12 OBDG02 Transmission Diagnostics

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0562	Ignition voltage at the TCM is low for an extended period of time.	Ignition Voltage	< = 11 Volts			= 4 Fail counts (1000ms loop) Out of 12 Sample Counts (1000ms loop)	No Mil
					Ignition Voltage Hyst Hi (enabled above this value) Ignition Voltage Hyst Lo (disabled below this value) Engine Speed **MIL not Illuminated for DTC's:**	> 6 Volts <= 2 Volts > 1200 RPM TCM: None ECM: None		
				Disable Conditions:				
Transmission Control Module (TCM)	P0563	Ignition voltage at the TCM is high for an extended period of time.	Ignition Voltage	> = 18 Volts			= 10 Fail counts (1000ms loop) Out of 12 Sample Counts (1000ms loop)	No Mil
					Ignition Voltage Hyst Hi (enabled above this value) Ignition Voltage Hyst Lo (disabled below this value) **MIL not Illuminated for DTC's:**	> 6 Volts <= 2 Volts TCM: None ECM: None		
				Disable Conditions:				

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 **Disable Conditions:**	**MIL not Illuminated for DTC's:**	TCM: P0601 ECM: None	>= 5 Fail Counts	One Trip
Transmission Control Module (TCM)	P0602	Transmission Electro-Hydraulic Control Module Not Programmed	Non-Programmed TECHM Failure	= TRUE Boolean **Disable Conditions:**	**MIL not Illuminated for DTC's:**	TCM: P0602 ECM: None	Runs Continously	No Mil
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 **Disable Conditions:**	**MIL not Illuminated for DTC's:**	TCM: P0603 ECM: None	Runs Continously	One Trip
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

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: 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	>= 144 ºC			>= 5 Fail Time (Sec)	One Trip
			Fail Case 2 Substrate Temperature	>= 50 ºC			>= 2 Fail Time (Sec)	
			Ignition Voltage	>= 18 Volts				
			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	>= 9 Volts <= 31.990234 Volts >= 0 ºC <= 240 ºC >= 0.25 Sec		

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		
					MIL not Illuminated for DTC's:	TCM: None ECM: None		
				Disable Conditions:				
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE Boolean			>= 3 Fail Counts out of 5 Sample Counts	One Trip
					P0658 Status is not	= Test Failed This Key On or Fault Active		
					High Side Driver 1 On	= True Boolean		
					MIL not Illuminated for DTC's:	TCM: None ECM: None		
				Disable Conditions:				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
High Side Driver 1	P0659	Actuator Supply Voltage Circuit High	During the controller power-up, prior to the HSD being turned on, the HWIO reports that power short failure is	= TRUE Boolean			>= 3 Fail Counts out of 5 Sample Counts	No Mil
			Disable Conditions:		P0659 Status is not **MIL not Illuminated for DTC's:**	= Test Failed This Key On or Fault Active 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 If TCM substrate temp to power up temp Δ	> Refer to Table 19 in supporting documents ºC > Refer to Table 20 in supporting documents ºC				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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 Accelerator Position Signal Valid	= TRUE Boolean = TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	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	>=	30.000305	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			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	< = 254 ºC				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	> = 254 ºC				
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0668 Status is	>= 9 Volts <= 31.990234 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI_e_VoltageInversePrOp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= -254 ºC				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= -254 ºC				
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If transmission oil temp to power up temp Δ	> Refer to Table 18 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	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	>=	30.000305	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			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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	< = -254 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	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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		
				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	> = 254 ºC			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P06AE Status is	≠ 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 Conditions:	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Mode Switch	**P071A**	**Transmission Mode Switch A Circuit**	**If Tow Haul / Winter Switch Active**	**= TRUE Boolean**			**>= 600 Fail Time (Sec)**	**No Mil**
					Ignition Voltage Lo **Ignition Voltage Hi** **Engine Speed Lo** **Engine Speed Hi** **Engine Speed is within the allowable limits for**	**>= 9 Volts** **<= 31.990234 Volts** **>= 400 RPM** **<= 7500 RPM** **>= 5 Sec**		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	**TCM: P1762** **ECM: None**		
Mode Switch	P071D	Transmission Mode Switch B Circuit	If Sport Mode Switch is Active	= TRUE Boolean			>= 600 Fail Time (Sec)	No Mil
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P1762 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/ Performance	If transmission oil temp to substrate temp Δ	> Refer to Table 19 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				>= 3000 Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out of 3750 Sample Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			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	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	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	>=	30.000305	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		
					P0711 Status is	≠	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 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 Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used = CeTFTI_e_VoltageInversePrOp If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	< = 254 ºC				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	>= 254 °C								
			Either condition above will satisfy the fail conditions						>= 60		Fail Time (Sec)	
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					P0712 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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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		
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI_e_VoltageInversePrOp				Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>= -254 ºC				
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<= -254 ºC				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Either condition above will satisfy the fail conditions				>= 60 Fail Time (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0713 Status is	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec ≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0713, P0716, P0717, P0722, P0723 ECM: None		
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 1350 RPM			>= 0.8 Fail Time (Sec)	One Trip
					Engine Torque is Engine Torque is Engine Speed Engine Speed Engine Speed is within the allowable limits for Vehicle Speed is Throttle Position is	>= 0 N*m <= 8191.875 N*m >= 400 RPM <= 7500 RPM >= 5 Sec >= 10 Kph >= 0 Pct		

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

					Transmission Input Speed is	>= 0 RPM		
					The previous requirement has been satisfied for	>= 0 Sec		

					The change (loop to loop) in transmission input speed is	< 8191.75 RPM/Loop		
					The previous requirement has been satisfied for	>= 0 Sec		
					Throttle Position Signal Valid	= TRUE Boolean		
					Engine Torque Signal Valid	= TRUE Boolean		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.990234 Volts		
					P0716 Status is not	= Test Failed This Key On or Fault Active		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0717, P0752, P0973, P0974 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1 Transmission Input Speed is	< 50 RPM			>= 4.5 Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	< 1000 RPM	Controller uses a single power supply for the speed sensors	= 1 Boolean		
					Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for P0717 Status is not **MIL not Illuminated for DTC's:**	>= 50 N*m <= 8191.875 N*m >= 16 Kph = TRUE Boolean >= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec = Test Failed This Key On or Fault Active TCM: P0722, P0723 ECM: P0101, P0102, P0103		
				Disable Conditions:				
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	< = 35 RPM			>= 4.5 Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					P0722 Status is not	=	Test Failed This Key On or Fault Active			
					Transmission Input Speed Check	=	TRUE	Boolean		
					Engine Torque Check	=	TRUE	Boolean		
					Throttle Position	>=	8.0001831	Pct		
					Transmission Fluid Temperature	>=	-40	ºC		
					Disable this DTC if the PTO is active	=	1	Boolean		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage is	>=	9	Volts		
					Ignition Voltage is	<=	31.990234	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 The Engine Torque Check is TRUE, if either of the two following conditions are TRUE Engine Torque Condition 1 Shift Status is not OR Transmission Range is	= = =	complete Park or Neutral			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Engine Torque is	>=	8191.75	N*m		
					Engine Torque is	<=	8191.75	N*m		
					Engine Torque Condition 2					
					Engine Torque is	>=	30	N*m		
					Engine Torque is	<=	8191.75	N*m		

