COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	ті	HRESHOLI	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME R	EQUIRED	MIL ILLUM.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	=	TRUE	Boolean			>=	5 Fail Counts	One Trip
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601 ECM: None			
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	=	TRUE	Boolean			Co	uns ntin Isly	One Trip
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None			
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	=	TRUE	Boolean				5 Fail Counts	
						Disable	MIL not Illuminated for		= 1	6 Counts	
						Conditions:	DTC's:	ECM: None			
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown		TRUE	Boolean			Co	uns ntin sly	One Trip
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P062F ECM: None			
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>=	144	°C			>=	Fail 5 Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Tł	IRESHOL	D VALUE	SECONDARY PARAMETERS		ENABLE ONDITIOI		ТІМЕ	REQ	UIRED	MIL ILLUM.
			<u>Fail Case</u> <u>2</u> Substrate Temperature	>=	50	°C					>=	2	Fail Time (Sec)	
			Ignition Voltage Note: either fail case can	>=	18	Volts								
			set the DTC				Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.99	Volts Volts				
							Substrate Temp Lo	>=	0	°C				
							Substrate Temp Hi Substrate Temp Between	<=	240	°C				
							Temp Range for Time	>=	0.25	Sec				
							P0634 Status is	¥	Test Failed This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: N ECM: N						
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	=	TRUE	Boolean					>=	3	Fail Counts	One Trip
											out of	5	Sample Counts	
							P0658 Status is not	=	Test Failed This Key On or Fault Active					
							High Side Driver 1 On	=	True	Boolea n				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: N ECM: N						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE ONDITIO		TIME	REQUI	IRED	MIL ILLUM.
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp $\Delta$	> 4								Two Trips
			If TCM substrate temp to power up temp $\Delta$									
			Both conditions above required to increment fail counter						>= 3	(	Fail Counts 100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						Out of 3	8750 (*	Counts Counts 100ms Ioop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700 (*	Pass Counts 100ms Ioop)	
									Out of	875 ( <sup>′</sup>	Sample Counts 100ms Ioop)	
					Engine Torque Signal Valid	=	TRUE	Boolea n				
					Accelerator Position Signal Valid	=	TRUE	Boolea n				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi Engine Speed Lo	<= >=	31.99 400	Volts RPM				
					Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE		TIME REQUIRED	MIL ILLUM.
					Below describes the brake torque entry criteria Engine Torque Throttle	>= >=	90 30	N*m Pct		
					Transmission Input Speed Vehicle Speed Transmission Range Transmission Range	<= <= ≠ ≠	200 8 Park Neutral	RPM Kph		
					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 Hydraul ic Air Purge Event			
					Clutch used to exit brake torque active	=	CeTFT D_e_C 3_Ratl Enbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>=	20	Sec		
					P0667 Status is	¥	Test Failed This Key On or Fault Active			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		<ul> <li>TCM: P0658, P0668,</li> <li>P0669, P06AD, P06AE,</li> <li>P0716, P0712, P0713,</li> <li>P0717, P0722, P0723,</li> <li>P0962, P0963, P0966,</li> <li>P0967, P0970, P0971,</li> <li>P215C, P2720, P2721,</li> <li>P2729, P2730</li> <li>ECM: P0101, P0102,</li> <li>P0103, P0106, P0107,</li> <li>P0108, P0171, P0172,</li> <li>P0174, P0175, P0201,</li> <li>P0202, P0203, P0204,</li> <li>P0205, P0206, P0207,</li> <li>P0208, P0300, P0301,</li> <li>P0302, P0303, P0304,</li> <li>P0305, P0306, P0307,</li> <li>P0308, P0401, P042E</li> </ul>		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and Temp Either condition above will	р			Fail	Two Trips
			Either condition above will satisfy the fail conditions		Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 400 RPM <= 7500 RPM	>= 60 Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	) VALUE	SECONDARY PARAMETERS		enable Inditio		ТІМЕ	REQUIRED	MIL ILLUM.
							P0668 Status is	¥	Test Failed This Key On or Fault Active				
						Disabl Conditions	s: DTC's:						
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used	=	CeTFTI_e_Vo ageInversePro p								Two Trips
			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								>=	Fail 60 Time (Sec)	
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	Volts			
							Engine Speed Lo		400	RPM			
							Engine Speed Hi	<=	7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							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			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Estimated Motor Power Loss greater than limit for time Lost Communication with Hybrid Processor Control	>= 0 Sec		
					Estimated Motor Power Loss Fault	= FALSE		
				Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	lf TCM power-up temp to substrate temp Δ					Two Trips
			lf transmission oil temp to power up temp Δ					
			Both conditions above required to increment fail counter				Fail >= 3000 Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Sample Out of 3750 Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass (100ms loop)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAE CONDIT		TIME REQUIRED	MIL ILLUM.
								Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid		n		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	>= 5 <= 31. >= 40 <= 75 >= 5	Volts 99 Volts 0 RPM 0 RPM		
					allowable limits for Brake torque active Below describes the brake torque entry criteria	= FAL			
					Engine Torque Throttle Transmission Input Speed Vehicle Speed		Pct D RPM		
					Transmission Range Transmission Range PTO	≠ Neu	ral t		
					Set Brake Torque Active TRUE if above conditions are met for:		sec		
					Below describes the brake torque exit criteria Brake torque entry criteria	= Not	Лet		
					Clutch hydraulic pressure	Clu Hyd ≠ ic / Pui Eve	aul ir je		

COMPONENT/ SYSTEM	FAULT CODE		MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					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:	>= 20 Sec		
					P06AC Status is	Test Failed ≠ This Key On or Fault Active		
				Disable Conditions:	DTC's:	P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201,		
						P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -254 °C			Fail >= 60 Time (Sec)	Two Trips
					Ignition Voltage Lo	>= 9 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE ONDITIOI		TIME REQU	IRED	MIL ILLUM.
					Ignition Voltage Hi	<=	31.99	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					Engine Speed is within the allowable limits for		5	Sec			
					P06AD Status is	¥	Test Failed This Key On or Fault Active				
					For Hybrids, below conditions must also be met						
					Estimated Motor Power Loss	>=	0	kW			
					Estimated Motor Power Loss greater than limit for time	>=	0	Sec			
					Lost Communication with Hybrid Processor Control Module	=	FALSE				
					Estimated Motor Power Loss Fault		FALSE				
				Disable Conditions:	DTC's:	TCM: P( P0722, I ECM: N	P0723	17,			
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 254 °C						Fail Time (Sec)	Two Trips
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P06AE Status is	Test Failed This Key On or Fault Active		
				Disable Conditions:				
Mode Switch	P071D	Transmission Mode Switch B Circuit	If Sport Mode Switch is Active	= TRUE Boolean			Fail >= 600 Time (Sec)	Special No Trip
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.99 Volts >= 400 RPM <= 7500 RPM		
				Disable Conditions:				
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp $\Delta$					Two Trips
			If transmission oil temp to power up temp $\Delta$					
			Both conditions above required to increment fail counter				>= 3000 Fail (100ms loop)	

