Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	reshold /alue	Secondary Malfunction		nable iditions			me uired	Mil Illum.
Transmission Control Module (TCM)	P0562	Ignition voltage at the TCM is low for an extended period of time.	Ignition Voltage	Volts				=	4	Fail counts (1000ms loop)	No Mil
								Out of	12	Sample Counts (1000ms loop)	
					Ignition Voltage Hyst Hi (enabled above this value)	> 6	Volts				
					Ignition Voltage Hyst Lo (disabled below this value)	<= 2					
					Engine Speed	> 120	00 RPM				
				Disable Conditions :							
Transmission Control Module (TCM)	P0563	Ignition voltage at the TCM is high for an extended period of time.	Ignition Voltage	Volts				=	10	Fail counts (1000ms loop)	No Mil
								Out of	12	Sample Counts (1000ms loop)	
					Ignition Voltage Hyst Hi (enabled above this value)	> 6	Volts				
					Ignition Voltage Hyst Lo (disabled below this value)		Volts				
				Disable Conditions							

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Manunction	Conditions	Required	
Transmission Control Module (TCM)	P0601	Transmission Electro- Hydraulic Control Module Read Only Memory	Incorrect program/calibr ations checksum	= TRUE Boolean			>= 5 Fail Counts	One Trip
				Disable Conditions :	MIL not Illuminated for DTC's:			
								No Mil
Transmission Control Module (TCM)	P0602	Transmission Electro- Hydraulic Control Module Not Programmed	Non- Programmed TECHM Failure	= TRUE Boolean			Runs Continously	
				Disable Conditions :	MIL not Illuminated for DTC's:			
Transmission Control Module (TCM)	P0603	Transmission Electro- Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE Boolean			Runs Continously	One Trip
				Disable Conditions :	MIL not Illuminated for DTC's:			
Transmission Control Module (TCM)	P0604	Transmission Electro- Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	= TRUE Boolean			>= 5 Fail Counts	One Trip
							= 16 Sample Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions		Tir Requ		Mil Illum.
					Disable Conditions :	MIL not Illuminated for DTC's:					
Transmission Control Module (TCM)	P062F	Transmission Electro- Hydraulic Control Module Long Term Memory Performance	TCM Non- Volatile Memory bit Incorrect flag at Powerdown	= TRUE	Boolean				Runs	Continously	One Trip
					Disable Conditions :						
Transmission Control Module (TCM)	P0634	Transmission Electro- Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	> 144 =	°C			>=	5	Fail Time (Sec)	One Trip
			Fail Substrate Case Temperature	> 50	°C			>=	2	Fail Time (Sec)	
			Ignition Voltage Note: either	> 18	Volts						
			fail case can set the DTC			Ignition Voltage Lo	>= 9 Volts				
						Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	<= 31.990234 Volts >= 0 °C <= 240 °C >= 0.25 Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0634 Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions :				
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE Boolean			>= 3 Fail Counts	One Trip
							out of 5 Sample Counts	
					P0658 Status is not	Test Failed This Key On or Fault Active		
					High Side Driver 1 On	= True Boolean		
				Disable Conditions :				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
High Side Driver		Actuator Supply Voltage Circuit High	During the controller power-up, prior to the HSD being turned on, the HWIO reports that power short failure is	= TRUE Boolean			>= 3 Fail Counts	No Mil
				Disable Conditions :	P0659 Status is not MIL not Illuminated for DTC's:	Active TCM: None	Counts Counts	
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/ Performance	If transmission oil temp to substrate temp Δ	Refer to Table 19 in support ing docum ents Refer				Two Trips
			If TCM substrate temp to power up temp Δ	to Table 20 in support ing docum ents				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable)	Tin	ne	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditio	ns	Requ	ıired	Illum.
			Both conditions above required to increment fail counter					>= 3000	Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.					Out 3750 of	Sample Counts (100ms loop)	
			Non- continuous (intermittent) fail conditions will delay resetting fail counter until					>= 700	Pass Counts (100ms loop)	
								Out 875 of	Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid	- TRUE	Boolean Boolean			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mil Illum.
System	Code	Description	Criteria	Value			Condition		Required	mum.
					Ignition Voltage Lo		9	Volts		
					Ignition Voltage Hi			Volts		
					Engine Speed Lo		400	RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is within the allowable		E	Coo		
					limits for		5	Sec		
					Brake torque active		FALSE			
					Below describes the		TALGE			
					brake torque entry					
					criteria					
					Engine Torque		90	N*m		
					Throttle			Pct		
					Transmission Input					
					Speed		200	RPM		
					Vehicle Speed		8	Kph		
								•		
					Transmission Range	¥	Park			
					Transmission Range	≠	Neutral			
					PTO	=	Not Active			
					Set Brake Torque					
					Active TRUE if above		7	sec		
					conditions are met for:	Ĺ	,	000		
					Below describes the					
					brake torque exit criteria					
					Brake torque entry criteria		Not Met			
					Ontona		Clutch			
					Clutch hydraulic		Hydraulic			
					pressure		Air Purge			
					procoure		Event			
							CeTFTD_e			
					Clutch used to exit brake torque active		_C3_RatlE			
					•		nbl			
					The above clutch					
					pressure is greater than this value for one	>=	600	kpa		
					loop					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
,					Set Brake Torque Active FALSE if above conditions are met for:			
					P0667 Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions :	for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	CeTFTI _e_Volt = ageInv ersePr op				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
бузівін	oue	Безоприон	If TCM Substrate Temperature Sensor = Direct Proportional and Temp	< 254 °C			. Togunou	
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	> 254 °C = 254 °C				
			Either condition above will satisfy the fail conditions				>= 60 Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0668 Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions :				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0669 Status is	Test Failed This Key On or Fault Active		
					For Hybrids, below conditions must also be met Estimated Motor Power Loss Estimated Motor Power Loss greater than limit for time	>= 0 kW >= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault			
				Disable Conditions :	for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/ Performance	If TCM power- up temp to substrate temp Δ					Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Molfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum
			If transmission oil temp to power up temp Δ	Support				
			Both conditions above required to increment fail counter				Fail Counts >= 3000 (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Sample Out 3750 Counts of (100ms loop)	
			Non- continuous (intermittent) fail conditions will delay resetting fail counter until				Pass Counts (100ms loop)	
							Sample Out Counts of (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditio	าร	Required	Illum.
					Accelerator Position		TRUE	Boolean		
					Signal Valid					
					Ignition Voltage Lo		9	Volts		
					Ignition Voltage Hi		31.990234	Volts		
					Engine Speed Lo		400	RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is within the allowable		E	Coo		
					limits for		5	Sec		
					Brake torque active		FALSE			
					Below describes the		TALOL			
					brake torque entry					
					criteria					
					Engine Torque		90	N*m		
					Throttle		30.000305	Pct		
					Transmission Input					
					Speed		200	RPM		
					Vehicle Speed		8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					PTO	=	Not Active			
					Set Brake Torque					
					Active TRUE if above		7	sec		
					conditions are met for:					
					Below describes the					
					brake torque exit					
					criteria					
					Brake torque entry		NI. (NA. (
					criteria		Not Met			
							Clutch			
					Clutch hydraulic	≠	Hydraulic			
					pressure		Air Purge			
							Event			
					Clutch used to exit brake torque active		CeTFTD_e _C3_RatIE			
					•		nbl			
					The above clutch					
					pressure is greater than this value for one loop		600	kpa		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Set Brake Torque Active FALSE if above conditions are met for:			
					P06AC Status is	Test Failed This Key On or Fault Active		
				Disable Conditions :	for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp				>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		

Component/	Fault	Monitor Strategy	Malfunction		shold	Secondary		Enable		Tin		Mil
System	Code	Description	Criteria	Va	alue	Malfunction		Conditions		Requ	ired	Illum.
						P06AD Status is	≠	Test Failed This Key On or Fault Active				
						For Hybrids, below conditions must also be met Estimated Motor Power Loss Estimated Motor Power Loss greater than limit for time	>=	0 kW 0 Sec				
						with Hybrid Processor Control Module	=	FALSE				
						Estimated Motor Power Loss Fault	=	FALSE				
					Disable Conditions			: P0716, P0717, P0722 23	,			
							ECM	: None				
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp		°C				>=	60	Fail Time (Sec)	Two Trips
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable Iimits for	<= >= <= >=	9 Volts 31.990234 Volts 400 RPM 7500 RPM 5 Sec				
						P06AE Status is	≠	Test Failed This Key On or Fault Active				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Gystom		2333p.::011	51.051.0	Disable Conditions :	MIL not Illuminated for DTC's:	TCM: None	- 1	
Mode Switch	P071A	Transmission Mode Switch A Circuit	If Tow Haul / Winter Switch Active	= TRUE Boolean	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec	>= 600 Fail Time (Sec)	No Mil
				Disable Conditions :	MIL not Illuminated for DTC's:			
Mode Switch	P071D	Transmission Mode Switch B Circuit	If Sport Mode Switch is Active	= TRUE Boolean			>= 600 Fail Time (Sec)	No Mil
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions :	MIL not Illuminated for DTC's:			