					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE					
					TIS Check Condition 1					
					Transmission Input Speed is	>=	1000	RPM		
					Transmission Input Speed is	<=	8191.75	RPM		
					TIS Check Condition 2					
					Engine Speed without the brake applied is	>=	3200	RPM		
					Engine Speed with the brake applied is	>=	3200	RPM		
					Engine Speed is	<=	8191.75	RPM		
					Controller uses a single power supply for the speed sensors	=	1	Boolean		
					Powertrain Brake Pedal is Valid	=	TRUE	Boolean		

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, P0723 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	>= 105 RPM			>= 0 Enable Time (Sec)	One Trip
			Output Speed Delta	<= 8191.8 RPM			>= 0 Enable Time (Sec)	
			Output Speed Drop	> 1000 RPM			>= 3 Output Speed Drop Recover Fail Time (Sec)	
					---------- 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	= TRUE See Below = TRUE See Below >= 5 Seconds		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active	=	1	Boolean		
					Ignition Voltage is	>=	9	Volts		
					Ignition Voltage is	<=	31.990234	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	RPM		
					Raw Input Speed	>=	500	RPM		
					TIS Condition 2 is TRUE when ALL of the next three conditions are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used for all speed sensors	=	TRUE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Powertrain Brake Pedal Applied is ----------	=	FALSE	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		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	>	1	Seconds		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Output Speed And the acceleration of the Transmission Output Speed is And the acceleration of the Transmission Output Speed is ----------	> 100 RPM < 500 RPM/Loop Rate > 0 RPM/Loop Rate		
					Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE Transmission Range is Transmission Range is Transmission Range is Range Change Delay Timer	 = Neutral ENUM = Reverse/Neutral Transitional ENUM = Neutral/Drive Transitional ENUM >= 5 Sec		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met	> = ~~500~~ 300 Kpa			>= 2 Enable Time (Sec)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			(A) TCC Slip Error @ TCC On Mode	>= Refer to Table 1 in Supporting Documents RPM			>= 4 Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>= ~~130~~ 110 RPM			>= 4 Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				>= 5 TCC Stuck Off Fail Counter	
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Engine Torque Lo	>= 30 N*m		
					Engine Torque Hi	<= 8191.875 N*m		
					Throttle Position Lo	>= 8.0001831 Pct		
					Throttle Position Hi	<= 99.998474 Pct		
					2nd Gear Ratio Lo	>= ~~2.75~~ 2.7045837 Ratio		
					2nd Gear Ratio High	<= ~~3.17~~ 3.1118164 Ratio		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					3rd Gear Ratio Lo	>=	~~1.77~~ 1.7601318	Ratio		
					3rd Gear Ratio High	<=	~~2.04~~ 2.0250244	Ratio		
					4th Gear Ratio Lo	>=	1.3450928	Ratio		
					4th Gear Ratio High	<=	1.5474854	Ratio		
					5th Gear Ratio Lo	>=	0.9300537	Ratio		
					5th Gear Ratio Hi	<=	1.0699463	Ratio		
					6th Gear Ratio Lo	>=	0.6938477	Ratio		
					6th Gear Ratio High	<=	0.7983398	Ratio		
					Transmission Fluid Temperature Lo	>=	-6.65625	ºC		
					Transmission Fluid Temperature Hi	<=	130	ºC		
					TCC Command Lock ON or ON mode	=	TRUE	Boolean		
					PTO Not Active	=	TRUE	Boolean		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					Dynamic Mode	=	FALSE	Boolean		
					P0741 Status is	≠	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 Conditions :	**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764 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		
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed TCC Slip Speed If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	> = -50 RPM < = 30 RPM			>= 1.2 Fail Time (Sec) >= 5 Fail Counter	One Trip
					Run TCC Stuck On Test Enable Criteria: Gear Ratio Gear Ratio Engine Speed Hi Engine Speed Lo Vehicle Speed HI Vehicle Speed Lo Stuck On During Upshift Enabled	 <= ~~4.77~~ 4.5 Ratio >= 2.4003906 Ratio <= 6500 RPM >= 500 RPM <= 511 KPH >= 11 KPH = 1 Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	35	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear	≠	1st Gear Locked	Boolean		
					Engine Torque Hi	<=	8191.875	Nm		
					Engine Torque Lo	>=	~~50~~ 25	Nm		
					Current Range	≠	Neutral	Range		
					Current Range	≠	Reverse	Range		
					Transmission Sump Temperature	<=	130	°C		
					Transmission Sump Temperature	>=	-6.65625	°C		
					Throttle Position Hyst High	>=	~~11~~ 10.00061035	Pct		
					Throttle Position Hyst Low	<=	2.9998779	Pct		
					PTO Active	=	FALSE	Boolean		
					Disable if in D1 and value true	=	0	Boolean		
					Disable if in D2 and value true	=	0	Boolean		
					Disable if in D3 and value true	=	0	Boolean		
					Disable if in D4 and value true	=	0	Boolean		
					Disable if in D5 and value true	=	0	Boolean		
					Disable if in MUMD and value true	=	0	Boolean		
					Disable if in TUTD and value true	=	0	Boolean		
					4 Wheel Drive Active	=	FALSE	Boolean		
					Hydraulic Clutch Air Purge Active	=	FALSE	Boolean		
					Ignore Air Purge if value = true	=	0	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					TCC Mode	= OFF		
					Common Enables:			
					Ignition Voltage	>= 9 V		
					Ignition Voltage	<= 31.990234 V		
					Vehicle Speed	<= 511 KPH		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Engine Torque Signal Valid	= TRUE Boolean		
					Throttle Position Signal Valid	= TRUE Boolean		
					P0742 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723, P0741, P2763, P2764 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		
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400 RPM				Two Trips
			Commanded Gear	= 1st Lock rpm				
			Gear Ratio	<= 1.5475			>= 0.3 Fail Tmr	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			Gear Ratio	>= 1.3451					=	5	Fail Counts	
			If the above parameters are true						≠	0	Neutral Timer (Sec)	
									>=	0.3	Fail Timer (Sec)	
									>=	8	Counts	
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Transmission Fluid Temperature	>=	-6.65625	ºC				
					Shift is Complete							
					TPS	>=	0.5004883	%				
					OR							
					Output Speed	>=	0	RPM				
					Throttle Position Signal Valid from ECM	=	TRUE	Boolean				
					Engine Torque Signal Valid from ECM, High side driver is enabled	=	TRUE	Boolean				
					High-Side Driver is Enabled	=	TRUE	Boolean				
					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		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400 Rpm				One Trip
			Commanded Gear	= 3rd Gear				
			Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	= TRUE Boolean				
			C456/CBR1 Pressure Switch	= Pressurized Boolean				
			C456/CBR1 Pressure Switch Fault	= FALSE Boolean				
			If the above parameters are true					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
									>=	Please Refer to Table 16 in Supporting Documents	Neutral Timer (Sec)	
									>=	5	Counts	
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					High-Side Driver is Enabled	=	TRUE	Boolean				
					Throttle Position Signal Valid from ECM	=	TRUE	Boolean				
					Output Speed OR	>=	0	RPM				
					TPS	>=	0.5004883	%				
					Shift is Complete							
					Transmission Fluid Temperature	>=	-6.65625	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		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gear	= 1st Locked				No Mil
			Gear Box Slip	>= 400 RPM			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec)	
			Intrusive Shift to 2nd Commanded Gear	= 1st Locked Gear				
			Previous Gear Ratio	<= 3.1118				
			Gear Ratio	>= 2.7046				
			If the above parameters are true				>= 1 sec >= 3 counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Output Speed	>=	0	RPM		
					OR TPS	>=	0.5004883	%		
					Shift is Complete					
					Transmission Fluid Temperature	>=	-6.65625	ºC		
					High-Side Driver is Enabled	=	TRUE	Boolean		
					Throttle Position Signal Valid from ECM	=	TRUE	Boolean		
					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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd Gear					One Trip
			Commanded Gear	= 3rd Gear				
			Gearbox Slip	>= 400 Rpm			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec)	
			Intrusive Test: Command 4th Gear					
			If attained Gear=4th gear for Time	>= Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)				
			It the above condiations are true, Increment 3rd gear fail counter				>= 2 3rd Gear Fail Counts or	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			and C35R Fail counter				>= 14 3-5R Clutch Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear					
			Commanded Gear	= 5th Gear				
			Gearbox Slip	>= 400 Rpm			>= Please Refer to Table 5 in Supporting Documents Neutral Timer (Sec)	
			Intrusive Test: Command 6th Gear					
			If attained Gear=6th gear Time	>= Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			It the above condiations are true, Increment 5th gear fail counter						>=	3	5th Gear Fail Counts	
			and C35R Fail counter							or		
									>=	14	3-5R Clutch 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	>=	0	RPM				
					(A) Output speed enable	>=	650	RPM				
					(B) Accelerator Pedal enable	>=	0.5004883	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	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	>=	-6.65625	ºC				
					Input Speed Sensor fault	=	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (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)				

