Component/	Fault	Monitor Strategy	Malfunction		Thresi		Secondary		Enable		Time	Mil
System	Code	Description	Criteria		Valu	ie	Malfunction		Condition	าร	Required	Illun
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck at a high magnitude in range	Lateral accleration magnitude	<=	3.85	g's						Spec No M
			Lateral accleration magnitude	>=	0.53	g's						
			Lateral accleration magnitude is within the range above for	>=	120	Sec						
							Lateral accleration magnitude	<=	3.85	g's		
							Lateral accleration magnitude	>=	0.53	g's		
							Lateral accleration magnitude is within the range above for	>=	90	Sec		
							Diagnostic shifting override command	=	FALSE	Boolean		
							Attained Gear State	=	1st through 6th			
							Attained Gear Slip	<=	20	RPM		
							Transmission Type	=	Clutch to Clutch Transmission			
							High Side Driver 1 On	=	TRUE	Boolean		
							Vehicle Speed	>=	15	kph		
							Battery Voltage	<=	31.99902	Volts		
							Battery Voltage	>=	9	Volts		
							Battery voltage is within the allowable limits for		0.1	Sec		
							Ignition Voltage	<=	31.99902	Volts		
							Ignition Voltage	>=	9	Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Cystom	Gode	Beschiption	Omerina			= FALSE Boolean >= 0.1 Sec TCM: If calibrated to illuminate the MIL (P0716, P0717, P0721, P0722, P0723, P07BF, P07C0, P077B, P077C, P077D, P215C, U0073)		
Transmission Control Module (TCM)	P0601	Transmission Electro- Hydraulic Control Module Read Only Memory	Incorrect program/calibration s checksum		le MIL not Illuminated iti for DTC's:		>= 5 Fail Counts	One Trip
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 Boolea	n		Runs Contino usly	One Trip
				Disab Cond on				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threst Valu		Secondary Malfunction	Enable Conditions			me uired	Mil Illum
Transmission Control Module (TCM)	D0004	Transmission Electro- Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	=	TRUE	Boolean			>=	5	Fail Counts Sample Counts	One Trip
						Disable Conditi ons:					Count	
Transmission Control Module (TCM)	F002F	Transmission Electro- Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	=	TRUE	Boolean				Runs Contino usly		One Trip
						Disable Conditi ons:						
Transmission Control Module (TCM)	P0634	Transmission Electro- Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>=	144	°C			>=	5	Fail Time (Sec)	One Trip
			Fail Substrate Case Substrate Temperature		50	°C			>=	2	Fail Time (Sec)	
			Ignition Voltage	>=	18	Volts						
			Note: either fail case can set the DTC									
							Ignition Voltage Lo Ignition Voltage Hi					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Valu		Secondary Malfunction	Enable Condition				ime quired	Mil Illum.
System	Code	Description	Criteria	Valu	ie .	Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	>= 0 <= 240 >= 0.25 Test Failed	°C °C Sec		Rec	quirea	mum.
					Disable Conditi ons:							
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE	Boolean				>= out of	4	Fail Counts Sample Counts	One Trip
						P0658 Status is not High Side Driver 1 On	Test Failed This Key On or Fault Active True	Boolean				
					Disable Conditi ons:							

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	IIIu
Fransmission 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 > supportin °C g documen ts				Tv Tri
			If TCM substrate temp to power up temp Δ	Refer to Table 20 in supportin °C g documen ts				
			Both conditions above required to increment fail counter				Fail Counts >= 3000 (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Ou 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Ou 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 Condition		Time Required	M Illu
Oystem	Code	Безсприон	Ontona	7 0	Accelerator Position Signal Valid		TRUE	Boolean	qucu	
					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	>=	0.1	Sec		
					Brake torque active	=	FALSE			
					Below describes the brake torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle	>=	30.0003	Pct		
					Transmission Input Speed		200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					РТО	=	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	r		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
<u>-</u>					Clutch used to exit brake torque active			
					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:			
					P0667 Status is	Test Failed This Key On ≠ or Fault Active		
				Disable Conditi ons:	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		
Fransmission Control Module TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	CeTFTI_ e_Voltag eInverse Prop				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition	s			ime uired	Mil Illum.
Oystem	Odde	Besonption	If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<=	254	°C				_				
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	>=	254	°C								
			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		0.1	Sec				
							P0668 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditi ons:			Л: None Л: None					
Fransmission Control Module TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	_ (CeTFTI_ e_Voltag eInverse Prop									Two Trips

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary		Enable				me	Mil
System	Code	Description	Criteria		Valu	е	Malfunction		Conditions	5		Req	uired	Illum
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>=	-254	°C								
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<=	-254	°C								
			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				ı
							Engine Speed Hi	<=	7500	RPM				ı
							Engine Speed is within the allowable limits for	>=	0.1	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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Estimated Motor Power Loss Fault	= FALSE		
				Disable Conditi ons:	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 If transmission oil temp to power up temp Δ	> supportin °C				Two Trips
			Both conditions above required to increment fail counter				>= 3000 (100ms loop)	-
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Ou 3750 Sample Counts (100ms loop)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enable Conditio			Tir		Mi Illui
System	Code	Description	Criteria	value	Waltunction		Conditio	ns		Requ	IIrea	IIIui
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
									Ou t of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid		TRUE	Boolean				
					Accelerator Position Signal Valid		TRUE	Boolean				
					Ignition Voltage Lo	>=	9	Volts				ı
					Ignition Voltage Hi	<=	31.99023	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	0.1	Sec				
					Brake torque active	=	FALSE					ı
					Below describes the brake torque entry criteria							
					Engine Torque	>=	90	N*m				
					Throttle	>=	30.0003	Pct				
					Transmission Input Speed		200	RPM				
					Vehicle Speed	<=	8	Kph				
					Transmission Range	≠	Park					
					Transmission Range	≠	Neutral					
					PTO	=	Not Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Set Brake Torque Active TRUE if above conditions are met for:	7 200		
					Below describes the brake torque exit criteria			
					Brake torque entry criteria			
					Clutch hydraulic pressure			
					Clutch used to exit brake torque active			
					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:			
					P06AC Status is	Test Failed This Key On ≠ or Fault Active		

Component/	Fault	Monitor Strategy	Malfunction	Thresh		Secondary Malfunction	Enable				me	Mil
System	Code	Description	Criteria	Valu		Malfunction	Condition			Req	uired	Illum.
Oystem	Odde	Description	Ontena			MIL not Illuminated		68, 06AE, 713, 723, 966, 971, 2721, 102, 107, 172, 201, 204, 207, 301, 304, 307,		,		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= 254	°C	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P06AD Status is For Hybrids, below conditions must also	<= 31.99023 >= 400 <= 7500 >= 0.1 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec	>=	60	Fail Time (Sec)	Two Trips
						be met Estimated Motor Power Loss		kW				

Component/	Fault	Monitor Strategy	Malfunction	Thresh		Secondary		Enable			Time		Mil
System	Code	Description	Criteria	Valu	е	Malfunction		Condition	s		Requi	red	Illum.
						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 Conditi ons:		P072	l: P0716, P07 ⁻ 22, P0723 l: None	17,				
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	>=	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		0.1	Sec				
						P06AE Status is	≠	Test Failed This Key On or Fault Active					
					Disable Conditi ons:			l: None l: None					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ					Two Trips
			If transmission oil temp to power up temp Δ	> supportin °C				
			Both conditions above required to increment fail counter				Fail Counts >= 3000 (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Ou 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Ou 875 Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolear	n	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Molfunction		Enable		Time	Mi
System	Code	Description	Criteria	Value	Malfunction		Conditio	ns	Required	Illui
					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	>=	0.1	Sec		
					Brake torque active	=	FALSE			
					Below describes the brake torque entry criteria	,				
					Engine Torque	>=	90	N*m		
					Throttle	>=	30.0003	Pct		
					Transmission Input Speed		200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	; ≠	Neutral			
					РТО	=	Not Active			
					Set Brake Torque Active TRUE if above conditions are met for:	>=	7	sec		
					Below describes the brake torque exit criteria	t				
					Brake torque entry criteria		Not Met			
					Clutch hydraulic pressure		Clutch Hydraulic Air Purge Event	r t		