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria		Waltuffction	Conditions	Required	Two Trips
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/ Performance	If transmission oil temp to substrate temp Δ	support				Two mps
			If transmission oil temp to power up temp Δ					
			Both conditions above required to increment fail counter				Fail Counts >= 3000 (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Sample Out Counts of (100ms loop)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enab Condit			Tim Requi		Mil Illum.
System	Code	Description	Criteria	value	Walturiction	Condit	ions		Requi	rea	mum.
			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		Boolean				
					Accelerator Position Signal Valid	- TDI IE	Boolean				
					Ignition Voltage Lo	>= 9	Volts				
					Ignition Voltage Hi						
					Engine Speed Lo		RPM				
					Engine Speed Hi Engine Speed is		RPM				
					within the allowable	>= 5	Sec				
					limits for Brake torque active						
					Below describes the						
					brake torque entry						
					criteria						
					Engine Torque		N*m				
					Throttle Transmission Input						
					Speed		RPM				
					Vehicle Speed		Kph				
					Transmission Range	≠ Park					
					Transmission Range	≠ Neutral					
					PTO	= Not Active	Э				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Set Brake Torque Active TRUE if above conditions are met for:	>= 7 sec		
					Below describes the brake torque exit criteria			
					Brake torque entry criteria			
					Clutch hydraulic pressure			
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	Test Failed This Key ≠ On or Fault Active		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions :	for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0104, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	ersePr op				Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable			Tim		Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions	S		Requ	ired	Illum.
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	= 234 C								
			Either condition above will satisfy the fail conditions						>=	60	Fail Time (Sec)	
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage Hi	<= 3	31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for		5	Sec				
					P0712 Status is		Fest Failed This Key On or Fault Active					
					For Hybrids, below conditions must also be met Estimated Motor	\ -	0	kW				
					Power Loss Estimated Motor Power Loss greater than limit for time	>=	0	Sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault			
				Disable Conditions :	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723		
				•		ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	CeTFTI _e_Volt = ageInv ersePr op				Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp					
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	< -254 °C =				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	Either condition above will satisfy the fail conditions				>= 60 Fail Time (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0713 Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions :	for DTC's:	TCM: P0713, P0716, P0717, P0722, P0723 ECM: None		
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	> 1350 RPM		LOW. NOTE	>= 0.8 Fail Time (Sec)	One Trip
					Engine Torque is Engine Torque is Engine Speed Engine Speed Engine Speed is within the allowable limits for Vehicle Speed is Throttle Position is	<= 8191.875 N*m >= 400 RPM <= 7500 RPM >= 5 Sec >= 10 Kph		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction		Enable Conditio			Tim Requ		Mil Illum.
		·				Transmission Input Speed is The previous requirement has been satisfied for	>=	0	RPM Sec				
						The change (loop to loop) in transmission input speed is	<	8191.75	RPM/Loop				
						The previous requirement has been satisfied for Throttle Position	>=	0	Sec				
						Signal Valid Engine Torque Signal Valid	=	TRUE	Boolean Boolean				
						Ignition Voltage Ignition Voltage		9 31.990234	Volts Volts				
						P0716 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions :	MIL not Illuminated for DTC's:			52, P0973,				
								: P0101, P01 1, P0122, P0					
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Transmission Case Input Speed is	< 50	RPM					>=	4.5	Fail Time (Sec)	One Trip

Component/	Fault Code	Monitor Strategy	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is		RPM	Controller uses a single power supply for the speed sensors	a y = 1 Boolean	Required	
						Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	s <= 8191.875 N*m d >= 16 Kph all = TRUE Boolean e >= 9 Volts e <= 31.990234 Volts d >= 400 RPM d <= 7500 RPM s e >= 5 Sec		
						P0717 Status is not	Test Failed		
					Disable Conditions :	for DTC's:	d TCM: P0722, P0723 S: ECM: P0101, P0102, P0103		
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	< 35 = 35	RPM			>= 45	One Trip Time ec)

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Condition		Time Required	Mil Illum.
System	Code	Description	Criteria	value	Manufiction	Condition	15	Kequirea	muni.
					P0722 Status is not	Test Failed This Key On or Fault Active			
					Transmission Input Speed Check		Boolean		
					Engine Torque Check	= TRUE	Boolean		
					Throttle Position		Pct		
					Transmission Fluid Temperature		°C		
					Disable this DTC if the PTO is active	= 1	Boolean		
					Engine Torque Signal Valid	- IRUE	Boolean		
					Throttle Position Signal Valid		Boolean		
					Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is	<= 31.990234 >= 400 <= 7500	Volts Volts RPM RPM		
					Engine Speed is within the allowable limits for	>= 5	Sec		
					Enable_Flags Defined Below				
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE				
					Engine Torque Condition 1 Shift Status is not OR Transmission Range is	= complete = Park or			

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio		Time Required	Mil Illum.
System	Code	Description	Criteria	value	Engine Torque is		8191.75	N*m	Required	mum.
					Engine Torque is Engine Torque is		8191.75	N*m		
					Engine rorque is	_	0191.75	IN III		
					Engine Torque					
					Condition 2					
					Engine Torque is		30	N*m		
					Engine Torque is	<=	8191.75	N*m		
					The Transmission					
					Input Speed (TIS)					
					Check is TRUE, if either of the two					
					following conditions					
					are TRUE					
					TIO Observations 4					
					TIS Check Condition 1					
					Transmission Input	>=	1000	RPM		
					Speed is		1000	TXI IVI		
					Transmission Input		8191.75	RPM		
					Speed is					
					TIS Check Condition 2					
					Engine Speed without		3200	RPM		
					the brake applied is					
					Engine Speed with the		3200	RPM		
					brake applied is					
					Engine Speed is	<=	8191.75	RPM		
					Controller uses a					
					single power supply		1	Boolean		
					for the speed sensors					
					Powertrain Brake					
					Pedal is Valid		TRUE	Boolean		
					5555115					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Jystein	Code	Description	Ontena	Disable Conditions	MIL not Illuminated	TCM: P0716, P0717, P0723	roquiou	
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed Output Speed Delta	> 105 RPM = 8191.8 RPM			>= 0 Enable Time (Sec) >= 0 Enable Time (Sec)	One Trip
			Output Speed Drop	> 1000 RPM			Output >= 3 Speed Drop Recover Fail Time (Sec)	
					Range_Disable			
					Neutral_Range_Enabl e	- TRUE See Below		
					And Neutral_Speed_Enabl e are TRUE concurrently	= TRUE See Below		
					Transmission_Range_ Enable Transmission_Input_S peed_Enable	= TRUE See Below		
					No Change in Transfer Case Range (High <-> Low) for	>= 5 Seconds		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
dystem	Ode	Безсприон	Ontena	value	P0723 Status is not	Test Failed		rtoquilou	
					Disable this DTC if the PTO is active	= 1 BC	oolean		
					Ignition Voltage is Ignition Voltage is Engine Speed is	<= 31.990234 \	Volts Volts RPM		
					Engine Speed is Engine Speed is	<= 7500 F	RPM		
					within the allowable limits for Enable_Flags Defined		Sec		
					Below				
					Transmission_Input_S peed_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 T	Enable Time (Sec)		
					Input Speed Delta Raw Input Speed		RPM RPM		
					TIS Condition 2 is TRUE when ALL of the next three conditions are satisfied				
					Input Speed A Single Power Supply is used for all speed sensors	= 0 F = TRUE Bo	RPM oolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·			Powertrain Brake Pedal Applied is			
					Neutral_Range_Enabl e is TRUE when any of the next 3 conditions are TRUE			
					Transmission Range is	- Neullal FNUM		
					Transmission Range is	- EULIAI ENDIVI		
					Transmission Range is	T VE FINITIVI		
					And when a drop occurs			
					Loop to Loop Drop of Transmission Output Speed is	> 650 RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is	= Park ENUM		
					Transmission Range is	Park/Rever = se ENUM Transitonal		
					Input Clutch is not	= ON (Fully Applied) ENUM		
					Neutral_Speed_Enabl e is TRUE when All of the next three conditions are satsified for	> 1 Seconds		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Transmission Output	Conditions	Required	mum.
					Speed	> 100 RPM		
					And the acceleration of the Transmission	SOO RPIVI/LOOP		
					Output Speed is	Rate		
					And the acceleration of the Transmission			
					Output Speed is	Nate		
					Transmission_Range_			
					Enable is TRUE when one of the next four			
					conditions is TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	Reverse/N = eutral ENUM Transitional		
					Transmission Range is	Neutral/Dri = ve ENUM Transitional		
					Range Change Delay Timer	>= 5 Sec		
				Disable Conditions		TCM: P0973, P0974, P0976, P0977		
				·		ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	> 500 = 300 Kpa			>= 2 Enable Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met					

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					3rd Gear Ratio Lo	>= 1.77 1.7601318 Ratio		
					3rd Gear Ratio High	<= 2.04 2.0250244 Ratio		
					4th Gear Ratio Lo 4th Gear Ratio High 5th Gear Ratio Lo 5th Gear Ratio Hi 6th Gear Ratio Lo 6th Gear Ratio High Transmission Fluid Temperature Lo Transmission Fluid	<= 1.5474854 Ratio >= 0.9300537 Ratio <= 1.0699463 Ratio >= 0.6938477 Ratio		
					Temperature Hi TCC Command Lock ON or ON mode	= TRUE Boolean		
					PTO Not Active Engine Torque Signal Valid	= TRUE Boolean = TRUE Boolean		
					Throttle Position Signal Valid Dynamic Mode	= TRUE Boolean = FALSE Boolean		
					P0741 Status is	Test Failed		

