Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE Boolean			>= 5 Fail Counts	One Trip
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0601 ECM: None		
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE Boolean			Runs Continously	One Trip
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0603 ECM: None		
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	= TRUE Boolean			>= 5 Fail Counts = 16 Sample Counts	One Trip
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0604 ECM: None		
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	= TRUE Boolean			Runs Continously	One Trip

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: P062F ECM: None			
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 out of 5	Fail Counts Sample Counts	One Trip
					P0658 Status is not = Test Failed This Key On or Fault Active High Side Driver 1 On = True Boolean				
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None ECM: None			
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below)	= FALSE Boolean					One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Ignition Voltage High Hyst (run crank goes true when above this value)	5 Volts			>= 280 Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2 Volts			Out of 280 Sample Counts (25ms loop)	
					ECM run/crank active status available	= TRUE Boolean		
					ECM run/crank active status	= 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.
~~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~~
						~~Ignition Voltage Lo >= 9 Volts~~ ~~Ignition Voltage Hi <= 18 Volts~~		
					~~Disable Conditions:~~ ~~MIL not Illuminated for DTC's:~~	~~TCM: P0604~~ ~~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 >= 9 Volts Ignition Voltage Hi <= 31.99023 Volts Substrate Temp Lo >= 0 ºC Substrate Temp Hi <= 240 ºC Substrate Temp Between Temp Range for Time >= 0.25 Sec P0634 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				
~~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~~	~~One Trip~~
								~~out of~~	~~5~~	~~Sample Counts~~	
						~~P0658 Status is not~~	~~= Test Failed This Key On or Fault Active~~				
						~~High Side Driver 1 On~~	~~= True Boolean~~				
				~~Disable Conditions:~~		~~MIL not Illuminated for DTC's:~~	~~TCM: None~~ ~~ECM: None~~				
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	>	Refer to Table 19 in supporting documents ºC						Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
			If TCM substrate temp to power up temp Δ	>	Refer to Table 20 in supporting documents ºC						
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						>= 3000 Out of 3750	Fail Counts (100ms loop) Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>= 700 Out of 875	Pass Counts (100ms loop) Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean			
					Accelerator Position Signal Valid	=	TRUE	Boolean			
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99023	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.
					Brake torque active	=	FALSE			
					Below describes the brake torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle	>=	30.00031	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_Rat lEnbl			
					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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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_Volt ageInve rseProp				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	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99023 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0668 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI_e_VoltageInverseProp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= -254 ºC				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
			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	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99023	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			
					P0669 Status is	≠	Test Failed This Key On or Fault Active				
					For Hybrids, below conditions must also be met						
					Estimated Motor Power Loss	>=	0	kW			
					Estimated Motor Power Loss greater than limit for time	>=	0	Sec			
					Lost Communication with Hybrid Processor Control Module	=	FALSE				
					Estimated Motor Power Loss Fault	=	FALSE				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723 ECM: None			
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	>	Refer to Table 20 in supporti ng docume nts	ºC			Two Trips
			If transmission oil temp to power up temp Δ	>	Refer to Table 18 in supporti ng docume nts	ºC			
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				>= 3000 Out of 3750	Fail Counts (100ms loop) Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Out of 875	Pass Counts (100ms loop) Sample Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99023	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	>=	30.00031	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			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
					Clutch used to exit brake torque active	=	CeTFTD_ e_C3_Rat lEnbl		
					The above clutch pressure is greater than this value for one loop	>=	600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>=	20 Sec		
					P06AC Status is	≠	Test Failed This Key On or Fault Active		

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 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 >= 9 Volts Ignition Voltage Hi <= 31.99023 Volts Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec P06AD Status is ≠ Test Failed This Key On or Fault Active			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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 °C				>= 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 <= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 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			
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 > supporti ºC ng docume nts					Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table 18 in > supporti ºC ng docume nts					
			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 Out of 3750	Fail Counts (100ms loop) Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700	Pass Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
									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	<=	31.99023	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	>=	30.00031	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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Clutch hydraulic pressure	≠	Clutch Hydraulic Air Purge Event			
					Clutch used to exit brake torque active	=	CeTFTD_ e_C3_Rat lEnbl			
					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 = If Transmission Fluid Temperature Sensor = Direct Proportional and Temp <=	CeTFTI _e_Volt ageInve rseProp 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	<=	31.99023	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			
					Lost Communication with Hybrid Processor Control Module	=	FALSE				
					Estimated Motor Power Loss Fault	=	FALSE				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI _e_Volt ageInve rseProp				Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>= -254 °C				
			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	<= 31.99023 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0713 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: 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 >= 0 N*m			
					Engine Torque is <= 8191.875 N*m			
					Engine Speed >= 400 RPM			
					Engine Speed <= 7500 RPM			
					Engine Speed is within the allowable limits for >= 5 Sec			
					Vehicle Speed is >= 10 Kph			
					Throttle Position is >= 0 Pct			

					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 <= 31.99023 Volts			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enable Conditions			Time Required		Mil Illum.
						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~~ 67 RPM						>= 4.5	Fail Time (Sec)	One Trip
			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	>=	50	N*m				
						Engine Torque is	<=	8191.875	N*m				
						Vehicle Speed	>=	16	Kph				
						Engine Torque Signal Valid	=	TRUE	Boolean				
						Ignition Voltage	>=	9	Volts				
						Ignition Voltage	<=	31.99023	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.
							P0717 Status is not	=	Test Failed This Key On or Fault Active				
				Disable Conditions:		**MIL not Illuminated for DTC's:**		TCM: P0722, P0723					
								ECM: P0101, P0102, P0103					
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
							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	>=	8.000183	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	<=	31.99023	Volts			
							Engine Speed is	>=	400	RPM			
							Engine Speed is	<=	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		
					Enable_Flags Defined Below					
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE					
					Engine Torque Condition 1					
					Range Shift Status	≠	**Range shift** completed	ENUM		
					OR Transmission Range is	=	Park or Neutral			
					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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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		
				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	**Transmission Output** Speed Sensor Raw 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 Recovery Fail Time (Sec)	
			AND					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
			Transmission Range is =	**Driven range (R,D)**					
					---------------------- Range_Disable	= FALSE	See Below		
					OR ---------------------- Neutral_Range_Enable	= TRUE	See Below		
					And Neutral_Speed_Enable	= TRUE	See Below		
					are TRUE concurrently ----------------------				
					Transmission_Range_Enable	= TRUE	See Below		
					Transmission_Input_Speed_Enable	= TRUE	See Below		
					No Change in Transfer Case Range (High <-> Low) for	>= 5	Seconds		
					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	<= 31.99023	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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					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 two conditions are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used for all speed sensors	=	TRUE	Boolean		
					Powertrain Brake Pedal Applied is	**=**	**FALSE**	**Boolean**		

					Neutral_Range_Enab le is TRUE when any of the next 3 conditions are TRUE					
					Transmission Range is	=	Neutral	ENUM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Transmission Range is	=	Reverse/ Neutral Transiton al	ENUM		
					Transmission Range is	=	Neutral/D rive Transiton al	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/Rev erse Transiton al	ENUM		
					Input Clutch is not	=	ON (Fully Applied)	ENUM		