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	 <= ~~2.00~~ 72.025 02 >= ~~1.74~~ 1.7601 318			>= 1.1 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	
			Fail Case 2 Case: Steady State 2nd gear Max Delta Output Speed Hysteresis	 >= Table Based value Please Refer to 3D Table 1 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 3D Table 2 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	< = ~~2.00~~ 72.02502				
			Gear Ratio	> = ~~1.74~~ 1.7601318				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							>= 3 Fail Count in 2nd Gear or >= 3 Total Fail Counts	
			Fail Case 3 Case: Steady State 4th gear					
			Max Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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	<= 1.0699				
			Gear Ratio	>= 0.9301				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear or >= 3 Total Fail Counts	
			Fail Case 4 Case: Steady State 6th gear					

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 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	> = Table Based Time Please Refer to Table 17 in supporting documents Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.0699			>= 1.1 Fail Timer (Sec)	
			Gear Ratio	>= 0.9301			>= 3 counts	
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 6th 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		
					Minimum output speed for RVT A OR B	>= 0 Nm		
					(A) Output speed enable	>= 650 Nm		
					(B) Accelerator Pedal enable	>= 0.5004883 Nm		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					if Attained Gear=1st FW Accelerator Pedal enable	>= 10.00061 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 45 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.875 Nm		
					Transmission Fluid Temperature	>= -6.65625 ºC		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			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 run appropriate Fail 1 Timers Below:					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>= 0.7002 Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.9004 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					
			3rd gear fail counter				>= 3 3rd gear fail counts OR	
			5th gear fail counter				>= 3 5th gear fail counts 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 counts	
					TUT Enable temperature	>= -6.671875 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	>= 200 RPM		
					input speed limit for TUT	>= 200 RPM		
					PRNDL state defaulted	= FALSE Boolean		
					IMS Fault Pending	= FALSE Boolean		
					Service Fast Learn Mode	= FALSE Boolean		
					HSD Enabled	= TRUE 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Output Speed Sensor (TOSS)	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage P077C Status is not If the above conditons have been met, increment the P077C Fail Counter	<= 0.25 Volts = Test Failed This Key On or Fault Active			>= 0.05 sec	One Trip
			DTC P077C Sets when the Fail Counter	>= 75 Counts	P077C Enable Calibration Ignition Voltage Lo Ignition Voltage Hi **MIL not Illuminated for DTC's:**	= 1 Boolean >= 9 Volts <= 31.990234 Volts TCM: P077D		
				Disable Conditions:				
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage P077D Status is not	>= 4.75 Volts = Test Failed This Key On or Fault Active			>= 0.05 sec	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above conditons have been met, increment the P077D Fail Counter					
			DTC P077D Sets when the Fail Counter	> = 75 Counts	P077D Enable Calibration Ignition Voltage Lo Ignition Voltage Hi	= 1 Boolean >= 9 Volts <= 31.990234 Volts		
					MIL not Illuminated for DTC's:	TCM: P077C		
			Disable Conditions:					
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear					One Trip
			Gear slip	> = 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					

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 if the above conditions have been met Increment 4th Gear Fail Counter and C456 Fail Counters	> = Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)			>= 2 4th Gear Fail Count OR >= 14 C456 Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear Gear slip Intrusive test: commanded 6th gear	> = 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear ≠ 6th for time	> = Table Based Time Please Refer to Table 3 in supporting documents Enable Time (Sec)				
			if the above conditions have been met					
			Increment 5th Gear Fail Counter				>= 2 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					

