Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction	Enable Conditions		Tim Requi		Mil Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE	Boolean				>= 5	Fail Counts	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601 ECM: None				
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Boolean				Runs Continously		One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None				
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	= TRUE	Boolean				>= 5	Fail Counts Sample Counts	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0604 ECM: None				
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	= TRUE	Boolean				Runs Continously		One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P062F ECM: None				
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>= 142.1016	°C				>= 5	Fail Time (Sec)	One Tri
			Fail Case 2 Substrate Temperature		°C Volts				>= 2	Fail Time (Sec)	-
						Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	>= 8.59961 <= 31.99902 >= 0 <= 170 >= 0.25	Volts Volts °C °C Sec			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			ime quired	Mil Illum.
					P0634 Status is	Test Failed This Key ≠ On or Fault Active				
				Disabl Conditions		TCM: None				
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE Boolean			>= out	4	Fail Counts	One Tri
					P0658 Status is not	Fault	of	6	Sample Counts	=
					High Side Driver 1 On	Active = True Boole	an			
				Disabl Conditions		TCM: None ECM: None				
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp $\boldsymbol{\Delta}$							Two Trips
			If TCM substrate temp to power up temp $\Delta$	Refer to Table  20 in °C supporting documents						
			Both conditions above required to increment fail counter Note: table reference temp = to				>=	3000	Fail Counts (100ms loop)	
			the median temp of trans oil temp, substrate temp and power up temp.				Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>=	700	Pass Counts (100ms loop)	
							Out of	875	Sample Counts (100ms loop)	

Accelerator Postorio Signal Valid  Ignition Vallage Le  Ignition Vallage Le  Ignition Spead I e  Fingins Speed I e  Fingins Spe	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mi Illur
Ignition Voltage Lis > 8.89%61 Volts Ignition Voltage His							=	TRUE	Boolean		
Spinton Voltage   1							\	9 50061	Volte		
Engine Speed I											
Engine Speed H   c= 7500 RPM   Engine Speed Is within the   call building the lative torque active   FALSE    Below describes the brake torque active   FALSE    Below describes the brake torque active   PALSE    Below describes the brake torque   call building   Park    Transmission fingul Speed   c= 200 RPM    Vehicle Speed   c= 200											
Engine Speed is within the allowable limits to >===================================						Engine Speed Ed					
allowable limits for Brake forque active be trake leave as FALSE  Below describes the brake forque entry circles and the provided and the prov						Engine Speed is within the					
Below describes he brake torque entry criteria Elono describes he brake torque entry criteria Engine Torque >> 90 N°m   Throttle						allowable limits for	>=	5	Sec		
Below describes the trake torque entry refleta Engline Torque   29 0 N°m   Throttle   20 0 RPM   Verhilds   20							=	FALSE			
Engine Torque   >= 90 N'm   Throttle   >= 30,0003 Pct			<u> </u>								
Transmission Input Speed  Transmission Input Speed  Vehicle Speed  Transmission Range Tra						torque entry criteria					
Transmission Input Speed Vehicle Speed  Vehicle Speed Transmission Range Transmission Range Transmission Range Transmission Range PTO Set Brake Torque Active TRUE if above conditions are met for: 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 Set Brake Torque Active The above conditions are met for:  Clutch Speed Vehicle						Engine Torque	>=		N*m		
Vehicle Speed   =   Rich     Transmission Range   ≠   Park     Transmission Range   ≠   Not Active     Set Brake Torque Active     TRUE if above conditions are met for:     Below describes the brake torque entity criteria     Brake torque entity criteria     Brake torque entity criteria     Clutch hydraulic pressure     Clutch used to exit brake torque active     Clutch used to exit brake torque active     Clutch used to exit brake torque active     The above clutch pressure is greater than this value for one     Set Brake Torque Active     FALSE if above conditions are met for:     Test Falled     Trest Fal						Throttle	>=	30.0003			
Transmission Range   # Park   Transmission Range   # Neutral   Transmission Range   # Park   Transmission Range   # Neutral   Not Active   Not Met   Treasure   Trea						Transmission Input Speed	<=				
