Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Transmission Fluid Temperature								
Transmission Fluid Temperature Sensor Circuit Range / Performance	P0711	This test detects performance of the transmission fluid temperature sensor by comparing changes in temperature from start up and between samples to calibration values.	All 5 Cases		Not Test Failed This Key On	P0711 P0716 P0717 P0721 P0722 P0742		B
					No Fault Pending DTCs for this drive cycle	P0716 P0717 P0721 P0722		
					No Pass DTCs for this drive cycle	P0711		
					No Fault Active DTC	P0711		
					Components powered			
					AND Battery Voltage between	 9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
					Start-up transmission fluid temperature is available Transmission fluid temperature between ECT is not defaulted	 -39 deg. C and 149 deg. C		
			Case 1 (Stuck sensor after cold start-up)				300 seconds	

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Start-up temperature change	<= 2 deg. C	Start-up transmission fluid temperature between	-40 deg. C and 21 deg. C		
			for a time	>= 100 seconds				
			AND		TCC Slip	>= 120 RPM		
					for a time	>= 300 seconds		
			Vehicle speed	>= 8 KPH				
			for a time	>= 300 seconds.	engine coolant temperature	>= 70 deg. C		
					AND engine coolant temperature change from start-up	>= 15 deg. C		
			Case 2 (Stuck sensor after warm start-up)				300 seconds	
			Start-up temperature change	<= 3 deg. C	Start-up transmission fluid temperature between	115 deg. C and 150 deg. C.		
			for a time	>= 100 seconds				
			AND		TCC Slip	>= 120 RPM		
					for a time	>= 300 seconds		
					engine coolant temperature	>= 70 deg. C		
			Vehicle speed	>= 8 KPH	AND engine coolant temperature change from start-up	>= 55 deg. C		
			for a time	>= 300 seconds.				
			Case 3 (Noisy sensor)				7 seconds	

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Change from previous temperature	>= 20 deg. C				
			for	14 events				
			in a time	< 7 seconds.				
			Case 4 (Doesn't warm up to at least 20 deg. C)		net engine torque	>= 150 Nm	2200 seconds	
			Time Enabled Criteria met AND		and	<= 1492 Nm		
			AND		vehicle speed	>= 22 KPH		
			Transmission Fluid Temperature	< 20 deg. C.	and	<= 512 KPH		
					%throttle	>= 10.5%		
			Time Enabled Criteria is determined by a lookup table ranging from	250 seconds when start-up temperature is >= 20 deg. C	and	<= 100%		
					engine speed	>= 500 RPM		
			to	2200 seconds when start-up temperature is <= -40 deg. C.	and	<= 6500 RPM		
					engine coolant temperature	>= -39 deg. C		
					and	<= 149 deg. C		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Case 5 (Reasonableness at start-up): Engine Speed AND Engine Coolant Temperature AND for AND ((ABS(IAT-ECT) AND (TFT-ECT)) OR (ABS(IAT-ECT) AND (TFT-ECT)))	 > 500 RPM > -39 deg. C < 50 deg. C >= 2 seconds <= 6 deg. C > 40 deg. C > 6 deg. C > 60 deg. C.	Intake Air Temperature is not defaulted		2 seconds	
Transmission Fluid Temperature Sensor Circuit Low Input	P0712	Out of range low.	transmission fluid temperature for a time	>=150 deg. C > 2.5 seconds.	Not Test Failed This Key On Components powered AND Battery Voltage between Engine Speed between	P0711 P0712 P0713 9 V and 18 V 200 RPM and 7500 RPM	2.5 seconds	B

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					for	5 seconds		
Transmission Fluid Temperature Sensor Circuit High Input	P0713	Out of range high.	transmission fluid temperature	<= -45 deg. C	Not Test Failed This Key On	P0711 P0712	2.5 seconds	B
			for a time	> 2.5 seconds		P0713		
					Components powered			
					AND Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
					IF Engine run time	<= 600 seconds		
					THEN Engine Coolant Temperature	must be > 20 deg. C		
					AND not defaulted for a time	>= 20 seconds.		
Speed Sensors								
Input / Turbine Speed Sensor Circuit Range / Performance	P0716	This test detects large changes in Input Speed and noisy Input Speed by comparing to calibration values.	All cases		Not Test Failed This Key On	P0716 P0717 P0721 P0722		A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					No Fault Pending DTCs for this drive cycle. Shifting complete	P0721 P0722		
			Case 1: (Unrealistically large changes in input speed) Change of Input Speed between samples for	 >= 800 RPM >= 0.15 seconds	Input Speed for	> 200 RPM >= 0.5 seconds	0.15 seconds	
			Case 2: (Noisy Input Speed) For sample size IF the change in Input Speed THEN the Low Counter is incremented IF the change in Input Speed THEN the High Counter is incremented This test fails if both the Low Counter and the High Counter OR Low Counter OR High Counter	 80 <= -800 RPM >= 800 RPM >= 5 >= 5 >= 5	Input Speed for	> 200 RPM >= 0.5 seconds	2 seconds	
			For Case 3: (Wires to speed sensors swapped) Increment counter when range attained and range commanded are neutral for a time		Input speed AND Engine speed for a time	> 100 RPM > 100 RPM >= 0.2 seconds	4 seconds	