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	> = Table Based Time Please Refer to Table 3 Enable Time (Sec)				
			if the above conditions have been met					
			Increment 6th Gear Fail Counter and C456 Fail Counter				>= 2 6th Gear Fail Count	
			and C456 Fail Counter				>= 14 OR 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	>= 0 RPM		
					(A) Output speed enable	>= 650 RPM		
					(B) Accelerator Pedal enable	>= 0.5004883 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Throttle Position Signal valid	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Transmission Fluid Temperature	>= -6.65625 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 Attained Gear slip	> = 400 RPM				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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	< = 1.5475				
			Gear Ratio	> = 1.3451				
			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 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 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)					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Gear Ratio	<= 1.5475				
			Gear Ratio	>= 1.3451				
			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 3D Table 1 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 3D Table 2 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	<= 1.5475				
			Gear Ratio	>= 1.3451				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
									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				
					Minimum output speed for RVT A OR B	>=	0	Nm				
					(A) Output speed enable	>=	650	Nm				
					(B) Accelerator Pedal enable	>=	0.5004883	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	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	>=	10.00061	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.875	Nm				
					Transmission Fluid Temperature	>=	-6.65625	ºC				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Default Gear Option is not present	= TRUE		
					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		
			Disable Conditions :					
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
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>= 0.9004 Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (5-3 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>= 0.9004 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	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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	
			Total fail counter				>= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.671875 °C		
					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	>= 200 RPM		
					input speed limit for TUT	>= 200 RPM		
					PRNDL state defaulted	= FALSE Boolean		
					IMS Fault Pending	= FALSE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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		
Transmission Input Speed Sensor (TISS)	P07BF	Input/Turbine Speed Sensor A Circuit Low	TISS Analog Signal Voltage	<= 0.25 Volts			>= 0.05 sec	One Trip
			P07BF Status is not	= Test Failed This Key On or Fault Active				
			If the above conditons have been met, increment the P07BF Fail Counter					
			DTC P07BF Sets when the Fail Counter	>= 75 Counts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P07BF Enable Calibration = 1 Boolean Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.990234 Volts			
				Disable Conditions:	**MIL not Illuminated for DTC's:**			
Transmission Input Speed Sensor (TISS)	P07C0	Input/Turbine Speed Sensor A Circuit High	TISS Analog Signal Voltage	>= 4.75 Volts			>= 0.05 sec	One Trip
			P07C0 Status is not	= Test Failed This Key On or Fault Active				
			If the above conditons have been met, increment the P07C0 Fail Counter					
			DTC P07C0 Sets when the Fail Counter	>= 75 Counts				
					P07C0 Enable Calibration = 1 Boolean Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.990234 Volts			
				Disable Conditions:	**MIL not Illuminated for DTC's:**			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 0 Boolean				Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= ~~1~~ 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0 Boolean				
			Tap Up Switch ON	= TRUE Boolean			>= 1 Fail Time (Sec)	
			Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 1 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= 0 Boolean = TRUE Boolean			>= 600 Fail Time (Sec)	
					Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0815 Status is	>= 1 Enable Time (Sec) >= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec ≠ Test Failed This Key On or Fault Active	
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 0 Boolean				Special No Trip
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= ~~1~~ 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	= 0 Boolean				
			Tap Down Switch ON	= TRUE Boolean			>= 1 sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Park Enabled	= 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Reverse Enabled Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= 0 Boolean = TRUE Boolean			>= 600 sec	
					Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0816 Status is	>= 1 Enable Time (Sec) >= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec ≠ Test Failed This Key On or Fault Active	
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
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 Trip
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0826 Status is MIL not Illuminated for DTC's:	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec ≠ Test Failed This Key On or Fault Active TCM: P1761 ECM: None		
			Disable Conditions:					
Transmission Fluid Pressure Switch	P0842	Transmission Fluid Pressure (TFP) Sensor A Circuit Low Voltage	C35R Hydraulic pressure Hydraulic Delay Timer (Table Based)	< = 50 Kpa > = See Table 7 for Delay Timer Cal Sec				No Mil

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 30 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 Kpa				
					Transmission Fluid Temperature Lo	>= -6.65625 °C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219 °C		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for Default Gear Action	>= 5 Sec = FALSE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min	= TRUE = Normal = TRUE >= 550 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0843	Transmission Fluid Pressure (TFP) Sensor A Circuit High Voltage	C35R Hydraulic pressure	>= 700 Kpa				No Mil
			Hydraulic Delay Timer (Table Based)	>= See Table 7 for Delay Timer Cal Sec				
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter				>= 50 Fail Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
			Note: Subsequent fail counts require C35R pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 Kpa						
					Transmission Fluid Temperature Lo	>=	-6.65625	°C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99219	°C		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action	=	FALSE			
					High Side Driver ON	=	TRUE			
					RVT Status	=	Normal			
					Hydraulic Pressure Available	=	TRUE			
					Engine Speed Min	>=	550	RPM		

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: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E** **ECM: None**		
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure	< = 50 KPa				Special No Trip
			Hydraulic Delay Timer (Table Based)	> = See Table 8 for Delay Timer Cal Sec				
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 8 Fail Counts	
			Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 Kpa				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Fluid Temperature Lo	>= -6.65625 ºC		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 ºC		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219 ºC		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure	>= 700 KPa				Special No Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>= See Table 8 for Delay Timer Cal Sec			>= 11 Fail Counts	
			Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa				
					Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this)	>= -6.65625 ºC Not >= 120 ºC		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219 °C		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPM		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure	<= 50 KPa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 6 for Delay Timer Cal Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 8 Fail Counts	
			Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa				
					Transmission Fluid Temperature Lo	>= -6.65625 ºC		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 ºC		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219 ºC		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					RVT Status = Normal Hydraulic Pressure Available = TRUE Engine Speed Min >= 550 RPM			
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>= 700 KPa >= See Table 6 for Delay Timer Cal Sec			>= ~~8~~ 5 Fail Counts	Special No Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
			Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 Kpa						
					Transmission Fluid Temperature Lo	>=	-6.65625	ºC		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	ºC		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99219	ºC		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action	=	FALSE			
					High Side Driver ON	=	TRUE			
					RVT Status	=	Normal			
					Hydraulic Pressure Available	=	TRUE			
					Engine Speed Min	>=	550	RPM		

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: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	Two Trips
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.5 Fail Time (Sec) out of 1.875 Sample Time (Sec)	One Trip
					Ignition Voltage	>= 9 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for **MIL not Illuminated for DTC's:**	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	Two Trips
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for **MIL not Illuminated for DTC's:**	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	**P0965**	**Pressure Control (PC) Solenoid B Control Circuit Rationality Test (C35R VBS)**	**The HWIO reports an invalid voltage (out of range) error flag**	**= TRUE Boolean**			**>= 4.4 Fail Time (Sec)** **out of 5 Sample Time (Sec)**	**No Mil**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Ignition Voltage **>=** **9** **Volts** **Ignition Voltage** **<=** **31.990234** **Volts** **Engine Speed** **>=** **400** **RPM** **Engine Speed** **<=** **7500** **RPM** **Engine Speed is within the allowable limits for** **>=** **5** **Sec** **P0965 Status is not** **=** **Test Failed This Key On or Fault Active** **MIL not Illuminated for DTC's:** **TCM: None** **ECM: None**		
			Disable Conditions :					
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R 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
					Ignition Voltage >= 9 Volts Ignition Voltage <= 31.990234 Volts Engine Speed >= 400 RPM Engine Speed <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec P0966 Status is not = 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 Conditions :	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R 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
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for P0967 Status is not	>= 9 Volts <= 31.990234 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		
Variable Bleed Solenoid (VBS)	**P0969**	**Pressure Control (PC) Solenoid C Control Circuit Rationality Test (C456/CBR1 VBS)**	**The HWIO reports an invalid voltage (out of range) error flag**	**= TRUE Boolean**			**>= 4.4 Fail Time (Sec)**	**No Mil**

