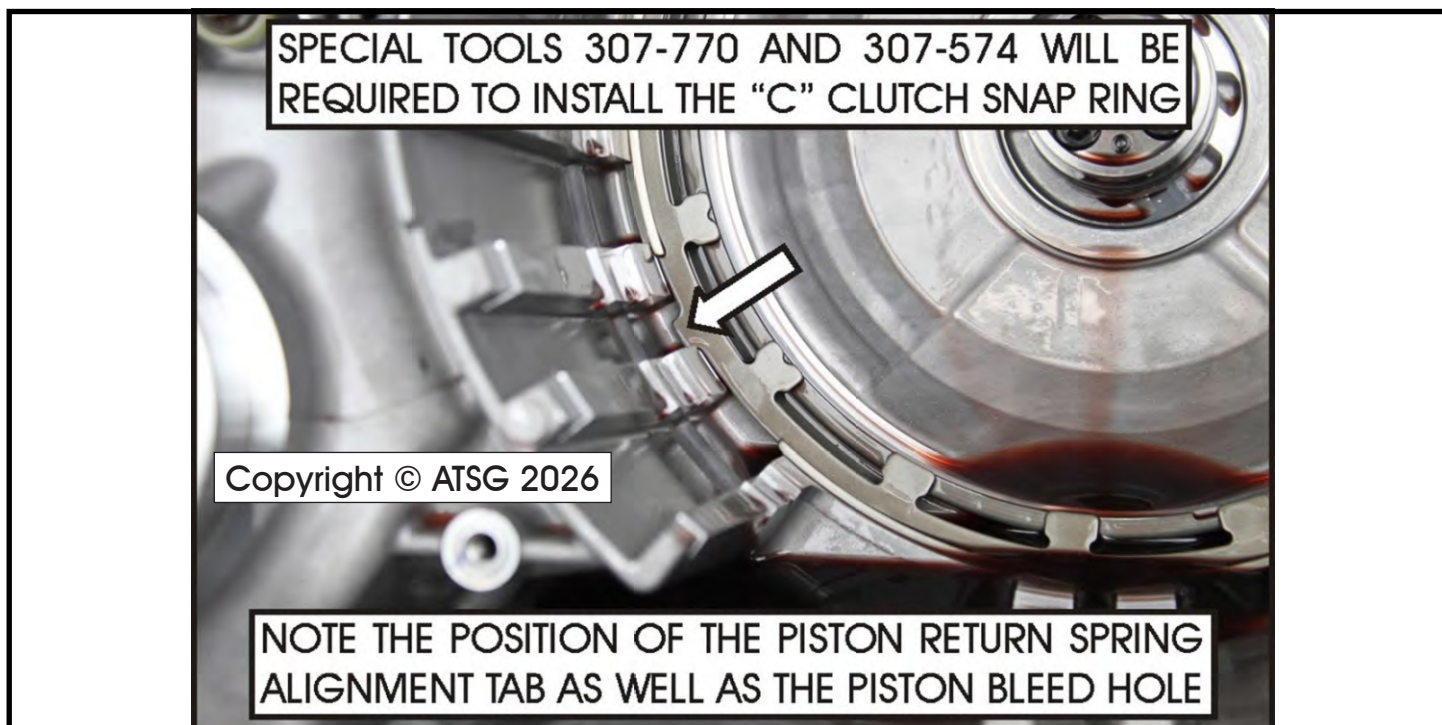