Transmission Range # Neutral PTO Set Brake Torque Active TRUE if above conditions are met for:  Below describes the brake torque entry criteria Clutch hydraulic pressure Hydraulic Air Purge Event Cortico torque active torque active agreeater than this value for one greater than this value for one so greater than this value for one met for:  Test Failed This Key  P0667 Status is # On or Fault									Kph		
FIG.  Set Brake Torque Active  TRUE if above conditions are met for:  Below describes the brake torque exit criteria Brake torque exit brake Clutch hydraulic pressure Clutch used to exit brake torque active The above clutch pressure is greater than this value for one loop Set Brake Torque Active FALSE if above conditions are met for:  Test Failed This Key P0667 Status is  To Not Active  Not Met Clutch Hydraulic  Air Purge Event Ceff TD_c Ceff TD											
Set Brake Torque Active TRUE if above conditions are set of the torque exit criteria Brake torque exit criteria Event Clutch Air Purge Event CerFTD_e  Clutch used to exit brake torque active The above clutch pressure is greater than this value for one loop Set Brake Torque Active FALSE if above conditions are met for:  Test Failed This Key  P0667 Status is # On or Fault							<b>≠</b>				
TRUE if above conditions are met for:  Below describes the trake torque entry 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 Set Brake Torque Active FALSE if above conditions are met for:  Test Failed This Key P0667 Status is  The above conditions are met for:  Test Failed This Key P0667 Status is  Test Failed This Key Fault							=	Not Active			
met for:  Below describes the brake torque exit criteria Brake torque entry criteria  Clutch hydraulic pressure  Clutch hydraulic pressure  Clutch used to exit brake torque active  The above clutch pressure is greater than this value for one loop  Set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This Key  P0667 Status is   This Most Met Clutch Clutch Hydraulic Air Purge Event CeTFTD_e  = C3_RailE nbl  Not Met Clutch Clutch Hydraulic Air Purge Event CeTFTD_e  = C3_RailE nbl  Test Failed This Key  P0667 Status is   P067 Status is   Test Failed This Key  P067 Status is   Test Failed This Key  P067 Status is   Test Failed This Key											
Below describes the brake torque exit criteria 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 Set Brake Torque Active FALSE if above conditions are refer met for:  Test Failed This Key P0667 Status is  To Not Met Clutch Hydraulic Hollic Hollic Hollic Hollic Hore Event CeTFTD_e  =C3_RallE nbl  0 on   Fault							>=	7	sec		
torque exit criteria Brake torque entry criteria  Clutch hydraulic pressure  Clutch hydraulic pressure  Clutch used to exit brake torque active The above clutch pressure is greater than this value for one loop Set Brake Torque Active FALSE if above conditions are met for:  Test Failed This Key P0667 Status is  Total Met Clutch Hydraulic Air Purge Event CeTFTD_eC3_RatlEnbl CeTFTD_eC3_RatlEnbl Test Failed This Key P0667 Status is F On or Fault			-			met for:					_
Brake torque entry criteria  Clutch hydraulic pressure  Clutch hydraulic pressure  Clutch used to exit brake torque active The above clutch pressure is greater than this value for one loop Set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This Key P0667 Status is ≠ On or Fault											
Clutch hydraulic pressure  Clutch used to exit brake torque active  The above clutch pressure is greater than this value for one loop  Set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This key  P0667 Status is  Clutch Hydraulic Air Purge Event CeTFTD_e = _C3_RailE nbl  Nbl  Test Failed This key Test Failed This key Ton or Fault								N - 4 N 4 - 4			
Clutch hydraulic pressure  Clutch used to exit brake torque active  The above clutch pressure is greater than this value for one loop  Set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This Key  P0667 Status is  This Hydraulic Air Purge Event CeTFTD_e  = _C3_RatlE nbl  Nbl  Test Failed This Key  On or Fault						Brake torque entry criteria	=				
Clutch used to exit brake torque active  The above clutch pressure is greater than this value for one loop Set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This Key  P0667 Status is  Air Purge Event CCETFTD_e  = C3_RallE nbl  Nbl  The above clutch pressure is greater than this value for one loop set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This Key  On or Fault											
Clutch used to exit brake torque active  The above clutch pressure is greater than this value for one loop Set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This Key  P0667 Status is  All Purgle  Event  CCFFTD_e  =C3_RatlE  nbl  >=600 kpa  >=600 kpa  Test Failed  This Key  P0667 Status is ≠ On or  Fault						Clutch hydraulic pressure	<b>≠</b>				