Component/	Fault	Monitor Strategy	Malfunction	٦	Threshold	Secondary Malfunction	Enable			me	Mil
System	Code	Description	Criteria		Value		Conditions		Requ	uired	Illum.
					Disable Conditions :		TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764 ECM: P0101, P0102, P0103, P0103, P0106, P0107,				
							P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed		0 RPM						One Trip
			TCC Slip Speed		0 RPM			>=	1.2	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter					>=	5	Fail Counter	
						Run TCC Stuck On Test Enable Criteria: Gear Ratio Gear Ratio Engine Speed Hi Engine Speed Lo Vehicle Speed HI Vehicle Speed Lo Stuck On During Upshift Enabled	<= 4.77 4.5 Ratio >= 2.4003906 Ratio <= 6500 RPM >= 500 RPM <= 511 KPH >= 11 Replace				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition		Time Required	Mil Illum.
- Cystelli		Description	- Children		If Stuck On During Upshift is enabled (See Above), Engine Torque Must be Down Shift In Progress	>=	35 FALSE	Nm Boolean		
					Current Gear Engine Torque Hi Engine Torque Lo Current Range Current Range Transmission Sump Temperature Transmission Sump	≠ <= >= ≠ <= <=	1st Gear Locked 8191.875 50 25 Neutral Reverse 130 -6.65625	Boolean Nm Nm Range Range °C °C		
					Throttle Position Hyst High Throttle Position Hyst		11- 10.000610 35 2.9998779	Pct Pct		
					Low PTO Active Disable if in D1 and value true	=	FALSE 0	Boolean Boolean		
					Disable if in D2 and value true Disable if in D3 and value true	_	0	Boolean Boolean		
					Disable if in D4 and value true Disable if in D5 and value true	=	0	Boolean Boolean		
					Disable if in MUMD and value true Disable if in TUTD and	=	0	Boolean		
					value true 4 Wheel Drive Active Hydraulic Clutch Air	=	0 FALSE FALSE	Boolean Boolean Boolean		
					Purge Active Ignore Air Purge if value = true	_	0	Boolean		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					TCC Mode Common Enables: Ignition Voltage Ignition Voltage Vehicle Speed Engine Speed Engine Speed	>= 9 V <= 31.990234 V <= 511 KPH >= 400 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Engine Torque Signal Valid Throttle Position Signal Valid	- TRUE Boolean		
					P0742 Status is	Test Failed		
				Disable Conditions :	for DTC's:	TCM: P0716, P0717, P0722, P0723, P0741, P2763, P2764		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip Commanded Gear	> 400 RPM = 1st rpm				Two Trips
			Gear Ratio	< 1.5475			>= 0.3 Fail Tmr	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable onditions			me uired	Mil Illum.
- Cystom		2000	Gear Ratio If the above parameters	> 1.3451				=	5	Fail Counts	
			are true								
								≠	0	Neutral Timer (Sec)	
								>=	0.3	Fail Timer (Sec)	
					Ignition Voltage Lo	>=	9 Volts	>=	8	Counts	
					Ignition Voltage Hi		90234 Volts				
					Engine Speed Lo		.00 RPM				
					Engine Speed Hi		500 RPM				
					Engine Speed is within the allowable limits for	>=	5 Sec				
					Transmission Fluid Temperature Shift is Complete	>= -6.6	°C °C				
					TPS OR		04883 %				
					Output Speed		0 RPM				
					Throttle Position Signal Valid from ECM		RUE Boolean				
					Engine Torque Signal Valid from ECM, High side driver is enabled	= TF	RUE Boolean				
					High-Side Driver is Enabled	= TF	RUE Boolean				
					Input Speed Sensor fault	= FA	LSE Boolean				
					Output Speed Sensor fault	= FA	LSE Boolean				
					Default Gear Option is not present		RUE				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Disable	MIL not Illuminated	TCM: P0716, P0717, P0722,	Required	mum.
				Conditions :	for DTC's:	P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	> 400 Rpm				One Trip
			Commanded Gear	= 3rd Gear				
			Commanded Gear has Achieved 1st Locked OR 1st Free- Wheel OR 2nd with Mode 2 Sol. Commanded On	= TRUE Boolean				
			C456/CBR1 Pressure Switch	= Pressur ized Boolean				
			C456/CBR1 Pressure Switch Fault	= FALSE Boolean				
			If the above parameters are true					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio		Tin Requ		Mil Illum.
									Please Refer to Table >= 16 in Suppor ting Docum ents	Neutral Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi	<=	9 31.990234	Volts Volts	>= 5	Counts	
					Engine Speed Lo Engine Speed Hi Engine Speed is	<=	400 7500	RPM RPM			
					within the allowable limits for	>=	5	Sec			
					High-Side Driver is Enabled	=	TRUE	Boolean			
					Throttle Position Signal Valid from ECM		TRUE	Boolean			
					Output Speed OR		0	RPM			
					TPS Shift is Complete Transmission Fluid		0.5004883	%			
					Transmission Fluid Temperature Input Speed Sensor	>=	-6.65625	°C			
					fault Output Speed Sensor	=	FALSE FALSE	Boolean Boolean			
					fault Default Gear Option is not present	_	TRUE	Doolean			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	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, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Commanded Gear	1st = Locke d				No Mil
			Gear Box Slip				Please Refer to Table >= 5 in Suppo rting Documents	
			Intrusive Shift to 2nd Commanded Gear Previous	1st = Locke Gear d				
				=				
			Gear Ratio If the above parameters are true	= 2.7046				
			are true				>= 1 sec >= 3 counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio		Time Required	Mil Illum.
System	Code	Description	Criteria	Value	Ignition Voltage Lo	>=	9	Volts	Required	
					Ignition Voltage Hi			Volts		
					Engine Speed Lo		400	RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is					
					within the allowable		5	Sec		
					limits for					
					Output Speed		0	RPM		
					OR					
					TPS		0.5004883	%		
					Shift is Complete					
					Transmission Fluid		-6.65625	°C		
					Temperature					
					High-Side Driver is Enabled	=	TRUE	Boolean		
					Throttle Position					
					Signal Valid from		TRUE	Boolean		
					ECM			20010411		
					Input Speed Sensor					
					fault		FALSE	Boolean		
					Output Speed	_	FALSE	Boolean		
					Sensor fault		FALSE	Doolean		
					Default Gear Option		TRUE			
					is not present					
				Diochlo	MIL mot Illuminated	TON	. D0746 D07	47 D0700		
				Disable Conditions				17, P0722,		
				Conditions .	ioi Dic s.	P012	.5, P 102E			
						FCM	: P0101, P01	02. P0103.		
							6, P0107, P0			
							'1, P0172, P0			
							'5, P0201, P0			
							3, P0204, P0			
						P020	6, P0207, P0	208,		
							0, P0301, P0			
							3, P0304, P0			
							6, P0307, P0	308,		
						P040	1, P042E			

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

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable				me	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditio	ns		Req	uired	Illum.
			It the above condiations are true, Increment 5th gear fail counter						>=	3	5th Gear Fail Counts	
			and C35R Fail counter						>=	14	or 3-5R Clutch Fail Counts	
					PRNDL State defaulted	-	FALSE	Boolean				
					inhibit RVT IMS fault pending		FALSE	Boolean				
					indication		FALSE	Boolean				
					TPS validity flag		TRUE	Boolean				
					Hydraulic System Pressurized	-	TRUE	Boolean				
					Minimum output speed for RVT A OR B	>=	0	RPM				
					(A) Output speed enable	>=	650	RPM				
					(B) Accelerator Pedal enable Common Enable	/-	0.5004883	Pct				
					Criteria							
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= >=	9 31.990234 400 7500	Volts Volts RPM RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Throttle Position Signal valid	=	TRUE	Boolean				
					HSD Enabled Transmission Fluid	\	TRUE -6.65625	Boolean °C				
					Temperature Input Speed Sensor fault	_	FALSE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value		Conditions	Required	mum.
					Output Speed Sensor fault Default Gear Option is not present	= FALSE Boolean		
				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 Solenoid (VBS)	D0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case Case: Steady State 1st Attained Gear	> 400 PPM				One Trip
			slip If the Above is True for Time	Table Based Time Please Refer				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystelli	Code	Безсприон	Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	< 2.00 72.025 = 02 1.74 > 1.7601 = 318			>= 1.1 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	
			Fail Case: Steady Case State 2nd gear Max Delta Output Speed Hysteresis	Table Based value Please Refer				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Min Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 2 in support ing docum ents				
			If the Above is True for Time					
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	< 2.00- 72.025 02 1.74-				
			Gear Ratio	= 1.7601 = 318				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If the Above is True for Time	Table Based Time Please Refer > to Sec = Table 17 in support ing docum ents				
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above	<pre>1.0699 2 0.9301</pre>				
			parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear or >= 3 Total Fail Counts	
			Fail Case Case: Steady 4 State 6th gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Manufiction	Conditions	Required	mum.
			Max Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 1 in support ing docum ents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 2 in support ing docum ents				
			If the Above is True for Time	Table Based Time Please Refer > to Sec Table 17 in support ing docum ents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition				me uired	Mil Illum.
- Oystelli	oddc	Безеприон	Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters	< 1.0699					>= >=	1.1	Fail Timer (Sec) counts	
			are true						>=	1.1	Fail Timer (Sec) Fail Count in 6th Gear	
									>=	3	or Total Fail Counts	
					PRNDL State defaulted inhibit RVT	_	FALSE FALSE	Boolean Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed TPS validity flag HSD Enabled	=	0 TRUE TRUE	RPM Boolean Boolean				
					Hydraulic_System_Pr essurized	_	TRUE	Boolean				
					Minimum output speed for RVT A OR B		0	Nm				
					(A) Output speed enable	/-	650	Nm				
					(B) Accelerator Pedal enable	/- (0.5004883	Nm				
					Ignition Voltage Lo Ignition Voltage Hi	<= 3	9 31.990234	Volts Volts RPM				
					Engine Speed Lo Engine Speed Hi Engine Speed is	<=	400 7500	RPM				
					within the allowable limits for	>=	5	Sec				