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							out of 5 Sample Time (Sec)	
					P0969 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.990234 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)	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
					P0970 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.990234 Volts		
					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		
					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 Ignition Voltage Engine Speed Engine Speed	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Disable Conditions:	**MIL not Illuminated for DTC's:** TCM: None ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.2 Fail Time (Sec) out of 1.5 Sample Time (Sec)	One Trip
					P0973 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.990234 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		
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 1.2 Fail Time (Sec) out of 1.5 Sample Time (Sec)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0974 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.990234 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		
Mode 3 Multiplex Valve	**P0976**	**Shift Solenoid BControl Circuit Low (Mode 3 Solenoid)**	**The HWIO reports a low voltage (ground short) error flag**	**= TRUE Boolean**			**>= 1.2 Sec** **out of 1.5 Sec**	**No Mil**
					P0976 Status is not	**= Test Failed This Key On or Fault Active**		
					Ignition Voltage	**>= 9 Volts**		
					Ignition Voltage	**<= 31.990234 Volts**		
					Engine Speed	**>= 400 RPM**		
					Engine Speed	**<= 7500 RPM**		
					Engine Speed is within the allowable limits for	**>= 5 Sec**		

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: None ECM: None		
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 1.2 Sec out of 1.5 Sec	No Mil
					P0977 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.990234 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		
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure	<= 50 Kpa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 9 for Delay Timer Cal Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 15 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa				
					Transmission Fluid Temperature Lo	>= -6.65625 ºC		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 ºC		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219 ºC		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min **MIL not Illuminated for DTC's:**	= FALSE = TRUE = Normal = TRUE >= 550 RPM TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>= 700 Kpa >= See Table 9 for Delay Timer Cal Sec			>= ~~26~~ 20 Fail Counts	Special No Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa						
					Transmission Fluid Temperature Lo	>=	-6.65625	ºC		
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	ºC		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99219	ºC		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action	=	FALSE			
					High Side Driver ON	=	TRUE			
					RVT Status	=	Normal			
					Hydraulic Pressure Available	=	TRUE			
					Engine Speed Min	>=	550	RPM		

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: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Mode 2 Multiplex Valve	P1751	Shift valve 1 performance	Attained Gear Slip is If Slip is Greater than the Above Cal Increment Fail Counter & Sample Counter	> = 100 RPM			>= 5 Fail Counts Out of 5 Sample Counts	No Mil
					Once this evaluation is complete the system will allow the valve to get back into position by delaying the next test for	= 1 Seconds		
					M2 Solenoid is Commanded On	= TRUE Boolean		
					Current Gear ≠ 2nd Gear	≠ 2nd Gear Gear		
					Calcaluted line pressure is	>= 1200 kPa		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					The test can begin when the M2 valve is verified to be in place because absolute value of attained gear slip and commanded gear slip is	<=	110	RPM		
					Test is delayed by a calibrated amount of time to allow the M2 valve to get into position	=	0.1	Sec		
					Upshift is In Progress	=	FALSE	Boolean		
					Input Speed Sensor Signal Hyst High (enabled above this value)	>=	1175	RPM		
					Input Speed Sensor Signal Hyst Low (disabled below this value)	<=	900	RPM		
					The torque converter clutch has transition from Locked to Unlocked.	=	TRUE	Boolean		
					TCC Stuck On Enable Criteria:					
					Gear Ratio	<=	4.5	Ratio		
					Gear Ratio	>=	2.4003906	Ratio		
					Engine Speed Hi	<=	6500	RPM		
					Engine Speed Lo	>=	500	RPM		
					Vehicle Speed HI	<=	511	KPH		
					Vehicle Speed Lo	>=	11	KPH		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Stuck On During Upshift Enabled	=	1	Boolean		
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	35	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear	≠	1st Gear Locked	Boolean		
					Engine Torque Hi	<=	8191.875	Nm		
					Engine Torque Lo	>=	25	Nm		
					Current Range	≠	Neutral	Range		
					Current Range	≠	Reverse	Range		
					Transmission Sump Temperature	<=	130	°C		
					Transmission Sump Temperature	>=	-6.65625	°C		
					Throttle Position Hyst High	>=	10.00061	Pct		
					Throttle Position Hyst Low	<=	2.9998779	Pct		
					PTO Active	=	FALSE	Boolean		
					Disable if in D1 and value true	=	0	Boolean		
					Disable if in D2 and value true	=	0	Boolean		
					Disable if in D3 and value true	=	0	Boolean		
					Disable if in D4 and value true	=	0	Boolean		
					Disable if in D5 and value true	=	0	Boolean		
					Disable if in MUMD and value true	=	0	Boolean		
					Disable if in TUTD and value true	=	0	Boolean		
					4 Wheel Drive Active	=	FALSE	Boolean		
					Air Purge Active	=	FALSE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Ignore Air Purge if value = true	=	0	Boolean		
					TCC Mode	=	OFF			
					Common Enables:					
					Ignition Voltage	>=	9	V		
					Ignition Voltage	<=	31.990234	V		
					Vehicle Speed	<=	511	KPH		
					Engine Speed	>=	400	RPM		
					Engine Speed	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					P1751 Status is	≠	Test Failed This Key On			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P0741, P0742, P2763, P2764 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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE Boolean			>= 3 Fail Counter > 10 Sample Timer (Sec)	Special No Trip
					Tap Up Tap Down Message Health Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	= TRUE Boolean >= 400 RPM <= 7500 RPM >= 5 Sec		
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE Boolean			>= 3 Fail Counter > 10 Sample Timer (Sec)	No Mil
					Pattern Switch Message Health Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	= TRUE Boolean >= 400 RPM <= 7500 RPM >= 5 Sec		