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_RatlEnbl		
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	Test Failed This Key On ≠ or Fault Active		
				Disable Conditi ons:	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)		Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	CeTFTI_ = e_Voltag eInverse Prop				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresi Valu		Secondary Malfunction		Enable Conditions	s			me uired	Mil Illum
· •			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	>=	0.1	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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition	s			me uired	Mil Illum.
							Estimated Motor Power Loss Fault	=	FALSE					
						Disable Conditi ons:		P07	1: P0716, P071 22, P0723 1: None	7,				
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	=	CeTFTI_ e_Voltage eInverse Prop	I								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	>=	0.1	Sec				
							P0713 Status is	≠	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction		Enable Conditio				me uired	Mil Illum
					Disable Conditi ons:		P071	: P0713, P077, P0722, P					
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		8191.88	N*m				
						Engine Speed	>=	400	RPM				
						Engine Speed	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	0.1	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/Loo p				
						The previous requirement has been satisfied for		0	Sec				
						Throttle Position Signal Valid		TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Valu		Secondary Malfunction		Enable Conditio				me uired	Mil Illum.
System	Code	Description	Criteria		Vaic		Engine Torque Signal Valid	=	TRUE	Boolean		rtoqi	uncu	
							Ignition Voltage	>=	9	Volts				
							Ignition Voltage		31.99023	Volts				
							P0716 Status is not		Test Failed This Key On or Fault Active	1				
						Disable Conditi ons:		P097	l: P0717, P07 73, P0974 l: P0101, P01 03, P0121, P0	102,				
			E-0					P012		,				0:2-2
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case Transmission Input 1 Speed is		33	RPM					>=	4.5	Fail Time (Sec)	One Trip
			Fail When P0722 DTC Case Status equal to Test Equal to Test 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	<=	8191.88	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	>=	0.1	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Condition	ıs			me uired	Mil Illum.
						P0717 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditi ons:			1: P0722, P072 1: P0101, P010					
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	>=	8.0002	Pct				
						Transmission Fluid Temperature	>=	-40	°C				
						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 Engine Speed is		400 7500	RPM RPM				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mi
System	Code	Description	Criteria	Value	Malfunction		Condition	S	Required	Illun
					Engine Speed is within the allowable limits for	>=	0.1	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					

Component/	Fault	Monitor Strategy	Malfunction		Thresh		Secondary Malfunction		Enable				me	Mil Illum.
System	Code	Description	Criteria		Value	 			Conditio	ons		Req	uired	mum.
							Transmission Input Speed is		1000	RPM				
							Transmission Input Speed is		8191.75	RPM				
							TIS Check Condition 2							
							Engine Speed without the brake applied is	>=	3200	RPM				
							Engine Speed with the brake applied is	>=	3200	RPM				
							Engine Speed is	<=	8191.75	RPM				
							Controller uses a single power supply							
							for the speed	=	1	Boolean				
							sensors Powertrain Brake Pedal is Valid		TRUE	Boolean				
						Disable Conditi ons:	MIL not Illuminated for DTC's:	TCM: ECM:	P0101, P0 ² 3, P0121, P	102,				
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	<= 8	3191.75	RPM					>=	0	Enable Time (Sec)	
			Output Speed Drop	>	1000	RPM					>=	3	Output Speed Drop Recovery Fail Time (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Condition	s	Required	Illun
			AND Transmission Range is	Driven = range (R,D)					
					Range_Disable		See Below		
					Neutral_Range_Ena ble And	= IRUE	See Below		
					Neutral_Speed_Ena ble	= TRUE	See Below		
					are TRUE concurrently				
					Transmission_Rang e_Enable		See Below		
					Transmission_Input _Speed_Enable		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		Boolean		
					Ignition Voltage is	>= 9	Volts		
					Ignition Voltage is	<= 31.99023	Volts		
					Engine Speed is	>= 400	RPM		
					Engine Speed is	<= 7500	RPM		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mi
System	Code	Description	Criteria	Value			Condition	ons	Required	Illui
					Engine Speed is within the allowable limits for	>=	0.1	Sec		
					Enable_Flags Defined Below					
					Transmission_Input _Speed_Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					
					TIS Condition 1 is TRUE when both of the following conditions are satsified for	>=	0	Enable Time (Sec)		
					Input Speed Delta	<=	4095	RPM		
					Raw Input Speed	>=	500	RPM		
					TIS Condition 2 is TRUE when ALL of the next two conditions are satisfied	:				
					Input Speed	=	0	RPM		
					A Single Power Supply is used for all speed sensors	=	TRUE	Boolean		
					Neutral_Range_Ena ble is TRUE when any of the next 3 conditions are TRUE					
					Transmission Range is	l _	Neutral	ENUM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Cinteria	Value	Transmission Range	Povorco/No	required	
					Transmission Range is	Noutral/Driv		
					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/Revers e Transitonal ENUM		
					Input Clutch is not	= ON (Fully Applied) ENUM		
					Neutral_Speed_Ena ble is TRUE when All of the next three conditions are satsified for	> 1.5 Seconds		
					Transmission Output Speed	> 130 RPM		
					The loop to loop change of the Transmission Output Speed is	< 125 RPM		

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	The loop to loop change of the Transmission Output Speed is	> -10 RPM	Required	illum.
					Transmission_Rang e_Enable is TRUE when one of the next six conditions is TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	Reverse/Ne = utral ENUM Transitional		
					Transmission Range is	Neutral/Driv = e ENUM Transitional		
					Time since a driven range (R,D) has been selected	>= Refer to Sec		
					Transmission Output Speed Sensor Raw Speed	>= 500 RPM		
					Output Speed when a fault was detected	>= 500 RPM		
				Disable Conditi ons:	for DTC's:	TCM: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition	s			ime quired	Mil Illun
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A)		500	Кра			<u> </u>	<u> </u>	>=	2	Enable Time (Sec)	Two
			or (B) Must be Met (A) TCC Slip Error @ TCC On Mode		Refer to Table 1 in Supporti ng Docume nts	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								>=	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	>=	0.1	Sec				
							Engine Torque Lo	>=	50	N*m				
							Engine Torque Hi	<=	8191.88	N*m				
							Throttle Position Lo	>=	8.0002	Pct				
							Throttle Position Hi	<=	99.9985	Pct				
							2nd Gear Ratio Lo	>=	2.75281	Ratio				
							2nd Gear Ratio High	<=	3.16724	Ratio				
							3rd Gear Ratio Lo	>=	1.77625	Ratio				
							3rd Gear Ratio High	<=	2.0437	Ratio				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditior	ıs	Time Required	Mil Illum
					4th Gear Ratio Lo	>=	1.34851	Ratio		
					4th Gear Ratio High	<=	1.55151	Ratio		
					5th Gear Ratio Lo	>=	0.93005	Ratio		
					5th Gear Ratio Hi	<=	1.06995	Ratio		
					6th Gear Ratio Lo	>=	0.69751	Ratio		
					6th Gear Ratio High	<=	0.80249	Ratio		
					Transmission Fluid Temperature Lo		-6.6563	°C		
					Transmission Fluid Temperature Hi		130	°C		
					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/	Fault	Monitor Strategy	Malfunction		Thres		Secondary		Enable				Time .	Mil
System	Code	Description	Criteria		Valu		Malfunction		Conditio			Re	quired	Illum.
						Disable Conditi ons:		P072 P276 ECM P010 P010 P017	2, P0723, F 3, P2764 : P0101, P0 3, P0106, P 8, P0171, P 4, P0175, P	20742, 20102, 20107, 20172, 20201,				
								P020 P020 P030 P030	2, P0203, P 5, P0206, P 8, P0300, P 2, P0303, P 5, P0306, P 8, P0401, P	0207, 0301, 0304, 0307,				
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM								One Trip
oldion (100)			TCC Slip Speed	<=	13	RPM								<u> </u>
											>=	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				
							Engine Speed Hi	<=	6000	RPM				
							Engine Speed Lo	>=	500	RPM				
							Vehicle Speed HI	<=	511	KPH				
							Vehicle Speed Lo		1	KPH				
							Engine Torque Hi	<=	8191.88	Nm				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition		Time Required	Mil Illum
					Engine Torque Lo	>=	60	Nm		
					Current Range	≠	Neutral	Range		
					Current Range	≠	Reverse	Range		
					Transmission Sump Temperature		130	°C		
					Transmission Sump Temperature		15	°C		
					Throttle Position Hyst High		10.0006	Pct		
					AND					
					Max Vehicle Speed to Meet Throttle Enable	<=	8	KPH		
					Once Hyst High has been met, the enable will remain while Throttle Position	>=	2.0004	Pct		
					Disable for Throttle Position		75	Pct		
					Disable if PTO active and value true	=	1	Boolean		
					Disable if in D1 and value true		1	Boolean		
					Disable if in D2 and value true		1	Boolean		
					Disable if in D3 and value true		1	Boolean		
					Disable if in D4 and value true	=	1	Boolean		
					Disable if in D5 and value true		1	Boolean		
					Disable if in MUMD and value true	=	1	Boolean		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Condition	s	Required	Illum
					Disable if in TUTD and value true		1	Boolean		
					4 Wheel Drive Low Active		FALSE	Boolean		
					Disable if Air Purge active and value false	=	0	Boolean		
					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	>=	0.1	Sec		
					Engine Torque Signal Valid		TRUE	Boolean		
					Throttle Position Signal Valid		TRUE	Boolean		
					P0742 Status is	≠	Test Failed This Key On or Fault Active			