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
				<= 3.5 seconds				
			AND		Hydraulic system pressurized			
			when ratio of engine speed and input speed	>= 3				
			Arm test when counter	>=20				
			OR when time	> 3.5 seconds				
			Malfunction is reported when, for a time	> 0.5 seconds				
			the range commanded is NOT neutral					
			AND the on-coming clutch control is complete					
			AND input speed	> 100 RPM				
			AND engine speed	< 100 RPM				
Input/Turbine Speed Sensor Circuit No Signal	P0717	This test detects unrealistically low value of input/turbine speed or unrealistically large changes in input/turbine speed.	Failure pending if transmission input speed	< 61 RPM	Not Test Failed This Key On	P0717 P0729 P0731	1 second	A
			This test fails if input speed	< 61 RPM		P0732		
			AND output speed	> 500 RPM		P0733 P0734		
			for a time	> 1 second.		P0735		
						P0736 P0721 P0722		
					No Fault Pending DTCs	P0721		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
						P0722		
					Reverse-to-Neutral shift not in process			
					Shifting complete			
					Range attained is not neutral			
					Transmission fluid temperature	> -25 deg. C		
					Engine speed	>= 400 RPM		
					Transmission output speed	>= 150 RPM		
Output Speed Sensor Circuit Range / Performance	P0721	This test detects a noisy output speed sensor or circuit by detecting large changes in output speed.	Case 1: (Unrealistically large change in output speed)		All Cases		Case 1:	A
					Not Test Failed This Key On	P0716	0.65 seconds	
			Change in output speed	>= 500 RPM		P0717		
			for a time	>= 0.15 seconds		P0721		
						P0722		
			Case 2: (Noisy output speed)				Case 2:	
			For sample size	80	No Fault Pending DTCs for this drive cycle	P0716 P0717	2 seconds	
			IF the change in output speed	<= -500 RPM				
			THEN the Low Counter is incremented.					
					Output Speed	> 200 RPM		
			IF the change in output speed	>= 500 RPM	for a time	>= 0.5 seconds		
			THEN the High Counter is incremented.					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Shift complete			
			Test fails if both the Low Counter and the High Counter	>= 5	AND range attained NOT neutral			
			OR the Low Counter	>= 5				
			OR the High Counter	>= 5				
Output Speed Sensor Circuit No Signal	P0722	This test detects unrealistically low value of output speed or unrealistically large change in output speed.	All Cases		All Cases			A
					Not Test Failed This Key On	P0721		
			Case 1: (Unrealistically large change in output speed)		Test enabled when output speed	>= 600 RPM	1 second	
			Failure pending if		for a time	>= 1 seconds		
			change in output speed	>= 600 RPM				
			Failure sets if range attained is Neutral		Test disabled when output speed	<= 600 RPM		
					for a time	> 1 seconds		
			Case 2: (Unrealistically low value of output speed)				4 seconds	
			Failure pending if output speed	< 61 RPM	Not Test Failed This Key On	P0731		
			Failure sets if not monitoring for low speed neutral and output speed	< 61 RPM		P0732 P0733 P0734		
			AND range is 3rd, 4th, 5th, or 6th			P0735 P0736		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			for a time	> 1 second		P0716		
						P0717		
			Failure sets if not monitoring for low speed neutral and output speed		No Fault Pending DTCs for this drive cycle	P0716		
						P0717		
			AND	< 61 RPM				
			((net engine torque	< -100 Nm	Engine is running			
			OR		Shift not in process			
			net engine torque)	> 100 Nm	Range attained is not Neutral			
			OR (turbine speed	> 1500 RPM	Reverse to Neutral shift not in process			
			AND		Transmission fluid temperature	> -25 deg. C		
			range is 2nd))		Transmission input speed	>= 1050 RPM		
			for a time	>= 4 seconds.	Not waiting for Manual Selector Valve to attain forward range			
					PRNDL State is NOT D4, NOT Transitional D4			
Range Verification								
Gear 1 Incorrect Ratio	P0731	This test verifies transmission operating ratio while 1st range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer				2.25 seconds	A
					Not Test Failed This Key On	P0877		
				>= 2 second				
			Timer accumulates when transmission is in forward or reverse range			P0878 P0721 P0722		
			AND output speed	>= 100 RPM		P0716 P0717		
			AND gear slip	> 100 RPM	No Fault Pending DTC for this drive	P0717		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					cycle.			
			In response to pending failure, a diagnostic response range is commanded.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)		Hydraulic System Pressurized			
				>= 230 RPM				
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 2 Incorrect Ratio	P0732	This test verifies transmission operating ratio while 2nd range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer				2.25 seconds	A
				>= 2 second	Not Test Failed This Key On	P0877		
			Timer accumulates when transmission is in forward or reverse range			P0878 P0721 P0722		
			AND output speed	>= 100 RPM		P0716 P0717		
			AND gear slip	> 100 RPM	No Fault Pending DTC for this drive	P0717		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					cycle.			
			In response to pending failure, a diagnostic response range is commanded.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)		Hydraulic System Pressurized			
				>= 230 RPM				
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 3 Incorrect Ratio	P0733	This test verifies transmission operating ratio while 3rd range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer				2.25 seconds	A
				>= 2 second	Not Test Failed This Key On	P0877		
			Timer accumulates when transmission is in forward or reverse range			P0878 P0721 P0722		
			AND			P0716		
			output speed	>= 100 RPM		P0717		
			AND					
			gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)		Hydraulic System Pressurized			
				>= 230 RPM				
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					process Normal powertrain initialization is complete			
Gear 4 Incorrect Ratio	P0734	This test verifies transmission operating ratio while 4th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range AND output speed AND gear slip In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 2 second >= 100 RPM > 100 RPM >= 230 RPM > 10 samples.	Not Test Failed This Key On No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete Output speed No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete	P0877 P0878 P0721 P0722 P0716 P0717 P0717 P0717 >= 200 RPM	2.25 seconds	A
Gear 5 Incorrect Ratio	P0735	This test verifies transmission operating ratio while 5th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range AND output speed AND gear slip In response to pending failure, a diagnostic response range is commanded.	>= 2 second >= 100 RPM > 100 RPM	Not Test Failed This Key On No Fault Pending DTC for this drive cycle. No range switch response active	P0877 P0878 P0721 P0722 P0716 P0717 P0717	2.25 seconds	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			During this command, this test fails if Abs(Converter Slip)	>= 230 RPM for > 10 samples.	Hydraulic System Pressurized Shift complete Output speed No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete	>= 200 RPM		
Reverse Incorrect Ratio	P0736	This test verifies transmission range while reverse range is commanded by comparing computed ratio to the commanded ratio.	Accumulated event timer Timer accumulates when transmission is in forward or reverse range AND output speed AND gear slip	>= 2 seconds >= 100 RPM > 100 RPM	Not Test Failed This Key On No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete Output speed No hydraulic default condition present Normal powertrain shutdown not in process	P0877 P0878 P0721 P0722 P0716 P0717 P0717 >= 200 RPM	2 seconds	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Normal powertrain initialization is complete			
Gear 6 Incorrect Ratio	P0729	This test verifies transmission operating ratio while 6th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range AND output speed AND gear slip In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip) for	>= 2 second >= 100 RPM > 100 RPM >= 230 RPM > 10 samples.	Not Test Failed This Key On No Fault Pending DTC for this drive cycle. No range switch response active Hydraulic System Pressurized Shift complete Output speed No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete	P0877 P0878 P0721 P0722 P0716 P0717 P0717 P0717 >= 200 RPM	2.25 seconds	A
Torque Converter Clutch								
Torque Converter Clutch Circuit Performance or Stuck Off	P0741	This test detects the torque converter being stuck off (unlocked).	TCC Slip for a time	>= 80 RPM >= 15 seconds.	Not Test Failed This Key On	P2761 P2763 P2764 P0721 P0722 P0716 P0717	15 seconds	B

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					No Fault Pending DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717		
					Components powered			
					AND Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
					Must be in forward range			
					% Throttle	> 10 % and <= 90 %		
					Transmission fluid temperature	> 5 deg. C and < 130 deg. C		
					Time Since Range Change	>= 6 seconds		
					AND TCC apply is complete			
					AND TCC pressure	>= 1000 kPa		
Torque Converter	P0742	This test detects the torque						B

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Clutch Circuit Stuck On		converter being stuck on (locked).	Case 1: (High Torque condition)		Not Test Failed This Key On	P2761	Case 1:	
			Set fault pending when throttle	>= 70%		P2763	2 Seconds	
			AND net engine torque	>= 275 Nm.		P2764 P0721		
			Report malfunction when fault pending exists continuously for a time	>= 2 seconds.		P0722 P0716 P0717 U0100		
			Case 2: (High Acceleration condition)		No Fault Pending DTCs for this drive cycle.	P2761 P2763	Case 2: 5 Seconds	
			Set fault pending when output shaft acceleration	>= 100 RPM/second		P2764 P0721		
			Report malfunction when fault pending exists continuously for a time	>= 5 seconds.		P0722 P0716 P0717 U0100		
					Components powered			
			Case 3: (Accel/Decel/Accel condition)		AND Battery Voltage between	9 V and 18 V	Case 3: 4 Seconds	
			Report malfunction when output acceleration event is followed by output deceleration event and followed by another output acceleration event. An output acceleration event occurs when output shaft acceleration		Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
					Must be in forward range			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			for a time	>= 40 RPM/second >= 4 seconds	TCC is commanded off			
					TCC Slip	>=-20 RPM and <= 20 RPM		
			An output deceleration event occurs when output shaft acceleration is					
			for a time	<=-40 RPM/second >= 2.5 seconds.	% Throttle	>= 25%		
					Net Engine Torque	>= 175 Nm		
					Engine speed	<= 3500 RPM		
					Input speed	<= 3500 RPM		
					Output speed	>= 100 RPM		
Pressure Switches								
Pressure Switch Solenoid 1 Circuit Low	P0842	This test compares the commanded valve position to the PS1 pressure switch feedback. (part of S1 valve integrity test)	Pending failure occurs when PS1 pressure switch indicates stroked for a time	> 0.08 seconds	S1 valve is destroked		100 ms	A
					NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
					Shutdown is NOT in process			
			In response to the pending failure, S1 valve is retried by triggering S1 valve command to stroked and back to destroked. If PS1 pressure switch continues to indicate stroked, then one of three malfunction cases exists:					
			For Case 1 (electrical malfunction),					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			SS1 Circuit Low reports failure, also. For Case 2 (mechanical malfunction), Shift Solenoid 1 (SS1) Valve Performance – Stuck On reports failure, also. For Case 3 (intermittent malfunction), SS1 valve retry attempted AND PS1 pressure switch continues to indicate stroked.	P0973 P0752 15 times				
Shift Solenoid 1 (SS1) Valve Performance – Stuck Off	P0751	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test)	S1 valve is commanded from destroked to stroked and the PS1 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C 12 seconds <= -40 deg. C	S1 valve commanded from destroked to stroked.		5 seconds	A
Shift Solenoid 1 (SS1) Valve Performance – Stuck On	P0752	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test).	S1 valve commanded from stroked to destroked and the PS1 pressure switch indication remains stroked for a time WITH	> 6.2 seconds	S1 valve commanded from stroked to destroked		6.6 seconds	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			transmission fluid temperature	>= 0 deg. C.				
			(Time increases as temperature decreases with maximum time at transmission fluid temperature)	10 seconds <= -40 deg. C				
Pressure Switch Solenoid 1 Circuit High	P0843	This test compares the commanded valve position to the PS1 pressure switch feedback. (part of S1 valve integrity test)	Pending failure occurs when PS1 pressure switch indicates destroked for a time	> 0.07 seconds	S1 valve is stroked		70 ms	A
			IF a main pressure dropout is suspected then time limit increases to	5 seconds	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
			In response to the pending failure, S1 valve is retried by triggering S1 valve command to destroked and back to stroked. If the PS1 pressure switch continues to indicate destroked, then one of three malfunction cases exists.		Shutdown NOT in process			
			For Case 1 (electrical malfunction), SS1 Control Circuit Low reports failure, also.	P0973				
			For Case 2 (mechanical malfunction), Shift Solenoid 1 (SS1) Valve Performance – Stuck Off reports failure, also.	P0751				
			For Case 3 (intermittent malfunction),					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			S1 valve retry attempted	15 times				
			AND PS1 pressure switch continues to indicate destroked.					
Pressure Switch Solenoid 2 Circuit Low	P0847	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve integrity test).	Pending failure occurs when PS2 pressure switch indicates stroked for a time	> 0.04004 seconds	S2 valve is destroked		40 ms	A
			IF a main pressure dropout is suspected then time limit increases to	0.2998 seconds	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
			In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction cases exists.		Shutdown is NOT in process			
			For Case 1 (electrical malfunction),					
			SS2 Control Circuit Low reports failure, also.	P0976				
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 2 Valve Performance – Stuck On reports failure, also.	P0757				
			For Case 3 (intermittent malfunction),					
			S2 valve retry attempted	2 times				
			AND PS2 pressure switch continues to indicate stroked.					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Shift Solenoid 2 Valve Performance – Stuck Off	P0756	This test compares the change of state of the valve command to the change of state of the PS2 pressure switch feedback (part of the S2 valve timeout test).	If the S2 valve is commanded from destroked to stroked and the PS2 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C. 12 seconds <= -40 deg. C.	S2 valve commanded from destroked to stroked.		5 seconds	A
Shift Solenoid 2 Valve Performance – Stuck On	P0757	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve timeout test).	S2 valve commanded from stroked to destroked and the PS2 pressure switch does not indicate destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 6.5 seconds >= 0 deg. C. 22 seconds <= -40 deg. C.	S2 valve commanded from stroked to destroked		6.5 sec	A
Pressure Switch Solenoid 2 Circuit High	P0848	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve integrity test).	Pending failure occurs when PS2 pressure switch indicates destroked for a time	> 0.30 seconds	S2 valve is stroked		300 ms	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
			IF a main pressure dropout is suspected, THEN time limit increases to	5 seconds				
			In response to the pending failure, S2 valve is retried by triggering S2 valve command to destroked and back to stroked. If PS2 pressure switch continues to indicate destroked, then one of three malfunction cases exists.		Shutdown NOT in process			
			For Case 1 (electrical malfunction),					
			SS2 Control Circuit Low reports failure, also.	P0976				
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 2 Valve Performance – Stuck Off reports failure, also.	P0756				
			For Case 3 (intermittent malfunction),					
			S2 valve retry attempted	2 times				
			AND PS2 pressure switch continues to indicate destroked.					
Pressure Switch Solenoid 3 Circuit Low	P0872	This test compares the commanded valve position to the PS3 pressure switch feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates stroked for a time	> 0.0195 seconds	S3 valve is destroked		20 ms	A
					NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			In response to the pending failure, S3 valve is retried by triggering S3 valve command to stroked and back to destroked. If PS3 pressure switch continues to indicate stroked, then one of three malfunction cases exists.		Shutdown is NOT in process			
			For Case 1 (electrical malfunction),					
			SS3 Control Circuit Low reports failure, also.	P0979				
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 3 Valve Performance – Stuck On reports failure, also.	P0762				
			For Case 3 (intermittent malfunction),					
			S3 valve retry attempted	2 times				
			AND PS3 pressure switch continues to indicate stroked.					
Shift Solenoid 3 Valve Performance – Stuck Off	P0761	This test compares the change of state of the valve command to the change of state of the PS3 pressure switch feedback. (part of the S3 valve timeout test)	If the S3 valve is commanded from destroked to stroked and the PS3 pressure switch indication remains destroked for a time	>= 5 seconds	S3 valve commanded from destroked to stroked.		5 seconds	A
			WITH transmission fluid temperature	>= 0 deg. C.				
			(Time increases as temperature decreases with maximum time	12 seconds				
			at transmission fluid temperature)	<= -40 deg. C.				