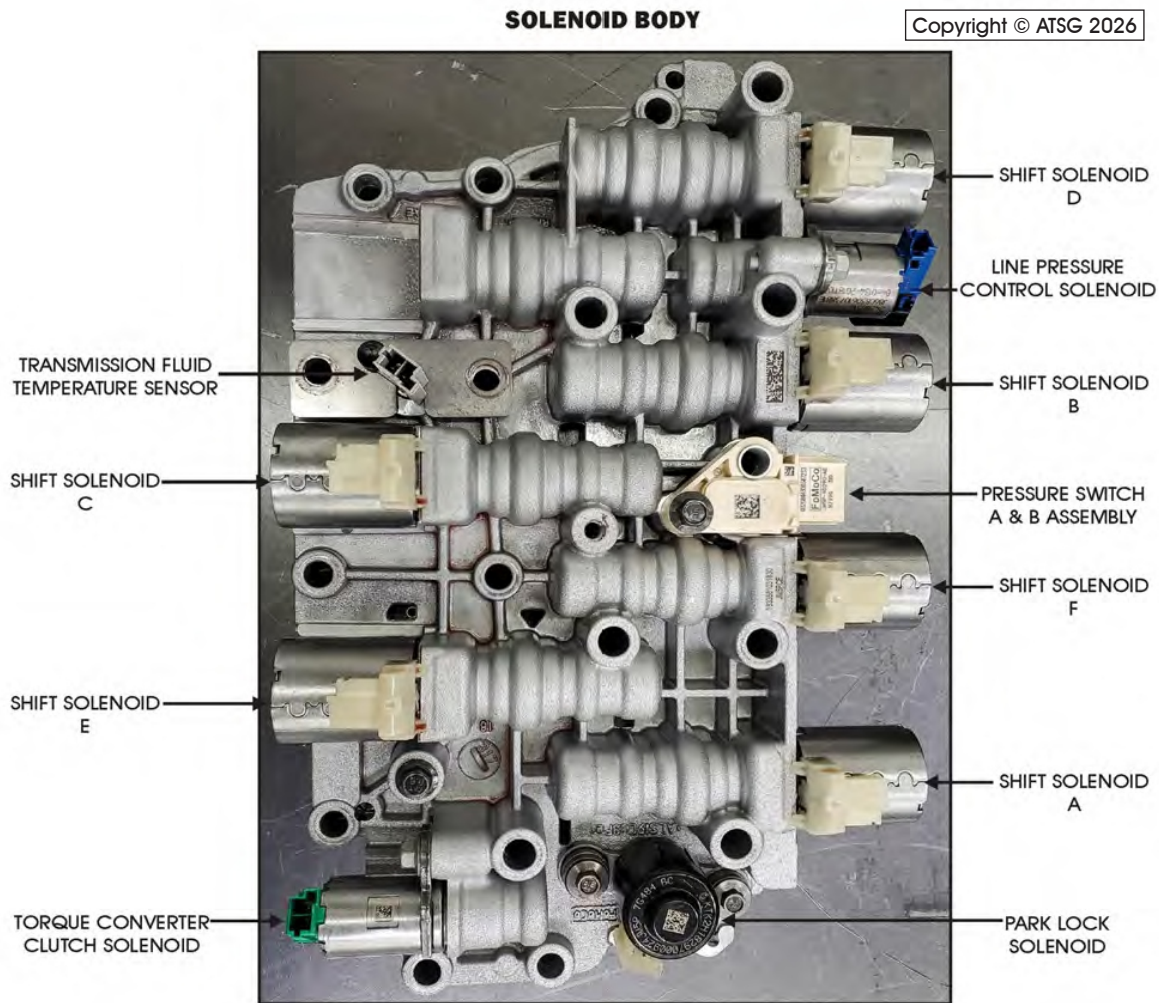