Clutch used to exit brake torque active  The above clutch pressure is greater than this value for one loop  Set Brake Torque Active  FALSE if above conditions are met for:  Test Failed This Key  P0667 Status is  CETFTD_e  = C3_RatlE nbl  Nbl  FallE nbl  This Key  Torque Active  Test Failed This Key  Pon or Fault											
Clutch used to exit brake torque active = C3_RatlE nbl   The above clutch pressure is greater than this value for one loop   Set Brake Torque Active   FALSE if above conditions are   20 Sec   met for:  Test Failed   This Key   P0667 Status is   70 nor   Fault											
The above clutch pressure is greater than this value for one   >=   600   kpa						Clutch used to exit brake					
The above clutch pressure is greater than this value for one loop Set Brake Torque Active FALSE if above conditions are refor:  Test Failed This Key P0667 Status is ≠ On or Fault						torque active	_				
greater than this value for one loop Set Brake Torque Active FALSE if above conditions are >= 20 Sec met for:  Test Failed This Key P0667 Status is ≠ On or Fault						The above clutch pressure is		וטו			
Set Brake Torque Active FALSE if above conditions are >= 20 Sec met for:  Test Failed This Key P0667 Status is ≠ On or Fault						greater than this value for one	>=	600	kna		
Set Brake Torque Active FALSE if above conditions are >= 20 Sec met for:  Test Failed This Key P0667 Status is ≠ On or Fault							-	000	кри		
FALSE if above conditions are >= 20 Sec met for:  Test Failed This Key P0667 Status is ≠ On or Fault						Set Brake Torque Active					
met for:    Test Failed   This Key							>=	20	Sec		
Test Failed This Key P0667 Status is ≠ On or Fault											
This Key  P0667 Status is ≠ On or  Fault								Toot Foiled			
P0667 Status is ≠ On or Fault											
Fault						DO447 Status is	4				
						Pubb/ Status is	7				
Active											
								Active			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
System	Code	Description	Citteria		isable MIL not Illumina	ted for TCM: P0658, P0668, P0668 DTC's: P06AE, P0716, P0712, P07 P0722, P0723, P0962, P096 P0967, P0970, P0971, P218 P2721, P2729, P2730	13, P0717, 3, P0966,		required	
						ECM: P0101, P0102, P010 P0107, P0108, P0171, P017 P0175, P0201, P0202, P020 P0205, P0206, P0207, P020 P0301, P0302, P0303, P030 P0306, P0307, P0308, P040	72, P0174, 03, P0204, 08, P0300, 04, P0305,			
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used  If TCM Substrate Temperature  Sensor = Direct Proportional and  Temp  If TCM Substrate Temperature  Sensor = Indirect Proportional and	p <= -249 °C						Two Trips
			Temp Either condition above will satisfy the fail conditions		Ignition Vol Ignition Vol Engine Sp Engine Speed is wi allowable li P0668 S	tage Hi <= 31.99902  seed Lo >= 400  ceed Hi <= 7500  thin the mits for	Volts Volts RPM RPM Sec	>= 60	0 Fail Timer (Sec)	
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used  If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and Temp Either condition above will satisfy	CeTFTLe_Vo = llageDirectPro p >= 249 °C		DTC's: ECM: None		>= 6(	0 Fail Timer (Sec)	Two Trips
			the fail conditions		Ignition Vol		Volts Volts			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
·					Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >=	400 7500 5	RPM RPM Sec				
					P0669 Status is	<i>≠</i>	Test Failed This Key On or Fault Active					
					For Hybrids, below conditions must also be met							
					Estimated Motor Power Loss	>=	0	kW				
					Estimated Motor Power Loss greater than limit for time	>=	0	Sec				
					Lost Communication with Hybrid Processor Control Module	=	FALSE					
					Estimated Motor Power Loss Fault	=	FALSE					
				Disab Condition			, P0717, P0722	, P0723				
				Refer to Table		ECM: None						Ture
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp $\Delta$	20 in 0C								Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table  > 18 in °C supporting documents								
			Both conditions above required to increment fail counter Note: table reference temp = to						>=	3000	Fail Counts (100ms loop)	
			the median temp of trans oil temp, substrate temp and power up temp.						Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid	=	TRUE TRUE	Boolean Boolean				
					Ignition Voltage Lo	>=	8.59961	Volts				

Ingrition Voltage	Fault Code		Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum
Explose Speed is within the John Service with John Service					Ignition Voltage Hi	<=	31.99902			
Express   Social Southins   Express   Social Social Institute   Social Social Institute   Social S					Engine Speed Lo	>=	400	RPM		
Botable Fires for year active   FALSE					Engine Speed Hi	<=	7500	RPM		
### Body Controllers that the control of the contro					Engine Speed is within the		_	Coo		
Before discretions the trake Larger Forque entry criteria Engine Forque Transmission Region Transmission Transmis					allowable limits for	>=	5	260		