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Shift Solenoid 3 Valve Performance – Stuck On	P0762	This test compares the commanded valve position to the PS3 pressure switch feedback (part of the S3 valve timeout test).	S3 valve commanded from stroked to destroked and the PS3 pressure switch does not indicate destroked for a time	> 6.5 seconds	S3 valve commanded from stroked to destroked		6.6 seconds	A
			WITH transmission fluid temperature	>= 0 deg. C.				
			(Time increases as temperature decreases with maximum time at transmission fluid temperature)	22 seconds >= -40 deg. C.				
Pressure Switch Solenoid 3 Circuit High	P0873	This test compares the commanded valve position to the pressure switch PS3 feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates destroked for a time	> 0.30 seconds	S3 valve is stroked		300 ms	A
			IF a main pressure dropout is suspected THEN time limit increases to	5 seconds	NOT Cold initialization unless transmission fluid temperature Shutdown NOT in process	> -25 deg. C		
			In response to the pending failure, S3 valve is retried by triggering S3 valve command to destroked and back to stroked. If PS3 pressure switch continues to indicate destroked, then one of the three malfunction cases exists.					
			For Case 1 (electrical malfunction), SS3 Control Circuit Low reports failure, also.	P0979				

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			For Case 2 (mechanical malfunction), Shift Solenoid 3 Valve Performance – Stuck Off reports failure, also. For Case 3 (intermittent malfunction), S3 valve retry attempted AND PS3 pressure switch continues to indicate destroked.	P0761 2 times				
Pressure Switch Reverse Circuit Low	P0877	This test detects Reverse Pressure Switch closed indication by comparing the Reverse Pressure Switch state to the PRNDL switch state.	Case 1: (Forward range) For a sample size (if dropout suspected, NLT or N02 cmded, use sample size) PRNDL is P, D1, D2, D3, D4, D5, D6, T8, or T4 AND RPS indicates Reverse for a time (if dropout suspected, NLT or N02 cmded, use time)	100 samples 255 samples >= 1 seconds 30 seconds	All Cases Not Test Failed This Key On No Fault Pending DTCs for this drive cycle Engine is Running Components powered AND Battery Voltage between Engine Speed between	P0877 P0878 P0708 P0708 9 V and 18 V 200 RPM and 7500 RPM	5 seconds	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Case 2: (Range indefinite)		for	5 seconds		
			For a sample size,	20 samples				
			net engine torque	>= 100 Nm	Transmission Fluid Temperature	>= 0 deg. C		
			AND PRNDL is indefinitely D3 or another forward range		Hydraulic System Pressurized			
			for a time	> 1 second				
					Reverse Pressure Switch State indicates REVERSE			
Pressure Switch Reverse Circuit High	P0878	This test detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL switch state and detects the Reverse Pressure switch stuck open at shutdown.	All Cases		Transmission Fluid Temperature	>= 0 deg. C		A
			Case 1: (RPS State and PRNDL State do not agree)		Not Test Failed This Key On	P0877 P0878	3 seconds	
			For sample size	40 samples				
			PRNDL is REVERSE			P0708		
			AND RPS indicates NOT REVERSE		No Fault Pending DTC for this drive cycle.	P0708		
			after a time	>= 1 second				
					Battery Voltage between	9 V and 18 V		
					No range switch response active			
			For Case 2: (RPS Shutdown Test)		Ignition Key State is NOT RUN		60 seconds	