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Ontena	Value	if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st	>= 10.00061 Pct	Кочиной	
					FW Engine Torque Enable if Attained Gear=1st			
					FW Engine Torque Enable Transmission Fluid			
					Temperature Input Speed Sensor fault	>= -0.05025 °C		
					Output Speed Sensor fault	= FALSE Boolean		
				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/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressur ized				
			Primary Offgoing Clutch Pressure Command Status	Clutch exhaus = t comma nd				
			Range Shift Status	Initial ≠ Clutch Control				
			Attained Gear Slip	< 40 RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:					

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			fail timer 1 (5-6 shifting with Closed Throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Refere nce Suppor ting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 3rd gear fail counter 5th gear fail				>= 3 3rd gear fail >= 3 counts OR 3 5th gear fail	
			oth gear fail counter				>= 3 stn gear fall counts OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio			Tim Requ		Mil Illum.
Oystem	Couc	Description	Total fail counter						>=	5	total fail counts	
					TUT Enable temperature		-6.671875	°C				-
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	_	FALSE	Boolean				
					Command / Attained Gear		1st	Boolean				
					High Side Driver ON		TRUE	Boolean				
					output speed limit for TUT		200	RPM				
					input speed limit for TUT	/-	200	RPM				
					PRNDL state defaulted	=	FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				
					Service Fast Learn Mode		FALSE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Default Gear Option is not present		TRUE					
				Disable Conditions :		TCM: P072	P0716, P07 3, P182E	17, P0722,				
						P010 P017 P017 P020 P020 P030 P030 P030	P0101, P01 6, P0107, P0 1, P0172, P0 5, P0201, P0 3, P0204, P0 6, P0207, P0 0, P0301, P0 3, P0304, P0 6, P0307, P0 1, P042E	1108, 1174, 1202, 1205, 1208, 1302, 1305,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction	Enable Conditio			Time Require	ed	Mil Illum.
Transmission Output Speed Sensor (TOSS)	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage						>=	0.05	sec	One Trip
			P077C Status is not	=								
			If the above conditons have been met, increment the P077C Fail Counter									
			DTC P077C Sets when the Fail Counter		Counts							
						P077C Enable Calibration Ignition Voltage Lo Ignition Voltage Hi	>= 1	Boolean Volts Volts				
					Disable Conditions :							
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage	> = 4.75	Volts				>=	0.05	sec	One Trip
			P077D Status is not	Test Failed This Key On or Fault Active								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the above conditons have been met, increment the P077D Fail Counter					
			DTC P077D Sets when the Fail Counter	> 75 Counts				
					P077D Enable Calibration Ignition Voltage Lo Ignition Voltage Hi	>= 9 Volts		
				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: Steady Case State 4th Gear					One Trip
			Gear slip	> 400 RPM			Please See Table Neutral >= 5 For Timer (Sec) Time Cal	
			Intrusive test: commanded 5th gear					

Code	Description	Criteria If attained Gear ≠5th for time			Conditions	Required	
		if the above conditions have been met Increment 4th Gear Fail Counter				>= 2 4th Gear Fail Count OR	
		and C456 Fail Counters				>= 14 C456 Fail Counts	
		Fail Case: Steady Case State 5th Gear				Please See Table	
		Intrusive test:	> 400 RPM			>= 5 For Timer (Sec) Neutral Time Cal	
			Fail Counters Fail Case: Steady Case State 5th 2 Gear Gear slip	Fail Counters Fail Case: Steady Case State 5th 2 Gear Gear slip = 400 RPM Intrusive test: commanded	Fail Counters Fail Case: Steady Case State 5th 2 Gear Gear slip = 400 RPM Intrusive test: commanded	Fail Counters Fail Case: Steady Case State 5th 2 Gear Gear slip = 400 RPM Intrusive test: commanded	Fail Counters Fail Case: Steady Case State 5th 2 Gear slip Gear slip Intrusive test: commanded State Steady Case State 5th 2 Gear slip Intrusive test: commanded

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable			Tir		Mil
System	Code	Description	Criteria	Value	Malfunction		Conditio	ns		Requ	uired	Illum.
			If attained Gear ≠ 5th for time if the above	Please Time (Sec) Refer to Table 3								
			conditions have been met Increment 6th Gear Fail Counter and C456 Fail Counter						>=	2	6th Gear Fail Count	
			and C456 Fail Counter						>=	14	OR C456 Fail Counts	
					PRNDL State		FALSE	Boolean				1
					defaulted inhibit RVT		FALSE	Boolean				
					IMS fault pending indication	l _	FALSE	Boolean				
					TPS validity flag	=	TRUE	Boolean				
					Hydraulic System Pressurized	-	TRUE	Boolean				
					Minimum output speed for RVT A OR B	_	0	RPM				
					(A) Output speed enable		650	RPM				
					(B) Accelerator Pedal enable Common Enable	>=	0.5004883	Pct				
					Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= <= >= <=	9 31.990234 400 7500	Volts Volts RPM RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System System					Malfunction Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault OutputSpeed Sensor fault Default Gear Option is not present MIL not Illuminated for DTC's:	Conditions = TRUE Boolean = TRUE Boolean >= -6.65625 °C = FALSE Boolean = FALSE Boolean = TRUE		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case Case: Steady State 1st Attained Gear	> 400 RPM		P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
oyotom	5546	Sostipatori	If the Above is	Table Based Time Please Refer				
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters	<pre></pre>				
			are true				>= 1.1 Fail Timer (Sec) >= 2 Fail Count in 1st Gear or >= 3 Total Fail Counts	
			Fail Case Case Steady State 2nd					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Max Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 1 in support ing docum ents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 2 in support ing docum ents				
			If the Above is True for Time	Table Based Time Please Refer > to Sec = Table 17 in support ing docum ents				
			Intrusive test: (CB26 clutch exhausted)					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Gear Ratio Gear Ratio	_				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 2nd Gear or	
							>= 3 Total fail counts	
			Fail Case Case Steady State 3rd					
			Max Delta Output Speed Hysteresis	rpm/sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Min Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 2 in support ing docum ents				
			If the Above is True for Time	Table Based Time Please Refer > to Sec = Table 17 in support ing docum ents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	< 1.5475				
			Gear Ratio	> = 1.3451				
			If the above parameters are true				- 1-	
							>= 1.1 Fail Timer (Sec) Fail Count in	
							>= 3 3rd Gear	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable			Tin		Mil Illum.
System	Code	Description	Criteria	Value	Manufiction		Conditio	ns		Requ	irea	mum.
									>=	OR 3	Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT IMS fault pending		FALSE	Boolean				
					indication	=	FALSE 0	Boolean RPM				
					output speed TPS validity flag		TRUE	Boolean				
					HSD Enabled		TRUE	Boolean				
					Hydraulic_System_Pr essurized	l _	TRUE	Boolean				
					Minimum output speed for RVT	>=	0	Nm				
					A OR B (A) Output speed enable	>=	650	Nm				
					(B) Accelerator Pedal enable	>=	0.5004883	Nm				
					Ignition Voltage Lo Ignition Voltage Hi	>=	9 31.990234	Volts Volts				
					Engine Speed Lo		400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.00061	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.875	Nm				
					Transmission Fluid Temperature	>=	-6.65625	°C				
					Input Speed Sensor fault	l _	FALSE	Boolean				
					Output Speed Sensor fault		FALSE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria	value	Default Gear Option is not present	= TRUF	Required	mum.
				Disable Conditions	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
				·		ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Primary Offgoing Clutch Pressure Command Status	Clutch exhaus t comma nd				
			Range Shift Status	Control				
			Attained Gear Slip					
			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (4-1 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (4-1 shifting without throttle)	> 0.9004 Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (4-2 shifting without throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				
			fail timer 1 (4-3 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (4-3 shifting without throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			fail timer 1 (5-3 shifting with throttle) fail timer 1 (5-3 shifting without	> a cood Fail Time				
			throttle) fail timer 1 (6-2 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (6-2 shifting without throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Refere nce Suppor ting Table 15 for Fail Timer 2	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition				me uired	Mil Illum.
Gystein	Code	Description	If fail timer is	FAIGO			3011411101					
			greater than									
			threshold									
			increment corresponding									
			gear fail									
			counter and									
			total fail									
			counter									
			4th gear fail counter						>=	3	Fail Counter From 4th Gear	
											OR	
			5th gear fail						>=	3	Fail Counter From 5th	
			counter						>=	3	Gear	
											OR	
			6th gear fail counter						>=	3	Fail Counter From 6th Gear	
											OR	
			Total fail counter						>=	5	Total Fail Counter	
			- Countries		TUT Enable temperature	>= -	-6.671875	°C			Codino	
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				
					Command / Attained	≠	1st	Boolean				
					Gear High Side Driver ON	=	TRUE	Boolean				
					output speed limit for TUT		200	RPM				
					input speed limit for TUT	>=	200	RPM				
					PRNDL state defaulted		FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				

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

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Switch Stuck in the Up Position in Range 1 Enabled	= 0 Boolean				Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 0 Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 40 Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	d Seco Malfu	ondary unction	Enable Condition	ıs	Time Required	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 1 Bool	ean					
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 1 Bool	ean					
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0 Bool	ean					
			Tap Up Switch ON	= TRUE Bool	ean			>=	Fail Time (Sec)	Э
			Fail Tap Up Case Switch Stuck in the Up Position in Range 1 Enabled	= 1 Bool	ean					
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	= 1 Bool	ean					

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch ON NOTE: Both Failcase 1 and Failcase 2 Must Be Met	= 0 Boolean = TRUE Boolean			>= 600 Fail Time (Sec)	
					Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM		
					P0815 Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions :	for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None		