Component/	Fault	Monitor Strategy	Malfunction		Thresh		Secondary		Enable				ime	Mil
System	Code	Description	Criteria		Valu		Malfunction		Condition			Red	quired	Illum.
Oystem	Odde	Description	Orneria				MIL not Illuminated for DTC's:	P072 P276 ECM P010 P017 P020 P020 P020 P030 P030	: P0716, P071 22, P0723, P0 33, P2764 : P0101, P01 03, P0106, P0 08, P0171, P0 74, P0175, P0 02, P0203, P0 05, P0206, P0 08, P0300, P0 02, P0303, P0 05, P0306, P0 05, P0306, P0	17, 741, 02, 107, 172, 201, 204, 207, 301, 304, 307,			,	
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip Commanded Gear	>=	400 1st Lock	RPM		P030	08, P0401, P04	42E 				Two Trips
			Gear Ratio								>=	0.3	Fail Tmr	
			Gear Ratio									5	Fail Counts	
			If the above parameters are true	>=	1.37300						=	5	rall Counts	
											≠	0	Neutral Timer (Sec)	
											>=	0.3	Fail Timer (Sec)	
											>=	8	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	>=	0.1	Sec				
							Transmission Fluid Temperature		-6.6563	°C				

Code Description	Criteria	Value	Malfunction Range Shift State TPS OR Output Speed	= Range S Comple >= 0.500	ted ENOM	Required	Illum.
			OR				
			Output Speed	\100			
				>= 100	RPM		
			Throttle Position Signal Valid from ECM		E Boolean		
			Engine Torque Signal Valid from ECM, High side driver is enabled	= TRUI	E Boolean		
			High-Side Driver is Enabled	= TRUI	Boolean		
			Input Speed Sensor fault	= FALS	E Boolean		
			Output Speed Sensor fault	= FALS	E Boolean		
			Default Gear Option is not present	= TRUI	Ē		
		Conditi	for DTC's:	TCM: P0716, P0722, P0723	P0717, 3, P182E		
				P0103, P0106 P0108, P0175 P0174, P0175 P0202, P0203 P0205, P0206 P0208, P0300 P0302, P0303 P0305, P0306	5, P0107, , P0172, 5, P0201, 6, P0204, 6, P0207, 0, P0301, 8, P0304, 6, P0307,		
			Conditi	High-Side Driver is Enabled Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present Disable MIL not Illuminated	High-Side Driver is Enabled Input Speed Sensor fault FALSI	High-Side Driver is Enabled Input Speed Sensor fault Output Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present Disable Conditi MIL not Illuminated for DTC's: P0722, P0723, P182E	High-Side Driver is Enabled Input Speed Sensor fault

Component/	Fault	Monitor Strategy	Malfunction		Threst		Secondary		Enable				me	Mil
System	Code	Description	Criteria		Valu	ie	Malfunction		Condition	ıs		Req	uired	Illun
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>=	400	RPM								One Trip
			Commanded Gear	=	3rd	Gear								
			Commanded Gear has Achieved 1st Locked OR 1st Free- Wheel OR 2nd with Mode 2 Sol. Commanded On	=	TRUE	Boolean								
			If the above parameters are true											
											>= <	Please Refer to Table 16 in Support ng Docume nts	Neutral i Timer (Sec)	
			Command 4th Gear once Output Shaft Speed		1000	RPM								
			If Gear Ratio	>=	4.35486									
			And Gear Ratio	<=	4.81323									
										>=	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	>=	0.1	Sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					High-Side Driver is Enabled	= TRUE Boolean		
					Throttle Position Signal Valid from ECM			
					Output Speed	>= 100 RPM		
					OR			
					TPS	>= 0.5005 %		
					Range Shift State	= Range Shift Completed ENUM		
					Transmission Fluid Temperature	>= -6.6563 °C		
					Input Speed Sensor fault			
					Output Speed Sensor fault			
					Default Gear Option is not present	= TRUE		
				Disable Conditi ons:	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/	Fault	Monitor Strategy	Malfunction		Thres		Secondary Malfunction	Enable Conditions		ime	Mil Illun
System	Code	Description	Criteria		Valu	ie	Mairunction	Conditions	Red	quired	
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case Case: Steady State 1 3rd Gear								One Trip
			Commanded Gear	=	3rd	Gear					
			Gearbox Slip	>=	400	RPM					
									Please Refer to Table 16 in >= Support ng Docume nts	Neutral ti Timer (Sec)	
			Command 4th Gear once Output Shaft Speed	<=	1000	RPM					
			If Gear Ratio	>=	1.37366						
			And Gear Ratio	<=	1.51831						
									>= 3	Fail Timer (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 Case: Steady State 2 5th Gear								
			Commanded Gear	· =	5th	Gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable			Гіте	Mi
System	Code	Description	Criteria	Value	Malfunction	Conditio	ns	Re	quired	Illui
			Gearbox Slip	>= 400 Rpm				Please Refer t Table : >= Support ng Docum nts	to 5 Neutral rti Timer (Sec)	
			Intrusive Test: Command 6th Gear							
			If attained Gear=6th gear Time	Please refer to Table 3 Shift >= Supportin (Sec) g documen ts						
			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		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	>= 100	RPM			
					A OR B					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition		Time Required	Mil Illum.
j		·			(A) Output speed enable		100	RPM		
					(B) Accelerator Pedal enable		0.5005	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	>=	0.1	Sec		
					Throttle Position Signal valid		TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature		-6.6563	°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.
System	Code	Description	Ontena	Dis Co	able MIL not Illuminated	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172,	Roquilou	
						P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case Case: Steady State 1 1st					One Trip
			Attained Gear slip	>= 400 RPM	Л			
			If the Above is True for Time	Table Based Time Please Refer to Ena >= Table 4 Time in (See supportin g documen ts	е			
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 2.00732				
			Gear Ratio	>= 1.74463				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	

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

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 Sec in supportin g documen ts				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 2.00732				
			Gear Ratio	>= 1.74463				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 2nd Gea	
							or >= 3 Total Fail Counts	
			Fail Case Case: Steady State 3 4th gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mi
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illun
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 1 in supportin g documen ts				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts				
			If the Above is True for Time					
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio	<= 1.06995				
			Gear Ratio	>= 0.93005				
			If the above parameters are true					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Гіте quired	Mil Illum.
							>= 1.1	Fail Timer (Sec)	
							>= 3	Fail Count in 4th Gear	
								or Total Fail	
			Fail Case Case: Steady State 4 6th gear				>= 3	Counts	-
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to					
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts					

Component/	Fault	Monitor Strategy	Malfunction		Threshold	Secondary		Enable				ime	Mi
System	Code	Description	Criteria		Value	Malfunction		Conditio	ons		Red	uired	Illu
			If the Above is True for Time		Table Based Time Please Refer to Table 17 Sec in supportin g documen ts								
			Intrusive test: (CB26 clutch		U								
			exhausted) Gear Ratio	<=	1.06995					>=	1.1	Fail Timer (Sec)	
			Gear Ratio	>=	0.93005					>=	3	counts	
			If the above parameters are true										
										>=	1.1	Fail Timer (Sec)	
										>=	3	Fail Count in 6th Gear	
												or	
										>=	3	Total Fail Counts	
						PRNDL State defaulted		FALSE	Boolean				
						inhibit RVT		FALSE	Boolean				
						IMS fault pending indication	=	FALSE	Boolean				
						output speed	>=	0	RPM				
						TPS validity flag		TRUE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
						Hydraulic_System_ Pressurized	=	TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction	-	Conditio	ns	Required	Illum
					A OR B					
					(A) Output speed enable		100	Nm		
					(B) Accelerator Pedal enable	>=	0.5005	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	>=	0.1	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.0006	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.88	Nm		
					Transmission Fluid Temperature	>=	-6.6563	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault		FALSE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Gyotom	0000	2000p					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)	П	TRUE	Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status		Maximu m pressuriz ed					
			Primary Offgoing Clutch Pressure Command Status		Clutch exhaust comman d					
			Range Shift Status	≠	Initial Clutch Control					
			Attained Gear Slip	<=	40	RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:							