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			If RPS indicates	not Reverse	Engine Stopped or Stalled			
			for a time	> 40 seconds				
			at transmission fluid temperature	0 deg. C.	End of Trip timer	>= 5 seconds		
			during engine shutdown					
			This time varies with transmission fluid temperature, from time	25 seconds	Engine had been cranking or running this drive cycle			
			at transmission fluid temperature	> 35 deg. C				
			to time	60 seconds	Engine speed	< 50 RPM		
			at transmission fluid temperature	< -20 deg. C.	Turbine speed	< 50 RPM		
					Output speed	< 50 RPM		
On-coming/Off-going Ratio								
Pressure Control Solenoid 1 Controlled Clutch Stuck Off	P2723	This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift.	Pending failure occurs when accumulated event timer	>= 2 seconds	Not Test Failed This Key On	P0721	2.25 seconds	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			(For rough road conditions, use)	2 seconds		P0722		
			Timer accumulates when transmission is shifting, output speed	>= 60 RPM		P0716 P0717 P0877 P0878		
			AND commanded gear slip speed	> 75 RPM				
			(For rough road conditions, use)	150 RPM.	Output Speed	>= 125 RPM		
					Turbine Speed	>= 60 RPM		
			In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip)		Hydraulic System Pressurized			
				>= 230 RPM	Normal powertrain shutdown not in process			
			for sample size	> 10 samples	Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
					On-coming clutch control enabled			
					Power downshift abort to previous range NOT active			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Pressure Control Solenoid 2 Controlled Clutch Stuck Off	P0776	This test determines if the on-coming clutch energized by Pressure Control Solenoid 2 engages during a forward range shift.	Pending failure occurs when accumulated event timer	>= 2 seconds	Not Test Failed This Key On	P0721	2.25 seconds	A
			(For rough road conditions, use)	2 seconds		P0722		
			Timer accumulates when transmission is shifting, output speed	>= 60 RPM		P0716 P0717 P0877 P0878		
			AND commanded gear slip speed	> 75 RPM	Output Speed	>= 125 RPM		
			(For rough road conditions, use)	150 RPM.	Turbine Speed	>= 60 RPM		
			In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip)	>= 230 RPM	Hydraulic System Pressurized			
					Normal powertrain shutdown not in process			
			for sample size	> 10 samples	Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
					On-coming clutch control enabled			
					Power downshift abort to previous range NOT active			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Pressure Control Solenoid 1 Controlled Clutch Stuck On	P2724	This test determines if the off-going clutch energized by Pressure Control solenoid 1 remains engaged during a forward range shift.	Accumulated fail timer	>= 0.2998 seconds	Not Test Failed This Key On	P0721	3 seconds	A
			for forward range upshift;			P0722		
			OR accumulated fail timer	>= 3.0 seconds		P0716		
			for direction change shifts;			P0717		
			OR accumulated fail timer	>= 0.500 seconds		P0877		
			for forward range closed throttle downshift;			P0878		
			OR accumulated fail timer	>= 1.0 second	No Fault Pending DTC for this drive cycle.	P0717		
			for forward downshifts above closed throttle.		Output Speed	>= 200 RPM		
			Fail timer accumulates during range to range shifts when attained gear slip speed		Turbine Speed	>= 200 RPM		
				<= 25 RPM	Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Pressure Control Solenoid 2 Controlled Clutch Stuck On	P0777	This test determines if the off-going clutch energized by Pressure Control solenoid 2 remains engaged during a forward range shift.	Accumulated fail timer	>= 0.2998 seconds	Not Test Failed This Key On	P0721	3 seconds	A
			for forward range upshift;			P0722		
			OR accumulated fail timer	>= 3.0 seconds		P0716		
			for direction change shifts;			P0717		
			OR accumulated fail timer	>= 0.500 seconds		P0877		
			for forward range closed throttle downshift;			P0878		
			OR accumulated fail timer	>= 1.0 second	No Fault Pending DTC for this drive cycle.	P0717		
			for forward downshifts above closed throttle.					
					Output Speed	>= 200 RPM		
			Fail timer accumulates during range to range shifts when attained gear slip speed		Turbine Speed	>= 200 RPM		
				<= 25 RPM	Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
PRNDL/IMS								
Transmission Range Sensor High Input	P0708	This test monitors the transmission range switch for invalid input conditions and parity errors occurring over consecutive ignition cycles.	For Case 1 (No Information):		Components powered		Case 1:	A
			Illegal electrical state for a time	>= 1 second	AND		1 second	
					Battery Voltage between	9 V and 18 V		
			For Case 2 (Long-term Parity):				Case 2:	
			There are 3 counters for long-term parity. These counters are updated at the end of each drive cycle, immediately prior to TCM shutdown.		Engine Speed between for	200 RPM and 7500 RPM 5 seconds	5th occurrence	
			For Counter 1, increment counter IF Parity Error Detected; decrement counter IF No Parity Error Detected AND No Motion Detected.					
			IF Counter 1	>= 15 counts				
			THEN report failure.					
			For Counter 2, increment counter IF Parity Error Detected AND (No Valid Drive Detected OR No Valid Park/Neutral Detected) AND Motion Detected; decrement counter IF No Parity Error Detected AND Valid Park/Neutral Detected AND Valid Drive Detected AND Motion Detected.					
			IF Counter 2,	>= 5 counts				
			THEN report failure.					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			For Counter 3, increment Counter 3 IF Parity Error Detected while in Reverse AND No Valid Reverse Detected AND Motion Detected. Decrement Counter 3 IF No Parity Error Detected AND Valid Reverse Detected AND Motion Detected.					
			IF Counter 3,	>= 5 counts				
			THEN report failure.					
			Where					
			Parity Error Detected is defined as a failure of the 4-bit PRNDL input such that the sum of those bits yields an odd result for a time;	>= 30 seconds;				
			Motion Detected is defined as output speed	>= 200 RPM				
			for a time;	>= 10 seconds				
			Valid Drive Detected is defined as the 4-bit DL indicates Valid Drive for a time;	>= 3 seconds				
			Valid Park Detected is defined as the 4-bit PRNDL indicates Valid Park for a time	>= 0.2 seconds				
			and output speed;	<= 20 RPM				
			Valid Reverse Detected is defined as the 4-bit PRNDL indicates Valid Reverse					
			for a time;	>= 15 seconds;				
			Valid Neutral Detected is defined as the					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			4-bit PRNDL indicates Valid Neutral					
			for a time	>= 0.2 seconds				
			and output speed	<= 20 RPM				
			OR for a time.	>= 3 seconds				
Transmission Range Sensor Circuit Range/Performance	P0706	This test monitors the transmission range switch inputs at engine start to determine that it is indicating a valid starting position (Park or Neutral).	For sample size,	> 7 samples	Not Test Failed This Key On	P0706	200 ms	B
			PRNDL C input is closed OR PRNDL P is NOT closed.		Battery voltage between	9V and 18V		
					Powertrain State is READY or CRANKING			
					Engine speed	> 100 RPM and < 350 RPM.		
Solenoid Electrical								
Main Modulation/Line Pressure Control Solenoid Control Circuit Open	P0960	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set at single hardware fault occurrence				1050 ms	A
			IF hardware fault is present for a sample size	>= 40 samples	Not Test Failed This Key On	P0657 P0658 P0659		
			AND Engine speed	>= 15 RPM	Components powered			
			THEN initiate intrusive test by opening low side driver		AND Battery voltage between	9V and 18V		
					If Engine Cranking, then			
			IF intrusive test indicates no short to ground exists for a sample size,		Crank Time	< 4 seconds		
					AND			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
				>= 2 samples	Battery Voltage	> 10 V		
			THEN report malfunction					
					High Side Driver 1 Enabled			
Main Modulation/Line Pressure Control Solenoid Control Circuit Performance	P0961	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1:				1000 ms	A
			Desired current	<= 0 mA	Not Test Failed This Key On	P0657 P0658 P0659 P0960 P0961 P0962		
			AND					
			Actual Duty Cycle	>= 40%				
			For a sample size,	>= 40 samples				
			THEN report malfunction					
			Case 2:		No Fault Pending DTC for this drive	P0960		
			Desired current	>= 500 mA	cycle.	P0962		
			AND					
					Components powered			
			Actual Duty Cycle	<= 10%				
			For a sample size,	>= 40 samples	AND			
					Battery voltage between	9V and 18V		
			THEN report malfunction					
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High Side Driver 1 Enabled			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Shift Complete Lockup Apply Complete OR Lockup Release Complete			
Main Modulation/Line Pressure Control Solenoid Control Circuit Low	P0962	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence IF hardware fault is present for a sample size AND Engine speed THEN initiate intrusive test by opening low side driver. IF intrusive test indicates short to ground exists for a sample size THEN report malfunction	 >= 40 samples >= 15 RPM >= 2 samples	Not Test Failed This Key On Components powered AND Battery voltage between If Engine Cranking, then Crank Time AND Battery Voltage High Side Driver 1 Enabled	P0657 P0658 P0659 9V and 18V < 4 seconds > 10 V	1050 ms	A
Main Modulation/Line Pressure Control Solenoid Control Circuit High	P0963	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P0657	75 ms	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			AND Engine speed	 >=15 RPM		P0658 P0659		
					Components powered			
					AND Battery voltage between	 9V and 18V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage	 > 10 V		
					High side driver 1 enabled			
Pressure Control Solenoid 2 Control Circuit Open	P0964	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence IF hardware fault is present for a sample size	 >= 6 samples	Not Test Failed This Key On	P2669 P2670 P2671	225 ms	A
			AND		Components powered			
			Engine speed	>= 15 RPM	AND Battery voltage between	 9V and 18V		
			THEN initiate intrusive test by opening low side driver.		If Engine Cranking, then			
			IF intrusive test indicates no short to ground exists for a sample size,	 >= 3 samples	Crank Time AND Battery Voltage	< 4 seconds > 10 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			THEN report malfunction					
					High Side Driver 2 Enabled			
Pressure Control Solenoid 2 Control Circuit Performance	P0965	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	<= 50 mA >= 40% >= 10 samples	Not Test Failed This Key On	P2669 P2670 P2671 P0964 P0965 P0966	250ms	A
			Case 2: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	>= 500 mA <= 15% >= 10 samples	No Fault Pending DTC for this drive cycle. Components powered AND Battery voltage between If Engine Cranking, then Crank Time AND Battery Voltage High Side Driver 2 Enabled Shift Complete	P0964 P0966 9V and 18V < 4 seconds > 10 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Lockup Apply Complete OR Lockup Release Complete			
Pressure Control Solenoid 2 Control Circuit Low	P0966	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence IF hardware fault is present for a sample size AND Engine speed THEN initiate intrusive test by opening low side driver. IF intrusive test indicates short to ground exists for a sample size THEN report malfunction.	 >= 6 samples >= 15 RPM >= 2 samples	Not Test Failed This Key On Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High Side Driver 2 Enabled	P2669 P2670 P2671 9 V and 18 V < 4 seconds > 10 V	200 ms	A
Pressure Control Solenoid 2 Control Circuit High	P0967	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for AND Engine speed	3 consecutive samples >= 15 RPM	Not Test Failed This Key On	P2669 P2670 P2671 P0967	75 ms	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High Side Driver 2 Enabled			
Pressure Control Solenoid 1 Control Circuit Open	P2727	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence		Not Test Failed This Key On	P0657 P0658 P0659	200 ms	A
			IF hardware fault is present for a sample size	>= 5 samples				
			AND					
			Engine speed	>= 15 RPM	Components powered			
					AND			
			THEN initiate intrusive test by opening low side driver.		Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates no short to ground exists for a sample size,		If Engine Cranking, then			
					Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					High side driver 1 enabled			
Pressure Control Solenoid 1 Control Circuit Performance	P2728	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	<= 50 mA >= 40% >= 10 samples	Not Test Failed This Key On	P0657 P0658 P0659 P2727 P2728 P2729	250ms	A
			Case 2: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	>= 500 mA <= 15% >= 10 samples	No Fault Pending DTC for this drive cycle. Components powered AND Battery voltage between If Engine Cranking, then Crank Time AND Battery Voltage High Side Driver 1 Enabled Shift Complete Lockup Apply Complete OR	P2727 P2729 9V and 18V < 4 seconds > 10 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Lockup Release Complete			
Pressure Control Solenoid 1 Control Circuit Low	P2729	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence IF hardware fault is present for a sample size AND Engine speed THEN initiate intrusive test by opening low side driver. IF intrusive test indicates short to ground exists for a sample size THEN report malfunction	 >= 5 samples >= 15 RPM >= 2 samples	Not Test Failed This Key On Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V	175 ms	A
Pressure Control Solenoid 1 Control Circuit High	P2730	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for AND Engine speed	3 consecutive samples >= 15 RPM	Not Test Failed This Key On Components powered AND	P0657 P0658 P0659 P2730	75 ms	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage	> 10 V		
					High side driver 1 enabled			
Shift Solenoid 1 Control Circuit Open	P0972	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence IF hardware fault is present for a sample size	>= 10 samples	Not Test Failed This Key On	P2669 P2670 P2671	325 ms	A
			AND Engine speed	>= 15 RPM	Components powered			
			THEN initiate intrusive test by opening low side driver.		AND Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates no short to ground exists for a sample size,		If Engine Cranking, then			
					Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		
					High side driver 2 enabled			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Shift Solenoid 1 Control Circuit Low	P0973	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence IF hardware fault is present for a sample size AND Engine speed THEN initiate intrusive test by opening low side driver. IF intrusive test indicates short to ground exists for a sample size THEN report malfunction	 >= 10 samples >= 15 RPM >= 2 samples	Not Test Failed This Key On Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled	P2669 P2670 P2671 9 V and 18 V < 4 seconds > 10 V	300 ms	A
Shift Solenoid 1 Control Circuit High	P0974	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for AND Engine speed	3 consecutive samples >= 15 RPM	Not Test Failed This Key On Components powered AND Battery Voltage between	P2669 P2670 P2671 P0974 9 V and 18 V	75 ms	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2 Control Circuit Open	P0975	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence		Not Test Failed This Key On	P2669 P2670 P2671	325 ms	A
			IF hardware fault is present for a sample size	>= 10 samples				
			AND					
			Engine speed	>= 15 RPM	Components powered			
					AND			
			THEN initiate intrusive test by opening low side driver.		Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates no short to ground exists for a sample size,		If Engine Cranking, then			
					Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2 Control Circuit Low	P0976	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence		Not Test Failed This Key On	P2669	300 ms	A
			IF hardware fault is present for a sample			P2670		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			size	>= 10 samples		P2671		
			AND					
			Engine speed	>= 15 RPM	Components powered			
					AND			
			THEN initiate intrusive test by opening low side driver.		Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates short to ground exists for a sample size		If Engine Cranking, then			
				>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2 Control Circuit High	P0977	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669	75 ms	A
			AND			P2670		
			Engine speed	>= 15 RPM		P2671		
						P0977		
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 3 Control Circuit Low	P0979	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence		Not Test Failed This Key On	P2669	150 ms	A
			IF hardware fault is present for a sample size	>= 6 samples		P2670		
						P2671		
			AND			P0979		
			Engine speed	>= 15 RPM				
			THEN report malfunction		Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
					Commanded gear NOT Reverse Trim, NOT 5th, NOT 6th			
Shift Solenoid 3 Control Circuit High	P0980	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669	75 ms	A
			AND			P2670		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Engine speed	>= 15 RPM		P2671		
						P0980		
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
					Commanded gear NOT Reverse Trim, NOT 5th, NOT 6th			
Actuator Supply 1 (HSD1) Voltage Open	P0657	This test detects if the voltage measured at the HSD1 detection circuit shows that multiple low side detection circuits indicate open, but the high side detection circuit indicates high voltage.	Report malfunction when the number of failure events	>= 3	Not Test Failed This Key On	P0657	75 ms	A
			AND					
			Engine speed	>= 15 RPM	HSD1 is commanded ON			
			A failure event occurs when the number of failed solenoids connected to HSD1		Components powered			
					AND			
				>= 2	Battery Voltage between	9 V and 18 V		
			AND					
			HSD1 voltage	>= 6V	If Engine Cranking, then			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Crank Time	< 4 seconds		
					AND Battery Voltage	> 10 V		
Actuator Supply 1 (HSD1) Voltage Low	P0658	This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.	Report malfunction when short to ground is detected for a number of events	>= 3 times	Not Test Failed This Key On HSD1 is commanded ON	P0658	75 ms	A
			AND Engine speed	>= 15 RPM	Components powered			
					AND Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage	> 10 V		
Actuator Supply 1 (HSD1) Voltage High	P0659	This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events	>= 3 times	During initialization		18.75 ms	A
			A failure event occurs when HSD1 voltage	>= 6V				
Actuator Supply2 (HSD2) Voltage Open	P2669	This test detects if the voltage measured at the HSD2 detection circuit shows that multiple low side detection circuits indicate open, but the high side detection circuit indicates high voltage.	Report malfunction when the number of failure events	>= 3	Not Test Failed This Key On	P2669	75 ms	A
			AND Engine speed	>= 15 RPM	HSD2 is commanded ON			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			A failure event occurs when the number of failed solenoids connected to HSD2	>= 2	Components powered AND Battery Voltage between	9 V and 18 V		
			AND HSD2 voltage	>= 6V	If Engine Cranking, then Crank Time AND Battery Voltage	< 4 seconds > 10 V		
Actuator Supply2 (HSD2) Voltage Low	P2670	This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.	Report malfunction when short to ground is detected for a number of events	>= 3 times	Not Test Failed This Key On HSD2 is commanded ON	P2670	75 ms	A
			AND Engine speed	>= 15 RPM	Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage	9 V and 18 V < 4 seconds > 10 V		
Actuator Supply 2 (HSD2) Voltage High	P2671	This test detects if the voltage measured at the HSD 2 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events	>= 3 times	During initialization		18.75 ms	A
			A failure event occurs when HSD1					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			voltage	>= 6V				
TCC Pressure Control Solenoid Control Circuit Open	P2761	This test detects torque converter solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence IF hardware fault is present for a sample size AND Engine speed THEN initiate intrusive test by opening low side driver. IF intrusive test indicates no short to ground exists for a sample size, THEN report malfunction	 >= 120 samples >= 15 RPM >= 3 samples	 Not Test Failed This Key On Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 1 enabled	 P0657 P0658 P0659 9 V and 18 V < 4 seconds > 10 V	3075 ms	B
TCC Pressure Control Solenoid Control Circuit Performance	P2762	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction Case 2: Desired current AND	 <= 0 mA >= 40% >= 40 samples >= 500 mA 	 Not Test Failed This Key On No Fault Pending DTC for this drive cycle.	 P0657 P0658 P0659 P2761 P2762 P2763 P2761 P2763	1000 ms	B