					Neutral_Speed_Enab le is TRUE when All of the next three conditions are satsified for	>	~~1~~ 1.5	Seconds		
					Transmission Output Speed	>	~~100~~ 130	RPM		
					The loop to loop change of the Transmission Output Speed is	<	~~500~~ 125	RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					The loop to loop change of the Transmission Output Speed is ----------------------	>	~~0~~ -10	RPM		
					Transmission_Range _Enable is TRUE when one of the next six conditions is TRUE					
					Transmission Range is	=	Neutral	ENUM		
					Transmission Range is	=	Reverse/ Neutral Transition al	ENUM		
					Transmission Range is	=	Neutral/D rive Transition al	ENUM		
					~~Range Change Delay Timer~~	~~>=~~	~~5~~	~~Sec~~		
					Time since a driven range (R,D) has been selected	>=	Table Based Time Please Refer to Table 21 in supportin g document s	Sec		
					Transmission Output Speed Sensor Raw Speed	>=	500	RPM		
					Output Speed when a fault was detected	>=	500	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: P0973, P0974, P0976, P0977		
							ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>= 500 Kpa			>= 2	Enable Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met						
			(A) TCC Slip Error @ TCC On Mode	>= Refer to Table 1 in Supporting Documents RPM			>= 5	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>= 130 RPM			>= 5	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				>= ~~6~~ 2	TCC Stuck Off Fail Counter	
					TCC Mode = On or Lock				
					Ignition Voltage Lo >= 9 Volts				
					Ignition Voltage Hi <= 31.99023 Volts				
					Engine Speed >= 400 RPM				
					Engine Speed <= 7500 RPM				
					Engine Speed is within the allowable limits for >= 5 Sec				
					Engine Torque Lo >= 50 N*m				
					Engine Torque Hi <= 8191.875 N*m				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Throttle Position Lo	>=	8.000183	Pct		
					Throttle Position Hi	<=	99.99847	Pct		
					2nd Gear Ratio Lo	>=	2.752808	Ratio		
					2nd Gear Ratio High	<=	3.167236	Ratio		
					3rd Gear Ratio Lo	>=	1.776245	Ratio		
					3rd Gear Ratio High	<=	2.043701	Ratio		
					4th Gear Ratio Lo	>=	1.348511	Ratio		
					4th Gear Ratio High	<=	1.551514	Ratio		
					5th Gear Ratio Lo	>=	0.930054	Ratio		
					5th Gear Ratio Hi	<=	1.069946	Ratio		
					6th Gear Ratio Lo	>=	0.69751	Ratio		
					6th Gear Ratio High	<=	0.80249	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 >= -50 RPM					One Trip
			TCC Slip Speed <= ~~30~~ 13 RPM				>= 1 Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				>= 8 Fail Counter	
					TCC Mode = Off			
					Enable test if Cmnd Gear = 1stFW and value true = 1 Boolean			
					Enable test if Cmnd Gear = 2nd and value true = 0 Boolean			
					~~Run TCC Stuck On Test Enable Criteria:~~			
					~~Gear Ratio <= 3.171509 Ratio~~			
					~~Gear Ratio >= 2.75647 Ratio~~			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Engine Speed Hi	<=	~~6500~~ 6000	RPM		
					Engine Speed Lo	>=	500	RPM		
					Vehicle Speed HI	<=	511	KPH		
					Vehicle Speed Lo	>=	~~16~~ 1	KPH		
					~~If Stuck On During Upshift is enabled (See Above), Engine Torque Must be~~	~~>=~~	~~50~~	~~Nm~~		
					~~Down Shift In Progress~~	~~=~~	~~FALSE~~	~~Boolean~~		
					~~Current Gear~~	~~≠~~	~~1st Gear Locked~~	~~Boolean~~		
					Engine Torque Hi	<=	8191.875	Nm		
					Engine Torque Lo	>=	60	Nm		
					Current Range	≠	Neutral	Range		
					Current Range	≠	Reverse	Range		
					Transmission Sump Temperature	<=	130	ºC		
					Transmission Sump Temperature	>=	~~-7~~ 15	ºC		
					Throttle Position Hyst High	>=	10.00061	Pct		
					~~Throttle Position Hyst Low~~	~~<=~~	~~2.999878~~	~~Pct~~		
					AND					
					Max Vehicle Speed to Meet Throttle Enable	<=	8	KPH		
					Once Hyst High has been met, the enable will remain while Throttle Position	>=	2.000427	Pct		
					Disable for Throttle Position	>=	75	Pct		
					Disable if PTO active and value true	=	~~0~~ 1	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Disable if in D1 and value true	=	0 1	Boolean		
					Disable if in D2 and value true	=	0 1	Boolean		
					Disable if in D3 and value true	=	0 1	Boolean		
					Disable if in D4 and value true	=	0 1	Boolean		
					Disable if in D5 and value true	=	0 1	Boolean		
					Disable if in MUMD and value true	=	0 1	Boolean		
					Disable if in TUTD and value true	=	0 1	Boolean		
					4 Wheel Drive Low Active	=	FALSE	Boolean		
					~~Hydraulic Clutch Air Purge Active~~	=	~~FALSE~~	~~Boolean~~		
					~~Ignore Air Purge if value = true~~	=	~~0~~	~~Boolean~~		
					Disable if Air Purge active and value false	=	0	Boolean		
					TCC Mode Common Enables:	**=**	**OFF**			
					RVT Diagnostic Active	=	FALSE	Boolean		
					Ignition Voltage	>=	9	V		
					Ignition Voltage	<=	31.99023	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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					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 Commanded Gear = 1st Lock rpm Gear Ratio <= 1.5183 Gear Ratio >= 1.3737 If the above parameters are true				>= 0.3 Fail Tmr = 5 Fail Counts ≠ 0 Neutral Timer (Sec) >= 0.3 Fail Timer (Sec) >= 8 Counts	Two Trips
					Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.99023 Volts			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					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		
					Range Shift State	=	Range Shift Completed	ENUM		
					TPS	>=	0.500488	%		
					OR					
					Output Speed	>=	100	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 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					One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
			Command 4th Gear once Output Shaft Speed **If Gear Ratio** **And Gear Ratio**	**<= 1000 RPM** **>= 4.3549** **<= 4.8132**					>= 16	Please Refer to Table 16 in Supporting Documents	Neutral Timer (Sec)
									>= 1.5		Fail Timer (Sec)
									>= 5		Counts
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99023	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	>=	~~0~~ 100	RPM			
					OR						
					TPS	>=	0.500488	%			
					Range Shift State	=	Range Shift Completed	ENUM			
					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		
					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)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd Gear Commanded Gear = 3rd Gear Gearbox Slip >= 400 RPM					One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							Please Refer to Table 5 16 in Supporting Documents >= Neutral Timer (Sec)	
			Command 4th Gear once Output Shaft Speed	<= 1000 RPM				
			If Gear Ratio	>= 1.3737				
			And Gear Ratio	<= 1.5183			**>= 3 Fail Timer (Sec)**	
			It the above condiations are true, Increment 3rd gear fail counter				>= 2 3rd Gear Fail Counts	
							or	
			and C35R Fail counter				>= 14 3-5R Clutch Fail Counts	
			<u>Fail Case 2</u> Case: Steady State 5th Gear					
			Commanded Gear	= 5th Gear				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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 >=	Please refer to Table 3 in supporting documents	Shift Time (Sec)			
			It the above condiations are true, Increment 5th gear fail counter				>= 3 5th Gear Fail Counts	
							or	
			and C35R Fail counter				>= 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 >= 0 RPM			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					A OR B					
					(A) Output speed enable	>=	~~650~~ 100	RPM		
					(B) Accelerator Pedal enable	>=	0.500488	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99023	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)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	<u>Fail Case 1</u> Case: Steady State 1st Attained Gear slip >= 400 RPM If the Above is True for Time >= Enable Time (Sec) Intrusive test: (CBR1 clutch exhausted) Gear Ratio <= 2.0073 Gear Ratio >= 1.7446	Table Based Time Please Refer to Table 4 in supporting documents				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)	
							>= 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					
			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: (CB26 clutch exhausted)								
			Gear Ratio	<=	2.0073						
			Gear Ratio	>=	1.7446						
			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 4th 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			
			Intrusive test: (C1234 clutch exhausted)						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			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					
			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	<= 1.0699			>=	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	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
									>=	3	Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurized	=	TRUE	Boolean				
					A OR B							
					(A) Output speed enable	>=	100	Nm				
					(B) Accelerator Pedal enable	>=	0.500488	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99023	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	°C				
					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.
				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) 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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above conditions are true run appropriate Fail 1 Timers Below:						
			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	
			Total fail counter				>=	5	total fail counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
					TUT Enable temperature	>= -6.65625	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	<= 0.25 Volts			>= 0.05 sec	One Trip
			P077C Status is not	= Test Failed This Key On or Fault Active				
			If the above conditons have been met, increment the P077C Fail Counter					
			DTC P077C Sets when the Fail Counter	>= 75 Counts				
					P077C Enable Calibration	= 1 Boolean		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99023 Volts		
				Disable Conditions:	**MIL not Illuminated for DTC's:** TCM: P077D			
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage	>= 4.75 Volts			>= 0.05 sec	One Trip
			P077D 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.
			If the above conditons have been met, increment the P077D Fail Counter					
			DTC P077D Sets when the Fail Counter	>= 75 Counts				
						P077D Enable Calibration = 1 Boolean Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.99023 Volts		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P077C		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	<u>Fail Case</u> Case: Steady State 1 4th Gear				Please See Table 5 >= For Neutral Time Cal Neutral Timer (Sec)	One Trip
			Gear slip	>= 400 RPM				
			Intrusive test: commanded 5th gear					
			If attained Gear ≠5th for time	>= Please refer to Table 3 in Supporting Docum ents Shift Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
			if the above conditions have been met							
			Increment 4th Gear Fail Counter				>=	2	4th Gear Fail Count	
									OR	
			and C456 Fail Counters				>=	14	C456 Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear							
			Gear slip	>= 400 RPM			>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 6th gear							
			If attained Gear ≠ 6th for time	>= Please Refer to Table 3 in Supporting Documents	Shift Time (Sec)					
			if the above conditions have been met							
			Increment 5th Gear Fail Counter				>=	2	5th Gear Fail Count	
									OR	
			and C456 Fail Counters				>=	14	C456 Fail Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			<u>Fail Case 3</u> Case: Steady State 6th Gear					
			Gear slip >= 400 RPM				>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear					
			If attained Gear ≠ 5th for time >=	Please refer to Table 3 in Supporting Docum ents Shift 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				OR >= 14 C456 Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					TPS validity flag	= TRUE Boolean		
					Hydraulic System Pressurized	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
					Minimum output speed for RVT A OR B	>= 0	RPM		
					(A) Output speed enable	>= 100	RPM		
					(B) Accelerator Pedal enable	>= 0.500488	Pct		
					Common Enable Criteria				
					Ignition Voltage Lo	>= 9	Volts		
					Ignition Voltage Hi	<= 31.99023	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		
					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			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1	Case: Steady State 1st							One Trip
				Attained Gear slip	>= 400 RPM						
				If the Above is True for Time	>= Table Based Time Please Refer to Table 4 in supporting documents	Enable Time (Sec)					
				Intrusive test: (CBR1 clutch exhausted)							
				Gear Ratio	<= 1.5291						
				Gear Ratio	>= 1.329						
				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 <= 1.5291					
			Gear Ratio >= 1.329					
			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	<= 1.5291				
			Gear Ratio	>= 1.329				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 3rd Gear	
							OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
									>=	3	Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurized	=	TRUE	Boolean				
					A OR B							
					(A) Output speed enable	>=	100	Nm				
					(B) Accelerator Pedal enable	>=	0.500488	Nm				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99023	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			
					Disable Conditions: **MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	$=$ TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	$=$ Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	$=$ Clutch exhaust command				
			Range Shift Status	$\neq$ Initial Clutch Control				
			Attained Gear Slip	$<=$ 40 RPM				