MAIN SECTION 1 OF 1 SECTION

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE INDITIO		TIME REQ	UIRED	MIL ILLUM.
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						Out of 3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>= 700	Pass Counts (100ms loop)	
									Out of 875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolea n			
					Accelerator Position Signal Valid	=	TRUE	Boolea n			
					Ignition Voltage Lo	>=	9	Volts			
					Ignition Voltage Hi	<=	31.99	Volts			
					Engine Speed Lo	>=	400	RPM			
					Engine Speed Hi	<=	7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			
					Brake torque active	=	FALSE				
					Below describes the brake torque entry criteria						
					Engine Torque	>=	90	N*m			
					Throttle	>=	30	Pct			
					Transmission Input Speed	<=	200	RPM			
					Vehicle Speed	<=	8	Kph			
					Transmission Range	¥	Park				
					Transmission Range	¥	Neutral Not				
					ΡΤΟ	=	Active				
					Set Brake Torque Active TRUE if above conditions are met for:	>=	7	sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE		TIME REQUIRED	MIL ILLUM.
					Below describes the brake torque exit criteria					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure	¥	Clutch Hydraul ic Air Purge Event			
					Clutch used to exit brake torque active		CeTFT D_e_C 3_Ratl Enbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:		20	Sec		
					P0711 Status is	¥	Test Failed This Key On or Fault Active			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	CeTFTI_e_Volt = ageInversePro p				Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	254 90				
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	>= 254 °C				
			Either condition above will satisfy the fail conditions				Fail >= 60 Time (Sec)	
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE		SECONDARY PARAMETERS		enable Onditio		ТІМЕ	REQUIRE	D MIL ILLUM
								P0712 Status is	¥	Test Failed This Key On or Fault Active				
								For Hybrids, below conditions must also be met						
								Estimated Motor Power Loss	>=	0	kW			
								Estimated Motor Power Loss greater than limit for time	>=	0	Sec			
								Lost Communication with Hybrid Processor Control Module	=	FALSE				
								Estimated Motor Power Loss Fault	=	FALSE				
						Dis Condit	sable ions:	MIL not Illuminated for DTC's:	TCM: P( P0722, I ECM: N	P0723	17,			
Transmission Fluid					0 7571 1									Two Trips
	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	=	CeTFTI_e_V ageInverseP p	olt ro								
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp		-254	°C								
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<i>c</i> =	-254	°C								
			Either condition above will satisfy the fail conditions									>=	Fa 60 Tim (Se	e
								Ignition Voltage Lo Ignition Voltage Hi	>= <=	9 31.99	Volts Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Lo	>= 400 RPM		
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0713 Status is	Test Failed ≠ This Key On or Fault Active		
				Disable Conditions:	DTC's:	TCM: P0713, P0716, P0717, P0722, P0723 ECM: None		
Treasuria di su la sut							Fail	One Trip
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 1350 RPM			>= 0.8 Time (Sec)	
					Engine Torque is	N		
					Engine Torque is	>= 0 N*m <= 8191.9 N*m		
					Engine Speed	>= 400 RPM		
					Engine Speed			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Vehicle Speed is	>= 10 Kph		
					Throttle Position is	>= 0 Pct		
					Transmission Input Speed is	>= 0 RPM		
					The previous requirement has been satisfied for	>= 0 Sec		
					The change (loop to loop) in transmission input speed is	< 8191.8 RPM/L oop		
					The previous requirement has been satisfied for	>= 0 Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	D VALUE	SECONDARY PARAMETERS		enable Inditio		TIME REG	QUIRED	MIL ILLUM.
						Throttle Position Signal Valid	=	TRUE	Boolea n			
						Engine Torque Signal Valid	=	TRUE	Boolea n			
						Ignition Voltage Ignition Voltage		9 31.99	Volts Volts			
						P0716 Status is not	=	Test Failed This Key On or Fault Active				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0 P0973, F		52,			
								101, P010 20121, P0				
Transmission Input Speed Sensor (TISS)		Input Speed Sensor Circuit Low Voltage	Fail Case Transmission Input 1 Speed is	< 50	RPM					>= 4.5	Fail Time (Sec)	One Trip
			Fail Case         When P0722 DTC Status           2         equal to Test Failed and           Transmission Input         Speed is	< 1000	RPM	Controller uses a single power supply for the speed sensors		1	Boolea n			
						Engine Torque is	>=	50	N*m			
						Engine Torque is Vehicle Speed		8191.9 16	N*m Kph			
						Engine Torque Signal Valid		TRUE	Boolea n			
						Ignition Voltage	>=	9	Volts			
						Ignition Voltage		31.99	Volts			
						Engine Speed	>=	400	RPM			
						Engine Speed Engine Speed is within the		7500 5	RPM Sec			
						allowable limits for	>=	Э	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITION		TIME REG	UIRED	MIL ILLUM.
					P0717 Status is no	t = Test Failed This Key On or Fault Active				
				Disa Conditio						
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 no	t = Test Failed This Key On or Fault Active				
					Transmission Input Speed Check		Boolea n			
					Engine Torque Check	a = TRUE	Boolea n			
					Throttle Positior Transmission Fluid	1	Pct °C			
					Temperature Disable this DTC if the PTC is active	) = 1	Boolea n			
					Engine Torque Signal Valio		Boolea n			
					Throttle Position Signal Valio	= TRUE	Boolea n			
					Ignition Voltage is		Volts			
					Ignition Voltage is Engine Speed is		Volts RPM			
					Engine Speed is		RPM			
					Engine Speed is within the allowable limits for	· · · · ·	Sec			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE		TIME REQUIRED	MIL ILLUM.
					Enable_Flags Defined Below					
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE					
					Engine Torque Condition 1					
					Shift Status is not	=	complet e			
					OR					
					Transmission Range is	=	Park or Neutral			
					Engine Torque is Engine Torque is	>= <=	8191.8			
						<=	8191.8	IN III		
					Engine Torque Condition 2 Engine Torque is	>=	30	N*m		
					Engine Torque is	<=	8191.8	N*m		
					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE					
					TIS Check Condition 1					
					Transmission Input Speed is	>=	1000	RPM		
					Transmission Input Speed is	<=	8191.8	RPM		
					TIS Check Condition 2					
					Engine Speed without the brake applied is	>=	3200	RPM		
					Engine Speed with the brake applied is	>=	3200	RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	٦	THRESHOLD	D VALUE	SECONDARY PARAMETERS	C	ENABI ONDITI		TIME R	EQUIRED	MIL ILLUM.
							Engine Speed is Controller uses a single power supply for the speed sensors	<=	8191. 1	8 RPM Boolea n			
							Powertrain Brake Pedal is Valid	=	TRUI	Boolea n			
						Disable Conditions:	DTC's:	P0723 ECM: P	0716, P0 0101, P0 P0121, F	102,			
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	>=	105	RPM					>=	Enable 0 Time (Sec)	One Trip
			Output Speed Delta	<=	8191.75	RPM					>=	Enable 0 Time (Sec)	
			Output Speed Drop	^	1000	RPM					>=	Output Speed Drop 3 Recove r Fail Time (Sec)	
							Range_Disable	=	FALS	E See Below			
							Neutral_Range_Enable	=	TRUI	See Below			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE		TIME REQUIRED	MIL ILLUM.
					Neutral_Speed_Enable are TRUE concurrently	=	TRUE	See Below		
					Transmission_Range_Enable	=	TRUE	See Below		
					Transmission_Input_Speed_ Enable	=	TRUE	See Below		
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Second s		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active	=	1	Boolea n		
					Ignition Voltage is	>=	9	Volts		
					Ignition Voltage is	<=	31.99	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission_Input_Speed_ Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					
					TIS Condition 1 is TRUE when both of the following conditions are satsified for	>=	0	Enable Time (Sec)		
					Input Speed Delta Raw Input Speed	<= >=	4095 500	RPM RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					TIS Condition 2 is TRUE when ALL of the next three conditions are satisfied			
					Input Speed	= 0 RPM		
					A Single Power Supply is used for all speed sensors	= TRUE Boole n	а	
					Powertrain Brake Pedal Applied is		a	
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE			
					Transmission Range is	= Neutral ENUM	1	
					Transmission Range is	Revers e/Neutr = al ENUN Transit onal	1	
					Transmission Range is	Neutral/ = Drive Transiti onal	1	
					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	1	
					Transmission Range is	Park/R everse Transit onal	1	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED MIL	L ILLUM.
					Input Clutch is not	ON (Fully Applied ENUM )		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	Second		
					Transmission Output Speed	> 100 RPM		
					And the acceleration of the Transmission Output Speed is	RPM/L < 500 oop Rate		
					And the acceleration of the Transmission Output Speed is	RPM/L > 0 oop Rate		
					Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	Revers e/Neutr = al ENUM Transiti onal		
					Transmission Range is	Neutral/ Drive Transiti onal		
					Range Change Delay Timer	>= 5 Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	т	THRESHOLD	VALUE	SECONDARY PARAMETERS		ENABLE ONDITIO		ТІМЕ	REQ	UIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0 P0976. I	0973, P09 20977	74,				
								ECM: P	0101, P01 P0121, P0					
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>=	500	Кра					>=	2	Enable Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met											
			(A) TCC Slip Error @ TCC On Mode	>=	Refer to Table 1 in Supporting Documents	RPM					>=	4	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>=	130	RPM					>=	4	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	5	TCC Stuck Off Fail Counter	
							Ignition Voltage Lo	>=	9	Volts				
							Ignition Voltage Hi	<=	31.99	Volts				
							Engine Speed Engine Speed	>= <=	400 7500	RPM RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							Engine Torque Lo	>=	50	N*m				
							Engine Torque Hi	<=	8191.9					
							Throttle Position Lo	>=	8.0002					
							Throttle Position Hi		99.998					
							2nd Gear Ratio Lo 2nd Gear Ratio High	>= <=	2.7528	Ratio Ratio				
							3rd Gear Ratio Lo	>=	1.7762					
							3rd Gear Ratio High	<=	2.0437					
							4th Gear Ratio Lo	>=	1.3485					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					4th Gear Ratio High	<= 1.5515 Ratio		
					5th Gear Ratio Lo			
					5th Gear Ratio Hi			
					6th Gear Ratio Lo 6th Gear Ratio High			
					Transmission Fluid			
					Temperature Lo			
					Transmission Fluid Temperature Hi	<= 130 °C		
					TCC Command Lock ON or ON mode			
					PTO Not Active	= TRUE Boolea n		
					Engine Torque Signal Valid	= TRUE Boolea n		
					Throttle Position Signal Valid	= TRUE Boolea n		
					Dynamic Mode	= FALSE Boolea n		
					P0741 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301,		
						P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	т	HRESHOL	D VALUE	SECONDARY PARAMETERS		ENABLE ONDITIO		TIME R	EQUIRE	D MIL ILLUM.
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM							One Trip
			TCC Slip Speed	<=	30	RPM						Fail	
											>= 1	.2 Time (Sec	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>= !	5 Fail Count	er
							Run TCC Stuck On Test Enable Criteria:						
							Gear Ratio	<=	4.77	Ratio			
							Gear Ratio	>=	2.4304				
							Engine Speed Hi	<=	6500	RPM			
							Engine Speed Lo Vehicle Speed HI	>= <=	500	RPM KPH			
							Vehicle Speed Lo	>=	511 11	KPH			
							Stuck On During Upshift Enabled		1	Boolea			
							If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	35	Nm			
							Down Shift In Progress	=	FALSE	Boolea n			
							Current Gear	¥	1st Gear Locked	Boolea n			
							Engine Torque Hi	<=	8191.9	Nm			
							Engine Torque Lo	>=	50	Nm			
							Current Range	≠	Neutral	Range			
							Current Range	¥	Revers e	Range			
							Transmission Sump Temperature	<=	130	°C			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE		TIME REQUIRED	MIL ILLUM.
					Transmission Sump Temperature	>=	-6.656	°C		
					Throttle Position Hyst High	>=	11	Pct		
					Throttle Position Hyst Low	<=	2.9999	Pct		
					PTO Active	=	FALSE	Boolea n		
					Disable if in D1 and value true	=	0	Boolea n		
					Disable if in D2 and value true	=	0	Boolea n		
					Disable if in D3 and value true	=	0	Boolea n		
					Disable if in D4 and value true	=	0	Boolea n		
					Disable if in D5 and value true	=	0	Boolea n		
					Disable if in MUMD and value true	=	0	Boolea n		
					Disable if in TUTD and value true	=	0	Boolea n		
					4 Wheel Drive Active	=	FALSE	Boolea n		
					Hydraulic Clutch Air Purge Active		FALSE	Boolea n		
					Ignore Air Purge if value = true	=	0	Boolea n		
					TCC Mode Common Enables:	=	OFF			
					Ignition Voltage	>=	9	V		
					Ignition Voltage	<=	31.99	V		
					Vehicle Speed	<=	511	KPH		
					Engine Speed		400	RPM		
					Engine Speed Engine Speed is within the	<= >=	7500 5	RPM Sec		
					allowable limits for					
					Engine Torque Signal Valid	=	TRUE	Boolea n		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHO	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRI	D MIL ILLUM.
						Throttle Position Signal Valid	= TRUE Boolea n		
						P0742 Status is	Test Failed ★ This Key On or Fault Active		
					Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P0741, P2763, P2764		
							ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400	RPM				Two Trips
Valve			Commanded Gear	= 1st Lock	rpm				
			Gear Ratio	<= 1.52905273	34			>= 0.3 Fa	
			Gear Ratio	>= 1.3289794	92			= 5 Fa	
			If the above parameters are true						
								Neu ≠ 0 Tin (Se	er
								Fa >= 0.3 Tin (Se	er
						Ignition Voltage Lo	>= 9 Volts	>= 8 Cou	nts
						Ignition Voltage Hi	<= 31.99 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	C	ENABLE ONDITIO		TIME REQUIRED	MIL ILLUM.
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi Engine Speed is within the	<= >=	7500 5	RPM Sec		
					allowable limits for Transmission Fluid	/-		Sec		
					Temperature	>=	-6.656	°C		
					Shift is Complete					
					TPS	>=	0.5005	%		
					OR Output Speed	>=	0	RPM		
					Throttle Position Signal Valid from ECM	=	TRUE	Boolea n		
					Engine Torque Signal Valid from ECM, High side driver is enabled	=	TRUE	Boolea n		
					High-Side Driver is Enabled	=	TRUE	Boolea n		
					Input Speed Sensor fault	=	FALSE	Boolea n		
					Output Speed Sensor fault	=	FALSE	Boolea n		
					Default Gear Option is not present	=	TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:		0716, P07 <sup>.</sup> P0723, P1			
						P0103, P0108,	0101, P01 P0106, P0 P0171, P0	107, 172,		
						P0202, P0205, P0208,	P0175, P0 P0203, P0 P0206, P0 P0300, P0	204, 207, 301,		
						P0305,	P0303, P0 P0306, P0 P0401, P0	307,		