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Components powered			
			Actual Duty Cycle For a sample size,	<= 10% >= 40 samples	AND Battery voltage between	9V and 18V		
			THEN report malfunction					
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage	> 10 V		
					High Side Driver 1 Enabled			
					Shift Complete			
					Lockup Apply Complete			
					OR Lockup Release Complete			
TCC Pressure Control Solenoid Control Circuit High	P2763	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P0657	75 ms	B
			AND Engine speed	>= 15 RPM		P0658 P0659		
					Components powered	P2763		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					AND Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage	> 10 V		
					High side driver 1 enabled			
TCC Pressure Control Solenoid Control Circuit Low	P2764	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence		Not Test Failed This Key On	P0657 P0658 P0659	3050 ms	B
			IF hardware fault is present for a sample size	>= 120 samples				
			AND Engine speed	>= 15 RPM	Components powered			
			THEN initiate intrusive test by opening low side driver		AND Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates short to ground exists for a sample size		If Engine Cranking, then			
				>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					High side driver 1 enabled			
Miscellaneous								
4 Wheel Drive Low Switch Circuit Malfunction	P2771	This test detects abnormal conditions for the four-wheel drive indication switch input by comparing switch state range to calculated range.	Case 1 (Stuck Off) This test fails when, for number of occurrences, the transfer case 4WD switch indicates High range and the calculated transfer case range is Low range for a time	>= 200 >= 5 seconds	All Cases Not Test Failed This Key On No Fault Active DTCs for this drive cycle	P2771 P0721 P0722 P2771 P0721 P0722	5 seconds	B
			Case 2 (Stuck On) This test fails when, for number of occurrences, the transfer case 4WD switch indicates Low range and the calculated transfer case range is High range for a time	>= 200 >= 5 seconds.	No Fault Pending DTCs for this drive cycle Output Speed Transfer Case is NOT Neutral Transmission fluid temperature Engine Speed between Shift complete AND range attained NOT Neutral	P0721 P0722 > 60 RPM > 20 deg. C and < 130 deg. C 200 RPM and 7500 RPM		
Transmission Component	P0894	This test detects the number of turbine slip events during	For this ignition cycle, when the number of Neutral Locked Turbine (NLT) Slip				8075 ms	B