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

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						
			4th gear fail counter				>= 3	Fail Counter From 4th Gear OR	
			5th gear fail counter				>= 3	Fail Counter From 5th Gear OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			6th gear fail counter						>=	3	Fail Counter From 6th Gear	
			Total fail counter						>=	5	OR Total Fail Counter	
					TUT Enable temperature	>=	-6.65625	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		
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				
						P07BF Enable Calibration = 1 Boolean Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.99023 Volts		

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:**			
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 <= 31.99023 Volts			
				Disable Conditions:	**MIL not Illuminated for DTC's:**			
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 MIL

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 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	=	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				
				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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Up Switch ON = TRUE Boolean NOTE: Both Failcase1 and Failcase 2 Must Be Met				>= 600 Fail Time (Sec)	
					Time Since Last Range Change >= 1 Enable Time (Sec) Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.99023 Volts Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec P0815 Status is ≠ 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 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				
			Tap Down Switch Stuck in the Down Position in Range Neutral 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 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	
			<u>Fail Case 2</u> 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				
			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				

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 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						
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	=	TRUE	Boolean			>= 600	sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Time Since Last Range Change	>=	1	Enable Time (Sec)		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99023	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					P0816 Status is	≠	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					
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean					>= 60 Fail Time (Sec)	Special No MIL
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99023	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					P0826 Status is	≠	Test Failed This Key On or Fault Active			

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: P1761 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)	Two Trips
							out of 5	Sample Time (Sec)	
					Ignition Voltage >= 9 Volts Ignition Voltage <= 31.99023 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)	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)	One Trip
							out of 1.875	Sample Time (Sec)	
					Ignition Voltage >= 9 Volts Ignition Voltage <= 31.99023 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					
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 out of 5	Fail Time (Sec) Sample Time (Sec)	Two Trips
					Ignition Voltage >= 9 Volts						
					Ignition Voltage <= 31.99023 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)	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 out of 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip
					Ignition Voltage >= 9 Volts						
					Ignition Voltage <= 31.99023 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			
					P0966 Status is not = Test Failed This Key On or Fault Active			
			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 >= 9 Volts Ignition Voltage <= 31.99023 Volts Engine Speed >= 400 RPM Engine Speed <= 7500 RPM Engine Speed is within the allowable limits for >= 5 Sec			
					P0967 Status is not = 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.
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)	One Trip
							out of 0.375	Sample Time (Sec)	
					P0970 Status is not = Test Failed This Key On or Fault Active				
					Ignition Voltage >= 9 Volts				
					Ignition Voltage <= 31.99023 Volts				
					Engine Speed >= 400 RPM				
					Engine Speed <= 7500 RPM				
					Engine Speed is within the allowable limits for >= 5 Sec				
			Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None				
					ECM: None				
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3	Fail Time (Sec)	One Trip
							out of 0.375	Sample Time (Sec)	
					P0971 Status is not = Test Failed This Key On or Fault Active				
					Ignition Voltage >= 9 Volts				
					Ignition Voltage <= 31.99023 Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
					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	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)	One Trip
									out of 1.5	Sample Time (Sec)	
					P0973 Status is not	=	Test Failed This Key On or Fault Active				
					Ignition Voltage	>=	9	Volts			
					Ignition Voltage	<=	31.99023	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)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							out of 1.5 Sample Time (Sec)	
					P0974 Status is not =	Test Failed This Key On or Fault Active		
						Ignition Voltage >= 9 Volts		
						Ignition Voltage <= 31.99023 Volts		
						Engine Speed >= 400 RPM		
						Engine Speed <= 7500 RPM		
						Engine Speed is within the allowable limits for >= 5 Sec		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	<u>Fail Case 1</u> Current range =	Transition 1 (bit state 1110) Range				One Trip
			Previous range ≠	CeTRGR_e_P RNDL_Drive6 Range				
			Previous range ≠	CeTRGR_e_P RNDL_Drive5 Range				
			Range Shift State =	Range Shift Completed ENUM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Absolute Attained Gear Slip	<= 50 rpm				
			Attained Gear	<= Sixth				
			Attained Gear	>= First				
			Throttle Position Available	= TRUE				
			Throttle Position	>= 8.0002 pct				
			Output Speed	>= 200 rpm				
			Engine Torque	>= 50 Nm				
			Engine Torque	<= 8191.8 Nm				
			If the above conditions are met then Increment Fail Timer				>= 1 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 5 Fail Counts	
			Fail Case 2 Output Speed	<= 70 rpm				
			The following PRNDL sequence events occur in this exact order:					
			PRNDL state	= Drive 6 (bit state 0110) Range				
			PRNDL state = Drive 6 for	>= 1 Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			PRNDL state	=	Transition 8 (bit state 0111) Range					
			PRNDL state	=	Drive 6 (bit state 0110) Range					
			PRNDL state	=	Transition 1 (bit state 1110) Range					
			Above sequencing occurs in	<=	1 Sec					
			Neutral Idle Mode	=	Inactive					
			If all conditions above are met Increment delay Timer							
			If the below two conditions are met Increment Fail Timer					>=	3 Fail Seconds	
			delay timer	>=	1 Sec					
			Input Speed	>=	400 Sec					
			If Fail Timer has Expired then Increment Fail Counter					>=	2 Fail Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 3 Current range =	Transiti on 13 (bit state 0010) Range	Previous range ≠	CeTRGR _e_PRND L_Drive3		
			Engine Torque >= -8192 Nm		Previous range ≠	CeTRGR _e_PRND L_Drive2		
			Engine Torque <= 8191.8 Nm		IMS is 7 position configuration = 0 Boolean			
			If the above conditions are met then, Increment Fail Timer		If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified ~~when the "current~~		>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 4 Current range =	Transiti on 8 (bit state 0111) Range	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8			
			Inhibit bit (see definition) = FALSE		Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)			
			Steady State Engine Torque >= 30 Nm					
			Steady State Engine Torque <= 8191.8 Nm					
			If the above conditions are met then Increment Fail Timer				>= 0.225 Seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 5 Throttle Position Available	= TRUE Boolean				
			The following PRNDL sequence events occur in this exact order:					
			PRNDL State	= Reverse (bit state 1100) Range				
			PRNDL State	= Transition 11 (bit state 0100) Range				
			PRNDL State	= Neutral (bit state 0101) Range				
			PRNDL State	= Transition 11 (bit state 0100) Range				
			Above sequencing occurs in	<= 1 Sec				
			Then delay timer increments					
			Delay timer	>= 5 sec				
			Range Shift State	= Range Shift Complete				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Absolute Attained Gear Slip	<= 50 rpm				
			Attained Gear	<= Sixth				
			Attained Gear	>= First				
			Throttle Position	>= 8.0002 pct				
			Output Speed	>= 200 rpm				
			If the above conditions are met Increment Fail Timer				>= 20 Seconds	
			<u>Fail Case 6</u> Current range	= Illegal (bit state 0000 or 1000 or 0001)	A Open Circuit Definition (flag set false if the following conditions are met):			
			and		Current Range ≠	Transition 11 (bit state 0100)		
			A Open Circuit (See Definition)	= FALSE Boolean	or			
					Last positive state ≠	Neutral (bit state 0101)		
					or			
					Previous transition state ≠	Transition 8 (bit state 0111)		
					Fail case 5 delay timer =	0 sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			<u>Fail Case 7</u> Current PRNDL State = PRNDL circuit ABCP = 1101 Range and Previous PRNDL state = PRNDL circuit ABCP =1111 Range Input Speed >= 150 RPM Reverse Trans Ratio <= 2.7369 ratio Reverse Trans Ratio >= 3.149 ratio If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met					
						Ignition Voltage Lo >= 9 Volts Ignition Voltage Hi <= 31.99023 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.
							Engine Torque Signal Valid	= TRUE Boolean				
				Disable Conditions:			**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723, P07C0, P07BF, P077C, P077D ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumeration						One Trip
			The following events must occur Sequentially									
			Initial Engine speed	<=	50	RPM			>=	0.1	Enable Time (Sec)	
			Then Engine Speed Between Following Cals									
			Engine Speed Lo Hist	>=	50	RPM						
			Engine Speed Hi Hist	<=	480	RPM			>=	0.0688	Enable Time (Sec)	
			Then Final Engine Speed	>=	500	RPM						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Final Transmission Input Speed	>= 100 RPM			>= 1.25 Fail Time (Sec)	
					DTC has Ran this Key Cycle?	= FALSE Boolean		
					Ignition Voltage Lo	>= 6 V		
					Ignition Voltage Hi	<= 31.99023 V		
					Ignition Voltage Hyst High (enables above this value)	>= 5 V		
					Ignition Voltage Hyst Low (disabled below this value)	<= 2 V		
					Transmission Output Speed	<= 90 rpm		
					P1915 Status is	≠ Test Failed This Key On or Fault Active		
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0722, P0723 ECM: None		
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case 1 Case: Steady State 2nd Gear					One Trip
			Gear slip	>= 400 RPM			>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
			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 or	
			and CB26 Fail Count						>=	14	CB26 Fail Count	
		Fail Case 2	Case: Steady State 6th Gear									
			Gear slip	>=	400	RPM			>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear									