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

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

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	Tap Down Switch Stuck in the Down Position in Reverse Enabled Tap Down	= 0 Boolean				
			Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean			>= 600 sec	
					Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	Sec Sec Sec		
				Disable Conditions :	MIL not Illuminated for DTC's:	TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold lue	Secondary Malfunction		Enable Condition	ıs		Tin Requ		Mil Illum.
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean					>=	60	Fail Time (Sec)	Special No Trip
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	\" \" \" \" \" \" \" \" \" \" \" \" \" \	9 31.990234 400 7500 5	Volts Volts RPM RPM				
						P0826 Status is	≠	Test Failed This Key On or Fault Active					
					Disable Conditions :	MIL not Illuminated for DTC's:		: P1761 : None					
Transmission Fluid Pressure Switch	P0842	Transmission Fluid Pressure (TFP) Sensor A Circuit Low Voltage	C35R Hydraulic pressure	< 50 = 50	Кра								No Mil
			Hydraulic Delay Timer (Table Based)		Sec								

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Oyalem	oue	Description	Ontonia	Disable Conditions :	High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min MIL not Illuminated for DTC's:	= TRUE = Normal = TRUE		
Transmission Fluid Pressure Switch	P0843	Transmission Fluid Pressure (TFP) Sensor A Circuit High Voltage	C35R Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment	> 700 Kpa See Table 7 > for Delay Timer Cal			>= 50 Fail Counts	No Mil

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	ns	Time Required	Mil Illum.
System	Code	Description		Value	a.ra.ro.ro.r	_	Condition	13	rrequired	
			Note:							
			Subsequent							
			fail counts							
			require C35R							
			pressure							
			below this							
			value to re-	< 700 Kpa						
			enable fail	-						
			logic. Results in							
			one fail							
			count per							
			clutch							
			transition							
			transition							
					Transmission Fluid Temperature Lo		-6.65625	°C		
					Transmission Fluid					
					Temperature Hyst Hi	NOt	120	°C		
					(disable above this)					
					Transmission Fluid					
					Temperature Hyst Lo		255.99219	°C		
					(enable below this)		200.00210			
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi		31.990234	Volts		
					Engine Speed Lo		400	RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is			_		
					within the allowable		5	Sec		
					limits for					
					Default Gear Action		FALSE			
					High Side Driver ON		TRUE			
					RVT Status		Normal			
					Hydraulic Pressure Available	_	TRUE			
					Engine Speed Min	>=	550	RPM		
,										

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria	Disable Conditions :	MIL not Illuminated	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None	Required	mum.
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter	See Table 8 > for Sec = Delay Timer Cal			>= 8 Fail Counts	Special No Trip
			Note: Subsequent fail counts require CB26 pressure above this value to re- enable fail logic. Results in one fail count per clutch transition	> 50 Kpa				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Condition		Time Required	Mil Illum.
5,500					Transmission Fluid Temperature Lo	>= 6.65625	°C	·	
					Transmission Fluid Temperature Hyst Hi (disable above this)	Not 120	°C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219	°C		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= 31.990234 >= 400 <= 7500	Volts Volts RPM RPM		
					Engine Speed is within the allowable limits for Default Gear Action	>= 5 = FALSE	Sec		
					High Side Driver ON RVT Status Hydraulic Pressure Available	= Normal			
					Engine Speed Min		RPM		
				Disable Conditions :		TCM: P0711, P07 P0716, P0717, P0 P0723, P0751, P0 P0756, P0757, P0 P0974, P0976, P0 P1915, P182E ECM: None	0722, 0742, 0973,		
Transmission Fluid Pressure Switch	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure	> 700 KPa					Special No Trip

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Hydraulic Delay Timer (Table Based)	See Table 8 > for Sec	indirection	Continuoris	Required	am.
			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	>= -6.65625 °C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	120 °C		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
5,500					Transmission Fluid Temperature Hyst Lo (enable below this)		·	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	<= 31.990234 Volts >= 400 RPM <= 7500 RPM		
					within the allowable limits for Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure	>= 5 Sec = FALSE = TRUE = Normal		
					Available Engine Speed Min			
				Disable Conditions :	for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E		
						ECM: None		
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure					Special No Trip
			Hydraulic Delay Timer (Table Based)					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Cyclom	9000	Возоприон	Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 8 Fail Counts	
			Note: Subsequent fail counts require C1234 pressure above this value to re- enable fail logic. Results in one fail count per clutch transition	> 50 kpa				
					Transmission Fluid Temperature Lo Transmission Fluid Temperature Hyst Hi (disable above this)	Not 120 °C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219 °C		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					Default Gear Action High Side Driver ON	= FALSE = TRUE		

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Condition	าร	Required	Illum.
			Note: Subsequent fail counts require C1234 pressure below this value to re- enable fail logic. Results in one fail count per clutch transition	< 700 Kpa					
					Transmission Fluid Temperature Lo		°C		
					Transmission Fluid Temperature Hyst Hi (disable above this)	120	°C		
					Transmission Fluid Temperature Hyst Lo (enable below this)	<= 255.99219	°C		
					Ignition Voltage Lo		Volts		
					Ignition Voltage Hi Engine Speed Lo		Volts RPM		
					Engine Speed Lo Engine Speed Hi Engine Speed is	<= 7500	RPM		
					within the allowable limits for	>= 5	Sec		
					Default Gear Action High Side Driver ON RVT Status	= TRUE			
					Hydraulic Pressure Available	- TDITE			
					Engine Speed Min		RPM		
1									

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time)	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Requir	ed	Illum.
				Disable Conditions :		TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None			
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4.4	Fail Time (Sec)	Two Trips
							out of 5	Sample Time (Sec)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		(333)	
				Disable Conditions :	MIL not Illuminated for DTC's:				
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.5	Fail Time (Sec)	One Trip
					Ignition Voltage		out of 1.875 .	Sample Time (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					Ignition Voltage Engine Speed			
					Engine Speed Engine Speed			
					Engine Speed is			
					within the allowable			
					limits for			
				Disable	MIL not Illuminated	TCM: None		
				Conditions	for DTC's:			
				:		ECM: None		
								Tue Trips
		Pressure Control	The HWIO					Two Trips
Variable Bleed		(PC) Solenoid A	reports a high voltage (open				, Fail Time	
Solenoid (VBS)	P0963	Control Circuit High	or power	= TRUE Boolean			>= 4.4 (Sec)	
(1 = 0)		Voltage	short) error				(555)	
		(Line Pressure VBS)	flag					
							Sample	
							out of 5 Time (Sec)	
					Ignition Voltage			
					Ignition Voltage			
					Engine Speed Engine Speed			
					Engine Speed is			
					within the allowable			
					limits for			
				Disable	MIL not Illuminated	TCM: None		
				Conditions	for DTC's:			
				:		ECM: None		
			The HWIO					No Mil
		Pressure Control	reports an					INO IVIII
Variable Bleed	BOOCE	(PC) Solenoid B	invalid	= TDHE Paglage			Fail Time	
Solenoid (VBS)	P0965	Control Circuit Rationality Test	voltage (out	= TRUE Boolean			>= 4.4 (Sec)	
		(C35R VBS)	of range)					
		(550)	error flag					
							out 5 Sample	
I							of Time (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enable Conditions			Time	Mil Illum.
System	Code	Description	Criteria	value					K	equired	mum.
					Ignition Voltage		9	Volts			
					Ignition Voltage		1.990234	Volts			
					Engine Speed		400	RPM			
					Engine Speed		7500	RPM			
					Engine Speed is						
					within the allowable		5	Sec			
					limits for						
							Test				
							Failed				
					P0965 Status is not	= 1	This Key				
							On or				
							Fault				
							Active				
				District.		TOM N					
				Disable			lone				
				Conditions	for DTC's:						
				:		ECM: N	ione				
											One Trip
		Pressure Control	The HWIO								One mp
.,		(PC) Solenoid B	reports a low								
Variable Bleed	P0966	Control Circuit Low	voltage	= TRUE Boolean					>= 0.	Fail Time	
Solenoid (VBS)		Voltage	(ground short)							(Sec)	
		(C35R VBS)	error flag								
									out of 0.3	75 Sample	
									0000	Time (Sec)	1
					Ignition Voltage		9	Volts			
					Ignition Voltage		1.990234	Volts			
					Engine Speed		400	RPM			
					Engine Speed		7500	RPM			
					Engine Speed is						
					within the allowable		5	Sec			
					limits for						
							est Failed				
					P0966 Status is not		This Key				
					1 0000 018183 13 1101	0	n or Fault				
							Active				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				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
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM	out of 0.375 Sample Time (Sec)	
					P0967 Status is not	Test Failed = This Key On or Fault Active		
				Disable Conditions :				
Variable Bleed Solenoid (VBS)	P0969	Pressure Control (PC) Solenoid C Control Circuit Rationality Test (C456/CBR1 VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec)	No Mil

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tin Requ		Mil Illum.
, , , , ,							out of	5	Sample Time (Sec)	
					P0969 Status is not	On or Fault Active				
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	<= 31.990234 Volts >= 400 RPM <= 7500 RPM				
					limits for					
				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	= TRUE Boolean			>=	0.3	Fail Time (Sec)	One Trip
							out of	0.375	Sample Time (Sec)	
					P0970 Status is not	Test Failed This Key On or Fault Active				
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed	<= 31.990234 Volts >= 400 RPM				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Engine Speed is within the allowable limits for	>= 5 Sec	Required	illum.
				Disable Conditions :	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip
							out of 0.375 Sample Time (Sec)	
					P0971 Status is not	Test Failed = This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions :	MIL not Illuminated for DTC's:			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			me uired	Mil Illum.
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>=	1.2	Fail Time (Sec)	One Trip
							out of	1.5	Sample Time (Sec)	
					P0973 Status is not	Test Failed This Key On or Fault Active				
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec				
				Disable Conditions :	MIL not Illuminated for DTC's:					
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>=	1.2	Fail Time (Sec)	Two Trips
							out of	1.5	Sample Time (Sec)	