Figure 43

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PRELIMINARY INFORMATION



The CIDAS type of solenoid is a pulse width modulated solenoid that does not use fluid pressure to stroke the clutch control valve. It is a mechanically operated solenoid with no fluid going through it. The pintle of the solenoid will stroke the clutch control valve a very short distance and fluid pressure will return the valve to its non-applied position when the solenoid is turned off and the pintle retracts.

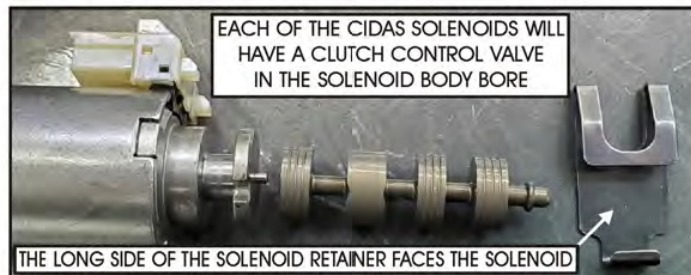


Figure 44

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PRELIMINARY INFORMATION

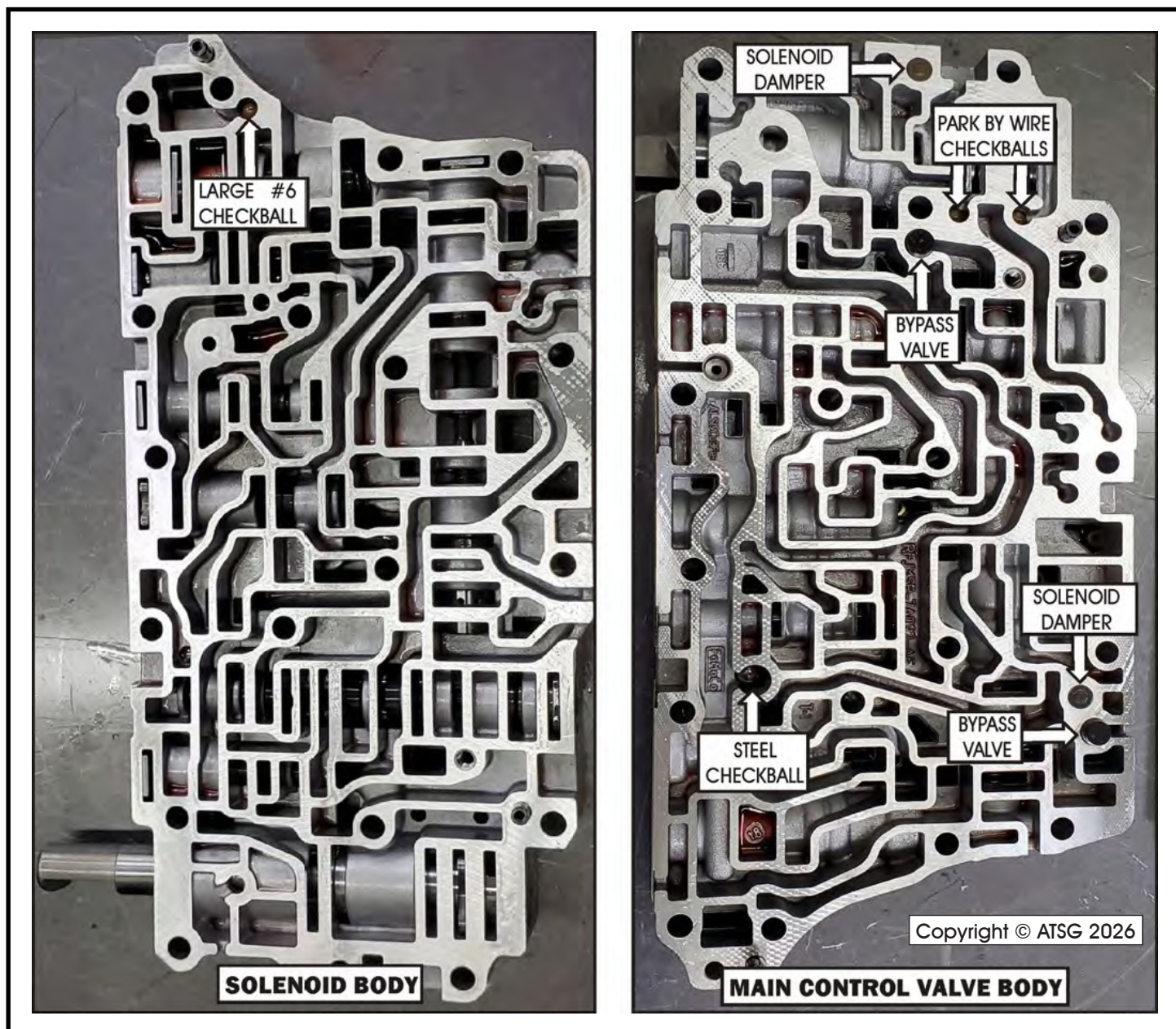
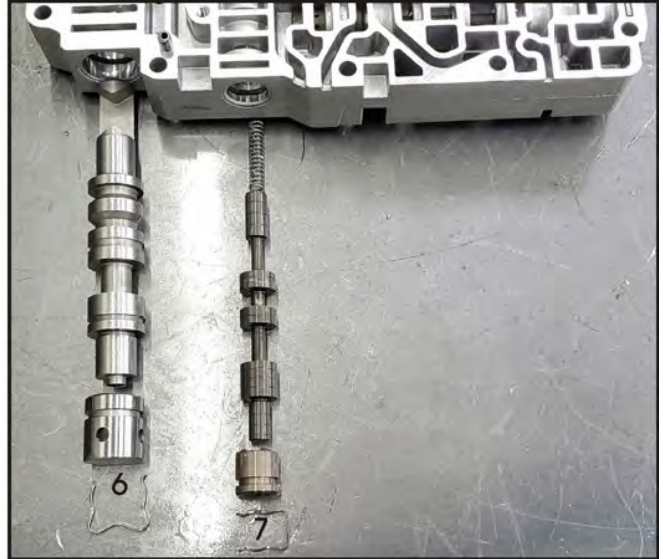
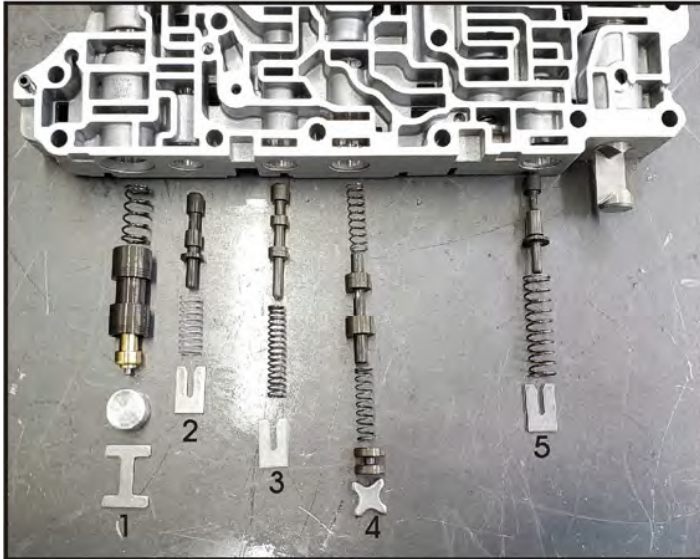