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 see Table 2 in Supporting Documents Enable Time (Sec)								
			If Above Conditions have been met, Increment 5th gear fail counter and CB26 Fail Count						>=	3	5th Gear 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				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT	>=	0	RPM				
					A OR B							
					(A) Output speed enable	>=	100	RPM				
					(B) Accelerator Pedal enable	>=	0.500488	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99023	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 °C			
					Input Speed Sensor fault = FALSE Boolean			
					Output Speed Sensor fault = FALSE Boolean			
					Default Gear Option is not present = TRUE			
				Disable Conditions:	**MIL not Illuminated for DTC's:** TCM: P0716, P0717, P0722, P0723, P182E			
					ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			
Variable Bleed Solenoid (VBS)	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 Primary Oncoming Clutch Pressure Command Status = Maximum pressurized					One Trip

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 comma nd				
			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)				
			fail timer 1 (6-4 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 (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
			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	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
			6th gear fail counter						>=	3	Fail Counter From 6th Gear OR
			total fail counter						>=	5	Total Fail Counter
					TUT Enable temperature	>=	-6.65625	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)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1	Case: Steady State 1st								One Trip
				Attained Gear slip	>=	400 RPM						
				If the Above is True for Time	>=	Table Based Time Please Refer to Table 4 in supporting documents	Enable Time (Sec)					
				Intrusive test: (CBR1 clutch exhausted)								
				Gear Ratio	<=	3.1127						
				Gear Ratio	>=	2.7053						
				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								

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: (C35R clutch exhausted)						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			Gear Ratio <= 3.1127						
			Gear Ratio >= 2.7053						
			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						
			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: (C1234 clutch exhausted)					
			Gear Ratio	<= 0.7982				
			Gear Ratio	>= 0.6937				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 4th 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	
			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					
			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 Sec 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 0.7982				
			Gear Ratio	>= 0.6937				
			If the above parameters are true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 5th Gear	
							or	
							>= 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		
					A OR B			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					(A) Output speed enable	>=	100	Nm		
					(B) Accelerator Pedal enable	>=	0.500488	Nm		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99023	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	°C		
					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)	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 <= 31.99023 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 >= 9 Volts Ignition Voltage <= 31.99023 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)	P2723	Pressure Control (PC) Solenoid E Stuck Off	<u>Fail Case 1</u> Case: Steady State 1st Gear Gear slip >= 400 RPM Intrusive test: commanded 2nd gear				>= Please See Table 5 For Neutral Time Cal Neutral Timer (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear ≠ 2nd for Time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 2 1st Gear Fail Count	
			and C1234 fail counter				or >= 14 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					
			If attained Gear ≠ 3rd for Time	>= Please refer to Table 3 in Supporting Documents Shift Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
			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							
			If attained Gear ≠ 4th for time	>= Please refer to Table 3 in Supporting Documents	Shift 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	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			<u>Fail Case 4</u> 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					
			If attained Gear = 5th For Time >=	Please refer to Table 3 in Supporting Documents Shift Time (Sec)				
			If Above Conditions have been met, Increment 4th gear fail counter				>= 3 4th Gear Fail Count	
			and C1234 fail counter				or C1234 >= 14 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			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					(A) Output speed enable	>=	100	RPM		
					(B) Accelerator Pedal enable	>=	0.500488	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99023	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			
				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				
			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				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.
			2nd gear fail counter					>=	3 Fail Counter From 2nd Gear	
			3rd gear fail counter					>=	3 Fail Counter From 3rd Gear	
			4th gear fail counter					>=	3 Fail Counter From 4th Gear	
			total fail counter					>=	5 Total Fail Counter	
					TUT Enable temperature	>=	-6.65625 °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			
					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)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents rpm/sec				One Trip

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	<= 1.5291				
			Gear Ratio	>= 1.329				
			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.
									>=	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						
			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 Sec 17 in supporting documents				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio <= 1.5291					
			Gear Ratio >= 1.329					
			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			
					A OR B			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					(A) Output speed enable	>=	100	Nm		
					(B) Accelerator Pedal enable	>=	0.500488	Nm		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99023	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		
					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)	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 >= 9 Volt Ignition Voltage <= 31.99023 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
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
							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 <= 31.99023 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)	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)	Two Trips
							out of 5	Sample Time (Sec)	
					P2763 Status is not = Test Failed This Key On or Fault Active				
					Ignition Voltage >= 9 Volt				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.
					Ignition Voltage	<= 31.99023	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					
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	One Trip
								out of 5	MPH	
					P2764 Status is not	= Test Failed This Key On or Fault Active				
					Ignition Voltage	>= 9	Volt			
					Ignition Voltage	<= 31.99023	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			

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, 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 Ignition Voltage >= 9 Volt Ignition Voltage <= 31.99023 Volt Power Mode = Run				
				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 >= 3 sec Ignition Voltage >= 9 Volt Ignition Voltage <= 31.99023 Volt Power Mode = Run				
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: U0073 ECM: None			

Supporting Documents - MH8/T76 2D Tables

Table 1

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

Table 2

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	2.00	2.00	Sec

Table 3

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	3.50	3.50	Sec

Table 4

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

Table 5

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	3.00	3.00	Sec

Table 6

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

Table 7

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

Supporting Documents - MH8/T76 2D Tables

Table 8

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

Table 9

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

Table 10

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	8.85	3.75	1.31	0.28	0.28	Sec

Table 11

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	5.00	1.70	0.40	0.25	0.25	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	8.00	2.20	0.70	0.25	0.25	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	5.20	1.60	0.50	0.27	0.16	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	ºC
Curve	5.00	1.50	0.70	0.25	0.25	Sec

Supporting Documents - MH8/T76 2D Tables

Table 15

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

Table 16

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

Table 17

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

Table 18

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

Table 19

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

Table 20

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

Table 21

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

Supporting Documents - MH8/T76 3D Tables

3D_Table 1

X-Axis Calibration	%		0.00	2.00	5.00	25.00	100.00
Y-Axis Calibration	°C	-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
Table Calibration	RPM/Sec	-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

X-Axis Calibration	%		0.00	2.00	5.00	25.00	100.00
Y-Axis Calibration	°C	-6.67	8191.75	8191.75	8191.75	8191.75	8191.75
Table Calibration	RPM/Sec	-6.66	500.00	500.00	300.00	300.00	300.00
		40.00	500.00	500.00	300.00	300.00	300.00

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	<u>Fail Case 1</u> Substrate Temperature	>= 146.29688 ºC			>= 5 Fail Time (Sec)	One Trip
			<u>Fail Case 2</u> Substrate Temperature	>= 50 ºC			>= 2 Fail Time (Sec)	
			Ignition Voltage	>= 18 Volts				
			Note: either fail case can set the DTC					
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		
					Substrate Temp Lo	>= 0 ºC		
					Substrate Temp Hi	<= 170 ºC		
					Substrate Temp Between Temp Range for Time	>= 0.25 Sec		
					P0634 Status is	≠ Test Failed This Key On or Fault Active		
					Disable Conditions: **MIL not Illuminated for DTC's:**	TCM: None ECM: None		
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> Refer to Table 21 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 TCM substrate temp to power up temp Δ	>	Refer to Table 22 in supporting documents	ºC					
			Both conditions above required to increment fail counter					>=	3000	3	
			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)	
			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	>=	8.5996 Volts		
					Ignition Voltage Hi	<=	31.99 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 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Clutch used to exit brake torque active	=	CeTFT D_e_C 3_RatlE nbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>=	20	Sec		
					P0667 Status is	≠	Test Failed This Key On or Fault Active			
				Disable Conditions:	**MIL not Illuminated for DTC's:**	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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_ VoltageDir ectProp				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	<=	-249	ºC								
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>=	-249	ºC								
			Either condition above will satisfy the fail conditions								>=	60	Fail Timer (Sec)	
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	31.99	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							P0668 Status is	≠	Test Failed This Key On or Fault Active					
				Disable Conditions:			**MIL not Illuminated for DTC's:**	TCM: None						
								ECM: None						