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions :	for DTC's:			
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 1.2 Sec	No Mil
					P0977 Status is not	Test Failed This Key On or Fault Active	of 1.5 Sec	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions :	for DTC's:			
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure	_ 50 Kpa				Special N Trip
			Hydraulic Delay Timer (Table Based)	See Table 9 > for Sec = Delay Timer Cal				

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions :		= TRUE = Normal = TRUE		
						ECM: None		
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure Hydraulic Delay Timer (Table Based)	> 700 Kpa = See Table 9 > for Sec = Delay Timer Cal				Special No Trip
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter				>= 26 -20 Fail Counts	

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value Disable Conditions :	MIL not Illuminated for DTC's:	Conditions TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None	Required	illum.
Mode 2 Multiplex Valve	P1751	Shift valve 1 performance	Attained Gear Slip is If Slip is Greater than the Above Cal Increment Fail Counter & Sample Counter		Once this evaluation is complete the system will allow the valve to get back into position by delaying the next test for M2 Solenoid is Commanded On Current Gear ≠ 2nd Gear Calcaluted line pressure is	= 1 Seconds = TRUE Boolean ≠ 2nd Gear Gear >= 1200 kPa	>= 5 Fail Counts Out 5 Sample Counts	No Mil

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Ena		Time	Mil Illum.
System	Code	Description	Criteria	Value		Condi	tions	Required	illum.
					The test can begin when the M2 valve is verified to be in place because absolute value of attained gear slip and commanded gear slip is	<= 110	RPM		
					Test is delayed by a calibrated amount of time to allow the M2 valve to get into position	= 0.1	Sec		
					Upshift is In Progress		Boolean		
					Input Speed Sensor Signal Hyst High (enabled above this value)	>= 1175	RPM		
					Input Speed Sensor Signal Hyst Low (disabled below this value)	<= 900	RPM		
					The torque converter clutch has transition from Locked to Unlocked.	= TRUE	Boolean		
					TCC Stuck On Enable Criteria: Gear Ratio Gear Ratio Engine Speed Hi Engine Speed Lo Vehicle Speed Lo	<= 4.5 >= 2.400390 <= 6500 >= 500 <= 511	Ratio P6 Ratio RPM RPM KPH KPH		

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditio	ns	Required	Illum.
					Ignore Air Purge if value = true	_	0	Boolean		
					TCC Mode	=	OFF			
					Common Enables:					
					Ignition Voltage		9	V		
					Ignition Voltage		31.990234	VDH		
					Vehicle Speed		511	KPH		
					Engine Speed		400	RPM		
					Engine Speed		7500	RPM		
					Engine Speed is within the allowable		5	Sec		
					limits for	_	3	360		
					Engine Torque					
					Signal Valid	=	TRUE	Boolean		
					Throttle Position	_	TRUE	Boolean		
					Signal Valid			Doolean		
							Test			
					P1751 Status is	≠	Failed			
					1 1701 Otatao 10	'	This Key			
							On			
				Disable	MIL not Illuminated	тсм:	P0716. P07	17. P0722.		
				Conditions			3, P0741, P0			
				:			3, P2764			
							P0101, P01			
							3, P0106, P0			
							8, P0171, P0			
							4, P0175, P0			
							2, P0203, P0			
							5, P0206, P0			
							8, P0300, P0			
							2, P0303, P0			
							5, P0306, P0			
i						P030	8, P0401, P0	42E		

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions		ime quired	Mil Illum.
					Disable Conditions :	for DTC's:				
Mode Switch	P078F	Winter Mode Switch	Winter mode switch active	= TRUE	Boolean			>= 600	Fail Time (Sec)	No Mil
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 18 Volts >= 400 RPM <= 7500 RPM >= 5 Sec			
					Disable Conditions :	for DTC's:				
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	Fail Tap Up Case Switch Stuck 1 in the Up Position in Range 1 Enabled Tap Up	= 0	Boolean					No Mil
			Switch Stuck in the Up Position in Range 2 Enabled Tap Up	= 0	Boolean					
			Switch Stuck in the Up Position in Range 3 Enabled	- 0	Boolean					

Component/	Fault	Monitor Strategy	Malfunction		eshold alue	Secondary Malfunction	Enable Conditions		me uired	Mil Illum.
System	Code	Description	Criteria	Và	aiue	Walturiction	Conditions	Requ	uirea	mam.
			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	= 0	Boolean					
			Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 0	Boolean					
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0	Boolean					
			Tap Up Switch ON	= TRUE	Boolean			>= 1	Fail Time (Sec)	

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Tap Up Switch Stuck in the Up Position in Park Enabled			Conditions	rtoquilou	
			Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up	= 0 Boolean				
			Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean		Freehle	>= 600 Fail Time (Sec)	
					Time Since Last Range Change			
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM		
					within the allowable limits for	>= 5 Sec Test		
					P1765 Status is	Failed This Key On or Fault Active		
				Disable Conditions :	for DTC's:	TCM: P1767, P1761, P182E, P1915 ECM: None		

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

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

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Oystelli	Jour	Description	Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0 Boolean				
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean			>= 600 sec	
					Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	>= 9 Volts <= 18 Volts >= 400 RPM <= 7500 RPM		
					within the allowable limits for P1766 Status is	Test Failed This Koy		
				Disable Conditions		TCM: P1767, P1761, P182E,		
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean		ECM. None	>= 60 Fail Time (Sec)	No Mil
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= 31.990234 Volts		

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

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If the above conditions are present Increment Fail Timer				>= 0.225 Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case Current range 3	"Transit = ional 13"	Previous range	CeTRGR_e ≠ _PRNDL_D rive4		
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean	Previous range	CeTRGR_e ≠ _PRNDL_D rive4		
			Engine Torque	> -8192 Nm	IMS is 7 position configuration			
			Engine Torque	< 8191.8 Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"			
			If the above conditions are present Increment Fail Timer				>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	

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

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

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	P182E will report test fail when any of the above 7 fail cases are met	Disable Conditions :	Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Engine Torque Signal Valid	>= 9 Volts <= 31.990234 Volts <= 511 KPH >= 400 RPM <= 7500 RPM >= 5 Sec = TRUE Boolean	Required	illulli.
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range	Park or Revers Range e or State Neutral		P0308, P0401, P042E		Special No Trip
			TUTD Enable Switch is Active	= TRUE Boolean			>= 3 Fail Time (Sec)	

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction		Enable Condition			Tin Requ		Mil Illum.
.,	- 340		Engine Speed Between Following Cals										
			Engine Speed Lo Hist	> = 50	RPM								
			Engine Speed Hi Hist	< = 480	RPM					>=	0.069	Enable Time (Sec)	
			Then Final Engine Speed	> = 500	RPM								
			Final Transmission Input Speed	> = 100	RPM					>=	1.25	Fail Time (Sec)	
						DTC has Ran this Key Cycle?		FALSE	Boolean				
						Ignition Voltage Lo	>=	6	V				
						Ignition Voltage Hi Ignition Voltage Hyst		31.990234	V				
						High (enables above this value)	>=	6	V				
						Ignition Voltage Hyst Low (disabled below this value)	<=	2	V				
						Transmission Output Speed	<=	90	rpm				
						P1915 Status is	≠	Test Failed This Key On or Fault Active					

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria		Disable Conditions :	MIL not Illuminated	TCM: P0722, P0723	Required	
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	Run crank active (based on voltage thresholds below)	= FALSE					One Trip
			Voltage High Hyst (run crank goes true when above this value)	6	Volts			>= 280 Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts			Out Sample Out 280 Counts of (25ms loop)	
						Normal CAN Comm Enabled ECM run/crank active status	= TRUE Boolean		
					Disable Conditions :	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case Case: Steady 1 State 2nd Gear						One Trip