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Slipping		the Neutral Locked Turbine (NLT) request from engine controller.	events, then report fail Where number of NLT Slip events for this ignition cycle = Number of accumulated NLT Slip events – Number of NLT Slip events from previous ignition cycles. And, where number of accumulated NLT Slip events is incremented when commanded gear or attained gear is NLT AND turbine speed for a time	>= 3 > 50 RPM > 3 seconds.	Components powered AND Battery Voltage between Engine Speed between for	9 V and 18 V 200 RPM and 7500 RPM 5 seconds		
Ignition Switch Run/Start Circuit	P2534	Out of range low.	Ignition voltage for a time	< 5 volts >= 30 seconds	Not Test Failed This Key On Components powered AND Battery Voltage between Engine Speed between for	P2534 9 V and 18 V 200 RPM and 7500 RPM 5 seconds	35 seconds	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
GMLAN Bus Reset Counter Overrun	U0073	This test detects if the GMLAN bus is off for a calibration duration.	CANB_bus is off for a time	>= 3 seconds	Components powered AND Battery Voltage between Engine Speed between for	 9 V and 18 V 200 RPM and 7500 RPM 5 seconds	8 seconds	B
GMLAN ECM Controller State of Health Failure	U0100	This test detects CAN (GMLAN) bus failures by detecting State of Health failures in GMLAN message $191 from ECM.	Case 1 (x out of y): The failure counter increments when a State of Health (SOH) failure is detected. A SOH failure occurs when message is missing. When the failure counter is a number of samples out of a number of samples, report fail. Case 2 (intermittent): Report fail, when the failure counter	 >= 5 samples 7 samples > 0 counts	All Cases Components powered AND Battery Voltage between Engine Speed between for Ignition Key State is RUN GMLAN message $191 is received from ECM	 9 V and 18 V 200 RPM and 7500 RPM 5 seconds	8 seconds	B

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Enable criteria met for a time	> 3 seconds		
			for a number of sample windows	< 5 samples				
Brake Switch Circuit	P0571	This test counts how many vehicle acceleration events occur while the brake switch indicates "ON" or the number of vehicle deceleration events while the brake switch indicates "OFF"			All Cases			C
			Case 1:		Not Test Failed This Key On	P0571		
			The number of vehicle accelerations with the brake switch "on"	>= 10		P0721 P0722	10 Acceleration Events	
					No Fault Pending DTCs	P0721		
						P0722		
			Case 2: The number of vehicle decelerations with the brake switch "off"	>= 10	Not Fault Active Components powered	P0703	10 Deceleration Events	
					AND Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
Brake Pedal Possition Switch Signal Rolling Count	P0703	This test detects rolling count failures for the Brake Switch GMLAN Message					15 seconds	C
			The failure count increments when the GMLAN message is not received or the rolling counter does not agree with the expected value		Components powered AND Battery Voltage between	9 V and 18 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Engine Speed between	200 RPM and 7500 RPM		
			When the failure counter is	> 5				
			for a time of	> 10 seconds	for	5 seconds		
			Report Failure					
Upshift Switch Circuit	P0815	This test detects the upshift switch ON					603 seconds	C
			When PRNDL state is N, P or R		Not Test Failed This Key On	P0826		
			and has been unchanged			P0708		
			for a time	>= 2.5 seconds				
			AND		Components powered			
			upshift switch state is ON		AND			
			for a time	>= 3 seconds.	Battery Voltage between	9 V and 18 V		
			AND		Engine Speed between	200 RPM and 7500 RPM		
			When PRNDL state is a forward range and has been unchanged for a time	>= 2.5 seconds	for	5 seconds		
			AND					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			upshift switch state is ON for a time	 >= 600 seconds.				
Downshift Switch Circuit	P0816	This test detects the downshift switch ON.	 When PRNDL state is N, P or R and has been unchanged for a time AND downshift switch state is ON for a time. AND When PRNDL state is a forward range and has been unchanged for a time AND downshift switch state is ON for a time	 >= 2.5 seconds >= 3 seconds. >= 2.5 seconds >= 600 seconds.	 Not Test Failed This Key On Components powered AND Battery Voltage between Engine Speed between for	 P0826 P0708 9 V and 18 V 200 RPM and 7500 RPM 5 seconds	603 Seconds	C
Up and Down Shift Switch Circuit	P0826	This test detects upshift/downshift switch circuit at an illegal state.	Switch state is ILLEGAL for a time	>= 10 seconds.	Not Test Failed This Key On	P0826	10 seconds	C

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
Upshift and Downshift Switch Signal Rolling Count	P1761	This test detects rolling count failures for the Upshift and Downshift GMLAN Message	The failure count increments when the GMLAN message is not received or the rolling counter does not agree with the expected value		Components powered		15 seconds	C
					AND			
					Battery Voltage between	9 V and 18 V		
			When the failure counter is	> 5	Engine Speed between	200 RPM and 7500 RPM		
			for a time of	> 10 seconds				
			Report Failure		for	5 seconds		

15 OBDG09 TCM Summary Tables (MYD Unique)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE Boolean			>= 5 Fail Counts	One Trip
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601 ECM: None		
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE Boolean			Runs Continously	One Trip
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None		
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	= TRUE Boolean			>= 5 Fail Counts = 16 Sample Counts	One Trip
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0604 ECM: None		
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	= TRUE Boolean			Runs Continously	One Trip
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P062F ECM: None		
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>= 142.1016 ºC			>= 5 Fail Time (Sec)	One Trip
			Fail Case 2 Substrate Temperature Ignition Voltage	>= 50 ºC >= 18 Volts			>= 2 Fail Time (Sec)	
			Note: either fail case can set the DTC					
					Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	>= 8.59961 Volts <= 31.99902 Volts >= 0 ºC <= 170 ºC >= 0.25 Sec		

15 OBDG09 TCM Summary Tables (MYD Unique)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0634 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> Refer to Table 19 in supporting documents °C				Two Trips
			If TCM substrate temp to power up temp Δ	> Refer to Table 20 in supporting documents °C				
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				>= 3000 Fail Counts (100ms loop) Out of 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop) Out of 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Brake torque active	= FALSE		
					Below describes the brake torque entry criteria			
					Engine Torque	>= 90 N*m		
					Throttle	>= 30.0003 Pct		
					Transmission Input Speed	<= 200 RPM		
					Vehicle Speed	<= 8 Kph		
					Transmission Range	≠ Park		
					Transmission Range	≠ Neutral		
					PTO	= Not Active		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Set Brake Torque Active TRUE if above conditions are met for:	>= 7 sec		
					Below describes the brake torque exit criteria			
					Brake torque entry criteria	= Not Met		
					Clutch hydraulic pressure	≠ Clutch Hydraulic Air Purge Event		
					Clutch used to exit brake torque active	= CeTFTD_e_C3_RatlEnbl		
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0667 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	= CeTFTI_e_VoltageDirectProp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<= -249 ºC				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>= -249 ºC				
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec)	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0668 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI_e_VoltageDirectProp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= 249 ºC				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= 249 ºC				
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec)	
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0669 Status is	≠ Test Failed This Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None		