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 0.5 Time				
			fail timer 1 (3-2 shifting with Throttle)	>= 0.40039 Time				
			fail timer 1 (3-2 shifting with Closed Throttle)	>= 0.5 Time				
			fail timer 1 (3-4 shifting with Throttle)	>= 0.40039 Time				
			fail timer 1 (3-4shifting with Closed Throttle)	>= 0.5 Time				
			fail timer 1 (3-5 shifting with Throttle)	>= 0.40039 Time				
			fail timer 1 (3-5 shifting with Closed Throttle)	>= 0.5 Time				
			fail timer 1 (5-3 shifting with Throttle)	>= 0.40039 Time				
			fail timer 1 (5-3 shifting with Closed Throttle)	>= 0.5 Time				
			fail timer 1 (5-4 shifting with Throttle)	>= 0.40039 Time				
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.5 Time				
			fail timer 1 (5-6 shifting with Throttle)	>= 0.40039 Time				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	M
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illu
			fail timer 1 (5-6 shifting with Closed Throttle)	Fail >= 0.5 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 Referen ce Supporti ng Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			3rd gear fail counter				>= 3 3rd gear fa	il
			5th gear fail counter				OR >= 3 5th gear fa counts OR	il
			Total fail counter				>= 3 total fail counts	
					TUT Enable temperature	>= -6.6563 °C		

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enable Conditio		Time Required	Mil Illum.
System	Code	Description	Criteria	value			Conditio	ns	Required	mum.
					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 Conditi ons:	MIL not Illuminated for DTC's:	TCM: F P0722,	P0716, P07 P0723, P1	717, 182E		
						P0103, P0108, P0174, P0202, P0205, P0208,	P0101, P01 P0106, P0 P0171, P0 P0175, P0 P0203, P0 P0206, P0 P0300, P0 P0303, P0	0107, 0172, 0201, 0204, 0207, 0301,		
						P0305,	P0306, P0	0307,		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresi Valu		Secondary Malfunction		Enable Conditio			Time Requir		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 Conditi ons:	MIL not Illuminated for DTC's:		: 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		Thres Valu		Secondary Malfunction		Enable Conditio		Tir Requ		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 Conditi ons:	MIL not Illuminated for DTC's:		: P077C				
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case Case: Steady State 1 4th Gear										One Trip
			Gear slip	>=	400	RPM					Please See Table 5 >= For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear										

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mi
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illui
			If attained Gear ≠5th for time	Please refer to Table 3 in Shift Time Supporti ng Docume nts				
			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 Case: Steady State 2 5th Gear					
			Gear slip	>= 400 RPM			Please See Table 5 Neutral For Neutral Time Cal	
			Intrusive test: commanded 6th gear					
			If attained Gear ≠ 6th for time	Please Refer to Table 3 in Time Supporti ng Docume nts				

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enable Conditio				me uired	Mil Illun
System	Code	Description	Criteria and C456 Fail	value	Manunction		Conditio	ns	>=	14	C456 Fail	IIIGII
			Counter		DDNDL OLL						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	>=	100	RPM				
					A OR B							
					(A) Output speed enable		100	RPM				
					(B) Accelerator Pedal enable	>=	0.5005	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	>=	0.1	Sec				
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled		TRUE	Boolean				
					Transmission Fluid Temperature	>=	-6.6563	°C				
					Input Speed Sensor fault		FALSE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					OutputSpeed Sensor fault			
					Default Gear Option is not present			
				Disable Condit ons:	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case: Steady State 1 1st					One Trip
			Attained Gear slip					
			If the Above is True for Time	Table Based Time Please Refer to Enable >= Table 4 Time in (Sec) supportin g documen ts				
			Intrusive test: (CBR1 clutch exhausted)					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum
Oystem	oode	Description	Gear Ratio Gear Ratio If the above parameters are true	>= 1	1.52905			>= >=	1.1 Fail Time (Sec) 2 Fail Coul in 1st Ge or	er nt ar
			Fail Case Case Steady State 2 2nd Max Delta Output Speed Hysteresis	 >= 3 s	Table Based value Please Refer to D Table rpm/sec 1 in upportin g			>=	3 Counts	
			Min Delta Output Speed Hysteresis	F >= 3	ts Table Based value Please Refer to D Table rpm/sec 2 in upportin g locumen ts					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If the Above is True for Time	Table Based Time Please Refer to >= Table 17 Sec in supportin g documen ts				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.52905				
			Gear Ratio	>= 1.32898				
			If the above parameters are true					
							>= 1.1 Fail Time (Sec)	r
							>= 3 Fail Cour in 2nd Ge	
							or >= 3 Total fail counts	
			Fail Case Case Steady State 3 3rd					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mi
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illun
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 1 in supportin g documen ts				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table 17 Sec in supportin g documen ts				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 1.52905				
				>= 1.32898				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio				ime _l uired	Mi Illun
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 3rd Gear	
										OR		
									>=	3	Total Fail Counts	
					PRNDL State defaulted		FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_ Pressurized	=	TRUE	Boolean				
					A OR B							
					(A) Output speed enable		100	Nm				
					(B) Accelerator Pedal enable	>=	0.5005	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	>=	0.1	Sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					if Attained Gear=1st FW Accelerator Pedal enable	>= 10.0006 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 45 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.88 Nm		
					Transmission Fluid Temperature	>= -6.6563 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present			
				Disable Conditi ons:	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/	Fault	Monitor Strategy	Malfunction	Thres		Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Valu	ıe	Malfunction	Conditions	Required	Illun
Variable Bleed Solenoid (VBS)		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				On Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressurii ed					
			Primary Offgoing Clutch Pressure Command Status	Clutch exhausi commar d					
			Range Shift Status	Initial ≠ Clutch Control					
			Attained Gear Slip	<= 40	RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:						
			fail timer 1 (4-1 shifting with throttle)	>= 0.40039	Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)		Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>= 0.40039	(Sec)				
			fail timer 1 (4-2 shifting without throttle)	>= 0.5	Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illun
- Cycle		2000117011	fail timer 1	Fail >= 0.7002 Time				
			fail timer 1 (4-3 shifting without throttle)					
			fail timer 1 (5-3 shifting with throttle)	Fail >= 0.40039 Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)					
			fail timer 1 (6-2 shifting with throttle)	Fail >= 0.40039 Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)					
			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 Referen ce Supporti ng Table 15 for Fail Timer 2	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable				ime	M
System	Code	Description	Criteria	Value	Malfunction	Condition	ons		Re	quired	Illu
			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	
			5th gear fail counter					>=	3	OR Fail Counter From 5th Gear	
			6th gear fail counter					>=	3	OR Fail Counter From 6th Gear	
			Total fail counter					>=	3	OR Total Fail Counter	
					TUT Enable temperature	>= -6.6563	°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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·			PRNDL state defaulted			
					IMS Fault Pending	, = FALSE Boolean		
					Service Fast Learn Mode			
					HSD Enabled	H = TRUE Boolean		
				Co	able MIL not Illuminated nditi for DTC's ons:	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 Volt	S		>= 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 Cou	nts			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Conditio			Time Requir		Mil Illum.
							P07BF Enable Calibration	=	1	Boolean				
							Ignition Voltage Lo	>=	9	Volts				
							Ignition Voltage Hi	<=	31.99023	Volts				
						Disable Conditi ons:	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				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Valu		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
<u> </u>	0000	Becomption	- Chienta				MIL not Illuminated for DTC's:			
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Tap Up Switch Case Stuck in the Up Position in Range 1 Enabled	=	1	Boolean				Specia No MIL
			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	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Thresh Valu		Secondary Malfunction	Enable Conditions		Time equired	Mil Illum.
System	Code	Description	Criteria		valu	e	Manunction	Conditions	R	equirea	mum.
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	1	Boolean					
			Tap Up Switch ON	=	TRUE	Boolean			>= 1	Fail Time (Sec)	
			Fail Tap Up Switch Case 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	=	1	Boolean					