Figure 45

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PRELIMINARY INFORMATION



- 1 - OIL LEVEL CONTROL VALVE
- 2 - SOWC LIMIT VALVE
- 3 - LATCH VALVE
- 4 - ANTI-BACKFLOW VALVE
- 5 - LUBE BOOST VALVE
- 6 - PARK BY WIRE CONTROL VALVE*
- 7 - TCC REGULATOR VALVE
- 8 - MAIN PRESSURE REGULATOR VALVE

*Vehicles without the park by wire feature will have a manual valve in this location.

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Figure 46

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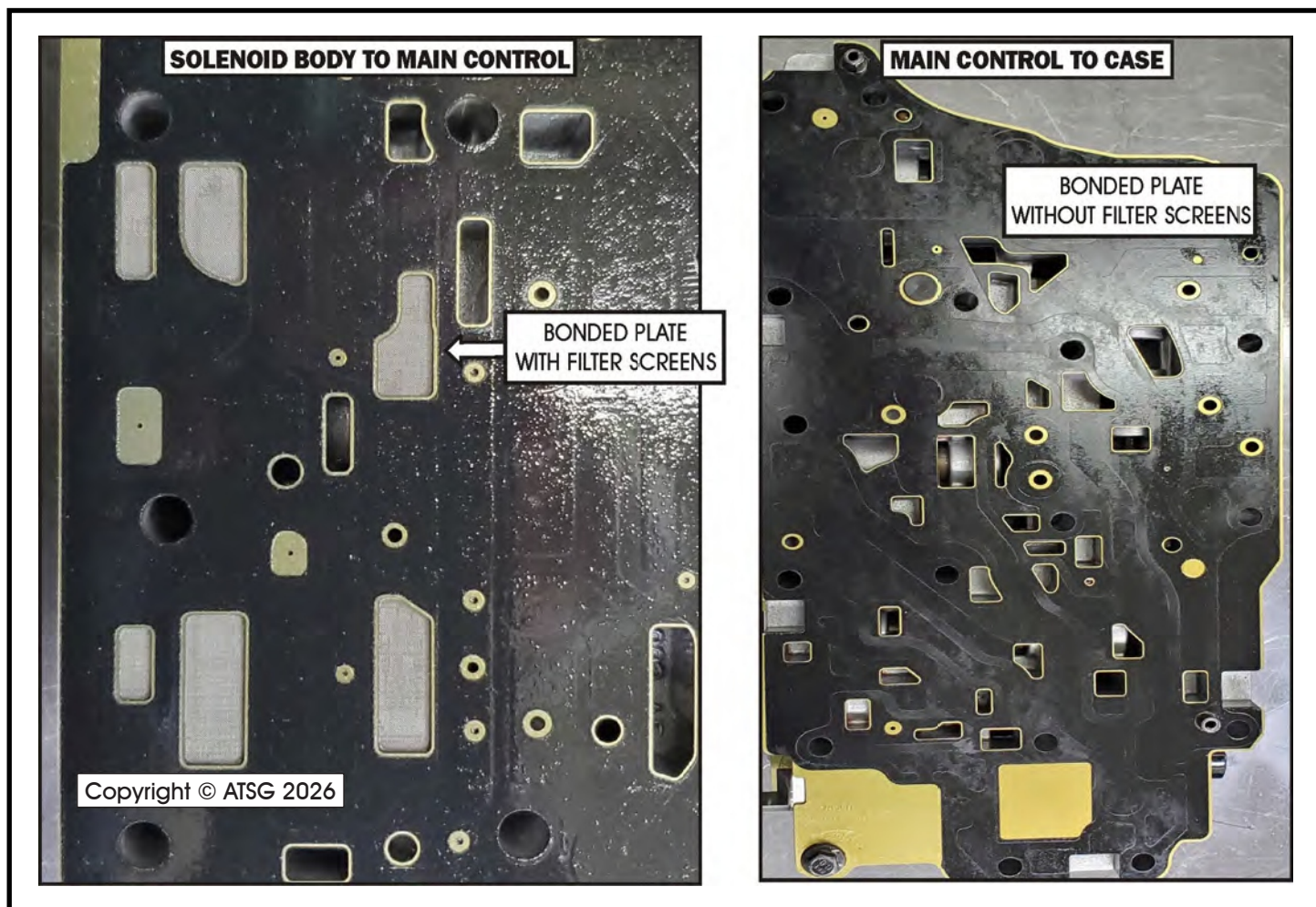