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: None ECM: None		
Mode Switch	P078F	Winter Mode Switch	Winter mode switch active	= TRUE Boolean			>= 600 Fail Time (Sec)	No Mil
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 9 Volts <= 18 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions :	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 0 Boolean				No Mil
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0 Boolean				
			Tap Up Switch ON	= TRUE Boolean			>= 1 Fail Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 1 Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0 Boolean				
			Tap Up Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean			>= 600 Fail Time (Sec)	
					Time Since Last Range Change	>= 1 Enable Time (Sec)		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P1765 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1761, P182E, P1915 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 0 Boolean				No Mil
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	= 0 Boolean				
			Tap Down Switch ON	= TRUE Boolean			>= 1 sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Park Enabled	= 0 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0 Boolean			>= 600 sec	
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean				
					Time Since Last Range Change	>= 1 Sec		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 18 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P1766 Status is	≠ Test Failed This Key On or Fault Active		
			Disable Conditions:		MIL not Illuminated for DTC's:	TCM: P1767, P1761, P182E, P1915 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean			>= 60 Fail Time (Sec)	No Mil
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Speed Hi Engine Speed is within the allowable limits for	**<= 7500 RPM** **>= 5 Sec**		
					P1767 Status is	**≠ Test Failed This Key On or Fault Active**		
				Disable Conditions :	**MIL not Illuminated for DTC's:**	**TCM: P1761** **ECM: None**		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	Fail Case 1 Current range Previous range Previous range	= "Transitional 1" Range State ≠ CeTRG R_e_P RNDL_ Drive6 Range State ≠ CeTRG R_e_P RNDL_ Drive5 Range State				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean				
			Engine Torque	> = -50 Nm				
			Engine Torque	< = 8191.8 Nm				
			If the above conditions are present Increment Fail Timer				>= 0.225 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 2 Current range	= "Transitional 1" Range State				
			S3 Pressure Switch indicates "Exhausted"	= TRUE Boolean				
			Commanded Gear	= 1st Locked Gear				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above conditions are present Increment Fail Timer				>= 0.225 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 3 Current range	= "Transitional 13"	Previous range	≠ CeTRGR_e_PRNDL_Drive4		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean	Previous range	≠ CeTRGR_e_PRNDL_Drive4		
			Engine Torque	>= -8192 Nm	IMS is 7 position configuration	= ~~1~~ 0 Boolean		
			Engine Torque	<= 8191.8 Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"			
			If the above conditions are present Increment Fail Timer				>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 4					
			Current range	= "Transitional 2" or "Transitional 8"	Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8			
			Inhibit bit (see definition)	= FALSE	Set inihibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transitional) Set inhibit bit false if PRNDL = 1001 (park)			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean				
			Steady State Engine Torque	>= 20 Nm				
			Steady State Engine Torque	<= 8191.8 Nm				
			If the above conditions are present Increment Fail Timer				>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 5 Current range	= "Transitional 11"				
			Engine Torque	> = 20 Nm				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean				
			If the above conditions are present Increment Fail Timer				>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 6 Current range	= "Illegal"	A Open Circuit Definition (flag set false if the following conditions are met):			
			and		Current Range	≠ "Transitional 11"		
			A Open Circuit (See Definition)	= FALSE Boolean	or			
					Last positive state or	≠ Neutral		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Previous transitional state	≠ Transitional 8 and Illegal		
					and			
					PRNDL Circuit A	= Open Circuit		
					PRNDL Circuit B	= Closed Circuit		
					PRNDL Circuit C	= Open Circuit		
					PRNDL Circuit P	= Open Circuit		
			If the above Condtions are present, Increment Fail timer				>= 6.25 Seconds	
			Fail Case 7 Current PRNDL State	= PRNDL circuit ABCP = 1101				
			and					
			Previous valid state	= PRNDL circuit ABCP =1111 Range				
			Input Speed	>= 150 RPM				
			Reverse Trans Ratio	<= 2.6702 ratio				
			Reverse Trans Ratio	>= 3.072 ratio				
			If the above Condtions are present, Increment Fail timer				>= 6.25 Seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			P182E will report test fail when any of the above 7 fail cases are met		Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.990234 Volts Vehicle Speed Lo <= 511 KPH 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: P0722, P0723 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)	P1876	Tap Up and Down Enable Switch Circuit	Current range	= Park or Reverse or Neutral Range State			>= 3 Fail Time (Sec)	Special No Trip
			TUTD Enable Switch is Active	= TRUE Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							>= 5 Fail Counts	
					Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.990234 Volts Vehicle Speed Lo <= 511 KPH Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec P1876 Status is ≠ Test Failed This Key On or Fault Active			
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0815, P0816, P0826, P1761, P1825, P1877, P1915, U0100 ECM: None		
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠ Park or Neutral Enumeration				One Trip
			The following events must occur Sequentially					
			Initial Engine speed	<= 50 RPM			>= 0.1 Enable Time (Sec)	
			Then					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Engine Speed Between Following Cals					
			Engine Speed Lo Hist	>= 50 RPM				
			Engine Speed Hi Hist	<= 480 RPM			>= 0.069 Enable Time (Sec)	
			Then Final Engine Speed	>= 500 RPM				
			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	<= 31.990234 V		
					Ignition Voltage Hyst High (enables above this value)	>= 6 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		

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: P0722, P0723 ECM: None		
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	Run crank active (based on voltage thresholds below)	= FALSE				One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)	6 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)	
					Normal CAN Comm Enabled	= TRUE Boolean		
					ECM run/crank active status	= TRUE 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

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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				>= 14 or CB26 Fail Count	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					TPS validity flag	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Hydraulic System Pressurized	=	TRUE	Boolean		
					Minimum output speed for RVT	>=	0	RPM		
					A OR B					
					(A) Output speed enable	>=	650	RPM		
					(B) Accelerator Pedal enable	>=	0.5004883	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	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	>=	-6.65625	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				
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 0.7002 Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (6-4 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>= 0.9004 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	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			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	
											OR	
			6th gear fail counter						>=	3	Fail Counter From 6th Gear	
			total fail counter								OR	
									>=	5	Total Fail Counter	
					TUT Enable temperature	>=	-6.671875	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	>=	200	RPM				
					input speed limit for TUT	>=	200	RPM				
					PRNDL state defaulted	=	FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				
					Service Fast Learn Mode	=	FALSE	Boolean				
					HSD Enabled	=	TRUE	Boolean				

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] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio	 >= 400 RPM >= Table Based Time Please Refer to Table 4 in supporting documents Enable Time (Sec) <= 3.1118 >= 2.7046				One Trip

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) >= 8 Fail Count in 1st Gear or >= 8 Total Fail Counts	
			Fail Case 2 Case: Steady State 3rd Gear					
			Max Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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	<= 3.1118				
			Gear Ratio	>= 2.7046				
			If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear or >= 8 Total Fail Counts	
			Fail Case 3 Case: Steady State 4rd Gear					