Before discretions the trake Larger Forque entry criteria Engine Forque Transmission Region Transmission Transmis					Brake torque active	=	FALSE			
Transmission application   Transmission application   Transmission application   Transmission floring   Transmis										
Engine Torque   > 90 Mm										
Throttle						>=	90	N*m		
Transmission Injust Speed   -20 RPM										
Vehicle Speed										
Transmission Range										
Transmission Range								крп		
Set Brake Torque Active										
Set Brake Torque Active TRUE if above conditions are per tor Below describes the brake torque entry critical Brake torque entry critical Brake torque entry critical Brake torque entry critical Clutch Hydraulic pressure Clutch tyes of lo exit brake torque active The above clutch pressure is greater than its value for one pose that is value for pose that the pose that is value for pose that the pose that is value for pose that the pose that the pose that the pose that the pose t										
TRUE if above conditions are   >= 7   sec   mel for						=	NOT ACTIVE			
Below describes the brake forque entry criteria  Below describes the brake forque entry criteria  Clutch hydraulic pressure  Clutch hydraulic pressure  Clutch thydraulic pressure  The above clutch pressure is greater than this value for one population of the properties of the p		1					-			
Below describes the brake forque entity criteria Brake forque entity criteria Brake forque entity criteria Brake forque entity criteria Clutch Hydraulic Ak Purga Event Celeff De Color Brake forque active The above clutch pressure to forque active The above clutch pressure by Goog Set Brake Torque Active FALSE if above conditions are mel for.  Disable Conditions:						>=	/	sec		
Test Falled   Tisk Eye   Test Falled   Tisk										_
Brake torque entry criteria   Not Met   Clutch hydraulic   Air Purge   Event   Cate   Hydraulic   Air Purge   Event   Cate   C										
Clutch hydraulic pressure										
Clutch tydraulic pressure   #Hydraulic   #Air Puge   Event   Cel FTD_0   Cel					Brake torque entry criteria	=	Not Met			
Cluich used to exit brake torque active   Fevent							Clutch			
Cluich used to exit brake torque active   Fevent					Objects to the second s		Hydraulic			
Clutch used to exit brake torque active					Clutch nydraulic pressure	7				
Clutch used to exit brake longue active The above clutch pressure is greater than this value for one loop Set Brake Torque Active FALSE if above conditions are met for:    Disable Conditions:										
Count is do text trace at least of exit traces to exit traces to forque active to from the solute of to find the solute of the solution of th										
The above clutch pressure is greater than this value for one look proposed in the proposed in						_				
The above clutch pressure is greater than this value for one loop  Set Brake Torque Active FALSE if above conditions are >= 20 Sec met for:  Test Failed This Key P06AC Status is ≠ On or Fault Active  MIL not Illuminated for TCM: P0658, P0668, P0669, P06AD, DT'CS: P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0966, P0963, P0966, P0972, P0730, P07305, P07306,					torque active	_				
greater than this value for one loop Set Brake Torque Active FALSE if above conditions are met for:  Test Failed This Key P06AC Status is  P06AC Status is  Disable Conditions:    Mil. not Illuminated for TCM: P0668, P0669, P06AD, P0713, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0667, P0762, P0763, P0766, P0767, P0772, P0771, P0772, P0772, P0772, P0773, P0772, P0771, P0772, P0771, P0772, P0771, P0772, P0771, P0772, P0771, P0772, P07717, P0772, P0771, P0772, P07717, P0772, P0773, P0773, P0772, P0772, P0772, P0772, P0772, P0772, P0772, P0772, P					The above clutch prossure is		IIDI			
Disable Conditions:							400	kno		
Set Brake Torque Active FALSE if above conditions are met for:    Test Failed This Key						>=	000	кра		
FALSE if above conditions are met for:    Test Failed This Key										
Test Failed   This Key							00			
Disable Conditions:   Mil. not Illuminated for   TCM: P0658, P0668, P0669, P06AD,   Fault   Active						>=	20	Sec		
Disable Conditions:   Disable Conditions   MIL not Illuminated for TCM: P0658, P0668, P0669, P06AD, P0702, P0703, P0712, P0713, P0717, P0702, P0703, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730					met for:					
Disable Conditions:   Disable Conditions   MIL not Illuminated for TCM: P0658, P0668, P0669, P06AD, P0702, P0703, P0712, P0713, P0717, P0702, P0703, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730							Test Failed			
P06AC Status is  P06AC										