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_VoltageDirectProp							Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= 249 ºC							
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= 249 ºC							
			Either condition above will satisfy the fail conditions						>= 60	Fail Timer (Sec)	
					TOSS Speed	>=	0	RPM			
					Toss Speed greater than above cal for	>=	0	Sec			
					TCC Slip	>=	0	RPM			
					TCC Slip greater than above cal for	>=	0	Sec			
					Ignition Voltage Lo	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	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.
					P0669 Status is	≠ Test Failed This Key On or Fault Active		
				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 22 in supporting documents ºC				Two Trips
			If transmission oil temp to power up temp Δ	> Refer to Table 20 in supporting documents ºC				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
			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)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean			
					Accelerator Position Signal Valid	=	TRUE	Boolean			
					Ignition Voltage Lo	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	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	Pct			
					Transmission Input Speed	<=	200	RPM			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					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		
					Set Brake Torque Active FALSE if above conditions are met for:	>=	20	Sec		
					P06AC 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,		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
								P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E						
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<=	-59	ºC					>=	60	Fail Time (Sec)	Two Trips
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	31.99	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							Toss Speed	>=	0	RPM				
							Toss Fail Timer	>=	0	Sec				
							TCC slip	>=	0	RPM				
							TCC Fail Timer	>=	0	Sec				
							P06AD 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 ECM: None						
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164	ºC					>= 60		Fail Time (Sec)	Two Trips
						Ignition Voltage Lo	>=	8.5996	Volts				
						Ignition Voltage Hi	<=	31.99	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					
				Disable Conditions:		**MIL not Illuminated for DTC's:**	TCM: None ECM: None						
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> Refer to Table 21 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 20 in supporting documents °C					
			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)	
			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	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	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	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			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Clutch used to exit brake torque active	=	CeTFT D_e_C 3_RatlE nbl			
					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			
				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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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_ VoltageDir ectProp				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 = Direct Proportional and Temp	<=	-74	ºC								
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	>=	-74	ºC								
			Either condition above will satisfy the fail conditions								>=	60	Fail Time (Sec)	
							TOSS	>=	0	RPM				
							TOSS above thresh for	>=	0	Sec				
							TCC slip	>=	0	RPM				
							TCC slip above thresh for	>=	0	Sec				
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	31.99	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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
			Disable Conditions:			**MIL not Illuminated for DTC's:**	TCM: P0716, P0717, P0722, P0723 ECM: None					
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	=	CeTFTI_e_ VoltageDir ectProp							Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>=	174 ºC							
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<=	174 ºC							
			Either condition above will satisfy the fail conditions							>=	60 Fail Time (Sec)	
						Ignition Voltage Lo	>=	8.5996	Volts			
						Ignition Voltage Hi	<=	31.99	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.
					P0713 Status is	≠ 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	>= 0 N*m		
					Engine Torque is	<= 1492 N*m		
					Engine Speed	>= 400 RPM		
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Vehicle Speed is	>= 0 Kph		
					Throttle Position is	>= 0 Pct		
					-------------- 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 RPM/Loop		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value			Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
								The previous requirement has been satisfied for	>=	0	Sec				
								Throttle Position Signal Valid	=	TRUE	Boolean				
								Engine Torque Signal Valid	=	TRUE	Boolean				
								Ignition Voltage	>=	8.5996	Volts				
								Ignition Voltage	<=	31.99	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
			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	>=	50	N*m				
								Engine Torque is	<=	1492	N*m				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
							Vehicle Speed	>=	16	Kph				
							Engine Torque Signal Valid	=	TRUE	Boolean				
							Ignition Voltage	>=	8.5996	Volts				
							Ignition Voltage	<=	31.99	Volts				
							Engine Speed	>=	400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							P0717 Status is not	=	Test Failed This Key On or Fault Active					
				Disable Conditions:			**MIL not Illuminated for DTC's:**							
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<=	70	RPM					>=	4.5	Fail Time (Sec)	One Trip
							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	>=	5.0003	Pct				
							Transmission Fluid Temperature	>=	-40	ºC				
							Disable this DTC if the PTO is active	=	1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage is	>=	8.5996	Volts		
					Ignition Voltage is	<=	31.99	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	=	complete			
					OR					
					Transmission Range is	=	Park or Neutral			
					Engine Torque is	>=	8191.8	N*m		
					Engine Torque is	<=	8191.8	N*m		
					Engine Torque Condition 2					
					Engine Torque is	>=	35	N*m		
					Engine Torque is	<=	1492	N*m		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					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	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	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	>=	210	RPM					>=	0.2 Enable Time (Sec)	One Trip
			Output Speed Delta	<=	8191	RPM					>=	0 Enable Time (Sec)	
			Output Speed Drop	>	650	RPM					>=	1.5 Output Speed Drop Recover Fail Time (Sec)	
							---------------------- Range_Disable	=	FALSE	Boolean			
							OR ---------------------- Neutral_Range_Enabl e	=	TRUE	Boolean			
							And Neutral_Speed_Enabl e are TRUE concurrently ----------------------	=	TRUE	Boolean			
							Transmission_Range _Enable	=	TRUE	Boolean			
							Transmission_Input_ Speed_Enable	=	TRUE	Boolean			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					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	>=	8.5996	Volts		
					Ignition Voltage is	<=	31.99	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		

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

					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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Input Clutch is not ---------------------	=	ON (Fully Applied)	ENUM		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for Transmission Output Speed	>	1	Seconds		
						>	70	RPM		
					And the acceleration of the Transmission Output Speed is	<	500	RPM/Loop Rate		
					And the acceleration of the Transmission Output Speed is ---------------------	>	0	RPM/Loop Rate		
					Transmission_Range _Enable is TRUE when one of the next four conditions is TRUE Transmission Range is	=	Neutral	ENUM		
					Transmission Range is	=	Reverse/Neutral Transitional	ENUM		
					Transmission Range is	=	Neutral/ Drive Transitional	ENUM		
					Range Change Delay Timer	>=	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: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123						
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>=	500	Kpa					>=	2	Enable Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met											
			(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	RPM					>=	4	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	3	TCC Stuck Off Fail Counter	
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	31.99	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		
					Engine Torque Lo	>=	50 N*m		
					Engine Torque Hi	<=	1492 N*m		
					Throttle Position Lo	>=	8.0002 Pct		
					Throttle Position Hi	<=	99.998 Pct		
					2nd Gear Ratio Lo	>=	2.671 Ratio		
					2nd Gear Ratio High	<=	3.073 Ratio		
					3rd Gear Ratio Lo	>=	1.713 Ratio		
					3rd Gear Ratio High	<=	1.9709 Ratio		
					4th Gear Ratio Lo	>=	1.3151 Ratio		
					4th Gear Ratio High	<=	1.5129 Ratio		
					5th Gear Ratio Lo	>=	0.9301 Ratio		
					5th Gear Ratio Hi	<=	1.0699 Ratio		
					6th Gear Ratio Lo	>=	0.6901 Ratio		
					6th Gear Ratio High	<=	0.7939 Ratio		
					Transmission Fluid Temperature Lo	>=	20 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	>=	-20 RPM				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			TCC Slip Speed	<=	30	RPM								
											>=	2.5	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	6	Fail Counter	
							Run TCC Stuck On Test Enable Criteria:							
							Gear Ratio	<=	3.073	Ratio				
							Gear Ratio	>=	0.6901	Ratio				
							Engine Speed Hi	<=	6500	RPM				
							Engine Speed Lo	>=	500	RPM				
							Vehicle Speed HI	<=	511	KPH				
							Vehicle Speed Lo	>=	16	KPH				
							Stuck On During Upshift Enabled	=	0	Boolean				
							If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm				
							Down Shift In Progress	=	FALSE	Boolean				
							Current Gear	≠	1st Gear Locked	Boolean				
							Engine Torque Hi	<=	1492	Nm				
							Engine Torque Lo	>=	80	Nm				
							Current Range	≠	Neutral	Range				
							Current Range	≠	Reverse	Range				
							Transmission Sump Temperature	<=	130	ºC				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Transmission Sump Temperature	>=	20	ºC		
					Throttle Position Hyst High	>=	8.0002	Pct		
					Throttle Position Hyst Low	<=	2.9999	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		
					TCC Mode	=	OFF			
					Common Enables: Ignition Voltage	>=	8.5996	V		
					Ignition Voltage	<=	31.99	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		

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
						P0305, P0306, P0307, P0308, P0401, P042E+W 597						
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 200 RPM								Two Trips
			Commanded Gear	= 1st Lock rpm								
			Gear Ratio	<= 1.4849854					>= 0.3 Fail Tmr			
			Gear Ratio	>= 1.3430176					= 8 Fail Counts			
			If the above parameters are true									
									≠ 0 Neutral Timer (Sec)			
									>= 0.3 Fail Timer (Sec)			
									>= 8 Counts			
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Transmission Fluid Temperature	>=	0	°C				
					Shift is Complete							
					TPS	>=	0.3998	%				
					OR							
					Output Speed	>=	0	RPM				
					Throttle Position Signal Valid from ECM	=	TRUE	Boolean				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
								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	>=	200	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	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	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	>=	0	RPM			
					OR						
					TPS	>=	0.3998	%			
					Shift is Complete						
					Transmission Fluid Temperature	>=	0	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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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 Gear Box Slip	= 1st Locked >= 200 RPM			Please Refer to Table 5 in Supporting Documents >= 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 Shift to 2nd Commanded Gear Previous Gear Ratio									
				= 1st Locked Gear								
			Gear Ratio	<= 3.0159912								
			Gear Ratio	>= 2.7280273								
			If the above parameters are true						>=	1	sec	
									>=	5	counts	
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi	<=	31.99	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	>=	0.3998	%				
					Shift is Complete							
					Transmission Fluid Temperature	>=	0	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						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd Gear Commanded Gear	= 3rd Gear				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			Gearbox Slip	>= 200	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	
			and C35R Fail counter					>= 14	or 3-5R Clutch Fail Counts	
		Fail Case 2	Case: Steady State 5th Gear							
			Commanded Gear	= 5th	Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
			Gearbox Slip	>= 200	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)							
			It the above condiations are true, Increment 5th gear fail counter							>= 3	5th Gear Fail Counts	
			and C35R Fail counter							>= 14	or 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			