Component/	Fault	Monitor Strategy	Malfunction		Thresh		Secondary		Enable			Time	Mi
System	Code	Description	Criteria		Valu	ie	Malfunction		Condition	s	Re	equired	Illur
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	1	Boolean							
			Tap Up Switch ON	=	TRUE	Boolean							
			NOTE: Both Failcase1 and Failcase 2 Must Be Met								>= 600	Fail Time (Sec)	
													l
							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	>=	0.1	Sec			
							P0815 Status is	≠	Test Failed This Key On or Fault Active				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresi Valu		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						Disable Conditi ons:	for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None	-	
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Tap Down Switch Case Stuck in the Down Position in Range 1 Enabled	=	1	Boolean				Special No MIL
			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	l _	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled		1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction	Enable Conditions	R	Time equired	Mil Illum
System	Code	Description	Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	1	Boolean	a.i.a.i.a.i	Conditions	, , ,	oquilou	
			Tap Down Switch ON	=	TRUE	Boolean			>= 1	sec	
			Fail Tap Down Switch Case 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					
			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	=	1	Boolean					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition			Tim Requi		Mil Illum.
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	1	Boolean								
			Tap Down Switch ON	=	TRUE	Boolean								
			NOTE: Both Failcase1 and Failcase 2 Must Be Met								>=	600	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	>=	0.1	Sec				

Component/	Fault	Monitor Strategy	Malfunction		Thresh		Secondary		Enable	_			me	Mil
System	Code	Description	Criteria		Value	•	Malfunction P0816 Status is	≠	Test Failed This Key On or Fault Active	S		Keq	uired	Illum.
						Disable Conditi ons:		P18: P19	1: P0815, P082 2E, P1876, P1 15, P1761 1: None	26, 877,				
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	>=	0.1	Sec				
							P0826 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditi ons:	MIL not Illuminated for DTC's:		1: P1761 1: 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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Valu		Secondary Malfunction		Enable Conditio				ime uired	Mil Illum.
		·								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		0.1	Sec				
					Disable Conditi ons:	MIL not Illuminated for DTC's:		: None : 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		0.1	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition	s			me uired	Mil Illum
System	Code	Description	Citteria		Valu		MIL not Illuminated for DTC's:			<u> </u>		Req		
/ariable Bleed Solenoid (VBS)	Dooes	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	=	TRUE	Boolean					>=	4.4	Fail Time (Sec)	Two
											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	>=	0.1	Sec				
						Disable Conditi ons:	MIL not Illuminated for DTC's:		: None : None					
/ariable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	=	TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
											out of	0.375	Sample Time (Sec)	
							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	Thresh Valu		Secondary Malfunction		Enable Conditions	6			me uired	Mil Illum.
						Engine Speed is within the allowable limits for	>=	0.1	Sec				
						P0966 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditi ons:			l: None l: 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
										out of	0.375	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	>=	0.1	Sec				
						P0967 Status is not	=	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition	s			me uired	Mil Illum
						Disable Conditi ons:			1: None 1: 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	>=	9	Volts				
							Ignition Voltage	<=	31.99023	Volts				
							Engine Speed	>=	400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	0.1	Sec				
						Disable Conditi ons:			1: None 1: 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)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Condition	s			me uired	Mil Illum.
					P0971 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	>= 0.1	Sec				
				Disabl Condi ons							
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean	n			>=	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	>= 0.1	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions			ime quired	Mil Illum.
System	Code	Description	Ontena			MIL not Illuminated for DTC's:	TCM: None			4400	
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRL	JE Boolean			>= out of	1.2	Fail Time (Sec) Sample Time (Sec)	Two Trips
						P0974 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	or Fault Active >= 9 Volts <= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 0.1 Sec				
					Disable Conditi ons:						
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value		JE Boolean			>=	3	Fail Counter	Specia No MI
								>	10	Sample Timer (Sec)	

Component/	Fault	Monitor Strategy	Malfunction Criteria		Thresh Value		Secondary Malfunction		Enable Condition		Time Required	Mil Illum
System	Code	Description	Criteria	-	value	•			Conditio	7115	Required	IIIdii
							Tap Up Tap Down Message Health	=	TRUE	Boolean		
							Engine Speed Lo	>=	400	RPM		
							Engine Speed Hi	<=	7500	RPM		
							Engine Speed is within the allowable limits for	>=	0.1	Sec		
						Disable Conditi ons:			None None			
nternal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	=	Transitio n 1 (bit state 1110)	Range						On Tri
			Previous range	≠	CeTRGR _e_PRN DL_Drive 6							
			Previous range	≠	CeTRGR _e_PRN DL_Drive 5	Range						
			Range Shift State	=	Range Shift Complet ed	ENUM						
			Absolute Attained Gear Slip		50	rpm						
			Attained Gear		Sixth							
			Attained Gear	>=	First							
			Throttle Position Available	=	TRUE							
			Throttle Position	>=	8.0002	pct						

Component/	Fault	Monitor Strategy	Malfunction		Thresh Valu		Secondary Malfunction	Enable Conditions			ime	Mil Illum
System	Code	Description	Criteria				Mairunction	Conditions	+	Red	quired	illum
			Output Speed			rpm						
			Engine Torque		50	Nm						
			Engine Torque	<=	8191.75	Nm						l
			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 Output Speed 2	<=	70	rpm						
			The following PRNDL sequence events occur in this exact order:									
			PRNDL state	=	Drive 6 (bit state 0110)	Range						
			PRNDL state = Drive 6 for	>=	1	Sec						
			PRNDL state	=	Transitio n 8 (bit state 0111)							
			PRNDL state	=	Drive 6 (bit state 0110)	Range						
			PRNDL state	=	Transitio n 1 (bit state 1110)	Range						
			Above sequencing occurs in	<=	1	Sec						
			Neutral Idle Mode	=	Inactive							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Conditions	i		Time quired	Mil Illum.
·		·	If all conditions above are met Increment delay Timer										
			If the below two conditions are met Increment Fail Timer								>= 3	Fail Seconds	
			delay timer	>=	1	Sec							
			Input Speed	>=	400	Sec							
			If Fail Timer has Expired then Increment Fail Counter								>= 2	Fail Counts	
			Fail Case 3 Current range	Ш	Transitio n 13 (bit state 0010)	Range	Previous range	≠	CeTRGR_e_ PRNDL_Driv e5				
			Engine Torque	>=	-8192	Nm	Previous range	≠	CeTRGR_e_ PRNDL_Driv e5				
			Engine Torque	<=	8191.75	Nm	IMS is 7 position configuration	=	0 6	Boolean			
			If the above conditions are met then, Increment Fail Timer				If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13"				>= 0.225	s Seconds	
			If Fail Timer has Expired then Increment Fail Counter								>= 15	Fail Counts	

Component/	Fault	Monitor Strategy	Malfunction		Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria		Value	Malfunction	Conditions	Required	Illum.
			Fail Case 4 Current range	=	Transitio n 8 (bit Range state 0111)	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	<=	8191.75 Nm				
			If the above conditions are met then Increment Fail Timer					>= 0.225 Seconds	
			If the above Condtions have been met, Increment Fail Counter					>= 15 Fail Counts	
			Fail Case Throttle Position Available	=	TRUE Boolean				
			The following PRNDL sequence events occur in this exact order:						
			PRNDL State	=	Reverse (bit state Range 1100)				

Component/	Fault	Monitor Strategy	Malfunction		Thresh Valu		Secondary Malfunction	Enable Conditions		Time Required	Mi Illur
System	Code	Description	Criteria	H			Walluffction	Conditions	- '	Required	illul
			PRNDL State	=	Transition 11 (bit state 0100)						
			PRNDL State	=	Neutral (bit state 0101)						
			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 Complet e						
			Absolute Attained Gear Slip	<=	50	rpm					
			Attained Gear	<=	Sixth						
			Attained Gear	>=	First						
			Throttle Position	>=	8.0002	pct					
			Output Speed	>=	200	rpm					
			If the above conditions are met Increment Fail Timer						>= 20) Seconds	
			Fail_ Case 6 Current range	=	Illegal (bit state 0000 or 1000 or 0001)		A Open Circuit Definition (flag set false if the following conditions are met):				

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary		Enable			Tir		Mi
System	Code	Description	Criteria	Valı	ıe	Malfunction		Conditions			Requ	uired	Illui
			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				
			If the above Condtions are met then, Increment Fail timer							>=	6.25	Seconds	
			Fail Case Current PRNDL Z State	PRNDL circuit ABCP = 1101	D								
			and										ı
			Previous PRNDL state	PRNDL circuit ABCP =1111	Range								
			Input Speed	>= 150	RPM								ı
			Reverse Trans Ratio	<= 2.73694	ratio								
			Reverse Trans Ratio	>= 3.14905	i ratio								
			If the above Condtions are met then, Increment Fail timer							>=	6.25	Seconds	