COMPONENT/ SYSTEM	FAULT CODE		MALFUNCTION CRITERIA		THRESHOLD	) VALUE	SECONDARY PARAMETERS		ENABLE INDITIO		TIME REQUIRE	D MIL ILLUM.
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>=	400	Rpm						One Trip
			Commanded Gear	=	3rd	Gear						
			Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	=	TRUE	Boolean						
			C456/CBR1 Pressure Switch	=	Pressurized	Boolean						
			C456/CBR1 Pressure Switch Fault If the above parameters are true	=	FALSE	Boolean						
											Pleas e Refer to Neuti 16 in Suppo rting Docu ments >= 5 Cour	۲۲ ()
							Ignition Voltage Lo	>=	9	Volts		
							Ignition Voltage Hi Engine Speed Lo	<= >=	31.99 400	Volts RPM		
							Engine Speed Hi	<=	7500	RPM		
							Engine Speed is within the allowable limits for	>=	5	Sec		
							High-Side Driver is Enabled	=	TRUE	Boolea n		
							Throttle Position Signal Valid from ECM	=	TRUE	Boolea n		
							Output Speed OR	>=	0	RPM		
							TPS	>=	0.5005	%		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Shift is Complete Transmission Fluid Temperature	>= -6.656 °C		
					Input Speed Sensor fault Output Speed Sensor fault	= FALSE n		
					Default Gear Option is not present			
				Disable Conditions:		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,		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case Case: Steady State 3rd 1 Gear Commanded Gear			P0308, P0401, P042E	Pleas	One Trip
			Gearbox Slip	>= 400 Rpm			e Refer to Neutral >= Table Timer 5 in (Sec) Suppo rting	
			Intrusive Test: Command 4th Gear				Docu ments	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If attained Gear=4th gear for Time	Table Based Time Please Refer to Table 3 in supporting documents				
			It the above condiations are true, Increment 3rd gear fail counter				3rd Sear Fail Counts or	
			and C35R Fail counter				>= 14 <sup>3-5R</sup> Clutch Fail Counts	
			Fail Case Case: Steady State 5th 2 Gear					
			Commanded Gear Gearbox Slip				Pleas e Refer to Neutral >= Table Timer 5 in (Sec)	
			Intrusive Test: Command 6th Gear				Suppo (Sec) rting Docu ments	
			If attained Gear=6th gear Time					
			It the above condiations are true, Increment 5th gear fail counter				5th Sear Fail Counts or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			and C35R Fail counter				>= 14 3-5R Clutch Fail Counts	
					PRNDL State defaulted	= FALSE Boolea n		
					inhibit RVT	= FALSE Boolea n		
					IMS fault pending indication	= FALSE Boolea n		
					TPS validity flag	= TRUE <sup>Boolea</sup> n		
					Hydraulic System Pressurized	= TRUE <sup>Boolea</sup> n		
					Minimum output speed for RVT	>= 0 RPM		
					A OR B (A) Output speed enable			
					(B) Accelerator Pedal enable Common Enable Criteria			
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi	<= 31.99 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Throttle Position Signal valid	= TRUE Boolea n		
					HSD Enabled	= TRUE Boolea n		
					Transmission Fluid Temperature			
					Input Speed Sensor fault	= FALSE Boolea n		
					Output Speed Sensor fault	= FALSE Boolea n		
					Default Gear Option is not present			
				Disable Conditions:		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	P0777	Pressure Control (PC) Solinoid B		+				One Trip
Solenoid (VBS)		Stuck On [C35R] (Steady State)	Attained Gear slip					
			If the Above is True for Time	Table Based Time Please Refer to Table Enable Time				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 2.007324219 >= 1.744628906			>= 1.1 Fail >= 1.1 Timer (Sec) Fail Count in 1st Gear or	
			Fail Case 2 Case: Steady State 2nd gear Max Delta Output Speed Hysteresis	Table 1 in supporting			Total >= 3 Fail Counts	
			Min Delta Output Speed Hysteresis	documents Table Based value Please Refer to 3D				
			If the Above is True for Time Intrusive test: (CB26 clutch exhausted)	Time Please Refer to Table				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gear Ratio Gear Ratio If the above parameters are true	>=	2.007324219 1.744628906			Fail >= 1.1 Timer (Sec)	
								Fail >= 3 Count in 2nd Gear or Total >= 3 Fail Counts	
			Fail Case 3 Case: Steady State 4th gear		Table Based				
			Max Delta Output Speed Hysteresis	>=	value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time		Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (C1234 clutch exhausted)		4 0000 40000				
			Gear Ratio Gear Ratio		1.069946289 0.930053711				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above parameters are true				Fail >= 1.1 Timer (Sec)	
							Fail >= 3 Count in 4th Gear or	
			<u>Fail Case</u> <u>4</u> Case: Steady State 6th gear				Total >= 3 Fail Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.069946289			Fail >= 1.1 Timer (Sec)	
			Gear Ratio	>= 0.930053711			>= 3 counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE ONDITIO		ТІМЕ	REQU	IRED	MIL ILLUM.
			If the above parameters are true									
									>=		Fail Timer (Sec)	
									>=	3	Fail Count in 6th Gear	
									>=	3	or Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolea n				
					inhibit RVT	=	FALSE	Boolea n				
					IMS fault pending indication	=	FALSE	Boolea n				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolea n				
					HSD Enabled	=	TRUE	Boolea n				
					Hydraulic_System_Pressurize d	=	TRUE	Boolea n				
					Minimum output speed for RVT	>=	0	Nm				
					A OR B							
					(A) Output speed enable	>=	650	Nm				
					(B) Accelerator Pedal enable	>=	0.5005					
					Ignition Voltage Lo Ignition Voltage Hi	>=	9 21.00	Volts				
					Engine Speed Lo	<= >=	31.99 400	Volts RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD V	ALUE	SECONDARY PARAMETERS		enable Inditio		TIME REQUIRED	MIL ILLUM.
							if Attained Gear=1st FW Accelerator Pedal enable	>=	10.001	Pct		
							if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm		
							if Attained Gear=1st FW Engine Torque Enable	<=	8191.9	Nm		
							Transmission Fluid Temperature		-6.656	°C		
							Input Speed Sensor fault	=	FALSE	Boolea n		
							Output Speed Sensor fault	=	FALSE	Boolea n		
						Disable Conditions:	MIL not Illuminated for DTC's:		0716, P071 20723, P18			
								P0103, F P0108, F P0174, F P0202, F P0205, F P0208, F P0302, F P0305, F	0101, P010 P0106, P0 P0171, P0 P0175, P02 P0203, P02 P0206, P03 P0303, P03 P0306, P03 P0306, P03 P0306, P03 P0306, P03	107, 172, 201, 204, 207, 301, 304, 307,		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	=	TRUE E	Boolean						One Trip
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized							
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command							
			Range Shift Status	¥	Initial Clutch Control							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Attained Gear Slip	<=	40	RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:							
			fail timer 1 (3-1 shifting with Closed Throttle)			Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)			Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Closed Throttle)	>=		Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>=		Fail Time (Sec)				