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 A OR B	>=	0	RPM		
					(A) Output speed enable	>=	16	RPM		
					(B) Accelerator Pedal enable	>=	0.3998	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	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	>=	0	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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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)	<u>Fail Case 1</u> Case: Steady State 1st Attained Gear slip	>= 200 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 Gear Ratio If the above parameters are true	<= 1.93396 >= 1.75			>= 0.75 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	
			Fail Case 2 Case: Steady State 2nd 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 Table 17 in supporting documents	rpm/sec			
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 in supporting documents	rpm/sec			
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 19 in supporting documents	Sec			
			Intrusive test: (CB26 clutch exhausted) Gear Ratio	<=	1.93396				
			Gear Ratio	>=	1.75				
			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.
									>=	0.75	Fail Timer (Sec)	
									>=	1	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 Table 17 in supporting documents	rpm/sec						
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 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 19 in supporting documents Sec						
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= >=	1.0500488 0.9499512			>= >= >=	0.75 1 3	Fail Timer (Sec) Fail Count in 4th Gear or 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 Table 17 in supporting documents	rpm/sec						
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 in supporting documents	rpm/sec						
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 19 in supporting documents	Sec						
			Intrusive test: (CB26 clutch exhausted)								Fail Timer (Sec)	
			Gear Ratio	<=	1.0500488				>=	0.75		
			Gear Ratio	>=	0.9499512				>=	1	counts	

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						>= 0.75 Fail Timer (Sec)		
									>= 1 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	>=	16	Nm			
					(B) Accelerator Pedal enable	>=	0.3998	Nm			
					Ignition Voltage Lo	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	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	>=	5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	1492	Nm		
					Transmission Fluid Temperature	>=	0	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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above conditions are true run appropriate Fail 1 Timers Below:					
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>= 1.2001953 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 (5-4 shifting with Closed Throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 1.2001953	Fail Time (Sec)			Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, sec and Reference Supporting Table 15 for Fail Timer 2	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers						
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			3rd gear fail counter						>=	3	3rd gear fail counts	
											OR	
			5th gear fail counter						>=	3	5th gear fail counts	
											OR	
			Total fail counter						>=	5	total fail counts	
					Trans oil temperature	>	0	°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	>=	350	RPM				
					input speed limit for TUT	>=	200	RPM				
					TUT Enable temperature	>=	0	°C				
					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					

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)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear					One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
			Gear slip	>=	200 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 Refer to Table 3 in supporting documents	Enable Time (Sec)					
			if the above conditions have been met								
			Increment 4th Gear Fail Counter						>=	2	4th Gear Fail Count OR
			and C456 Fail Counters						>=	14	C456 Fail Counts
			Fail Case 2 Case: Steady State 5th Gear								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
			Gear slip	>=	200 RPM			>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 6th gear								
			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	
			<u>Fail Case 3</u> 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	>= 200 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 Refer to Table 3 in supporting documents	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			

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 A OR B	>=	0 RPM		
					(A) Output speed enable	>=	16 RPM		
					(B) Accelerator Pedal enable	>=	0.3998 Pct		
					Common Enable Criteria				
					Ignition Voltage Lo	>=	8.5996 Volts		
					Ignition Voltage Hi	<=	31.99 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	>=	0 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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1	Case: Steady State 1st				One Trip
				Attained Gear slip >= 200 RPM				

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 Gear Ratio If the above parameters are true	<= >=	1.4849854 1.3430176			>= >= >=	0.75 2 3	Fail Timer (Sec) Fail Count in 1st Gear or Total Fail Counts	
			Fail Case 2 Case Steady State 2nd								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 17 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 in supporting documents rpm/sec				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 19 in supporting documents Sec				
			Intrusive test: (CB26 clutch exhausted) Gear Ratio	<=	1.4849854				
			Gear Ratio	>=	1.3430176				
			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.
									>=	0.75	Fail Timer (Sec)	
									>=	1	Fail Count in 2nd Gear or	
									>=	3	Total fail counts	
			Fail Case 3	Case Steady State 3rd								
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 17 in supporting documents	rpm/sec						
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 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 19 in supporting documents Sec								
			Intrusive test: (C35R clutch exhausted) Gear Ratio <= 1.4849854 Gear Ratio >= 1.3430176 If the above parameters are true						>= 0.75 Fail Timer (Sec)			
									>= 1 Fail Count in 3rd Gear			
									OR			
									>= 3 Total Fail Counts			
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurized	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Minimum output speed for RVT A OR B	>=	0	Nm		
					(A) Output speed enable	>=	16	Nm		
					(B) Accelerator Pedal enable	>=	0.3998	Nm		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	1492	Nm		
					Transmission Fluid Temperature	>=	0	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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command				
			Range Shift Status	≠	Initial Clutch Control				
			Attained Gear Slip	<=	40	RPM			
			If the above conditions are true increment appropriate Fail 1 Timers Below:						
			fail timer 1 (4-1 shifting with throttle)	>=	1.2001953	Fail Time (Sec)			
			fail timer 1 (4-1 shifting without throttle)	>=	1.2001953	Fail Time (Sec)			
			fail timer 1 (4-2 shifting with throttle)	>=	1.2001953	Fail Time (Sec)			
			fail timer 1 (4-2 shifting without throttle)	>=	1.2001953	Fail Time (Sec)			
			fail timer 1 (4-3 shifting with throttle)	>=	1.2001953	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 (4-3 shifting without throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>= 1.2001953	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, sec and Reference Supporting Table 15 for Fail Timer 2	

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	
					Trans oil temperature	>	0	ºC				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				
					Command / Attained Gear	≠	1st	Boolean				
					High Side Driver ON	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					output speed limit for TUT	>=	350	RPM		
					input speed limit for TUT	>=	200	RPM		
					TUT Enable temperature	>=	0	ºC		
					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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
								P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
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				

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 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)	
			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						

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	=	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				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean				
			Tap Up Switch ON	=	TRUE	Boolean				
			NOTE: Both Failcase1 and Failcase 2 Must Be Met						>= 600 Fail Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value			Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
								Time Since Last Range Change	>=	1	Enable Time (Sec)		
								Ignition Voltage Lo	>=	8.5996	Volts		
								Ignition Voltage Hi	<=	31.99	Volts		
								Engine Speed Lo	>=	400	RPM		
								Engine Speed Hi	<=	7500	RPM		
								Engine Speed is within the allowable limits for	>=	5	Sec		
								P0815 Status is	≠		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				
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	<u>Fail Case 1</u>	Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	0	Boolean						Special No Trip

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 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				
			Tap Down Switch Stuck in the Down Position in Range Neutral 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 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						
			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						

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 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						
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean						
			NOTE: Both Failcase1 and Failcase 2 Must Be Met						>=	600	sec	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
					Time Since Last Range Change	>=	1	Enable Time (Sec)			
					Ignition Voltage Lo	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			
					P0816 Status is	≠		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					
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	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	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.
							P0826 Status is	≠	Test Failed This Key On or Fault Active				
				Disable Conditions:			**MIL not Illuminated for DTC's:**		TCM: P1761 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							>=	18	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 CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>	50	Kpa						
							Transmission Fluid Temperature Lo	>=	0	ºC		
							Transmission Fluid Temperature Hi	<=	120	ºC		
							Ignition Voltage Lo	>=	8.5996	Volts		
							Ignition Voltage Hi	<=	31.99	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	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure	>= 700 KPa				Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 8 for Delay Timer Cal Sec				
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter				>= 20 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 CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa						
					Transmission Fluid Temperature Lo	>=	0	ºC		
					Transmission Fluid Temperature Hi	<=	120	ºC		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	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	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter	<= 50 KPa See Table >= 6 for Delay Sec Timer Cal			>= 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 above this value to re-enable fail logic. Results in one fail count per clutch transition	>	50	kpa						
							Transmission Fluid Temperature Lo	>=	0	ºC		
							Transmission Fluid Temperature Hi	<=	120	ºC		
							Ignition Voltage Lo	>=	8.5996	Volts		
							Ignition Voltage Hi	<=	31.99	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	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 Sec Timer Cal			>= 8 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	>=	0	ºC		
					Transmission Fluid Temperature Hi	<=	120	ºC		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	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)	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			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip
					Ignition Voltage >= 8.5996 Volts			
					Ignition Voltage <= 31.99 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					
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 out of 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip
						Ignition Voltage	>=	8.5996	Volts			
						Ignition Voltage	<=	31.99	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				
			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)	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)	
					Ignition Voltage	>=	8.5996	Volts				
					Ignition Voltage	<=	31.99	Volts				
					Engine Speed	>=	400	RPM				
					Engine Speed	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					P0967 Status is not	=	Test Failed This Key On or Fault Active					
			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)	One Trip
									out of	0.375	Sample Time (Sec)	
					P0970 Status is not	=	Test Failed This Key On or Fault Active					
					Ignition Voltage	>=	8.5996	Volts				
					Ignition Voltage	<=	31.99	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			
						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)	One Trip
										out of 0.375	Sample Time (Sec)	
						P0971 Status is not	=	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	8.5996	Volts			
						Ignition Voltage	<=	31.99	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.
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)	One Trip
											out of	1.5	Sample Time (Sec)	
							P0973 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage	>=	8.5996	Volts				
							Ignition Voltage	<=	31.99	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)	Two Trips
											out of	1.5	Sample Time (Sec)	