Figure 47

FORD 8F35/40
PRELIMINARY INFORMATION

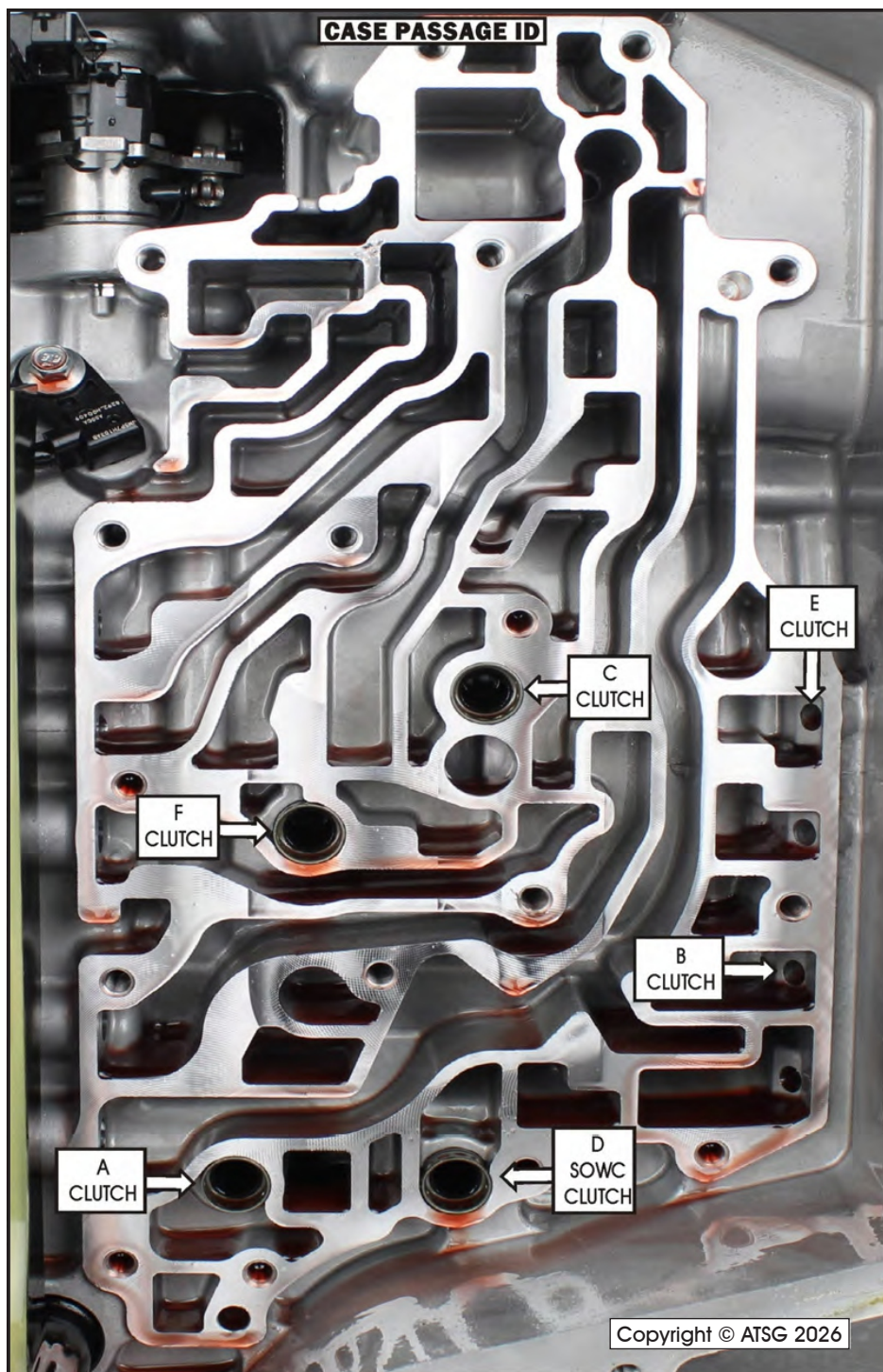


Figure 48
AUTOMATIC TRANSMISSION SERVICE GROUP