Image: set of the set of	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Image: Second				(5-6 shifting with Closed	>= 0.900390625				
If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter       2         3rd gear fail counter       3rd         3rd gear fail counter       3rd         OR       OR				Less than Above Cal				Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail	
3rd gear fail counter >= 3 gear fail counts OR				threshold increment corresponding gear fail counter and total fail				2	
				3rd gear fail counter				>= 3 gear fail counts	
5th gear fail counter >= 3 gear fail counts				5th gear fail counter				5th >= 3 gear fail counts	
Total fail counter     Total fail counter     OR       TUT Enable temperature     >= -6.672 °C				Total fail counter				>= 5 total fail	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Input Speed Sensor fault	= FALSE Boolea n		
					Output Speed Sensor fault	= FALSE Boolea n		
					Command / Attained Gear	≠ 1st Boolea n		
					High Side Driver ON	= TRUE Boolea n		
					output speed limit for TUT	>= 200 RPM		
					input speed limit for TUT	>= 200 RPM		
					PRNDL state defaulted	= FALSE Boolea n		
					IMS Fault Pending	= FALSE Boolea n		
					Service Fast Learn Mode	n		
					HSD Enabled	n		
					Default Gear Option is not present			
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS		ABLE	TIME REQUIRED	MIL ILLUM.
Transmission Output Speed Sensor (TOSS)	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage	<=	0.25	Volts				>= ##### 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 Boolea	1	
							Ignition Voltage Lo Ignition Voltage Hi	>=	n 9 Volts 31.99 Volts		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P077	D		
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage	>=	4.75	Volts				>= ###### sec	One Trip
			P077D Status is not	=	Test Failed This Key On or Fault Active						
			If the above conditons have been met, increment the P077D Fail Counter								
			DTC P077D Sets when the Fail Counter	>=	75	Counts					
							P077D Enable Calibration Ignition Voltage Lo Ignition Voltage Hi	= >= <=	1 Boolea n 9 Volts 31.99 Volts		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case Case: Steady State 4th 1 Gear Gear slip	ſ			Pleas e See Table Neutral >= 5 For Timer	One Trip
			Intrusive test: commanded 5th gear	: r			Neutr (Sec) al Time	
			If attained Gear ≠5th for time if the above conditions have been met	<ul> <li>Sector to table</li> <li>3 in supporting documents</li> </ul>				
			Increment 4th Gear Fail Counter				≥= 2 Gear Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			2 Gear Gear slip				Pleas e See Table Neutral >= 5 For Timer Neutr (Sec) al Time	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive test: commanded 6th gear					
			If attained Gear ≠ 6th for time	Table Based Time Please Refer to Table 3 in supporting documents				
			if the above conditions have been met					
			Increment 5th Gear Fail Counter				5th Sear >= 2 Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			Fail Case Case: Steady State 6th 3 Gear				Pleas	
			Gear slip	>= 400 RPM			e See Table Neutral >= 5 For Timer Neutr (Sec) al Time	
			Intrusive test: commanded 5th gear					
			If attained Gear ≠ 5th for time	Table Based Time Please Refer to Table 3 in supporting documents				
			if the above conditions have been met					
			Increment 6th Gear Fail Counter and C456 Fail Counter				6th >= 2 Gear Fail Count	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE ONDITIO		TIME REQUIRED	MIL ILLUM.
									OR	
			and C456 Fail Counter						C456 >= 14 Fail Counts	
					PRNDL State defaulted	I	FALSE	Boolea n		
					inhibit RVT	=	FALSE	Deelee		
					IMS fault pending indication	=	FALSE	Boolea		
					TPS validity flag	=	TRUE	Boolea		
					Hydraulic System Pressurized	=	TRUE	n Boolea		
					Minimum output speed for			n		
					RVT A OR B	>=	0	RPM		
					(A) Output speed enable	>=	650	RPM		
					(B) Accelerator Pedal enable	>=	0.5005	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid	=	TRUE	Boolea n		
					HSD Enabled	=	TRUE	Boolea n		
					Transmission Fluid Temperature	>=	-6.656			
					Input Speed Sensor fault	=	FALSE	Boolea		
							FALSE	n Deelee		
					OutputSpeed Sensor fault Default Gear Option is not	=		n		
					present	=	TRUE			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)			Fail Case         1       Case: Steady State 1st         Attained Gear slip         If the Above is True for         Time         Intrusive test:         (CBR1 clutch exhausted)         Gear Ratio         Gear Ratio         If the above parameters         are true	<ul> <li>&gt;= 400 RPM</li> <li>Table Based Time Please Refer to Table 4 in supporting documents</li> <li>= 1.529052734</li> <li>&gt;= 1.328979492</li> </ul>	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, P0308, P0401, P042E	>= 1.1 Timer (Sec) Fail >= 2 Count	One Trip
							in 1st Gear or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							Total >= 3 Fail Counts	
			Fail Case 2 Case Steady State 2nd					
			Max Delta Output Speed Hysteresis					
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio Gear Ratio					
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							>= 3 Fail >= 3 Count in 2nd Gear	
							or	
							Total >= 3 fail counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	-	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case 3 Case Steady State 3rd						
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time		Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (C35R clutch exhausted)						
			Gear Ratio Gear Ratio		1.529052734 1.328979492				
			If the above parameters are true						
								Fail >= 1.1 Timer (Sec)	
								Fail >= 3 Count in 3rd Gear	
								OR Total >= 3 Fail Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLI ONDITIC		TIME REQUIRED	MIL ILLUM.
					PRNDL State defaulted	=	FALSE	Boolea n		
					inhibit RVT	=	FALSE	Boolea n		
					IMS fault pending indication	=	FALSE	Boolea n		
					output speed	>=	0	RPM		
					TPS validity flag	=	TRUE	Boolea n		
					HSD Enabled	=	TRUE	Boolea n		
					Hydraulic_System_Pressurize d	=	TRUE	Boolea n		
					Minimum output speed for RVT	>=	0	Nm		
					A OR B					
					(A) Output speed enable	>=	650	Nm		
					(B) Accelerator Pedal enable	>=	0.5005	Nm		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.001	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.9	Nm		
					Transmission Fluid Temperature	>=	-6.656	°C		
					Input Speed Sensor fault	=	FALSE	Boolea n		
					Output Speed Sensor fault	=	FALSE	Boolea n		
					Default Gear Option is not present	=	TRUE			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:		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, P0308, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below: fail timer 1 (4-1 shifting with throttle)	= = ≠ = ,	TRUE Maximum pressurized Clutch exhaust command Initial Clutch Control 40	Boolean RPM Fail Time (Sec) Fail Time		P0308, P0401, P042E		One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (4-2 shifting with throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>=	0.700195313 (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>=	0.700195313 Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>=	0.900390625 Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Fail	
			4th gear fail counter				Counter >= 3 From 4th Gear OR	
			5th gear fail counter				Fail Counter >= 3 From 5th Gear OR	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			6th gear fail counter				Fail Counter >= 3 From 6th Gear OR	
			Total fail counter				Total >= 5 Fail Counter	
					TUT Enable temperature	>= -6.672 °C		
					Input Speed Sensor fault	= FALSE Boolea	1	
					Output Speed Sensor fault	= FALSE Boolea n		
					Command / Attained Gear	≠ 1st Boolea n		
					High Side Driver ON	= TRUE Boolea		
					output speed limit for TUT			
					input speed limit for TUT			
					PRNDL state defaulted	= FALSE Boolea		
					IMS Fault Pending	= FALSE Boolea n		
					Service Fast Learn Mode	= FALSE Boolea n		
					HSD Enabled	= TRUE Boolea n		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	COND	BLE	TIME REQUIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0722, P072			
								ECM: P0101, P0103, P010 P0108, P017 P0174, P017, P0202, P0200 P0205, P020 P0208, P0300 P0302, P0300 P0305, P0300 P0308, P040	6, P0107, 1, P0172, 5, P0201, 3, P0204, 6, P0207, 0, P0301, 3, P0304, 6, P0307,		
Transmission Input Speed Sensor (TISS)	P07BF	Input/Turbine Speed Sensor A Circuit Low	TISS Analog Signal Voltage	<=		Volts				>= ##### sec	One Trip
			P07BF Status is not	=	Test Failed This Key On or Fault Active						
			If the above conditons have been met, increment the P07BF Fail Counter								
			DTC P07BF Sets when the Fail Counter	>=	75	Counts					
							P07BF Enable Calibration	=	1 Boolea n		
							Ignition Voltage Lo Ignition Voltage Hi		9 Volts 1.99 Volts		
						Disable Conditions:	MIL not Illuminated for DTC's:				
Transmission Input Speed Sensor (TISS)	P07C0	Input/Turbine Speed Sensor A Circuit High	TISS Analog Signal Voltage	>=	4.75	Volts				>= ##### sec	One Trip
			P07C0 Status is not	=	Test Failed This Key On or Fault Active						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THR	ESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		TIME REQUIRED	MIL ILLUM.
			If the above conditons have been met, increment the P07C0 Fail Counter								
			DTC P07C0 Sets when the Fail Counter	>=	75	Counts	P07C0 Enable Calibration Ignition Voltage Lo Ignition Voltage Hi	= >= <=	1 Boolea n 9 Volts 31.99 Volts		
						Disable Conditions:	MIL not Illuminated for DTC's:				
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case         Tap Up Switch Stuck in           1         the Up Position in Range           1         the Up Position in Range	=	0	Boolean					Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	1	Boolean					
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Т	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean				
			Tap Up Switch ON	=	TRUE	Boolean			Fail >= 1 Time (Sec)	
			Fail Case     Tap Up Switch Stuck in       2     the Up Position in Range       1 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled		1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled		1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled		0	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	a = 0 Boolean				
			Tap Up Switch ON	I = TRUE Boolean				
			NOTE: Both Failcase1 and Failcase 2 Must Be Met				Fail >= 600 Time (Sec)	
					Time Since Last Range Change	Enable >= 1 Time (Sec)		
					Ignition Voltage Lo			
					Ignition Voltage Hi Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					P0815 Status is	Test Failed This ≮ Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	т	HRESHOLD	/ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case         Tap Down Switch Stuck           1         in the Down Position in Range 1 Enabled	=	0	Boolean				Special No Trip
			Tap Down Switch Stuck in the Down Position in	=	0	Boolean				
			Rance 2 Enabled Tap Down Switch Stuck in the Down Position in	=	0	Boolean				
			Rance 3 Enabled Tap Down Switch Stuck	=	0	Declass				
			in the Down Position in Range 4 Enabled Tap Down Switch Stuck	=	0	Boolean				
			in the Down Position in Range 5 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in	=	1	Boolean				
			Rance Neutral Enabled Tap Down Switch Stuck in the Down Position in	=	1	Boolean				
			Range Park Enabled Tap Down Switch Stuck							
			in the Down Position in Range Reverse Enabled	=		Boolean				
			Tap Down Switch ON	=	TRUE	Boolean			>= 1 sec	
			Fail Case         Tap Down Switch Stuck           2         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	=	1	Boolean				
			Rance 4 Enabled Tap Down Switch Stuck in the Down Position in	=	1	Boolean				
			Range 5 Enabled Tap Down Switch Stuck	=	1	Boolean				
			in the Down Position in Rance 6 Enabled Tap Down Switch Stuck							
			in the Down Position in Neutral Enabled	=	0	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Tap Down Switch Stuck in the Down Position in Park Enabled Tap Down Switch Stuck in the Down Position in Reverse Enabled Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= 0 Boolean = 0 Boolean = TRUE Boolean	Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0816 Status is	>= 9 Volts >= 9 Volts <= 31.99 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test Failed Test		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	C	ENABLE CONDITIO		ТІМЕ	REQU	IIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	P182E	P0815, P08 , P1876, P1 ,  P1761	26, 877,				
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	=	TRUE	Boolean					>=		Fail Time (Sec)	Special No Trip
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>=	9 31.99 400 7500	Volts Volts RPM RPM				
							Engine Speed is within the allowable limits for	>=	5 Test	Sec				
							P0826 Status is	¥	Failed This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: I ECM: I						
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure Hydraulic Delay Timer	<=	50 See Table 8 fo Delay Timer									Special No Trip
			(Table Based) Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter		Cal						>=	8	Fail Counts	
			Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	^	50	Кра								