Component/	Fault	Monitor Strategy	Malfunction	Thresh		Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Valu	е	Malfunction	<u> </u>	Conditio	ns	Required	Illum.
			P182E will report test fail when any of the above 7 fail cases are met								
						Ignition Voltage Lo	>=	9	Volts		
						Ignition Voltage Hi	<=	31.99023	Volts		
						Engine Speed Lo	>=	400	RPM		
						Engine Speed Hi	<=	7500	RPM		
						Engine Speed is within the allowable limits for		0.1	Sec		
						Engine Torque Signal Valid	=	TRUE	Boolean		
					Disable Conditi ons:	MIL not Illuminated for DTC's:	P072	: P0716, P07 2, P0723, P0 3F, P077C, F	07C0,		
							P010	: P0101, P0 3, P0106, P0	0107,		
							P017 P020 P020	8, P0171, P0 4, P0175, P0 2, P0203, P0 5, P0206, P0 8, P0300, P0	0201, 0204, 0207,		
							P030 P030	2, P0303, P0 5, P0306, P0 8, P0401, P0	0304, 0307,		
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range	Park or Reverse or Neutral	Range State						Specia No MI
			TUTD Enable Switch is Active		Boolean						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Condition	s			ime _l uired	Mil Illum
											>=	3	Fail Time (Sec)	
											>=	5	Fail Counts	
							Ignition Voltage Lo	>=	9	Volts				
							Ignition Voltage Hi	<=	31.99023	Volts				
							Vehicle Speed Lo	<=	511	KPH				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	0.1	Sec				
							P1876 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditi ons:		P082	l: P0815, P081 26, P1761, P18 77, P1915, U01	325,				
								ECM	1: None					
nternal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumer ation								On Tri _l
			The following events must occur Sequentially											
			Initial Engine speed	<=	50	RPM					>=	0.1	Enable Time (Sec)	
			Then Engine Speed Between Following Cals											

Component/	Fault	Monitor Strategy	Malfunction Criteria		Thresi Valu		Secondary Malfunction		Enable Condition				me uired	Mil Illum
System	Code	Description	Engine Speed Lo				Walluffelion		Condition	15		Keqi	uneu	IIIGIII
			Hist	>=	50	RPM								
			Engine Speed Hi Hist	<=	480	RPM					>=	0.0688	Enable Time (Sec)	
			Then											l
			Final Engine Speed	>=	500	RPM								
			Final Transmission Input Speed	>=	100	RPM					>=	1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle?	=	FALSE	Boolean				
							Ignition Voltage Lo	>=	6	V				
							Ignition Voltage Hi	<=	31.99023	V				
							Ignition Voltage Hyst High (enables above this value)		5	٧				
							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 Conditi ons:			1: P0722, P07 1: None	23				
ransmission ontrol Module CM)		Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below)	=	FALSE	Boolean								On Tri

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Valu		Secondary Malfunction		nable nditions			me uired	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				Ou t of		Sample Counts (25ms loop)	
							ECM run/crank active status available	= TRI	JE Boolea	an			
							ECM run/crank active status		JE Boolea	an			
						Disable Conditi ons:	MIL not Illuminated for DTC's:						
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case Case: Steady State 1 2nd Gear										One Trip
			Gear slip	>=	400	RPM				>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 3rd gear								34.		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If attained Gear = 3rd for Time	Table Based Time Please see Enable >= Table 2 Time in (Sec) Supporti ng Docume nts				
			If Above Conditions have been met					
			Increment 2nd gear fail count				>= 3 2nd Gear Fail Count	
			and CB26 Fail Count				or >= 14 CB26 Fail Count	
			Fail Case Case: Steady State 6th Gear					
			Gear slip	>= 400 RPM			Please See Table 5 >= For Neutral Time Cal)
			Intrusive test: commanded 5th gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Molfunction		Enable				ime	Mi
System	Code	Description	Criteria	Value	Malfunction		Condition	ons		Red	uired	Illur
			If attained Gear = 5th For Time	Table Based Time Please see Enable >= Table 2 Time in (Sec) Supporti ng Docume								
			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	>=	100	RPM				
					(B) Accelerator Pedal enable	>=	0.5005	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	9	Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio		Time Required	Mil Illum.
					Ignition Voltage Hi	<=	31.99023	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	0.1	Sec		
					Throttle Position Signal valid		TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature	>=	-6.6563	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault		FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				Disable Conditi ons:		TCM P072	: P0716, P07 22, P0723, P1	/17, 182E		
						P010 P010 P017 P020 P020 P020 P030 P030	: P0101, P01 03, P0106, P0 08, P0171, P0 74, P0175, P0 02, P0203, P0 05, P0206, P0 08, P0300, P0 05, P0306, P0 05, P0306, P0 08, P0401, P0	0107, 0172, 0201, 0204, 0207, 0301, 0304,		

Component/	Fault	Monitor Strategy	Malfunction	Threshol		Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illun
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 B	oolean			One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressuriz ed				
			Primary Offgoing Clutch Pressure Command Status	Clutch exhaust comman d				
			Range Shift Status	Control				
			Attained Gear Slip If above coditons are true, increment appropriate Fail 1 Timers Below:	<= 40 R	PM			
			fail timer 1 (2-1 shifting with throttle)	>= 0.40039 T	rail rime Sec)			
			fail timer 1 (2-1 shifting without throttle)	>= 0.5 T	ail ïme Sec)			
			fail timer 1 (2-3 shifting with throttle)	>= 0.40039 T	Sec)			
			fail timer 1 (2-3 shifting without throttle)	>= 0.5 T	fail Time Sec)			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illun
			fail timer 1 (2-4 shifting with throttle)	Fail >= 0.40039 Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	Fail >= 0.5 Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	Fail >= 0.40039 Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)					
			fail timer 1 (6-5 shifting with throttle)	Fail >= 0.7002 Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	Fail >= 0.5 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 Referen ce Supporti ng Table 15 for Fail Timer 2	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable				ime	Mi
System	Code	Description	Criteria	Value	Malfunction		Condition	ons		Red	quired	Illui
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter									
			2nd gear fail counter						>=	3	Fail Counter From 2nd Gear	
			6th gear fail counter						>=	3	OR Fail Counter From 6th Gear	
			total fail counter						>=	3	OR Total Fail Counter	
					TUT Enable temperature	>=	-6.6563	°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				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value			Required	mum.
					HSD Enabled	= TRUE Boolean		
					ble MIL not Illuminated	TCM: P0716, P0717,		
				Cor	diti for DTC's:	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		
		Pressure Control (PC)	<u>Fail</u>					One
Variable Bleed Solenoid (VBS)	P2715	Solenoid D Stuck On	<u>Case</u> Case: Steady State 1 1st					Trip
odenola (VDO)		[CB26] (Steady State)						
			Attained Gear slip	>= 400 RPM				
				Table				
				Based				
				Time Please				
			If the Above is True	Refer to Enab				
			for Time	>= Table 4 Time in (Sec)				
				supportin				
				g				
				documen ts				
			Intrusive test:					
			(CBR1 clutch					
			exhausted)					
			Gear Ratio	<= 3.11267				
	1		Gear Ratio	>= 2.70532				

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				Fail Timer	
							>= 1.1 (Sec)	
							>= 5 Fail Count in 1st Gear	
							or >= 5 Total Fail Counts	
			Fail Case: Steady State 2 3rd Gear					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 1 in supportin g documen ts				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If the Above is True for Time	Table Based Time Please Refer to >= Table 17 Sec in supportin g documen ts				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 3.11267				
			Gear Ratio	>= 2.70532				
			If the above parameters are true					
							>= 1.1 Fail T	
							>= 3 Fail C in 3rd	
							OI	·
							>= 5 Total Cou	
			Fail Case Steady State 3 4rd Gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 1 in supportin g documen ts				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table 17 Sec in supportin g documen ts				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio	<= 0.79822				
				>= 0.69373				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
oyalom	5546	Description	If the above parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear or >= 5 Total Fail Counts	
			Fail Case Case: Steady State 4 5th Gear				Oddina	
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 1 in supportin g documen ts				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts				

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enab Condit				me uired	Mi Illun
System	Code	Description		<= 0.79822 >= 0.69373	Malfunction	Condit	ions		1.1	uired Fail Timer	Illui
								>= >=	3	(Sec) Fail Count in 5th Gear or Total Fail	
					PRNDL State defaulted inhibit RVT	= FALSE	Boolean Boolean			Counts	
					IMS fault pending indication	_	Boolean				
					output speed		RPM				
					TPS validity flag		Boolean				
					HSD Enabled Hydraulic_System_ Pressurized		Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio		Time Required	Mil Illun
-					A OR B					
					(A) Output speed enable		100	Nm		
					(B) Accelerator Pedal enable		0.5005	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	>=	0.1	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.0006	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.88	Nm		
					Transmission Fluid Temperature		-6.6563	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present		TRUE			