15 OBDG09 TCM Summary Tables (MYD Unique)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	> Refer to Table 20 in supporting documents ºC				Two Trips
			If transmission oil temp to power up temp Δ	> Refer to Table 18 in supporting documents ºC				
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				>= 3000 Fail Counts (100ms loop) Out of 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop) Out of 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Brake torque active	= FALSE		
					Below describes the brake torque entry criteria			
					Engine Torque	>= 90 N*m		
					Throttle	>= 30.0003 Pct		
					Transmission Input Speed	<= 200 RPM		
					Vehicle Speed	<= 8 Kph		
					Transmission Range	≠ Park		
					Transmission Range	≠ Neutral		
					PTO	= Not Active		
					Set Brake Torque Active TRUE if above conditions are met for:	>= 7 sec		
					Below describes the brake torque exit criteria			
					Brake torque entry criteria	= Not Met		
					Clutch hydraulic pressure	≠ Clutch Hydraulic Air Purge Event		
					Clutch used to exit brake torque active	= CeTFTD_e_C3_RatlEnbl		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P06AC Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 ºC			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P06AD Status is	≠ Test Failed This Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164 ºC			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P06AE Status is	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec ≠ Test Failed This Key On or Fault Active	
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed Output Speed Delta Output Speed Drop AND Transmission Range is	>= 105 RPM <= 8192 RPM > 650 RPM = Driven range (R,D)			>= 0 Enable Time (Sec) >= 0 Enable Time (Sec) >= 1.5 Output Speed Drop Recovery Fail Time (Sec)	One Trip
					---------- Range_Disable OR ---------- Neutral_Range_Enable And Neutral_Speed_Enable are TRUE concurrently ----------	= = =	FALSE See Below TRUE See Below TRUE See Below	
					Transmission_Range_Enable Transmission_Input_Speed_Enable No Change in Transfer Case Range (High <-> Low) for P0723 Status is not	= = >= =	TRUE See Below TRUE See Below 5 Seconds Test Failed This Key On or Fault Active	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Disable this DTC if the PTO is active	=	1	Boolean		
					Ignition Voltage is	>=	8.59961	Volts		
					Ignition Voltage is	<=	31.99902	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission_Input_Speed_Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					
					TIS Condition 1 is TRUE when both of the following conditions are satsified for	>=	0	Enable Time (Sec)		
					Input Speed Delta	<=	4095.88	RPM		
					Raw Input Speed	>=	500	RPM		
					TIS Condition 2 is TRUE when ALL of the next two conditions are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used for all speed sensors	=	TRUE	Boolean		

					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE					
					Transmission Range is	=	Neutral	ENUM		
					Transmission Range is	=	Reverse/Neutral Transitonal	ENUM		
					Transmission Range is	=	Neutral/Drive Transitional	ENUM		
					And when a drop occurs					
					Loop to Loop Drop of Transmission Output Speed is	>	650	RPM		

					Range_Disable is TRUE when any of the next three conditions are TRUE					
					Transmission Range is	=	Park	ENUM		
					Transmission Range is	=	Park/Reverse Transitonal	ENUM		
					Input Clutch is not	=	ON (Fully Applied)	ENUM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.

					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	> 1.5 Seconds		
					Transmission Output Speed	> 130 RPM		
					The loop to loop change of the Transmission Output Speed is	< 20 RPM		
					The loop to loop change of the Transmission Output Speed is	> -10 RPM		

					Transmission_Range_Enable is TRUE when one of the next six conditions is TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	= Reverse/Neutral Transitional ENUM		
					Transmission Range is	= Neutral/Drive Transitional ENUM		
					Time since a driven range (R,D) has been selected	>= Table Based Time Please Refer to Table 21 in supporting documents Sec		
					Transmission Output Speed Sensor Raw Speed	>= 500 RPM		
					Output Speed when a fault was detected	>= 500 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear Gear slip Intrusive test: commanded 5th gear	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear ≠5th for time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			if the above conditions have been met					
			Increment 4th Gear Fail Counter				>= 3 4th Gear Fail Count OR	
			and C456 Fail Counters				>= 14 C456 Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 6th gear					
			If attained Gear ≠ 6th for time	>= Please Refer to Table 3 in Supporting Documents Shift Time (Sec)				
			if the above conditions have been met					
			Increment 5th Gear Fail Counter				>= 3 5th Gear Fail Count OR	
			and C456 Fail Counters				>= 14 C456 Fail Counts	
			Fail Case 3 Case: Steady State 6th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					
			If attained Gear ≠ 5th for time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			if the above conditions have been met					
			Increment 6th Gear Fail Counter and C456 Fail Counter				>= 3 6th Gear Fail Count OR	
			and C456 Fail Counter				>= 14 C456 Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					TPS validity flag	= TRUE Boolean		
					Hydraulic System Pressurized	= TRUE Boolean		
					Minimum output speed for RVT A OR B	>= 67 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					(A) Output speed enable	>= 67 RPM		
					(B) Accelerator Pedal enable	>= 0.5005 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Throttle Position Signal valid	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Transmission Fluid Temperature	>= -6.6563 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					OutputSpeed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1 Case: Steady State 1st					One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec)				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	
			Fail Case 2 Case Steady State 2nd					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 22 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 23 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 2nd Gear or >= 3 Total fail counts	
			Fail Case 3 Case Steady State 3rd					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 22 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 23 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear OR >= 3 Total Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed	>= 0 RPM		
					TPS validity flag	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pressurized	= TRUE Boolean		
					A OR B			
					(A) Output speed enable	>= 67 Nm		
					(B) Accelerator Pedal enable	>= 0.5005 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>= 5.0003 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 5 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.88 Nm		
					Transmission Fluid Temperature	>= -6.6563 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (4-1 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				>= Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2 sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			4th gear fail counter				>= 3 Fail Counter From 4th Gear OR	
			5th gear fail counter				>= 3 Fail Counter From 5th Gear OR	
			6th gear fail counter				>= 3 Fail Counter From 6th Gear OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Total fail counter				>= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.6563 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					PRNDL state defaulted	= FALSE Boolean		
					IMS Fault Pending	= FALSE Boolean		
					Service Fast Learn Mode	= FALSE Boolean		
					HSD Enabled	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean			>= 60 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0826 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761 ECM: None		
Variable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip

15 OBDG09 TCM Summary Tables (MYD Unique)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0970 Status is not = Test Failed This Key On or Fault Active			
					Ignition Voltage >= 8.59961 Volts Ignition Voltage <= 31.99902 Volts Engine Speed >= 400 RPM Engine Speed <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip
					P0971 Status is not = Test Failed This Key On or Fault Active			
					Ignition Voltage >= 8.59961 Volts Ignition Voltage <= 31.99902 Volts Engine Speed >= 400 RPM Engine Speed <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range = Transition 1 (bit state 1110) Range Previous range ≠ CeTRGR_e_PRNDL_Drive6 Range Previous range ≠ CeTRGR_e_PRNDL_Drive4 Range Range Shift State = Range Shift Completed ENUM Absolute Attained Gear Slip <= 50 rpm Attained Gear <= Sixth Attained Gear >= First Throttle Position Available = TRUE					One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Throttle Position	>= 8.0002 pct				
			Output Speed	>= 200 rpm				
			Engine Torque	>= 50 Nm				
			Engine Torque	<= 8191.75 Nm				
			If the above conditions are met then Increment Fail Timer				>= 1 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 5 Fail Counts	
			Fail Case 2 Output Speed	<= 70 rpm				
			The following PRNDL sequence events occur in this exact order:					
			PRNDL state	= Drive 6 (bit state 0110) Range				
			PRNDL state = Drive 6 for	>= 1 Sec				
			PRNDL state	= Transition 8 (bit state 0111) Range				
			PRNDL state	= Drive 6 (bit state 0110) Range				
			PRNDL state	= Transition 1 (bit state 1110) Range				
			Above sequencing occurs in	<= 1 Sec				
			Neutral Idle Mode	= Inactive				
			If all conditions above are met Increment delay Timer					
			If the below two conditions are met Increment Fail Timer				>= 3 Fail Seconds	
			delay timer	>= 1 Sec				
			Input Speed	>= 400 Sec				
			If Fail Timer has Expired then Increment Fail Counter				>= 2 Fail Counts	
			Fail Case 3 Current range	= Transition 13 (bit state 0010) Range	Previous range	≠ CeTRGR_e_PRNDL_Drive1		
			Engine Torque	>= -8192 Nm	Previous range	≠ CeTRGR_e_PRNDL_Drive2		
			Engine Torque	<= 8191.75 Nm	IMS is 7 position configuration	= 1 Boolean		
			If the above conditions are met then, Increment Fail Timer		If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13"		>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 4 Current range	= Transition 8 (bit state 0111) Range	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value		Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
							Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)							
			Inhibit bit (see definition)	=	FALSE									
			Steady State Engine Torque	>=	100	Nm								
			Steady State Engine Torque	<=	8191.75	Nm								
			If the above conditions are met then Increment Fail Timer								>=	0.225	Seconds	
			If the above Condtions have been met, Increment Fail Counter								>=	15	Fail Counts	
			Fail Case 5 Throttle Position Available	=	TRUE	Boolean								
			The following PRNDL sequence events occur in this exact order:											
			PRNDL State	=	Reverse (bit state 1100)	Range								
			PRNDL State	=	Transition 11 (bit state 0100)	Range								
			PRNDL State	=	Neutral (bit state 0101)	Range								
			PRNDL State	=	Transition 11 (bit state 0100)	Range								
			Above sequencing occurs in Then delay timer increments	<=	1	Sec								
			Delay timer	>=	5	sec								
			Range Shift State	=	Range Shift Complete									
			Absolute Attained Gear Slip	<=	50	rpm								
			Attained Gear	<=	Sixth									
			Attained Gear	>=	First									
			Throttle Position	>=	8.0002	pct								
			Output Speed	>=	200	rpm								
			If the above conditions are met Increment Fail Timer								>=	20	Seconds	
			Fail Case 6											
			Current range	=	Illegal (bit state 0000 or 1000 or 0001)		A Open Circuit Definition (flag set false if the following conditions are met):							
			and				Current Range	≠	Transition 11 (bit state 0100)					
			A Open Circuit (See Definition)	=	FALSE	Boolean	or							
							Last positive state	≠	Neutral (bit state 0101)					
							or							
							Previous transition state	≠	Transition 8 (bit state 0111)					
							Fail case 5 delay timer	=	0	sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			Fail Case 7 Current PRNDL State and Previous PRNDL state Input Speed Reverse Trans Ratio Reverse Trans Ratio If the above Condtions are met then, Increment Fail timer	= PRNDL circuit ABCP = 1101 Range = PRNDL circuit ABCP =1111 Range >= 150 RPM <= 2.84583 ratio >= 3.27417 ratio			>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met		Ignition Voltage Lo >= 8.59961 Volts Ignition Voltage Hi <= 31.99902 Volts Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec Engine Torque Signal Valid = TRUE Boolean			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P07C0, P07BF, P077C, P077D ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is The following events must occur Sequentially Initial Engine speed	≠ Park or Neutral Enumeration <= 50 RPM			>= 0.25 Enable Time (Sec)	One Trip
			Then Engine Speed Between Following Cals Engine Speed Lo Hist Engine Speed Hi Hist	 >= 50 RPM <= 480 RPM			>= 0.06875 Enable Time (Sec)	
			Then Final Engine Speed	>= 525 RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Final Transmission Input Speed	>= 100 RPM			>= 1.25 Fail Time (Sec)	
					DTC has Ran this Key Cycle?	= FALSE Boolean		
					Ignition Voltage Lo	>= 6 V		
					Ignition Voltage Hi	<= 31.99902 V		
					Ignition Voltage Hyst High (enables above this value)	>= 5 V		
					Ignition Voltage Hyst Low (disabled below this value)	<= 2 V		
					Transmission Output Speed	<= 90 rpm		
					P1915 Status is	≠ Test Failed This Key On or Fault Active		
			Disable Conditions:		MIL not Illuminated for DTC's:	TCM: P0722, P0723 ECM: None		
Transmission Control Module (TCM)	P2535	Ignition Switch Run/Start Position Circuit High	TCM Run crank active (based on voltage thresholds below)	= TRUE Boolean				One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	5 Volts			>= 280 Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2 Volts			Out of 280 Sample Counts (25ms loop)	
					ECM run/crank active status available	= TRUE Boolean		
					ECM run/crank active status	= FALSE Boolean		
			Disable Conditions:		MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case 1 Case: Steady State 2nd Gear					One Trip
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 3rd gear					
			If attained Gear = 3rd for Time	>= Table Based Time Please see Table 2 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Increment 2nd gear fail count				>= 3 2nd Gear Fail Count	
			and CB26 Fail Count				or >= 14 CB26 Fail Count	
			Fail Case 2 Case: Steady State 6th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					
			If attained Gear = 5th For Time	>= Table Based Time Please see Table 2 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met, Increment 5th gear fail counter				>= 3 5th Gear Fail Count	
			and CB26 Fail Count				or >= 14 CB26 Fail Count	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					TPS validity flag	= TRUE Boolean		
					Hydraulic System Pressurized	= TRUE Boolean		
					Minimum output speed for RVT A OR B	>= 0 RPM		
					(A) Output speed enable	>= 67 RPM		
					(B) Accelerator Pedal enable	>= 0.5005 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Throttle Position Signal valid	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Transmission Fluid Temperature	>= -6.6563 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized Clutch				
			Primary Offgoing Clutch Pressure Command Status	= exhaust command				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If above coditons are true, increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-1 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>= 0.5 Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>= 0.2998 Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>= 0.5 Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				>= Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Reference Supporting Table 15 for Fail Timer 2 sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				>= 3 Fail Counter From 2nd Gear	
			6th gear fail counter				>= 3 OR Fail Counter From 6th Gear	
			total fail counter				>= 5 OR Total Fail Counter	
					TUT Enable temperature	>= -6.6563 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					PRNDL state defaulted	= FALSE Boolean		
					IMS Fault Pending	= FALSE Boolean		
					Service Fast Learn Mode	= FALSE Boolean		
					HSD Enabled	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip If the Above is True for Time	>= 400 RPM >= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec)				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	 <= 2.48218 >= 2.24585			>= 1.1 Fail Timer (Sec) >= 5 Fail Count in 1st Gear or >= 5 Total Fail Counts	
			Fail Case 2 Case: Steady State 3rd Gear Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	 >= Table Based value Please Refer to Table 22 in supporting documents rpm/sec >= Table Based value Please Refer to Table 23 in supporting documents rpm/sec >= Table Based Time Please Refer to Table 17 in supporting documents Sec <= 2.48218 >= 2.24585			>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear or >= 5 Total Fail Counts	
			Fail Case 3 Case: Steady State 4rd Gear Max Delta Output Speed Hysteresis	 >= Table Based value Please Refer to Table 22 in supporting documents rpm/sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 23 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio	<= 0.70032				
			Gear Ratio	>= 0.63367				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear or >= 5 Total Fail Counts	
			Fail Case 4 Case: Steady State 5th Gear					
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 22 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 23 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 17 in supporting documents Sec				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 0.70032				
			Gear Ratio	>= 0.63367				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 5th Gear or	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							>= 5 Total Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed	>= 0 RPM		
					TPS validity flag	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pressurized	= TRUE Boolean		
					A OR B			
					(A) Output speed enable	>= 67 Nm		
					(B) Accelerator Pedal enable	>= 0.5005 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi	<= 31.99902 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>= 5.0003 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 5 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.88 Nm		
					Transmission Fluid Temperature	>= -6.6563 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P2770 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.99902 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip
					P2721 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volts		
					Ignition Voltage	<= 31.99902 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	Two Trips
					P2763 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>= 5 Sec		
					High Side Driver Enabled	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659 ECM: None		
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	One Trip
					P2764 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.59961 Volt		
					Ignition Voltage	<= 31.99902 Volt		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					High Side Driver Enabled	= TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659 ECM: None		

Table 1

Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00	N*m
Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	RPM

Table 2

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	2.00	2.00	Sec

Table 3

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	4.00	4.00	Sec

Table 4

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	2.00	2.00	Sec

Table 5

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	3.00	3.00	Sec

Table 6

Axis	-6.67	-6.66	40.00	80.00	120.00	ºC
Curve	409.00	3.60	1.60	1.40	1.40	Sec

Table 7

Axis	-6.67	-6.66	40.00	80.00	120.00	ºC
Curve	409.00	3.40	1.40	1.30	1.20	Sec

Table 8

Axis	-6.67	-6.66	40.00	80.00	120.00	ºC
Curve	409.00	3.60	1.60	1.50	1.40	Sec

Table 9

Axis	-6.67	-6.66	40.00	80.00	120.00	ºC
Curve	409.00	3.30	1.30	1.20	1.10	Sec

Table 10

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	3.03	1.86	1.00	0.75	0.58	Sec

Table 11

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	1.72	1.11	0.60	0.36	0.22	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.12	1.39	0.84	0.64	0.33	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.51	0.95	0.50	0.29	0.13	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	2.97	0.82	0.47	0.20	0.13	Sec

Table 15

Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00	ºC
Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Sec

Table 16

Axis	-6.67	-6.66	40.00	ºC
Curve	409.59	2.50	2.50	Sec

Table 17

Axis	-6.67	-6.66	40.00	ºC
Curve	0.40	0.35	0.30	Sec

Table 18

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	ºC
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	ºC

Table 19

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	ºC
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	ºC

Table 20

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	ºC
Curve	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00	ºC

Table 21

Axis	-40.00	-20.00	40.00	ºC
Curve	5.00	3.00	1.00	Sec

Table 22

Axis	-6.67	-6.66	40.00	ºC
Curve	8191.75	8191.75	8191.75	RPM/Sec

Table 23

Axis	-6.67	-6.66	40.00	ºC
Curve	8191.75	8191.75	8191.75	RPM/Sec