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 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	> = Table Based Time Please Refer to Table 17 in supporting documents Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	 <= 0.7983 >= 0.6938			>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear or >= 8 Total Fail Counts	
			Fail Case 4 Case: Steady State 5th Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 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 3D Table 2 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	<= 0.7983				
			Gear Ratio	>= 0.6938				
			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.
									>=	8	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				
					Minimum output speed for RVT A OR B	>=	0	Nm				
					(A) Output speed enable	>=	650	Nm				
					(B) Accelerator Pedal enable	>=	0.5004883	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	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	>=	10.00061	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.875	Nm				
					Transmission Fluid Temperature	>=	-6.65625	ºC				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Default Gear Option is not present	= TRUE		
					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		
				Disable Conditions:				
High Side Driver 2	**P2670**	**Actuator Supply Voltage B Circuit Low**	**The HWIO reports a low voltage (open or ground short) error flag**	**= TRUE Boolean**			**>= 0 Fail Counts**	**No Mil**
							out of 0 Sample Counts	
					P2670 Status is not	**= Test Failed This Key On or Fault Active**		
					High Side Driver 2 On	**= True Boolean**		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	**TCM: None** **ECM: None**		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
High Side Driver 2	P2671	Actuator Supply Voltage B Circuit High	During the controller power-up, prior to the HSD being turned on, the HWIO reports that power short failure is	= TRUE Boolean			>= 0 Fail Counts out of 0 Sample Counts	No Mil
			Disable Conditions:		P2671 Status is not MIL not Illuminated for DTC's:	= Test Failed This Key On or Fault Active TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2719	Pressure Control (PC) Solenoid D Control Circuit Rationality Test (CB26 VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec) out of 5 Sample Time (Sec)	No Mil
					P2719 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed	= Test Failed This Key On or Fault Active >= 9 Volts <= 31.990234 Volts >= 400 RPM <= 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**		
				Disable Conditions :	**MIL not Illuminated for DTC's:**	**TCM: None** **ECM: None**		
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
					P2770 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage	<= 31.990234 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
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 Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear Gear slip	>= 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.
			Intrusive test: commanded 2nd gear					
			If attained Gear ≠ 2nd for Time	>= Table based Timer, Please See Table 3 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 2 1st Gear Fail Count	
			and C1234 fail counter				>= 14 or C1234 Clutch Fail Count	
			Fail Case 2 Case: Steady State 2nd Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 3rd gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear ≠ 3rd for Time	>= Table based Timer, Please See Table 3 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met, Increment 2nd gear fail counter				>= 2 2nd Gear Fail Count	
			and C1234 fail counter				>= 14 or C1234 Clutch Fail Count	
			Fail Case 3 Case: Steady State 3rd Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 4th gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear ≠ 4th for time	>= Table based Timer, Please See Table 3 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met, Increment 3rd gear fail counter				>= 2 3rd Gear Fail Count	
			and C1234 fail counter				>= 14 or C1234 Clutch Fail Count	
			Fail Case 4 Case: Steady State 4th Gear					
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					

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	> = Table based Timer, Please See Table 3 in Supporting Documents Enable Time (Sec)				
			If Above Conditions have been met, Increment 4th gear fail counter				>= 3 4th Gear Fail Count	
			and C1234 fail counter				>= 14 or C1234 Clutch 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	>= 650 RPM		
					(B) Accelerator Pedal enable	>= 0.5004883 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					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	>=	-6.65625	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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			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 (2-6 shifting with throttle)	>= 0.7002 sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (2-6 shifting without throttle)	>= 0.9004 sec				
			fail timer 1 (3-5 shifting with throttle)	>= 0.7002 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 0.9004 sec				
			fail timer 1 (4-5 shifting with throttle)	>= 0.7002 sec				
			fail timer 1 (4-5 shifting without throttle)	>= 0.9004 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 0.7002 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 0.9004 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	
			3rd gear fail counter				>= 3 Fail Counter From 3rd Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			4th gear fail counter				>= 3 Fail Counter From 4th Gear	
			total fail counter				>= 5 Total Fail Counter	
					TUT Enable temperature	>= -6.671875 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	>= 200 RPM		
					input speed limit for TUT	>= 200 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear					One Trip
			Max Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	> = Table Based value Please Refer to 3D Table 2 in supporting documents rpm/sec				
			If the Above is True for Time	> = Table Based Time Please Refer to Table 17 in supporting documents Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	 <= 1.5475 >= 1.3451			>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 5th Gear OR >= 3 Total Fail Counts	
			Fail Case 2 Case: 6th Gear Max Delta Output Speed Hysteresis	 >= Table Based value Please Refer to 3D Table 1 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 3D Table 2 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	< = ~~1.52~~ 1.547485				
			Gear Ratio	> = ~~1.33~~ 1.345092				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
									>=	3	Fail Count in 6th 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				
					Minimum output speed for RVT A OR B	>=	0	Nm				
					(A) Output speed enable	>=	650	Nm				
					(B) Accelerator Pedal enable	>=	0.5004883	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.990234	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	>=	10.00061	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.875	Nm				
					Transmission Fluid Temperature	>=	-6.65625	ºC				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE **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		
			Disable Conditions :					
Variable Bleed Solenoid (VBS)	**P2728**	**Pressure Control (PC) Solenoid E Control Circuit Rationality Test (C1234 VBS)**	**The HWIO reports an invalid voltage (out of range) error flag**	**= TRUE Boolean**			**>= 4.4 Fail Time (Sec)** **out of 5 Sample Time (Sec)**	**No Mil**
					P2728 Status is not	**= Test Failed This Key On or Fault Active** **Ignition Voltage >= 9 Volt** **Ignition Voltage <= 31.990234 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**		
				Disable Conditions :	**MIL not Illuminated for DTC's:**	**TCM: None** **ECM: None**		
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 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
					P2729 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 9 Volt <= 31.990234 Volt >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions :	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							out of 0.375 Sample Time (Sec)	
					P2730 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volt		
					Ignition Voltage	<= 31.990234 Volt		
					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)	**P2762**	**Torque Converter Clutch Pressure Control Solenoid Control Rationality Test**	**The HWIO reports an invalid voltage (out of range) error flag**	**= TRUE Boolean**			**>= 4.4 Fail Time (Sec)** **out of 5 Sample Time (Sec)**	**No Mil**
					P2762 Status is not	**= Test Failed This Key On or Fault Active**		
					Ignition Voltage	**>= 9 Volt**		
					Ignition Voltage	**<= 31.990234 Volt**		
					Engine Speed	**>= 400 RPM**		
					Engine Speed	**<= 7500 RPM**		
					Engine Speed is within the allowable limits for	**>= 5 Sec**		