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature Lo			
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99 °C		
					Ignition Voltage Lo		i -	
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Default Gear Action			
					High Side Driver ON	= TRUE		
					RVT Status			
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min	>= 550 RPN		
				Disable Conditions	DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid		Transmission Fluid Pressure						Special No Trip
Pressure Switch	P0873	(TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure	>= 700 KPa				
			Hydraulic Delay Timer (Table Based)	See Table 8 for >= Delay Timer Sec Cal				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter				>= 11 Fail Counts	
			Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa				
					Transmission Fluid Temperature Lo			
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99 °C		
					Ignition Voltage Lo			
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi Engine Speed is within the allowable limits for			
					Default Gear Action	= FALSE		
					High Side Driver ON	= TRUE		
					RVT Status	= Normal		
					Hydraulic Pressure Available	= TRUE		
					Engine Speed Min			

COMPONENT/ SYSTEM	FAULT CODE		MALFUNCTION CRITERIA		THRESHOLD	O VALUE	SECONDARY PARAMETERS		NABLE NDITIOI		TIME REQUIRED	MIL ILLUM.
						Disable Conditions:	DTC's:	TCM: P07 P0713, Pi P0722, Pi P0742, Pi P0973, Pi P0977, P ECM: Noi	0716, P07 0723, P07 0756, P07 0974, P09 1915, P18	717, 751, 757, 976,		
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based)	<= >=	50 See Table 6 fo Delay Timer							Special No Trip
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter		Cal						>= 8 Fail Counts	
			Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	^	50	kpa						
							Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this)	>= Not >=	-6.656 120	℃ ℃		
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99			
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<=	9 31.99 400 7500	Volts Volts RPM RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	C	ENABLE ONDITIO		TIME REQUIRED	MIL ILLUM.
						Disable Conditions:		P0713, P0722, P0742, P0973,	P0716, P0 P0723, P0 P0756, P0 P0974, P0 P1915, P1	RPM 12, 717, 751, 757, 976,		
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulic pressure	>=	700 See Table 6 for	KPa						Special No Trip
			Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>=	Delay Timer Cal						>= 8 Fail Counts	
			Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	<	700	Кра						
							Transmission Fluid Temperature Lo	>=	-6.656	°C		

		DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS		ENABLE INDITION		ТІМЕ	REQUIRI	ED M	11L ILLUM.
						Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C				
						Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99	°C				
						Ignition Voltage Lo	>=	9	Volts				
						Ignition Voltage Hi		31.99	Volts				
						Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
						Engine Speed is within the allowable limits for	~-	5	Sec				
						Default Gear Action	=	FALSE					
						High Side Driver ON	=	TRUE					
						RVT Status	=	Normal					
						Hydraulic Pressure Available	=	TRUE					
						Engine Speed Min		550	RPM				
					Disable Conditions:		P0713, P P0722, P P0742, P P0973, P	20716, P07 20723, P07 20756, P07 20974, P09 21915, P18	717, 751, 757, 976,				
Variable Bleed Solenoid (VBS)	0961 A	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					>=	Fa 4.4 Tir (Se	nil ne	Two Trips
										out of	San 5 Tir (So	ne	
						Ignition Voltage	>=	9	Volts				
						Ignition Voltage Engine Speed	<= >=	31.99 400	Volts RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS		Enable Nditio		TIME	REQUIRED	MIL ILLUM.
						Engine Speed	<=	7500	RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			
					Disable Conditions:	DTC's:	TCM: No ECM: No					
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					>=	Fail 1.5 Time (Sec)	
										out of 1	Sample .875 Time (Sec)	
						Ignition Voltage	>=	9	Volts			
						Ignition Voltage		31.99	Volts			
						Engine Speed Engine Speed	>= <=	400 7500	RPM RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			
					Disable Conditions:	DTC's:	TCM: No ECM: No					
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	Fail 4.4 Time (Sec)	
										out of	5 Time (Sec)	
						Ignition Voltage	>=	9	Volts			
						Ignition Voltage Engine Speed	<= >=	31.99 400	Volts RPM			
						Engine Speed	<=	7500	RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	LD VALUE	SECONDARY PARAMETERS		ENABLI ONDITIO		TIME REQ	UIRED	MIL ILLUM.
						Engine Speed is within the allowable limits for	>=	5	Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:						
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag		Boolean					>= 0.3	Fail Time (Sec)	One Trip
										out of 0.375	Sample Time (Sec)	
						Ignition Voltage		9	Volts			
						Ignition Voltage		31.99	Volts RPM			
						Engine Speed Engine Speed		400 7500	RPM			
						Engine Speed is within the allowable limits for		5	Sec			
						P0966 Status is not	=	Test Failed This Key Or or Faul Active	ı t			
					Disable Conditions:	MIL not Illuminated for DTC's:						
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	<=	31.99	Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed			
					Engine Speed Engine Speed is within the			
					allowable limits for	>= 5 Sec		
					P0967 Status is not	Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:			
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				Fail >= 0.3 Time (Sec)	One Trip
							Sample out of 0.375 Time (Sec)	
					P0970 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volts		
					Ignition Voltage			
					Engine Speed Engine Speed			
					Engine Speed is within the allowable limits for			
				Disable Conditions:				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHO	LD VALUE	SECONDARY PARAMETERS		ENABLE ONDITIO		ТІМЕ	REQI	UIRED	MIL ILLUM.
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		Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of		Sample Time (Sec)	
						P0971 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage		9	Volts				
						Ignition Voltage	<= >=	31.99 400	Volts RPM				
						Engine Speed Engine Speed	>= <=	400 7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
					Disable Conditions:		TCM: No ECM: No						
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	1.2	Fail Time (Sec)	One Trip
										out of		Sample Time (Sec)	
						P0973 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage	>=	9	Volts				
						Ignition Voltage Engine Speed	<=	31.99 400	Volts RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	E	SECONDARY PARAMETERS		enable Nditio		TIME	REQUIR	ED	MIL ILLUM.
						Engine Speed	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
					isable itions:	MIL not Illuminated for DTC's:	TCM: No ECM: No						
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean	n					>=	1.2 Ti	ail me ec)	Two Trips
										out of	1.5 Ti	mple me ec)	
						P0974 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage		9	Volts				
						Ignition Voltage		31.99	Volts				
						Engine Speed Engine Speed		400 7500	RPM RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
					)isable itions:	MIL not Illuminated for DTC's:							
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure	<= 50 Kpa								Ś	Special No Trip
			Hydraulic Delay Timer (Table Based)	See Table 9 for >= Delay Timer Sec Cal									