Disable Conditions:    MIL not Illuminated for TCM: P0658, P0669, P06AD, DTC's: P06AE, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730   ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0177, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0301, P0302, P0303, P0304, P0305, P0301, P0302, P0303, P0304, P0305, P03004, P0305, P03005, P03006, P0301, P03004, P03005, P03006, P03006, P03006, P03006, P03006, P03006, P03006, P03006, P03007, P03007					PNAAC Status is	≠				
Disable Conditions:  MIL not Illuminated for TCM: P0658, P0668, P0669, P06AD, DTC's: 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,		1			i ouno sialus is					
Disable Conditions:  MIL not Illuminated for TCM: P0658, P0669, P06AD, P0712, P0713, P0717, P0722, P0723, P0669, P0666, P076, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730  ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,										
Conditions: DTC's: P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2729, 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,		1					ACTIVE			
Conditions: DTC's: P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2729, 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,										
Conditions: DTC's: 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,										
Conditions: DTC's: P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, 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,				Disable	MIL not Illuminated for	TCM: P0658	P0668 P0669	P06AD		
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,		1								
P0967, P0970, P0971, P215C, P2720, P2721, P2729, 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,		1		Conditions.						
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, P0301, P0302, P0303, P0304, P0305,										
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,		1						U, PZ/ZU,		
P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,						P2/21, P2/2	29, P2/30			
P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,										
P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,										
P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,		1				P0107, P010	08, P0171, P0172	2, P0174,		
P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,						P0175, P020	1, P0202, P0203	3, P0204,		
P0301, P0302, P0303, P0304, P0305,										
P0306, P0307, P0308, P0401, P042E		1				1 0300, 2030	11, FUSUO, PU4U	1, FU4ZE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			reshold Value		Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<=	-59	°C						>=	60	Fail Time (Sec)	Two Trips
· · · · · · ·								Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <=	8.59961 31.99902 400 7500	Volts Volts RPM RPM Sec				
								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	\	0	kW Sec				
								greater than limit for time Lost Communication with Hybrid Processor Control		FALSE					
								Module Estimated Motor Power Loss Fault	=	FALSE					
						C	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716	, P0717, P0722	, P0723				
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>=	164	°C						>=	60	Fail Time (Sec)	Two Trips
(Comp		Total go mg.						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<=	8.59961 31.99902 400 7500	Volts Volts RPM RPM Sec				,,po
								P06AE Status is	≠	Test Failed This Key On or Fault Active					
						С	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> ;	efer to Tal 19 in supporting document	g °C									Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				me uired	IIIu
			If transmission oil temp to power up temp Δ	Refer to Table 18 in °C supporting documents								
			Both conditions above required to increment fail counter Note: table reference temp = to						>=	3000	Fail Counts (100ms loop)	
			the median temp of trans oil temp, substrate temp and power up temp.						Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid	=	TRUE TRUE	Boolean Boolean				
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= <= >= <=	8.59961 31.99902 400 7500	Volts Volts RPM RPM				
					Engine Speed III  Engine Speed is within the allowable limits for Brake torque active	>=	5 FALSE	Sec				
					Below describes the brake torque entry criteria Engine Torque	>=	90	N*m				
					Throttle Transmission Input Speed Vehicle Speed	>= <= <=	30.0003 200 8 Park	Pct RPM Kph				
					Transmission Range Transmission Range PTO Set Brake Torque Active	≠ ≠ =	Neutral Not Active					
					TRUE if above conditions are met for:  Below describes the brake	>=	7	sec				
					torque exit criteria Brake torque entry criteria	=	Not Met Clutch					
					Clutch hydraulic pressure	≠	Hydraulic Air Purge Event CeTFTD_e					
					Clutch used to exit brake torque active  The above clutch pressure is	=	_C3_RatlE nbl					
					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.