	Monitor Strategy	Malfunction		Thresh	olu	Secondary		Enable			- 11	me	Mil
Code	Description	Criteria		Valu	е	Malfunction		Conditions	S		Req	uired	Illum.
					Conditi	for DTC's:							
							P010 P010 P020 P020 P020 P030 P030	03, P0106, P01 08, P0171, P01 74, P0175, P02 02, P0203, P02 05, P0206, P02 08, P0300, P03 02, P0303, P03 05, P0306, P03	07, 72, 001, 004, 007, 001, 004,				
D2720	Solenoid D Control			TRUE	Boolean					>= out	0.3	Fail Time (Sec) Sample	One Trip
						P2770 Status is not	=	Test Failed This Key On or Fault Active		of	0.070	Time (Sec)	
						Ignition Voltage	<=	9 31.99023 400	Volts Volts				
						Engine Speed Engine Speed is	<=	7500	RPM				
					Conditi	limits for MIL not Illuminated	TCM	/l: None	230				
	D2720	Pressure Control (PC) Solenoid D Control Circuit Low	Pressure Control (PC) Solenoid D Control Circuit Low P2720 Circuit Low Pressure Control (PC) The HWIO reports a low voltage (ground chort) circuit low	Pressure Control (PC) Solenoid D Control Circuit Low Pressure Control (PC) The HWIO reports a low voltage (ground expert) orror flog	Pressure Control (PC) Solenoid D Control Circuit Low Pressure Control (PC) The HWIO reports a low voltage (ground cheet) error flog	P2720 Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS) The HWIO reports a low voltage (ground short) error flag TRUE Boolean Disable	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS) The HWIO reports a low voltage (ground short) error flag P2770 Status is not Ignition Voltage Igniiton Voltage Igniiton Voltage Igniiton Voltage Igniiton Voltage Igniiton Speed Engine Speed is within the allowable Ilimits for Disable Conditi MIL not Illuminated Conditi	P2720 Pressure Control (PC) Solenoid D Condition Short) error flag low voltage (ground short) error flag low voltage logition v	Disable Condition TCM: P0716, P071 P0712, P0723, P18 P0722, P0723, P18 P0703, P0106, P01 P0103, P0106, P01 P0103, P0106, P01 P0104,	Disable Conditions: Disable Conditions: TCM: P0716, P0717, P0722, P0723, P182E P072	Disable Conditi Ons: Disable Conditi Ons: For DTC's: P0722, P0723, P182E	Disable Conditions:	Disable Condition Control (PC) Control (Control (Condition Short) error flag TRUE Boolean Failed This Key On or Fault Active Ingritton Voltage Ingri

Component/	Fault	Monitor Strategy	Malfunction		Threst		Secondary		Enable				me	Mil
System	Code	Description	Criteria		Valu	е	Malfunction		Conditions	5		Req	uired	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)	One Trip
											out of	0.375	Sample Time (Sec)	
							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	>=	0.1	Sec				
						Disable Conditi ons:	MIL not Illuminated for DTC's:		1: None 1: None					
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case Case: Steady State 1 1st Gear											One Trip
			Gear slip	>=	400	RPM					>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 2nd gear											

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illun
			If attained Gear ≠ 2nd for Time	Please refer to Table 3 in Shift Time Supporti ng Docume nts				
			If Above Conditions have been met, Increment 1st gear fail counter	nio			>= 2 1st Gear Fail Count	
			and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
			Fail Case Case: Steady State 2 2nd Gear					
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Neutral Time Cal	
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	Please refer to Table 3 in Time Supporti ng Docume nts				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction		Enable Condition				me uired	Mil Illum
System	Code	Description	Fail Case: Steady State 4th Gear	•	, aruc			Condition	,,,,,,		ived	uii ou	
			Gear slip	>= 40	0 RPM					>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear										
			If attained Gear = 5th For Time	Plea refer Tabl in Supp ng Docu	r to e 3 Shift Time corti (Sec) ume								
			If Above Conditions have been met, Increment 4th gear fail counter							>=	3	4th Gear Fail Count or	
			and C1234 fail counter							>=	14	C1234 Clutch Fail Count	
						PRNDL State defaulted	=	FALSE	Boolean				
						inhibit RVT IMS fault pending		FALSE	Boolean				
						indication TPS validity flag	_	FALSE TRUE	Boolean Boolean				
						Hydraulic System Pressurized	_	TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enable Conditio		Time Required	Mi Illur
System	Code	Description	Criteria	value			Conditio	ns	Required	IIIui
					Minimum output speed for RVT	>=	0	RPM		
					A OR B					
					(A) Output speed enable		100	RPM		
					(B) Accelerator Pedal enable	>=	0.5005	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	>=	0.1	Sec		
					Throttle Position Signal valid		TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature		-6.6563	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present		TRUE			

Component/	Fault	Monitor Strategy	Malfunction		Thresh		Secondary	Enable	Time	Mil
System	Code	Description	Criteria		Valu	е	Malfunction	Conditions	Required	Illum.
						Disable Conditi ons:	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 (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	=	Maximu m pressuriz ed					
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust comman d					
			Range Shift Status	≠	Initial Clutch Control					
			Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below:		40	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Valu		Secondary Malfunction	Enable Conditions	Time Require	
			fail timer 1 (2-6 shifting with throttle)	>= 0.40039	sec				
			fail timer 1 (2-6 shifting without throttle)		sec				
			fail timer 1 (3-5 shifting with throttle)		sec				
			fail timer 1 (3-5 shifting without throttle)		sec				
			fail timer 1 (4-5 shifting with throttle)		sec				
			fail timer 1 (4-5 shifting without throttle)		sec				
			fail timer 1 (4-6 shifting with throttle)		sec				
			fail timer 1 (4-6 shifting without throttle)		sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mi
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illur
			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 Referen ce Supporti ng 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				Fail Counte >= 3 From 2nd Gear	er
			3rd gear fail counter				Fail Counte >= 3 From 3rd Gear	er
			4th gear fail counter				Fail Counte >= 3 From 4th Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition				me uired	Mil Illum
			total fail counter						>=	3	Total Fail Counter	
					TUT Enable temperature		-6.6563	°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/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Gyotom	9646	Becompaign			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	1 in supportin		1 0500, F0401, F042E		One Trip
			Min Delta Output Speed Hysteresis	documen ts Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum
			If the Above is True for Time	Table Based Time Please Refer to >= Table 17 Sec in supportin g documen ts				
			Intrusive test: (C35R clutch exhausted)					
			•	<= 1.52905				
				>= 1.32898				
			If the above parameters are true					
							>= 1.1 Fail Time (Sec)	r
							>= 3 Fail Coun in 5th Gea	
							OR	1
							>= 3 Total Fail Counts	
			Fail Case Case: 6th Gear 2					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 1 in supportin g documen ts				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D Table rpm/sec 2 in supportin g documen ts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table 17 Sec in supportin g documen ts				
				<= 1.52905 >= 1.32898				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio				ime uired	Mil Illum
									>=	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							
					(A) Output speed enable		100	Nm				
					(B) Accelerator Pedal enable	>=	0.5005	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	>=	0.1	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.0006	Pct				