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 15 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa				
					Transmission Fluid Temperature Lo			
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not >= 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99 °C		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= 31.99 Volts >= 400 RPM		
					Engine Speed is within the allowable limits for	<b>N-</b> 5 900		
					Default Gear Action High Side Driver ON			
					RVT Status Hydraulic Pressure Available			
					Engine Speed Min			
				Disable Conditions:	DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS				TIME R	EQUIRED	MIL ILLUM.
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure	~=	700	Кра							Special No Trip
			Hydraulic Delay Timer (Table Based)	>=	See Table 9 fo Delay Timer Cal								
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter								>=	26 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition		700	kpa							
							Transmission Fluid Temperature Lo	>=	-6.656	°C			
							Transmission Fluid Temperature Hyst Hi (disable above this)	Not >=	120	°C			
							Transmission Fluid Temperature Hyst Lo (enable below this)	<=	255.99	°C			
							Ignition Voltage Lo	>=	9	Volts			
							Ignition Voltage Hi	<=	31.99	Volts			
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM			
							Engine Speed is within the allowable limits for		5	Sec			
							Default Gear Action	=	FALSE				
							High Side Driver ON		TRUE				
							RVT Status	=	Normal				
							Hydraulic Pressure Available	=	TRUE				
							Engine Speed Min		550	RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	) VALUE	SECONDARY PARAMETERS		Enable Nditio		ТІМЕ	REQL	JIRED	MIL ILLUM.
					Disable Conditions:		TCM: P07 P0713, P P0722, P P0742, P P0973, P P0977, P	0716, P0 0723, P0 0756, P0 0974, P0	717, 751, 757, 976,				
							ECM: No	ne					
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE	Boolean					>=	3	Fail Counter	Special No Trip
										>	10	Sample Timer (Sec)	
						Tap Up Tap Down Message Health	=	TRUE	Boolea n				
						Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
					Disable Conditions:	DTC's:	TCM: No ECM: No						
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE	Boolean					>=	3	Fail Counter	Special No Trip
										>		Sample Timer (Sec)	
						Pattern Switch Message Health	=	TRUE	Boolea n				
						Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							Engine Speed is within the allowable limits for	>= 5 Sec		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	<u>Fail Case</u> 1 Current range	=	"Transitional 1"	Range State				One Trip
			Previous range	¥	CeTRGR_e_P RNDL_Drive6	Range State				
			Previous range	¥	CeTRGR_e_P RNDL_Drive5	Range State				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean				
			Engine Torque	>=	-50	Nm				
			Engine Torque	<=	8191.75	Nm				
			If the above conditions are present Increment Fail Timer						Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter						>= 15 Fail Counts	
			Fail Case 2 Current range	=	"Transitional 1"	Range State				
			S3 Pressure Switch indicates "Exhausted"	=	TRUE	Boolean				
			Commanded Gear If the above conditions are present Increment Fail Timer	=	1st Locked	Gear			Fail >= 0.225 Second s	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS		ENABLE ONDITIONS	ТІМЕ	REQUIRED	MIL ILLUM.
			If Fail Timer has Expired then Increment Fail Counter							>=	15 Fail Counts	
			Fail Case 3 Current range	=	"Transitional 13"		Previous range	¥	CeTRG R_e_P RNDL_ Drive5			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	¥	CeTRG R_e_P RNDL_ Drive5			
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	1 Boolea n			
			Engine Torque	<=	8191.75	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"					
			If the above conditions are present Increment Fail Timer							>= (	0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter							>=	15 Fail Counts	
			<u>Fail Case</u> <u>4</u> Current range	=	"Transitional 2" or "Transitional 8	n	Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8					
			Inhibit bit (see definition)	=	FALSE		Set inihibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transitional) Set inhibit bit false if PRNDL = 1001 (park)					
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	1	THRESHOLD	VALUE	SECONDARY PARAMETERS		ENABLE ONDITIONS	TIME REQUIRED	MIL ILLUM.
			Steady State Engine Torque	>=	20	Nm					
			Steady State Engine Torque	<=	8191.75	Nm					
			If the above conditions are present Increment Fail Timer							>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter							>= 15 Fail Counts	
			Fail Case 5 Current range	=	"Transitional 11"						
			Engine Torque	>=	20	Nm					
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					
			If the above conditions are present Increment Fail Timer							>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter							>= 15 Fail Counts	
			<u>Fail Case</u> <u>6</u> Current range	=	"Illegal"		A Open Circuit Definition (flag set false if the following conditions are met):				
			and				Current Range	¥	"Transit ional 11"		
			A Open Circuit (See Definition)	=	FALSE	Boolean	or Last positive state or	¥	Neutral		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	С	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						Previous transitional state	¥	Transiti onal 8 and Illegal		
						and				
						PRNDL Circuit A	=	Open Circuit		
						PRNDL Circuit B	=	Closed Circuit		
						PRNDL Circuit C	=	Open Circuit		
						PRNDL Circuit P	=	Open Circuit		
			If the above Condtions are present, Increment Fail timer						>= 6.25 Second s	
			Fail Case Z Current PRNDL State	=	PRNDL circuit ABCP = 1101					
			and							
			Previous valid state	=	PRNDL circuit ABCP =1111 Range					
			Input Speed	>=	150 RPM					
			Reverse Trans Ratio	<=	2.795898438 ratio					
			Reverse Trans Ratio	>=	3.149047852 ratio					

MAIN SECTION 1 OF 1 SECTION

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above Condtions are present, Increment Fail timer				>= 6.25 Second s	
			P182E will report test fail when any of the above 7 fail cases are met					
					Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo	<= 31.99 Volts <= 511 KPH		
					Engine Speed Hi Engine Speed is within the allowable limits for	<= 7500 RPM		
					Engine Torque Signal Valid	= TRUE Boolea n		
				Disable Conditions	DTC's:			
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range TUTD Enable Switch is Active	Neutral				Special No Trip
							Fail >= 3 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	т	HRESHOL	D VALUE	SECONDARY PARAMETERS		enable Inditio		ТІМЕ	REQ	UIRED	MIL ILLUM.
											>=	5	Fail Counts	
							Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= <= >= <= >=	9 31.99 511 400 7500 5	Volts Volts KPH RPM RPM Sec				
							P1876 Status is	¥	Test Failed This Key On or Fault Active					
						Disable Conditions:		P0826, F	P1761, P18 P1915, U0	825,				
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	¥	Park or Neutr	al Enumeration								One Trip
			The following events must occur Sequentially											
			Initial Engine speed	<=	50	RPM					>=	0.1	Enable Time (Sec)	
			Then Engine Speed Between Following Cals											
			Engine Speed Lo Hist	>=	50	RPM							Enable	
			Engine Speed Hi Hist	<=	480	RPM					>=	0.069	Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	TΗ	IRESHOLI	) VALUE	SECONDARY PARAMETERS	C	ENABLE		TIME R	EQUIRI	ED	MIL ILLUM.
			Then Final Engine Speed	>=	500	RPM								
			Final Transmission Input Speed	>=	100	RPM					>= 1	Fa 25 Tir (Se	ne	
							DTC has Ran this Key Cycle?	=	FALSE	Boolea n				
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	6 31.99	V V				
							Ignition Voltage Hyst High (enables above this value)	>=	6	V				
							Ignition Voltage Hyst Low (disabled below this value)	<=	2	V				
							Transmission Output Speed	<=	90 Test	rpm				
							P1915 Status is	¥	Failed This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P ECM: N		3				
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	Run crank active (based on voltage thresholds below)	=	FALSE									One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)		6	Volts					>= 2	Fa 80 Cou (25 Ioc	ints ms	
			Ignition Voltage Low Hyst (run crank goes false when below this value)		2	Volts					Out of 2	San Cou (25 Ioc	ints ms	
							Normal CAN Comm Enabled	=	TRUE	Boolea n				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	٦	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENAE CONDIT		TIME R	EQUIRED	MIL ILLUM.
						Disable		TCM: None	JE Boolea n			
Verieble Direct			Fail Case			Conditions:	DTC's:	ECM: None				One Trip
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	<u>1</u> Case: Steady State 2nd Gear							e	eas See ble	
			Gear slip	>=	400	RPM				>= 5 Ne Ti	For Timer eutr (Sec) me	
			Intrusive test: commanded 3rd gear		Table Based Time Please							
			If attained Gear = 3rd for Time If Above Conditions have	>=	see Table 2 in Supporting Documents	Enable Time (Sec)						
			been met Increment 2nd gear fail count							>=	2nd Gear Fail Count	
			and CB26 Fail Count							>= `	or CB26 4 Fail Count	
			Fail Case 2 Case: Steady State 6th Gear									

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE	6	TIME REQU	IIRED	MIL ILLUM.
			Gear slip	>= 400 RPM					>= 5 For Neutr al Time	Neutral Timer (Sec)	
			Intrusive test: commanded 5th gear						Cal		
			If attained Gear = 5th For Time	Table Based Time Please >= see Table 2 in Supporting Documents							
			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	loolea n			
					inhibit RVT	=	FALSE E	loolea n			
					IMS fault pending indication	=	FALSE	loolea n			
					TPS validity flag	=	TRUE	n n			
					Hydraulic System Pressurized	=	TRUE E	loolea n			
					Minimum output speed for RVT	>=	0	RPM			
					A OR B (A) Output speed enable	>=	650	RPM			
					(B) Accelerator Pedal enable Common Enable Criteria	>=	0.5005	Pct			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VA	LUE	SECONDARY PARAMETERS		enable Inditio		TIME REQUIRED	MIL ILLUM.
						Ignition Voltage Lo	>=	9	Volts		
						Ignition Voltage Hi Engine Speed Lo	<= >=	31.99 400	Volts RPM		
						Engine Speed Lo Engine Speed Hi	<=	400 7500	RPM		
						Engine Speed is within the allowable limits for	>=	5	Sec		
						Throttle Position Signal valid	=	TRUE	Boolea n		
						HSD Enabled	=	TRUE	Boolea n		
						Transmission Fluid Temperature	>=	-6.656	°C		
						Input Speed Sensor fault	=	FALSE	Boolea n		
						Output Speed Sensor fault	=	FALSE	Boolea n		
						Default Gear Option is not present	=	TRUE			
				с	Disable onditions:	MIL not Illuminated for DTC's:		)716, P07 <sup>-</sup> P0723, P1			
							P0103, F P0108, F P0174, F	0101, P01 20106, P0 20171, P0 20175, P0 20203, P0	107, 172, 201,		
							P0205, F P0208, F P0302, F P0305, F	P0206, P0 P0300, P0 P0303, P0 P0306, P0 P0401, P0	207, 301, 304, 307,		
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)		olean						One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Primary Oncoming Clutch Pressure Command Status		Maximum pressurized					
			Primary Offgoing Clutch Pressure Command Status		Clutch exhaust command					
			Range Shift Status	≠	Initial Clutch Control					
			Attained Gear Slip	<=	40 RPM					
			If above coditons are true, increment appropriate Fail 1 Timers Below:							
			fail timer 1 (2-1 shifting with throttle)	>=	0.700195313 Fail Time (Sec)	е				
			fail timer 1 (2-1 shifting without throttle)		0.900390625 Fail Time (Sec)	e				
			fail timer 1 (2-3 shifting with throttle)	>=	0.700195313 Fail Time (Sec)	e				
			fail timer 1 (2-3 shifting without throttle)		0.900390625 Fail Time (Sec)	е				
			fail timer 1 (2-4 shifting with throttle)	>=	0.700195313 Fail Time (Sec)	e				
			fail timer 1 (2-4 shifting without throttle)		0.900390625 Fail Time (Sec)	е				
			fail timer 1 (6-4 shifting with throttle)	>=	0.700195313 Fail Time (Sec)	е				
			fail timer 1 (6-4 shifting without throttle)		0.900390625 Fail Time (Sec)	e				
			fail timer 1 (6-5 shifting with throttle)	>=	0.700195313 Fail Time (Sec)	е				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (6-5 shifting without throttle)	>= 0.900390625				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting Table 15 for Fail	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Timer 2	
			2nd gear fail counter				Fail Counter >= 3 From 2nd Gear	
			6th gear fail counter				OR Fail Counter >= 3 From 6th Gear	