- Cystoni	Jour	2 3 3 1 priori	5616		Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	CeTFTI_e_Vo = ltageDirectPro p				Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp If Transmission Fluid Temperature	<= -74 °C				
			Sensor = Indirect Proportional and Temp Either condition above will satisfy	>= -74 °C			>= 60 Fail Time (Sec	(:)
			the fail conditions		Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0712 Status is	Test Failed This Key ≠ On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
	-	2555	WE 1 TOWN 1 TOWN		Lost Communication with Hybrid Processor Control	= FALSE		
					Module Estimated Motor Power Loss Fault	= FALSE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	CeTFTI_e_Vo = ItageDirectPro p				Two Trips
			Sensor = Direct Proportional and Temp If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp					
			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	>= 400 RPM <= 7500 RPM >= 5 Sec		
					P0713 Status is	This Key ≠ On or Fault Active		
				Disable Conditions:				
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 900 RPM		ECM: None	>= 0.8 Fail Time (Sec)	One Trip
					Engine Torque is Engine Torque is Engine Speed Engine Speed Engine Speed is within ties allowable limits for Vehicle Speed is Throttle Position is	>= 0 N'm <= 8191.88 N'm >= 400 RPM <= 7500 RPM >= 5 Sec >= 10 Kph >= 0 Pct		
					Transmission Input Speed is	>= 0 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
•					The previous requirement has been satisfied for	>= 0 Sec		
					The change (loop to loop) ir transmission input speed is	< 8191.88 RPM/Loop		
					The previous requirement has been satisfied for			
					Throttle Position Signal Valid	= TRUE Boolean		
					Engine Torque Signal Valio Ignition Voltage Ignition Voltage			
					P0716 Status is no	Test Failed This Key		
				Disab Condition		TCM: P0717, P0752, P0973, P0974 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1 Transmission Input Speed is	< 33 RPM			>= 4.5 Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	< 653.13 RPM	Controller uses a single power supply for the speed sensors	= 1 Boolean		
					Engine Torque is Engine Torque is Vehicle Speec Engine Torque Signal Valic Ignition Voltage Ignition Voltage Engine Speec Engine Speec Engine Speec Engine Speed is within the	>= 10 Kph = TRUE Boolean >= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0717 Status is no	Test Falled This Key = On or Fault Active		
				Disab Condition		TCM: P0722, P0723 ECM: P0101, P0102, P0103		
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<= 35 RPM			>= 4.5 Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum
					P0722 Status is not	=	Test Failed This Key On or Fault Active			
					Transmission Input Speed Check Engine Torque Check Throttle Position Transmission Fluid Temperature Disable this DTC if the PTO is active Engine Torque Signal Valid Throttle Position Signal Valid Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is Engine Speed is Engine Speed is	= = >= >= = = = >= <= >= <= >= >= >= >= >= >= >= >= >= >= >= >= >=	Active TRUE TRUE 8.0002 -40 1 TRUE TRUE TRUE 400 7500 5	Boolean Pct °C Boolean Boolean Boolean Volts Volts RPM RPM Sec		
					Enable_Flags Defined Below  The Engine Torque Check is  TRUE, if either of the two following conditions are TRUE					
					Engine Torque Condition 1  Range Shift Status  OR	<b>≠</b>	Range shift completed	ENUM		
					Transmission Range is Engine Torque is Engine Torque is Engine Torque Condition 2	= >= <=	Park or Neutral 8191.75 8191.75	N*m N*m		
					Engine Torque is Engine Torque is Engine Torque is The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE	>= <=	50 8191.75	N*m N*m		
					TIS Check Condition 1 Transmission Input Speed is	>=	653.13	RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
							Transmission Input Speed is	<=	5350	RPM				
							TIS Check Condition 2 Engine Speed without the brake applied is Engine Speed with the brake applied is Engine Speed is	>=	3200 3200 8191.88	RPM RPM RPM				
							Controller uses a single power supply for the speed sensors		1	Boolean				