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable			Tin		Mil Illum.
System	Code	Description	Criteria	Value	Manufiction	Condition	ns		Requ	ıırea	mum.
			Gear slip	> = 400 RPM				>=	Please See Table 5 For Neutral Time Cal	Neutral	
			Intrusive test: commanded 5th gear								
			If attained Gear = 5th For Time	_ Table 2 Finable							
			If Above Conditions have been met, Increment 5th gear fail counter					>=	3	5th Gear Fail Count	
			and CB26 Fail Count					>=	14	or CB26 Fail Count	
					PRNDL State defaulted	= FALSE	Boolean				
					inhibit RVT IMS fault pending		Boolean				
					indication	- FALSE	Boolean				
					TPS validity flag	= TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio		Time Required	Mil Illum.
		·			Hydraulic System Pressurized		TRUE	Boolean		
					Minimum output speed for RVT	\	0	RPM		
					A OR B					
					(A) Output speed enable		650	RPM		
					(B) Accelerator Pedal enable		0.5004883	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	9	Volts		
					Ignition Voltage Hi	<=	31.990234	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid		TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature	>=	-6.65625	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault		FALSE	Boolean		
					Default Gear Option is not present	_	TRUE			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria	Value Disable		TCM: P0716, P0717, P0722,	Required	mum.
				Conditions	for DTC's:	P0723, P182E		
				:	10. 210 0.	,		
						FOM D0404 D0400 D0400		
						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		
								One Trip
			Primary					l '
			Offgoing					
		Pressure Control	Clutch is					
/ariable Bleed	P2715	(PC) Solenoid D	exhausted (See Table 13	= TRUE Boolean				
Solenoid (VBS)	F2/13	Stuck On [CB26]	in Supporting	- TRUE BOOIEAN				
		(Dynamic)	Documents					
			for Exhaust					
			Delay Timers)					
			Primary					
			Oncoming Clutch	Maximu _ m				
			Pressure	= pressur				
			Command	ized				
			Status					
			Primary					
			Offgoing	Clutch				
			Clutch	exhaus = t				
			Pressure	comma				
			Command Status	nd				
			Glatus					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Range Shift Status Attained Gear Slip	Initial ≠ Clutch Control		Conditions	Required	
			If above coditons are true, increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-1 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (2-1 shifting without throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				
			fail timer 1 (2-3 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (2-3 shifting without throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				
			fail timer 1 (2-4 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (2-4 shifting without throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				
			fail timer 1 (6-4 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
oystem -	ouc	Безеприон	fail timer 1 (6-4 shifting without throttle)	> 0.0004 Fail Time				
			fail timer 1 (6-5 shifting with throttle)	> 0.7002 Fail Time = 0.7002 (Sec)				
			fail timer 1 (6-5 shifting without throttle)	> 0.9004 Fail Time = 0.9004 (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer >= 1, and Refere nce Suppor ting Table 15 for Fail Timer 2	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio	ns		Ti Rea	me uired	Mil Illum.
Gystein	Oode	Безеприон	If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter							,		
			2nd gear fail counter						>=	3	Fail Counter From 2nd Gear	
			6th gear fail counter						>=	3	OR Fail Counter From 6th Gear	
			total fail counter		TUT				>=	5	OR Total Fail Counter	
					TUT Enable temperature Input Speed Sensor fault	_	-6.671875 FALSE	°C Boolean				
					Output Speed Sensor fault	_	FALSE	Boolean				
					Command / Attained Gear	7	1st	Boolean				
					High Side Driver ON output speed limit for		TRUE 200	Boolean RPM				
					TUT input speed limit for TUT	>=	200	RPM				
					PRNDL state defaulted	=	FALSE	Boolean				
					IMS Fault Pending Service Fast Learn Mode	=	FALSE FALSE	Boolean Boolean				
					HSD Enabled		TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value		Conditions	Required	illum.
				Disable Conditions :	for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case Case: Steady 1 State 1st Attained Gear slip If the Above is True for Time	Table Based Time Please RPM				One Trip
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio Gear Ratio					

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria If the above parameters are true Fail Case: Steady Case State 3rd Gear Max Delta Output Speed Hysteresis	= Table 1 rpm/sec in	Malfunction	Conditions	Required >= 1.1 Fail Timer (Sec) >= 8 Fail Count in 1st Gear or >= 8 Total Fail Counts	Illum.
			Min Delta Output Speed Hysteresis	support ing docum ents Table Based value Please Refer > to 3D = Table 2 in support ing docum ents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
oyotom.	5340	Societion	If the Above is True for Time	Table Based Time Please Refer > to See				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio Gear Ratio If the above parameters	> 2.7046 = 2.7046				
			are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 3rd Gear or Total Fail	
			Fail Case: Steady Case State 4rd Gear				Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Max Delta Output Speed Hysteresis	Table Based value Please Refer		Containe	rtoquilou	
			Min Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 2 in support ing docum ents				
			If the Above is True for Time					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	> 0.6938			>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear or Total Fail >= 8 Counter	
			Fail Case: Steady Case State 5th 4 Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D Table 1 rpm/sec			Counts	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Min Delta Output Speed Hysteresis	rpm/sec				
			If the Above is True for Time	Table Based Time Please Refer > to Sec Table 17 in support ing docum ents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio Gear Ratio	_				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 5th Gear or	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio			Tin Requ		Mil Illum.
- System	3 3 3 3 3	2000p							>=	8	Total Fail Counts	
					PRNDL State defaulted		FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication		FALSE	Boolean				
					output speed		0	RPM				
					TPS validity flag		TRUE	Boolean				
					HSD Enabled		TRUE	Boolean				
					Hydraulic_System_Pr essurized	-	TRUE	Boolean				
					Minimum output speed for RVT A OR B	/-	0	Nm				
					(A) Output speed enable	\	650	Nm				
					(B) Accelerator Pedal enable		0.5004883	Nm				
					Ignition Voltage Lo		9	Volts				
					Ignition Voltage Hi		31.990234	Volts				
					Engine Speed Lo		400	RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st							
					FW Accelerator Pedal enable	>=	10.00061	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.875	Nm				
					Transmission Fluid Temperature	\	-6.65625	°C				
					Input Speed Sensor fault	l <u>-</u>	FALSE	Boolean				
					Output Speed Sensor fault		FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Cyclem	Couc	Bosonphon	01110114		Default Gear Option is not present	= TRUF	1104	
				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		
High Side Driver 2		Actuator Supply Voltage B Circuit Low	The HWIO reports a low voltage (open or ground short) error	= TRUE Boolean			>= 0 Fail Counts	No Mil
			flag		P2670 Status is not	Test Failed This Key On or	out ₀ Sample of Counts	
					High Side Driver 2 On	Fault Active True Boolean		
l				Disable Conditions :				

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
System High Side Driver 2	P2671	Description Actuator Supply Voltage B Circuit High	Criteria During the controller power-up, prior to the HSD being turned on, the HWIO reports that power short failure is	= TRUE Boolean	wanunction	Conditions		0 Fail Counts	No Mil
					P2671 Status is not	Test Failed This Key On or Fault Active	out of	0 Sample Counts	
				Disable Conditions :	MIL not Illuminated for DTC's:				
Variable Bleed Solenoid (VBS)	P2719	Pressure Control (PC) Solenoid D Control Circuit Rationality Test (CB26 VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4	4.4 Fail Time (Sec)	No Mil
					P2719 Status is not	On or Fault	out of	5 Sample Time (Sec)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed	<= 31.990234 Volts >= 400 RPM			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value Disable Conditions :	Engine Speed is within the allowable limits for MIL not Illuminated for DTC's:	>= 5 Sec TCM: None	Required	Illum.
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out of 0.375 Sample Time (Sec)	One Trip
					P2770 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 9 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions :	MIL not Illuminated for DTC's:			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip
							out of 0.375 Sample Time (Sec)	
					P2721 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	<= 31.990234 Volts >= 400 RPM <= 7500 RPM		
				Disable	limits for MIL not Illuminated			
				Conditions :	for DTC's:			
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case: Steady Case State 1st 1 Gear					One Trip
			Gear slip	> 400 RPM			Please See Table Neutral Timer (Sec) Time Cal	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
.,			Intrusive test: commanded 2nd gear				·	
			If attained Gear ≠ 2nd for Time	Please See Enable Table 3 Time (See)				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 2 1st Gear Fail Count or	
			and C1234 fail counter <u>Fail</u> Case: Steady				C1234 >= 14 Clutch Fail Count	
			Case Steady Case State 2nd Gear Gear				Please See Table Neutral Timer (Sec) Time	
			Intrusive test: commanded 3rd gear				Cal	

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

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

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio				me uired	Mil Illum.
System	Code	Description	Griteria	Table based	Mananonon		Conditio	II3		Neq	uneu	mum.
			If attained Gear = 5th For Time	Timer, Please See Enable Table 3 Time (See)								
			If Above Conditions have been met, Increment 4th gear fail counter						>=	3	4th Gear Fail Count	
			and C1234 fail counter						>=	14	or C1234 Clutch Fail Count	
					PRNDL State defaulted		FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	_	FALSE	Boolean				
					TPS validity flag		TRUE	Boolean				
					Hydraulic System Pressurized	-	TRUE	Boolean				
					Minimum output speed for RVT A OR B	>=	0	RPM				
					(A) Output speed enable	\ <u>-</u>	650	RPM				
					(B) Accelerator Pedal enable Common Enable	>=	0.5004883	Pct				
					Criteria							
					Ignition Voltage Lo		9	Volts				
					Ignition Voltage Hi Engine Speed Lo		31.990234 400	Volts RPM				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditio	ns	Required	Illum.
					Engine Speed Hi Engine Speed is		7500	RPM		
					within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid		TRUE	Boolean		
					HSD Enabled		TRUE	Boolean		
					Transmission Fluid Temperature		-6.65625	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	. =	TRUE			
				Disable Conditions :	for DTC's:	P0723, ECM: F P0106, P0171, P0175, P0203, P0206, P0300, P0303,	P182E P0101, P01 P0107, P0 P0172, P0 P0201, P0 P0204, P0 P0207, P0 P0301, P0 P0304, P0	02, P0103, 0108, 0174, 0202, 0205, 0208, 0302, 0305,		
						P0306,	P0304, P0 P0307, P0 P042E			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressur ized				
			Primary Offgoing Clutch Pressure Command Status	ovhaus				
			Range Shift Status Attained Gear	Control				
			Slip If the above conditions are true increment appropriate Fail 1 Timers Below:	= 40 KFW				
			fail timer 1 (2-6 shifting with throttle)	> 0.7002 sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (2-6 shifting without throttle)	> 0.9004 sec				
			fail timer 1 (3-5 shifting with throttle)	> 0.7002 sec				
			fail timer 1 (3-5 shifting without throttle)	> 0.9004 sec				
			fail timer 1 (4-5 shifting with throttle)	_ 0.7002 sec				
			fail timer 1 (4-5 shifting without throttle)	> 0.0004 soc				
			fail timer 1 (4-6 shifting with throttle)	> 0.7002 sec				
			fail timer 1 (4-6 shifting without throttle)	> 0.9004 sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable Conditions	Time Poguired	Mil Illum
System	Code	Description	If Attained Gear Slip is Less than Above Cal Increment Fail Timers	Value	Malfunction	Conditions	Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Refere nce Suppor ting Table 15 for Fail Timer 2	Illum.
			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	
			3rd gear fail counter				Fail Counter >= 3 From 3rd Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditio				me uired	Mil Illum.
9,0.0		2000.1941011	4th gear fail counter					·	>=	3	Fail Counter From 4th Gear	
			total fail counter						>=	5	Total Fail Counter	
					TUT Enable temperature		-6.671875	°C				
					Input Speed Sensor fault		FALSE	Boolean				
					Output Speed Sensor fault	_	FALSE	Boolean				
					Command / Attained Gear	≠	1st	Boolean				
					High Side Driver ON	=	TRUE	Boolean				
					output speed limit for TUT	>=	200	RPM				
					input speed limit for TUT	>=	200	RPM				
					PRNDL state defaulted		FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				
					Service Fast Learn Mode		FALSE	Boolean				
					HSD Enabled		TRUE	Boolean				
				Disable Conditions :	for DTC's:	P0723 ECM: P0106 P0171 P0175 P0203 P0206 P0300 P0303 P0306		02, P0103, 1108, 1174, 1202, 1205, 1208, 1302, 1305,				