	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
								OR	
				total fail counter				Total >= 5 Fail Counter	
						TUT Enable temperature	>= -6.672 °C		
						Input Speed Sensor fault	= FALSE Boolea n		
						Output Speed Sensor fault	= FALSE Boolea n		
						Command / Attained Gear	≠ 1st Boolea n		
						High Side Driver ON	= TRUE Boolea n		
						output speed limit for TUT			
						input speed limit for TUT			
						PRNDL state defaulted	= FALSE Boolea n		
						IMS Fault Pending	= FALSE Boolea n		
						Service Fast Learn Mode	= FALSE Boolea n		
						HSD Enabled	= TRUE Boolea n		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
							ECM: P0101, P0102, P0103, P0106, P0107,		
							P0108, P0171, P0172,		
							P0174, P0175, P0201, P0202, P0203, P0204,		
							P0205, P0206, P0207, P0208, P0300, P0301,		
							P0302, P0303, P0304,		
							P0305, P0306, P0307, P0308, P0401, P042E		
L									

COMPONENT/ SYSTEM	FAULT CODE		MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1 Case: Steady State 1st						One Trip
			Attained Gear slip	>=	400 RPM				
			If the Above is True for Time		Table Based Time Please Refer to Table 4 in supporting documents				
			Intrusive test: (CBR1 clutch exhausted)						
			Gear Ratio Gear Ratio		3.112670898 2.705322266				
			If the above parameters are true		2.100022200				
								Fail >= 1.1 Timer (Sec)	
								>= 8 Fail in 1st Gear	
								or Total	
								>= 8 Fail Counts	;
			<u>Fail Case</u> <u>2</u> Case: Steady State 3rd Gear						
			Max Delta Output Speed Hysteresis	>=	Table Based value Please Refer to 3D Table 1 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio Gear Ratio					
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							Fail ≻= 3 Count in 3rd Gear	
							or Total >= 8 Fail Counts	
			Fail Case 3 Case: Steady State 4rd Gear					
			Max Delta Output Speed Hysteresis					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis					
			If the Above is True for Time	>= Sec				
			Intrusive test: (C1234 clutch exhausted)					
			Gear Ratio Gear Ratio					
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							>= 3 Fail in 4th Gear	
							or Total >= 8 Fail Counts	
			Fail Case Case: Steady State 5th 4 Gear					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE ONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis						
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents					
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 0.798217773 >= 0.693725586					
								Fail >= 1.1 Timer (Sec)	
								Fail >= 3 Count in 5th Gear	
								or Total >= 8 Fail Counts	
					PRNDL State defaulted	=	FALSE Boolea		
					inhibit RVT	=	FALSE Boolea		
					IMS fault pending indication	=	FALSE Boolea n		
					output speed	>=	0 RPM		
					TPS validity flag	=	TRUE Boolea n		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS		ENABLE ONDITIO		TIME REQUIRED	MIL ILLUM.
					HSD Enabled	=	TRUE	Boolea n		
					Hydraulic_System_Pressurize	=	TRUE	Boolea n		
					u Minimum output speed for RVT	>=	0	Nm		
					A OR B (A) Output speed enable	>=	650	Nm		
					(B) Accelerator Pedal enable	>=	0.5005	Nm		
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.001	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.9	Nm		
					Transmission Fluid Temperature	>=	-6.656	°C		
					Input Speed Sensor fault	=	FALSE	Boolea n		
					Output Speed Sensor fault	=	FALSE	Boolea n		
					Default Gear Option is not present	=	TRUE			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean	P2770 Status is not	Key On	>= 0.3 Fail >= 0.3 Time (Sec) Sample out of 0.375 Time (Sec)	One Trip
				Disable Conditions:	DTC's:	<= 31.99 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS		ENABLE ONDITION		TIME REQU	JIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)		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	<=	31.99	Volts			
						Engine Speed	>=	400	RPM			
						Engine Speed Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: No ECM: No					
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear									One Trip
			Gear slip	>= 400	RPM					Pleas e See Table 5 For Neutr al Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 2nd gear									

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If attained Gear ≠ 2nd for Time					
			If Above Conditions have been met, Increment 1st gear fail counter				1st >= 2 Gear Fail Count or	
			and C1234 fail counter				>= 14 C1234 >= 14 Clutch Fail Count	
			Fail Case 2 Case: Steady State 2nd Gear				Pleas	
			Gear slip	>= 400 RPM			e See Table 5 For Neutral Neutral (Sec) Time Cal	
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	Table based Timer, Please See Table 3 in Supporting Documents				
			If Above Conditions have been met, Increment 2nd gear fail counter				≥= 2 2nd Sear Fail Count	
							or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			and C1234 fail counter				>= 14 C1234 Clutch Fail Count	
			Fail Case 3 Case: Steady State 3rd Gear				Pleas	
			Gear slip	>= 400 RPM			e See Table S For Neutral Neutr al Time Ceci	
			Intrusive test: commanded 4th gear				Cal	
			If attained Gear ≠ 4th for time	Table based Timer, Please See Table 3 in Supporting Documents				
			If Above Conditions have been met, Increment 3rd gear fail counter				3rd >= 2 Gear Fail Count	
			and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
			Fail Case Case: Steady State 4th 4 Gear					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAE CONDIT		TIME REQUIRED	MIL ILLUM.
			Gear slip	>= 400 RPM				Pleas e See Table 5 For Timer al Time	
			Intrusive test: commanded 5th gear					Cal	
			If attained Gear  = 5th For Time	Table based Timer, Please See Table 3 in Supporting Documents					
			If Above Conditions have been met, Increment 4th gear fail counter					4th Sear Fail Count	
			and C1234 fail counter					or C1234 >= 14 Clutch Fail Count	
					PRNDL State defaulted	= FAL	SE Boolea n		
					inhibit RVT	= FAL	n		
					IMS fault pending indication	= FAL	n		
					TPS validity flag	= TR	п		
					Hydraulic System Pressurized Minimum output speed for	= TR	n		
					RVT A OR B	>= (	RPM		
					(A) Output speed enable	>= 65			
					(B) Accelerator Pedal enable	>= 0.50	005 Pct		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	DTC's:	<ul> <li>&gt;= 9 Volts</li> <li>31.99 Volts</li> <li>400 RPM</li> <li>7500 RPM</li> <li>5 Sec</li> <li>TRUE Boolea n</li> <li>TRUE Boolea n</li> <li>-6.656 °C</li> <li>FALSE Boolea n</li> <li>FALSE Boolea n</li> <li>TRUE</li> </ul>		
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)					One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command				
			Range Shift Status	¥	Initial Clutch Control				
			Attained Gear Slip If the above conditions are true increment	<=	40 RPM				
			appropriate Fail 1 Timers Below:						
			fail timer 1 (2-6 shifting with throttle)	>=	0.700195313 sec				
			fail timer 1 (2-6 shifting without throttle)	>=	0.900390625 sec				
			fail timer 1 (3-5 shifting with throttle)	>=	0.700195313 sec				
			fail timer 1 (3-5 shifting without throttle)	>=	0.900390625 sec				
			fail timer 1 (4-5 shifting with throttle)	>=	0.700195313 sec				
			fail timer 1 (4-5 shifting without throttle)	>=	0.900390625 sec				
			fail timer 1 (4-6 shifting with throttle)	>=	0.700195313 sec				
			fail timer 1 (4-6 shifting without throttle)	>=	0.900390625 sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enabl e Timer s for >= Fail sec Timer 1, and Refer ence Suppo rting 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 Counter >= 3 From 2nd Gear	r
			3rd gear fail counter				Fail Counter >= 3 From 3rd Gear	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			4th gear fail counter				Fail Counter >= 3 From 4th Gear	
			total fail counter				Total >= 5 Fail Counter	
					TUT Enable temperature			
					Input Speed Sensor fault	= FALSE Boolea n		
					Output Speed Sensor fault	= FALSE Boolea n		
					Command / Attained Gear	≠ 1st Boolea n		
					High Side Driver ON	= TRUE Boolea n		
					output speed limit for TUT			
					input speed limit for TUT	Deales		
					PRNDL state defaulted	= FALSE Boolea n		
					IMS Fault Pending	= FALSE Boolea		
					Service Fast Learn Mode	= FALSE Boolea n		
					HSD Enabled	= TRUE Boolea n		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	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					One Trip
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio Gear Ratio	1.529052734 1.328979492				
			If the above parameters are true					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED MIL ILLUM.
							Fail >= 1.1 Timer (Sec)
							Fail Count in 5th Gear
							OR Total >= 3 Fail Counts
			Fail Case 2 Case: 6th Gear				
			Max Delta Output Speed Hysteresis	>= Table Based value Please Refer to 3D Table 1 in supporting documents			
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents			
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in Supporting documents			
			Intrusive test: (CB26 clutch exhausted)				
			Gear Ratio Gear Ratio	>= 1.328979492			
			If the above parameters are true				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS			ТІМЕ	REQ	UIRED	MIL ILLUM.
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 6th Gear	
									>=	3	OR Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolea n				
					inhibit RVT	=	FALSE	Boolea n				
					IMS fault pending indication	=	FALSE	Boolea n				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolea n				
					HSD Enabled	=	TRUE	Boolea n				
					Hydraulic_System_Pressurize d	=	TRUE	Boolea n				
					Minimum output speed for RVT	>=	0	Nm				
					A OR B (A) Output speed enable		650	Nm				
					(B) Accelerator Pedal enable		650 0.5005					
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.001	Pct				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					if Attained Gear=1st FW Engine Torque Enable	>= 45 Nm		
					if Attained Gear=1st FW Engine Torque Enable			
					Transmission Fluid Temperature			
					Input Speed Sensor fault	= FALSE Boolea n		
					Output Speed Sensor fault	= FALSE Boolea n		
					Default Gear Option is not present			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			Fail >= 0.3 Time (Sec)	One Trip
							Sample out of 0.375 Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P2729 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volt		
					Ignition Voltage			
					Engine Speed			
					Engine Speed	<= 7500 RPM		
					Engine Speed is within the allowable limits for			
				Disable Conditions:	DTC's:			
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			Fail >= 0.3 Time (Sec) Sample out of 0.375 Time	One Trip
							(Sec)	
					P2730 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage			
					Ignition Voltage			
					Engine Speed			
					Engine Speed Engine Speed is within the allowable limits for			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		CONDITIONS												CONDITIONS		CONDITIONS		ТІМЕ	REQ	UIRED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:																						
					conditions.		ECM: None																					
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE	Boolean				>= out of	4.4 5	Fail Time (Sec) Sample Time	Two Trips																
						P2763 Status is not	Test Failed This Key On or Fault Active				(Sec)																	
						Ignition Voltage		Volt																				
						Ignition Voltage		Volt																				
						Engine Speed		RPM																				
						Engine Speed		RPM																				
						Engine Speed is within the allowable limits for		Sec																				
						High Side Driver Enabled	= TRUE	Boolea n																				
					Disable Conditions:	MIL not Illuminated for DTC's:		9																				
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE	Boolean				>=	4.4	MPH	One Trip																
									out of	5	MPH																	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	тн	RESHOLD	) VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS															тіме	REQUIRE	D M	11L ILLUM.
							P2764 Status is not	=	Test Failed This Key Or or Fault	ı t																
							Ignition Voltage	>=	9	Volt																
							Ignition Voltage	<=	31.99	Volt																
							Engine Speed	>=	400	RPM																
							Engine Speed	<=	7500	RPM																
							Engine Speed is within the allowable limits for	>=	5	Sec																
							High Side Driver Enabled	=	TRUE	Boolea n																
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: PO ECM: No		59																
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	=	TRUE	Boolean					>=	Fai cour 62 (≈ 1 seco s)	ts 0 nd	One Trip												
			Delay timer	>=	0.1125	sec					Out of	Sam Cour 70 (≈ 1 seco s)	nts 1 nd													
							Stabilization delay Power Mode	>= =	3 Run	sec																
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: No ECM: No																		