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: 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 Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	>= 9 Volt <= 31.990234 Volt >= 400 RPM <= 7500 RPM >= 5 Sec = TRUE Boolean		
				Disable Conditions :	**MIL not Illuminated for DTC's:**	TCM: P0658, P0659 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
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 MPH out of 5 MPH	One Trip
					P2764 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volt		
					Ignition Voltage	<= 31.990234 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		
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	= TRUE Boolean			>= 62 Fail counts (≈ 10 seconds)	One Trip
			Delay timer	>= 0.1125 sec			Out of 70 Sample Counts (≈ 11 seconds)	
					Stabilization delay	>= 3 sec		
					Power Mode	= Run		

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: None ECM: None		
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	= TRUE Boolean			>= 12 sec	One Trip
					Stabilization delay Power Mode	>= 3 sec = Run		
				Disable Conditions :	**MIL not Illuminated for DTC's:**	TCM: U0073 ECM: None		
Communication	**U0121**	**Loss Communications with ABS (Anti-lock Brake System)**	**CAN messages from ABS are not received by the TCM**	**= TRUE Boolean**			**>= 12 sec**	**No Mil**
					Stabilization delay Power Mode	**>= 3 sec = Run**		
				Disable Conditions :	**MIL not Illuminated for DTC's:**	**TCM: U0073 ECM: None**		
Communication	**U0140**	**Loss Communications with BCM (Body Control Module)**	**CAN messages from BCM are not received by the TCM**	**= TRUE Boolean**			**>= 12 sec**	**No Mil**
					Stabilization delay Power Mode	**>= 3 sec = Run**		

Supporting Documents - 2D Tables

Table 1

KtTCCD_n_StuckOffFailLimit	**Axis**	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
KtTCCD_n_StuckOffFailLimit	**Curve**	100.00	120.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00 RPM

Table 2

KnRSSC_T_RVT_TransTempAxis	**Axis**	-6.67	-6.66	40.00	°C
KtRSSC_t_INT_EstGear	**Curve**	409.59	2.00	2.00	Sec

Table 3

KnRSSC_T_RVT_TransTempAxis	**Axis**	-6.67	-6.66	40.00	°C
KtRSSC_t_INT_ShiftTime	**Curve**	409.59	3.50	3.50	Sec

Table 4

KnRSSC_T_RVT_TransTempAxis	**Axis**	-6.67	-6.66	40.00	°C
KtRSSC_t_TUT_NeutralTime	**Curve**	409.59	2.99	2.00	Sec

Table 5

KnRSSC_T_RVT_TransTempAxis	**Axis**	-6.67	-6.66	40.00	°C
KtRSSC_t_INT_NeutralTime	**Curve**	409.59	3.00	3.00	Sec

Table 6

KnDGSC_T_TransTempAxis	**Axis**	-~~7.01~~6.67	-~~7.00~~6.66	40.00	80.00	120.00 °C
KtDGSC_t_S1_TestDelayLimit	**Curve**	409.00	3.60	1.60	1.40	1.40 Sec

Table 7

KnDGSC_T_TransTempAxis	**Axis**	-~~7.01~~6.67	-~~7.00~~6.66	40.00	80.00	120.00 °C
KtDGSC_t_S2_TestDelayLimit	**Curve**	409.00	3.40	1.40	1.30	1.20 Sec

Table 8

KnDGSC_T_TransTempAxis	**Axis**	-~~7.01~~6.67	-~~7.00~~6.66	40.00	80.00	120.00 °C
KtDGSC_t_S3_TestDelayLimit	**Curve**	409.00	3.60	1.60	1.50	1.40 Sec

Supporting Documents - 2D Tables

Table 9

KnDGSC_T_TransTempAxis	Axis	- ~~7.01~~6.67	-~~7.00~~6.66	40.00	80.00	120.00	°C
KtDGSC_t_S4_TestDelayLimit	Curve	409.00	3.30	1.30	1.20	1.10	Sec

Table 10

KnRSCC_T_TransFluidTempAxis	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
KtRSCC_t_C1_OffgoingNoCapTmr	Curve	8.85	3.75	1.31	0.28	0.28	Sec

Table 11

KnRSCC_T_TransFluidTempAxis	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
KtRSCC_t_C2_OffgoingNoCapTmr	Curve	5.00	1.70	0.40	0.25	0.25	Sec

Table 12

KnRSCC_T_TransFluidTempAxis	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
KtRSCC_t_C3_OffgoingNoCapTmr	Curve	8.00	2.20	0.70	0.25	0.25	Sec

Table 13

KnRSCC_T_TransFluidTempAxis	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
KtRSCC_t_C4_OffgoingNoCapTmr	Curve	5.20	1.60	0.50	0.27	0.16	Sec

Table 14

KnRSCC_T_TransFluidTempAxis	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
KtRSCC_t_C5_OffgoingNoCapTmr	Curve	5.00	1.50	0.70	0.25	0.25	Sec

Table 15

KeRSCC_t_12RngDiagFailDeltTbl	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00	°C
KeRSCC_t_12RngDiagFailDeltTbl	Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Sec

Table 16

KnRSSC_T_RVT_TransTempAxis	Axis	-6.67	-6.66	40.00	°C
KtRSSC_t_M2V_StuckOnNeutralTime	Curve	409.59	1.50	1.50	Sec

Table 17

KnRSSC_T_RVT_TransTempAxis	Axis	-6.67	-6.66	40.00	°C
KtRSSC_t_SS_DecelHystTime	Curve	0.40	0.35	0.30	Sec

Supporting Documents - 2D Tables

Table 18

KnTFTD_T_RatlCheckTempAxis	**Axis**	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	°C
KtTFTD_T_OilPwrUpMaxDelta	**Curve**	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	°C

Table 19

KnTFTD_T_RatlCheckTempAxis	**Axis**	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	°C
KtTFTD_T_OilSubMaxDelta	**Curve**	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	°C

Table 20

KnTFTD_T_RatlCheckTempAxis	**Axis**	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	°C
KtTFTD_T_SubPwrUpMaxDelta	**Curve**	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00	°C

Supporting Documents - 3D Tables

3D_Table 1

KnRSSC_Pct_StartleThrotAxis	X-Axis Calibration	%
KnRSSC_T_RVT_TransTempAxis	Y-Axis Calibration	ºC
KtRSSC_dn_StartleDecelMax	Table Calibration	RPM/Sec

	0.00	2.00	5.00	25.00	100.00
-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
-6.66	8191.75	8191.75	8191.75	8191.75	8191.75
40.00	8191.75	8191.75	8191.75	8191.75	8191.75

3D_Table 2

KnRSSC_Pct_StartleThrotAxis	X-Axis Calibration	%
KnRSSC_T_RVT_TransTempAxis	Y-Axis Calibration	ºC
KtRSSC_dn_StartleDecelMin	Table Calibration	RPM/Sec

	0.00	2.00	5.00	25.00	100.00
-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
-6.66	500.00	500.00	300.00	300.00	300.00
40.00	500.00	500.00	300.00	300.00	300.00