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	< 1.5475				
			Gear Ratio	> 1.3451 =				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 5th Gear OR	
							>= 3 Total Fail Counts	
			<u>Fail</u> Case: 6th <u>Case</u> Gear <u>2</u>					
			Max Delta Output Speed Hysteresis	rpm/sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	Maitunction	Conditions	Required	Illum.
			Min Delta Output Speed Hysteresis	Table Based value Please Refer > to 3D = Table 2 in support ing docum ents				
			If the Above is True for Time	Table Based Time Please Refer > to Sec Table 17 in support ing docum ents				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	85				
			Gear Ratio	> 1.33 = 1.3450 = 92				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable				me	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditio	ns		Requ	uired	Illum.
									>=	3	Fail Count in 6th Gear OR Total Fail	
									/-	3	Counts	
					PRNDL State defaulted inhibit RVT	-	FALSE FALSE	Boolean Boolean				
					IMS fault pending indication	l _	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag		TRUE	Boolean				
					HSD Enabled Hydraulic_System_Pr		TRUE	Boolean				
					essurized	-	TRUE	Boolean				
					Minimum output speed for RVT		0	Nm				
					A OR B (A) Output speed enable	>=	650	Nm				
					(B) Accelerator Pedal enable	>=	0.5004883	Nm				
					Ignition Voltage Lo		9	Volts				
					Ignition Voltage Hi Engine Speed Lo		31.990234 400	Volts RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	10.00061	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<=	8191.875	Nm				
					Transmission Fluid Temperature		-6.65625	°C				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Gydddin		3333.164.011	5.1.0.1.0		Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= FALSE Boolean = FALSE Boolean = TRUE		
				Disable Conditions :	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2728	Pressure Control (PC) Solenoid E Control Circuit Rationality Test (C1234 VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec) out 5 Sample of Time (Sec)	No Mil
					P2728 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed	On or Fault Active >= 9 Volt <= 31.990234 Volt >= 400 RPM	2	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions :	for DTC's:			
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip
							out of 0.375 Sample Time (Sec)	
					P2729 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.990234 Volt >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions :				
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Tir Requ		Mil Illum.
		,,,,					out of 0.375	Sample Time (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 Iimits for	<= 31.990234 Volt >= 400 RPM <= 7500 RPM >= 5 Sec			
				Disable Conditions :	MIL not Illuminated for DTC's:				
ariable Bleed olenoid (VBS)	P2762	Torque Converter Clutch Pressure Control Solenoid Control Rationality Test	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4.4	Fail Time (Sec)	No M
			error nag				out of 5	Sample Time (Sec)	
					P2762 Status is not	On or Fault		. ,	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.990234 Volt >= 400 RPM <= 7500 RPM >= 5 Sec			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions :	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec)	Two Trips
							out of 5 Sample Time (Sec)	
					P2763 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	<= 31.990234 Volt >= 400 RPM <= 7500 RPM >= 5 Sec		
					limits for High Side Driver Enabled			
				Disable Conditions :	for DTC's:	TCM: P0658, P0659 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			me uired	Mil Illum.
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE Boolean			>=	4.4	MPH MPH	One Trip
					P2764 Status is not	Test Failed = This Key On or Fault Active				
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<= 31.990234 Volt >= 400 RPM <= 7500 RPM >= 5 Sec				
				Disable Conditions :	MIL not Illuminated for DTC's:	TCM: P0658, P0659 ECM: None				
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	= TRUE Boolean			>=	62	Fail counts (≈ 10 seconds)	One Trip
			Delay timer	> 0.1125 sec	Stabilization delay Power Mode		Out of	70	Sample Counts (≈ 11 seconds)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions :	MIL not Illuminated for DTC's:			
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:			
Communication	U0121	Loss Communications with ABS (Anti-lock Brake System)	CAN messages from ABS are not received by the TCM	= TRUE Boolean			>= 12 sec	No Mil
					Stabilization delay Power Mode			
				Disable Conditions :	MIL not Illuminated for DTC's:			
Communication	U0140	Loss Communications with BCM (Body Control Module)	CAN messages from BCM are not received by the TCM	= TRUE Boolean			>= 12 sec	No Mil
					Stabilization delay Power Mode			

Supporting Documents - 2D Tables

Table 1	KtTCCD n StuckOffFailLimit	Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
	KtTCCD_n_StuckOffFailLimit	Curve	100.00	120.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00 RPM
Table 2	KnRSSC_T_RVT_TransTempAxis KtRSSC_t_INT_EstGear	Axis Curve	-6.67 409.59	-6.66 2.00	40.00 °C						
Table 3	KnRSSC_T_RVT_TransTempAxis KtRSSC_t_INT_ShiftTime	Axis Curve	-6.67 409.59	-6.66 3.50	40.00 °C 3.50 S						
Table 4	KnRSSC_T_RVT_TransTempAxis KtRSSC_t_TUT_NeutralTime	Axis Curve	-6.67 409.59	-6.66 2.99	40.00 °C 2.00 S						
Table 5	KnRSSC_T_RVT_TransTempAxis KtRSSC_t_INT_NeutralTime	Axis Curve	-6.67 409.59	-6.66 3.00	40.00 °C 3.00 S						
Table 6	KnDGSC_T_TransTempAxis KtDGSC_t_S1_TestDelayLimit	Axis - Curve	7.01 6.67	7.006.66 3.60	40.00 1.60	80.00	120.00 °(1.40 S				
Table 7	KnDGSC_T_TransTempAxis KtDGSC_t_S2_TestDelayLimit	Axis - Curve	7.016 .67 -409.00	3.40	40.00 1.40	80.00	120.00 °(1.20 S				
Table 8	KnDGSC_T_TransTempAxis KtDGSC_t_S3_TestDelayLimit	Axis - Curve	7.01 6.67 -4	7.006.66 3.60	40.00 1.60	80.00	120.00 °(1.40 S	C ec			

Supporting Documents - 2D Tables

Table 9

Table 3	KnDGSC_T_TransTempAxis KtDGSC_t_S4_TestDelayLimit	Axis Curve	- 7.01 6.67 - 7	3.30	40.00 1.30	80.00 1.20	120.00 °C 1.10 Sec	;			
Table 10	KnRSCC_T_TransFluidTempAxis KtRSCC_t_C1_OffgoingNoCapTmr	Axis Curve	-40.00 8.85	-20.00 3.75	0.00	30.00	110.00 °C 0.28 Sec	:			
Table 11	KnRSCC_T_TransFluidTempAxis KtRSCC_t_C2_OffgoingNoCapTmr	Axis Curve	-40.00 5.00	-20.00 1.70	0.00	30.00	110.00 °C 0.25 Sec	:			
Table 12	KnRSCC_T_TransFluidTempAxis KtRSCC_t_C3_OffgoingNoCapTmr	Axis Curve	-40.00 8.00	-20.00 2.20	0.00	30.00 0.25	110.00 °C 0.25 Sec				
Table 13	KnRSCC_T_TransFluidTempAxis KtRSCC_t_C4_OffgoingNoCapTmr	Axis Curve	-40.00 5.20	-20.00	0.00	30.00 0.27	110.00 °C 0.16 Sec	:			
Table 14	KnRSCC_T_TransFluidTempAxis KtRSCC_t_C5_OffgoingNoCapTmr	Axis Curve	-40.00 5.00	-20.00 1.50	0.00	30.00	110.00 °C 0.25 Sec	:			
<u>Table 15</u>	KeRSCC_t_12RngDiagFailDeltTbl KeRSCC_t_12RngDiagFailDeltTbl	Axis Curve	-40.00 0.00	-30.00 0.00	-20.00 0.00	-10.00 0.00	0.00	10.00	20.00	30.00	40.00 °C 0.00 Sec
<u>Table 16</u>	KnRSSC_T_RVT_TransTempAxis KtRSSC t M2V StuckOnNeutralTime	Axis Curve	-6.67 409.59	-6.66 1.50	40.00 °C 1.50 Se			·		·	
Table 17	KnRSSC_T_RVT_TransTempAxis	Axis	-6.67	-6.66	40.00°C						
	KtRSSC_t_SS_DecelHystTime	Curve	0.40	0.35	0.30 Se						

Supporting Documents - 2D Tables

Table 18											
	KnTFTD_T_RatlCheckTempAxis	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	KtTFTD_T_OilPwrUpMaxDelta	Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
		_									
<u> Table 19</u>		_									
	KnTFTD_T_RatlCheckTempAxis	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	KtTFTD_T_OilSubMaxDelta	Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
		_									
<u> Table 20</u>		_									
	KnTFTD_T_RatlCheckTempAxis	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	KtTFTD_T_SubPwrUpMaxDelta	Curve	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00 °C

Supporting Documents - 3D Tables

3D_Table 1

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

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

3D_Table 2

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

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