MAIN SECTION 1 OF 1 SECTION

COMPONENT/ SYSTEM	FAULT CODE		MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	= TRUE	Boolean			>= 12 sec	One Trip
						Stabilization delay Power Mode			
					Disable Conditions:	MIL not Illuminated for DTC's:			

						2D Ta	bles				
<u>Table 1</u>	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	<mark>512.00</mark> N*m 150.00 RPM		
	100.00	120.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00 RPW		
<u>Table 2</u>	-6.67 409.59	-6.66 2.00	40.00 °C 2.00 Se								
<u>Table 3</u>	-6.67 409.59	-6.66 3.50	<mark>40.00</mark> ⁰0 3.50 Se								
<u>Table 4</u>	-6.67 409.59	-6.66 2.99	<mark>40.00</mark> °C 2.00 Se								
<u>Table 5</u>	-6.67 409.59	-6.66 3.00	40.00 ℃ 3.00 Se								
<u>Table 6</u>	-7.01 409.00	-7.00 3.60	<b>40.00</b> 1.60	80.00 1.40	<mark>120.00</mark> °C 1.40 Se						
<u>Table 7</u>	-7.01 409.00	-7.00 3.40	<b>40.00</b> 1.40	80.00 1.30	<mark>120.00</mark> °C 1.20 Se						

					2D
Table 8					
	-7.01 409.00	-7.00 3.60	40.00 1.60	80.00 1.50	120.00 ⁰C 1.40 Sec
<u>Table 9</u>					
	-7.01 409.00	-7.00 3.30	40.00 1.30	80.00 1.20	120.00 ºC 1.10 Sec
Table 10	-40.00	-20.00	0.00	30.00	110.00 °C
	8.85	3.75	1.31	0.28	0.28 Sec
Table 11	-40.00	-20.00	0.00	30.00	110.00 °C
	5.00	1.70	0.40	0.25	0.25 Sec
Table 12	40.00	20.00	0.00	20.00	110.00
	-40.00 8.00	-20.00 2.20	0.00 0.70	30.00 0.25	110.00 ⁰C 0.25 Sec
Table 13					
	-40.00 5.20	<mark>-20.00</mark> 1.60	0.00 0.50	30.00 0.27	<mark>110.00</mark> ⁰C 0.16 Sec

					2	D Ta	bles		
Table 14									
	-40.00	-20.00	0.00	30.00	110.00 °C				
	5.00	1.50	0.70	0.25	0.25 Sec	•			
Table 15									
	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00 °C
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Sec
Table 16									
	-6.67	-6.66	40.00 °C						
	409.59	1.50	1.50 Se	ec					
Table 17									
	-6.67	-6.66	40.00 °C						
	0.40	0.35	0.30 Se	ec					
Table 18									
	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	<mark>149.10</mark> ⁰C
	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
Table 19									
	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	<mark>149.10</mark> ⁰C
	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
Table 20									
	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	<mark>149.10</mark> ⁰C
	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00 °C

3D_Table 1 X-Axis Calibration % Y-Axis Calibration % Table Calibration RPM/Sec 3D_Table 2 X-Axis Calibration % Y-Axis Calibration % X-Axis Calibration % Y-Axis Calibration % Y-Axis Calibration % Y-Axis Calibration % Y-Axis Calibration % Y-Axis Calibration % Y-Axis Calibration RPM/Sec X-Axis Calibration % Y-Axis Calibration RPM/Sec			3D 1	<b>Fable</b>	S		
X-Axis Calibration       %         Y-Axis Calibration       °C         Table Calibration       RPM/Sec         -6.67       8191.75       8191.75       8191.75       8191.75         3D_Table 2       X-Axis Calibration       %       0.00       2.00       5.00       25.00       100.00         3D_Table 2       X-Axis Calibration       %       0.00       2.00       5.00       25.00       100.00         Y-Axis Calibration       %       0.00       8191.75       8191.75       8191.75       8191.75         3D_Table 2       X-Axis Calibration       %       0.00       2.00       5.00       25.00       100.00         Y-Axis Calibration       %       0.667       8191.75       8191.75       8191.75       8191.75         Y-Axis Calibration       RPM/Sec       -6.66       500.00       300.00       300.00       300.00							
Y-Axis Calibration       °C       -6.67       8191.75 <td>3D_Table 1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	3D_Table 1						
Table Calibration       RPM/Sec       -6.66       8191.75       8191.75       8191.75       8191.75       8191.75         3D_Table 2       X-Axis Calibration       %       0.00       2.00       5.00       25.00       100.00         Y-Axis Calibration       °C       -6.66       8191.75       8191.75       8191.75       8191.75       8191.75         Table Calibration       °C       -6.67       8191.75       8191.75       8191.75       8191.75         Table Calibration       RPM/Sec       -6.66       500.00       500.00       300.00       300.00		0.07					
40.00       8191.75       8191.75       8191.75       8191.75       8191.75       8191.75         3D_Table 2       X-Axis Calibration %       0.00       2.00       5.00       25.00       100.00         Y-Axis Calibration %       -6.67       8191.75       8191.75       8191.75       8191.75         Table Calibration RPM/Sec       -6.66       500.00       500.00       300.00       300.00							
3D_Table 2 X-Axis Calibration % Y-Axis Calibration °C Table Calibration RPM/Sec No.00 2.00 5.00 25.00 100.00 8191.75 8191							
X-Axis Calibration       %       0.00       2.00       5.00       25.00       100.00         Y-Axis Calibration       °C       -6.67       8191.75       8191.75       8191.75       8191.75       8191.75         Table Calibration       RPM/Sec       -6.66       500.00       500.00       300.00       300.00							
Y-Axis Calibration         °C         -6.67         8191.75			0.00	2.00	5.00	25.00	100.00
		-6.67					
40.00 <u>500.00</u> <u>300.00</u> <u>300.00</u> <u>300.00</u> <u>300.00</u>	Table Calibration RPM/Sec	-6.66	500.00	500.00	300.00	300.00	300.00
		40.00	500.00	500.00	300.00	300.00	300.00