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	>=	8.5996	Volts				
					Ignition Voltage	<=	31.99	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:**								
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	Two Trips
									out of	1.5	Sec	
					P0976 Status is not	=	Test Failed This Key On or Fault Active					
					Ignition Voltage	>=	8.5996	Volts				
					Ignition Voltage	<=	31.99	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								>= out of	1.2 1.5	Sec Sec	One Trip
							P0977 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	= >= <= >= <= >=	Test Failed This Key On or Fault Active 8.5996 31.99 400 7500 5	 Volts Volts RPM RPM 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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			Hydraulic Delay Timer (Table Based)	>= See Table 9 for Delay Timer Cal Sec								
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter						>=	18	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	>=	0	ºC				
					Transmission Fluid Temperature Hi	<=	120	ºC				
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi	<=	31.99	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	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure	>= 700 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 Pressurized 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	< 700 kpa							
					Transmission Fluid Temperature Lo	>=	0	ºC			
					Transmission Fluid Temperature Hi	<=	120	ºC			
					Ignition Voltage Lo	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	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	Two Trips
					Once this evaluation is complete the system will allow the valve to get back into position by delaying the next test for	= 1 Seconds		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
					M2 Solenoid is Commanded On	=	TRUE Boolean		
					Current Gear ≠ 2nd Gear	≠	2nd Gear Gear		
					Calcaluted line pressure is	>=	1300 kPa		
					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	=	0.5 Sec		
					Upshift is In Progress	=	FALSE Boolean		
					Input Speed Sensor Signal Hyst High (enabled above this value)	>=	1200 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					TCC Stuck On Enable Criteria:					
					Gear Ratio	<=	3.073	Ratio		
					Gear Ratio	>=	0.6901	Ratio		
					Engine Speed Hi	<=	6500	RPM		
					Engine Speed Lo	>=	500	RPM		
					Vehicle Speed HI	<=	511	KPH		
					Vehicle Speed Lo	>=	16	KPH		
					Stuck On During Upshift Enabled	=	0	Boolean		
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear	≠	1st Gear Locked	Boolean		
					Engine Torque Hi	<=	1492	Nm		
					Engine Torque Lo	>=	80	Nm		
					Current Range	≠	Neutral	Range		
					Current Range	≠	Reverse	Range		
					Transmission Sump Temperature	<=	130	ºC		
					Transmission Sump Temperature	>=	20	ºC		
					Throttle Position Hyst High	>=	8.0002	Pct		
					Throttle Position Hyst Low	<=	2.9999	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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					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		
					Ignore Air Purge if value = true	=	0	Boolean		
					TCC Mode	=	OFF			
					Common Enables: Ignition Voltage	>=	8.5996	V		
					Ignition Voltage	<=	31.99	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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch- Invalid Range	<u>Fail Case 1</u> Current range	= "Transition Range State al 1"				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
			Previous range	!=	CeTRGR_ e_PRNDL_ Drive6 Range State						
			Previous range	!=	CeTRGR_ e_PRNDL_ Drive4 Range State						
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE Boolean						
			Engine Torque	>=	-50 Nm						
			Engine Torque	<=	1492 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	
			<u>Fail Case 2</u> Current range	=	"Transition al 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	=	"Transition al 13"	Previous range	!=	CeTRG R_e_P RNDL_ Drive3					
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE Boolean	Previous range	!=	CeTRG R_e_P RNDL_ Drive2					
			Engine Torque	>=	-1492 Nm	IMS is 7 position configuration	=	0 Boolean					
			Engine Torque	<=	1492 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				Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8				
			Current range	=	"Transition al 2" or "Transition al 8"						
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					
			Steady State Engine Torque	>=	100	Nm					
			Steady State Engine Torque	<=	1492	Nm					
			If the above conditions are present Increment Fail Timer						>= 0.225	Second s	
			If the above Condtions have been met, Increment Fail Counter						>= 15	Fail Counts	
			Fail Case 5								
			Current range	=	"Transition al 11"						
			Engine Torque	>=	-50	Nm					

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					
			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):				
			or		Current Range ≠	"Transiti onal 11"			
			ECM Park/Neutral Message	= "Park/Neutr al"	or				
			and		Last positive state ≠ Neutral				
			Current Range	≠ Park, Neutral, Reverse, Transitiona l 8, or Transitiona l 11	or				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.
			and			Previous transitional state	≠	Transitional 8 and Illegal			
			A Open Circuit (See Definition)	= FALSE	Boolean	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 encoded value of ABCP =1111 Range						
			Input Speed	>= 150	RPM						
			Reverse Trans Ratio	<= 2.6783447	ratio						
			Reverse Trans Ratio	>= 3.081543	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	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
								P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumeration					One Trip
			The following events must occur Sequentially								
			Initial Engine speed	<=	50	RPM			>=	0.25	Enable Time (Sec)
			Then								
			Engine Speed Between Following Cals								
			Engine Speed Lo Hist	>=	50	RPM					
			Engine Speed Hi Hist	<=	480	RPM			>=	0.06875	Enable Time (Sec)
			Then								
			Final Engine Speed	>=	525	RPM					
			Final Transmission Input Speed	>=	200	RPM			>=	1.25	Fail Time (Sec)
							DTC has Ran this Key Cycle?	= FALSE Boolean			
							Ignition Voltage Lo	>= 6 V			
							Ignition Voltage Hi	<= 31.99 V			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
							Ignition Voltage Hyst High (enables above this value)	>=	5	V			
							Ignition Voltage Hyst Low (disabled below this value)	<=	2	V			
							Transmission Output Speed	<=	90	rpm			
							P1915 Status is	≠	Test Failed This Key On or Fault Active				
				Disable Conditions:			**MIL not Illuminated for DTC's:**	TCM: P0722, P0723 ECM: None					
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case 1	Case: Steady State 2nd Gear									One Trip
				Gear slip	>=	200 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 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 or	
			and CB26 Fail Count						>=	14	CB26 Fail Count	
			Fail Case 2	Case: Steady State 6th Gear								
				Gear slip	>=	200	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 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				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT	>=	0	RPM				
					A OR B							
					(A) Output speed enable	>=	16	RPM				
					(B) Accelerator Pedal enable	>=	0.3998	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					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	>=	0	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,					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If above coditons are true, increment appropriate Fail 1 Timers Below:						
			fail timer 1 (2-1 shifting with throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>= 1.2001953	Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>= 1.2001953	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 (6-5 shifting without throttle)	>= 1.2001953 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, sec and Reference Supporting Table 15 for Fail Timer 2	
			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	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			6th gear fail counter						>=	3	Fail Counter From 6th Gear OR	
			total fail counter						>=	5	Total Fail Counter	
					Trans oil temperature	>	0	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	>=	350	RPM				
					input speed limit for TUT	>=	200	RPM				
					TUT Enable temperature	>=	0	ºC				
					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							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						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	>= 200 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	<= 3.0159912						
			Gear Ratio	>= 2.7280273						
			If the above parameters are true				>=	0.75	Fail Timer (Sec)	
							>=	2	Fail Count in 1st Gear	
									or	
							>=	3	Total Fail Counts	
			Fail Case 2 Case: Steady State 3rd 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 Table 17 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 in supporting documents rpm/sec				
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 19 in supporting documents Sec				
			Intrusive test: (C35R clutch exhausted) Gear Ratio	<=	3.0159912				
			Gear Ratio	>=	2.7280273				
			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.
									>=	0.75	Fail Timer (Sec)	
									>=	1	Fail Count in 3rd Gear	
									>=	3	or Total Fail Counts	
			Fail Case 3	Case: Steady State 4rd Gear								
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 17 in supporting documents	rpm/sec						
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 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 19 in supporting documents Sec						
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= >=	0.7790527 0.7049561			>=	0.75	Fail Timer (Sec)	
								>=	1	Fail Count in 4th Gear	
										or Total Fail Counts	
								>=	3		
			<u>Fail Case 4</u> Case: Steady State 5th 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 Table 17 in supporting documents	rpm/sec			
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to Table 18 in supporting documents	rpm/sec			
			If the Above is True for Time	>=	Table Based Time Please Refer to Table 19 in supporting documents	Sec			
			Intrusive test: (C35R clutch exhausted) Gear Ratio	<=	0.7790527				
			Gear Ratio	>=	0.7049561				
			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.
									>=	0.75	Fail Timer (Sec)
									>=	1	Fail Count in 5th 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	>=	0	Nm			
					A OR B						
					(A) Output speed enable	>=	16	Nm			
					(B) Accelerator Pedal enable	>=	0.3998	Nm			
					Ignition Voltage Lo	>=	8.5996	Volts			
					Ignition Voltage Hi	<=	31.99	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
					if Attained Gear=1st FW Engine Torque Enable	>=	20 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	1492 Nm		
					Transmission Fluid Temperature	>=	0 °C		
					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,			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required		Mil Illum.
						P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E					
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean					>= 0.3	Fail Time (Sec)	One Trip
									out of 0.375	Sample Time (Sec)	
					P2770 Status is not	=	Test Failed This Key On or Fault Active				
					Ignition Voltage	>=	8.5996	Volts			
					Ignition Voltage	<=	31.99	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		
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip
					P2721 Status is not	= Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 8.5996 Volts		
					Ignition Voltage	<= 31.99 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)	P2723	Pressure Control (PC) Solenoid E Stuck Off	<u>Fail Case 1</u> Case: Steady State 1st Gear					One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			Gear slip	>=	200 RPM			>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			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	
			<u>Fail Case 2</u> Case: Steady State 2nd Gear							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions	Time Required			Mil Illum.
			Gear slip	>=	200	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 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									