Component/	Fault	Monitor Strategy	Malfunction	Thresh		Secondary		Enable			ime	Mil
System	Code	Description	Criteria	Valu	е	Malfunction	Co	ndition	S	Re	quired	Illum.
						if Attained Gear=1st FW Engine Torque Enable	>= 4	15	Nm			
						if Attained Gear=1st FW Engine Torque Enable	<= 819	1.88	Nm			
						Transmission Fluid Temperature	>= -6.0	6563	٥C			
						Input Speed Sensor fault	= FA	LSE	Boolean			
						Output Speed Sensor fault	= FA	LSE	Boolean			
						Default Gear Option is not present	= TF	RUE				
					Disable Conditi ons:	MIL not Illuminated for DTC's:						
							ECM: P010 P0103, P0 P0108, P0 P0174, P0 P0202, P0 P0205, P0 P0208, P0 P0302, P0 P0305, P0 P0308, P0	106, P0 171, P0 175, P0 203, P0 206, P0 300, P0 303, P0 306, P0	107, 172, 201, 204, 207, 301, 304,			
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)	One Trip
		(3.231 750)								out of 0.375	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threst Valu		Secondary Malfunction		Enable Condition	s		ime quired	Mil Illum
Jystem	Code	Description	Onteria			P2729 Status is not	=	Test Failed This Key On or Fault Active	<u> </u>		,uou	
						Ignition Voltage	>=	9	Volt			
						Ignition Voltage	<=	31.99023	Volt			ı
						Engine Speed	>=	400	RPM			l
						Engine Speed	<=	7500	RPM			ı
						Engine Speed is within the allowable limits for	>=	0.1	Sec			
					Disable Conditi ons:	MIL not Illuminated for DTC's:		I: None I: 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 out 0.375	Fail Time (Sec) Sample Time (Sec)	On Tri _l
						P2730 Status is not	=	Test Failed This Key On or Fault Active			, ,	
						Ignition Voltage	>=	9	Volt			ı
						Ignition Voltage		31.99023	Volt			
						Engine Speed		400	RPM			
						Engine Speed Engine Speed is within the allowable limits for	>=	7500 0.1	RPM Sec			

Component/	Fault	Monitor Strategy	Malfunction		eshold	Secondary		Enable				ime	Mil
System	Code	Description	Criteria	V	alue	Malfunction		Condition	ıs		Rec	quired	Illum
					Disable Condit ons			1: None 1: 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	= TRU	JE 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				
						Ignition Voltage	<=	31.99023	Volt				
						Engine Speed	>=	400	RPM				
						Engine Speed	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	0.1	Sec				
						High Side Driver Enabled	=	TRUE	Boolean				
					Disable Condit ons			1: P0658, P06	59				
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	= TRL	JE Boolean					>=	4.4	MPH	One Trip

Component/ System	Fault Code	Monitor Strategy Description		Thresh Valu			Secondary Malfunction	Enable Conditions				Mil Illum.		
											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		0.1	Sec				
							High Side Driver Enabled	=	TRUE	Boolean				
						Disable Conditi ons:	MIL not Illuminated for DTC's:		: P0658, P06 I: None	59				
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					Ou t of	70	Sample Counts (≈ 11 seconds)	
							Stabilization delay	>=	3	sec				
							Ignition Voltage	>=	9	Volt				
							Ignition Voltage	<=	31.99023	Volt				
							Power Mode	=	Run					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Secondary Enable Value Malfunction Conditions		s		Tir Requ	ne ıired	Mil Illum.				
						Disable Conditi ons:	MIL not Illuminated for DTC's:		l: None l: 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 Conditi ons:	MIL not Illuminated for DTC's:		l: U0073 1: None					
Communication	00293	Loss Communications with HPCM (Hybrid Powertrain Control Module)	CAN messages from HPCM are not received by the TCM	=	TRUE	Boolean					>=	12	sec	Two Trips
							Stabilization delay	>=	3	sec				
							Ignition Voltage	>=	9	Volt				
							Ignition Voltage	<=	31.99023	Volt				
							Power Mode	=	Run					

Supporting Documents - 2D Tables

Table 1											
	KtTCCD_n_StuckOffFailLimit	Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
	KtTCCD_n_StuckOffFailLimit	Curve	100.00	120.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00 RPM
		_									
Table 2		_									
	KnRSSC_T_RVT_TransTempAxis	Axis	-6.67	-6.66	40.00°						
	KtRSSC_t_INT_EstGear	Curve	409.59	2.00	2.00	Sec					
Table 3	K D000 T DVT T T A :		0.07	0.00	40.00	0					
	KnRSSC_T_RVT_TransTempAxis	Axis	-6.67	-6.66	40.00						
	KtRSSC_t_INT_ShiftTime	Curve	409.59	3.50	3.50	sec					
Table 4											
Table 4	KnRSSC_T_RVT_TransTempAxis	Axis	-6.67	-6.66	40.00°	C					
	KtRSSC_t_TUT_NeutralTime	Curve	409.59	2.99	2.00						
	National Property of the Control of	Ourve	+00.00	2.00	2.00	000					
Table 5											
	KnRSSC_T_RVT_TransTempAxis	Axis	-6.67	-6.66	40.00°	С					
	KtRSSC_t_INT_NeutralTime	Curve	409.59	3.00	3.00 S	Sec					
		_									
Table 6											
	KnDGSC_T_TransTempAxis	Axis	-6.67	-6.66	40.00	80.00	120.00 °	C			
	KtDGSC_t_S1_TestDelayLimit	Curve	409.00	3.60	1.60	1.40	1.40 S	Sec			
Table 7		_									
	KnDGSC_T_TransTempAxis	Axis	-6.67	-6.66	40.00	80.00	120.00 °	C			

1.40

1.30

1.20 Sec

3.40

KtDGSC_t_S2_TestDelayLimit

Curve

409.00

Supporting Documents - 2D Tables

Table 8							
	KnDGSC_T_TransTempAxis	Axis	-6.67	-6.66	40.00	80.00	120.00 °C
	KtDGSC_t_S3_TestDelayLimit	Curve	409.00	3.60	1.60	1.50	1.40 Sec
Table 0							
Table 9	Kapocco T TananaTanan Asia	A :	0.07	0.00	40.00	00.00	120.00.00
	KnDGSC_T_TransTempAxis	Axis	-6.67	-6.66	40.00	80.00	120.00 °C
	KtDGSC_t_S4_TestDelayLimit	Curve	409.00	3.30	1.30	1.20	1.10 Sec
Table 10							
	KnRSCC_T_TransFluidTempAxis	Axis ⁰	С				
	KtRSCC_t_C1_OffgoingNoCapTmr	Curve	8.85	3.75	1.31	0.28	0.28 Sec
Table 11							
	KnRSCC_T_TransFluidTempAxis	Axis		4.70	0.40	0.05	0.05
	KtRSCC_t_C2_OffgoingNoCapTmr	Curve	5.00	1.70	0.40	0.25	0.25 Sec
Table 12							
14510 12	KnRSCC_T_TransFluidTempAxis	Axis °	С				
	KtRSCC_t_C3_OffgoingNoCapTmr	Curve	8.00	2.20	0.70	0.25	0.25 Sec
		_					
Table 13							
	KnRSCC_T_TransFluidTempAxis	Axis °					
	KtRSCC_t_C4_OffgoingNoCapTmr	Curve	5.20	1.60	0.50	0.27	0.16 Sec
Toble 44							
Table 14	KnDSCC T TransfluidTampAvia	Axis °	C				
	KnRSCC_T_TransFluidTempAxis KtRSCC_t_C5_OffgoingNoCapTmr	Curve	5.00	1.50	0.70	0.25	0.25 Sec
	Nil\300_i_03_OligolilgiNoCap i IIII	Curve	5.00	1.50	0.70	0.23	0.25 360

Supporting Documents - 2D Tables

<u>Table 15</u>											
	KeRSCC_t_12RngDiagFailDeltTbl	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00 °C
	KeRSCC_t_12RngDiagFailDeltTbl	Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Sec
Table 16	KnRSSC_T_RVT_TransTempAxis KtRSSC_t_M2V_StuckOnNeutralTime	Axis Curve	-6.67 409.59	-6.66 2.50	40.00 °(2.50 S						
Table 17	KnRSSC_T_RVT_TransTempAxis KtRSSC_t_SS_DecelHystTime	Axis Curve	-6.67 0.40	-6.66 0.35	40.00 ° 0.30 S						
Table 18	KnTFTD_T_RatlCheckTempAxis KtTFTD_T_OilPwrUpMaxDelta	Axis Curve	-40.10 256.00	-40.00 50.00	-20.00 45.00	0.00 40.00	30.00 34.00	60.00	100.00	149.00 20.00	149.10 °C 256.00 °C
Table 19											
	KnTFTD_T_RatlCheckTempAxis	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	KtTFTD_T_OilSubMaxDelta	Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
Table 20	KnTFTD_T_RatlCheckTempAxis KtTFTD_T_SubPwrUpMaxDelta	Axis Curve	-40.10 256.00	-40.00 10.00	-20.00 8.00	0.00 8.00	30.00 8.00	60.00 8.00	100.00	149.00 8.00	149.10 °C 256.00 °C
<u>Table 21</u>	KnTOSI_T_DirctnChgTempAxis	Axis	-40.00	-20.00	40.00°	С					

3.00

KtTOSI_t_DirctnChgDelayTime

Curve

5.00

1.00 Sec

Supporting Documents - 3D Tables

3D_Table 1

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

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

3D_Table 2

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

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