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			Gear slip	>= 200 RPM				>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 4th gear							
			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							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions				Time Required			Mil Illum.
			Gear slip	>=	200	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 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					

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 A OR B	>= 0	RPM		
					(A) Output speed enable	>= 16	RPM		
					(B) Accelerator Pedal enable	>= 0.3998	Pct		
					Common Enable Criteria				
					Ignition Voltage Lo	>= 8.5996	Volts		
					Ignition Voltage Hi	<= 31.99	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	>= 0	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,			

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-6 shifting with throttle)	>= 1.2001953 sec				
			fail timer 1 (2-6 shifting without throttle)	>= 1.2001953 sec				
			fail timer 1 (3-5 shifting with throttle)	>= 1.2001953 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 1.2001953 sec				
			fail timer 1 (4-5 shifting with throttle)	>= 1.2001953 sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (4-5 shifting without throttle)	>= 1.2001953 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 1.2001953 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 1.2001953 sec			Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, sec and Reference Supporting Table 15 for Fail Timer 2	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers					
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			2nd gear fail counter						>=	3	Fail Counter From 2nd Gear	
			3rd gear fail counter						>=	3	Fail Counter From 3rd Gear	
			4th gear fail counter						>=	3	Fail Counter From 4th Gear	
			total fail counter						>=	5	Total Fail Counter	
					Trans oil temperature	>	0	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	>=	350	RPM				
					input speed limit for TUT	>=	200	RPM				
					TUT Enable temperature	>=	0	ºC				
					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		

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)	<u>Fail Case 1</u> Case: 5th Gear					One Trip
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 17 in supporting documents rpm/sec				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 18 in supporting documents rpm/sec				
			If the Above is True for Time	>= Table Based Time Please Refer to Table 19 in supporting documents Sec				
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio	<= 1.4849854 >= 1.3430176				

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				>=	0.75	Fail Timer (Sec)	
							>=	1	Fail Count in 5th Gear	
							>=	3	OR Total Fail Counts	
			Fail Case 2 Case: 6th Gear							
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 17 in supporting documents rpm/sec						
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to Table 18 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 19 in supporting documents Sec								
			Intrusive test: (CB26 clutch exhausted) Gear Ratio <= 1.4849854 Gear Ratio >= 1.3430176 If the above parameters are true						>= 0.75 Fail Timer (Sec)			
									>= 1 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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
					Minimum output speed for RVT A OR B	>=	0	Nm		
					(A) Output speed enable	>=	16	Nm		
					(B) Accelerator Pedal enable	>=	0.3998	Nm		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	1492	Nm		
					Transmission Fluid Temperature	>=	0	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					

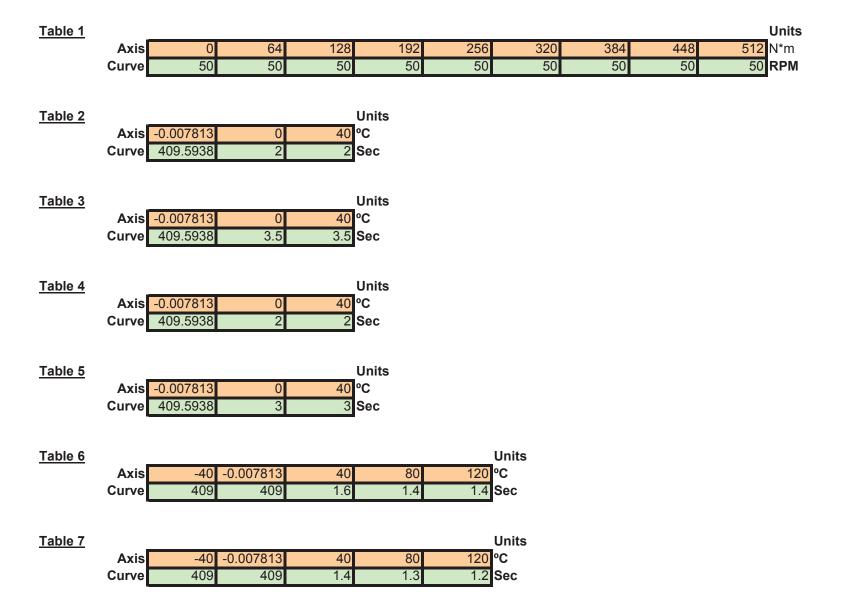| Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			
Variable Bleed Solenoid (VBS)	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 out of 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P2729 Status is not	=	Test Failed This Key On or Fault Active		
					Ignition Voltage	>=	8.5996 Volt		
					Ignition Voltage	<=	31.99 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)	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
							out of 0.375 Sample Time (Sec)	
					P2730 Status is not	=	Test Failed This Key On or Fault Active		
					Ignition Voltage	>=	8.5996 Volt		
					Ignition Voltage	<=	31.99 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)	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)	One Trip
										out of	5 Sample Time (Sec)	
						P2763 Status is not	=	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	8.5996	Volt			
						Ignition Voltage	<=	31.99	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			

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, P0659 ECM: None					
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	=	TRUE Boolean					>= 4.4 MPH out of 5 MPH		One Trip
						P2764 Status is not	=	Test Failed This Key On or Fault Active				
						Ignition Voltage	>=	8.5996	Volt			
						Ignition Voltage	<=	31.99	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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value			Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
			Delay timer	>=	0.1125	sec					Out of	70	Sample Counts (≈ 11 seconds)	
							Stabilization delay	>=	3	sec				
							Power Mode	=	Run					
							Ignition Voltage Lo	>=	8.5996	Volt				
							Ignition Voltage Hi	<=	31.99	Volt				
				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	>=	3	sec				
							Power Mode	=	Run					
							Ignition Voltage Lo	>=	8.5996	Volt				
							Ignition Voltage Hi	<=	31.99	Volt				
				Disable Conditions:			**MIL not Illuminated for DTC's:**	TCM: U0073						
								ECM: None						

Supporting Documents - MH2/T43 Tables

Table 1

									Units
Axis	0	64	128	192	256	320	384	448	512 N*m
Curve	50	50	50	50	50	50	50	50	50 RPM

Table 2

				Units
Axis	-0.007813	0	40	°C
Curve	409.5938	2	2	Sec

Table 3

				Units
Axis	-0.007813	0	40	°C
Curve	409.5938	3.5	3.5	Sec

Table 4

				Units
Axis	-0.007813	0	40	°C
Curve	409.5938	2	2	Sec

Table 5

				Units
Axis	-0.007813	0	40	°C
Curve	409.5938	3	3	Sec

Table 6

					Units
Axis	-40	-0.007813	40	80	120 °C
Curve	409	409	1.6	1.4	1.4 Sec

Table 7

					Units
Axis	-40	-0.007813	40	80	120 °C
Curve	409	409	1.4	1.3	1.2 Sec

Supporting Documents - MH2/T43 Tables

Table 8

Axis	-40	-0.007813	40	80	120	°C
Curve	409	409	1.6	1.5	1.4	Sec

Table 9

Axis	-40	-0.007813	40	80	120	°C
Curve	409	409	1.3	1.2	1.1	Sec

Table 10

Axis	-40	-20	0	30	110	°C
Curve	3.099609	1.900391	1.099609	0.799805	0.599609	Sec

Table 11

Axis	-40	-20	0	30	110	°C
Curve	1.799805	1.200195	0.599609	0.400391	0.299805	Sec

Table 12

Axis	-40	-20	0	30	110	°C
Curve	2.200195	1.400391	0.900391	0.700195	0.400391	Sec

Table 13

Axis	-40	-20	0	30	110	°C
Curve	2.599609	1	0.5	0.299805	0.200195	Sec

Table 14

Axis	-40	-20	0	30	110	°C
Curve	3	0.900391	0.5	0.299805	0.200195	Sec

Table 15

Axis	-40	-30	-20	-10	0	10	20	30	40	°C
Curve	0	0	0	0	0	0	0	0	0	Sec

Supporting Documents - MH2/T43 Tables

Table 16

				Units
Axis	-0.007813	0	40	ºC
Curve	409.5938	1.5	1.5	Sec

Table 17

				Units
Axis	-0.007813	0	40	ºC
Curve	8191	1676	1676	Unknown Unit

Table 18

				Units
Axis	-0.007813	0	40	ºC
Curve	8191	500	500	Unknown Unit

Table 19

				Units
Axis	-0.007813	0	40	ºC
Curve	0.4	0.35	0.3	Sec

Table 20

									Units
Axis	-40.10156	-40	-20	0	30	60	100	149	149.1016	ºC
Curve	255.9961	50	45	40	34	25	20	20	255.9961	ºC

Table 21

									Units
Axis	-40.10156	-40	-20	0	30	60	100	149	149.1016	ºC
Curve	255.9961	50	45	40	34	25	20	20	255.9961	ºC

Table 22

									Units
Axis	-40.10156	-40	-20	0	30	60	100	149	149.1016	ºC
Curve	255.9961	10	8	8	8	8	8	8	255.9961	ºC