							Powertrain Brake Pedal is  Valid	=	TRUE	Boolean				
						Disable Conditions:	MIL not Illuminated for	TCM: P0716	I, P0102, P0103					
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed	>=	105	RPM					>=	0	(Sec)	One Trip
			Output Speed Delta	<=	8192	RPM					>=	0	Enable Time (Sec)	
			Output Speed Drop	>	650	RPM					>=	1.5	Output Speed Drop Recovery Fail Time (Sec)	
			AND Transmission Range is	D	riven rang (R,D)	e								
							Range_Disable OR	=	FALSE	See Below				
							Neutral_Range_Enable And		TRUE	See Below				
							Neutral_Speed_Enable are TRUE concurrently	=	TRUE	See Below				
							Transmission_Range_Enable	=	TRUE	See Below				
							Transmission_Input_Speed_E nable	=	TRUE	See Below				
							No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds				
							P0723 Status is not	=	Test Failed This Key On or Fault Active					
							Disable this DTC if the PTO is active	=	1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	N III
					Ignition Voltage is	>=	8.59961	Volts		
					Ignition Voltage is	<=	31.99902	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the	>=	5	Sec		
					allowable limits for					
					Enable_Flags Defined Below					
					Transmission_Input_Speed_E					
					nable is TRUE when either TIS					
					Condition 1 or TIS Condition 2					
					is TRUE:					
					TIS Condition 1 is TRUE when			Enable Time		
					both of the following conditions	>=	0			
					are satsified for			(Sec)		
					Input Speed Delta	<=	4095.88	RPM		
					Raw Input Speed	>=	500	RPM		
					TIS Condition 2 is TRUE when					
					ALL of the next two conditions					
					are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used	=		KFIVI		
					for all speed sensors	=	TRUE	Boolean		
					Neutral_Range_Enable is					
					TRUE when any of the next 3					
					conditions are TRUE					
					Transmission Range is	=	Neutral	ENUM		
							Reverse/N			
					Transmission Range is	=	eutral	ENUM		
					Transmission range is		Transitonal			
							Neutral/Dri			
					Transmission Range is	=	ve	ENUM		
							Transitiona I			
					And when a drop occurs		ı			
					Loop to Loop Drop of					
					Transmission Output Speed is	>	650	RPM		
					Transmission Output Speed is					
					Range_Disable is TRUE when					
				1	any of the next three					
				1	conditions are TRUE					
					Transmission Range is	=	Park	ENUM		
					mansmission Range is	=				
							Park/Reve			
					Transmission Range is	=	rse	ENUM		
							Transitonal			
							ON (Fully			
					Input Clutch is not	=	Applied)	ENUM		
	1 1			1	1		Applied)			- 1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Requi		Mil Illum.
2,5					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified	> 1.5	Seconds				
					for Transmission Output Speed		RPM				
					The loop to loop change of the Transmission Output Speed is		RPM				
					The loop to loop change of the Transmission Output Speed is	> -10	RPM				
					Transmission_Range_Enable is TRUE when one of the next six conditions is TRUE Transmission Range is Transmission Range is	= Neutral Reverse/N	ENUM ENUM				
					Transmission Range is	Neutral/Dri	ENUM				
					Time since a driven range (R,D) has been selected		Sec				
					Transmission Output Speed Sensor Raw Speed Output Speed when a fault was detected	>= 500	RPM RPM				
				Disable Conditions	MIL not Illuminated for	TCM: P0973, P0974, P0976 ECM: P0101, P0102, P0103 P0122, P0123					
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met	>= 750 Kpa				>=	2	Enable Time (Sec)	Two Trips
			(A) TCC Slip Error @ TCC On Mode	Refer to Table >= 1 in RPM Supporting Documents				>=	5	Fail Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshol Value	d	Secondary Malfunction		Enable Conditions				ime uired	Mil Illum
			(B) TCC Slip @ Lock On Mode >=	130 RP	М					>=	5	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter							>=	2	TCC Stuck Off Fail Counter	
			morement i dii ocuntor			TCC Mode	=	On or Lock					1
						Ignition Voltage Lo	>=	8.59961	Volts				1
						Ignition Voltage Hi	>= <=	31.99902	Volts				
						Engine Speed	>=	400	RPM				1
						Engine Speed	<=	7500	RPM				1
						Engine Speed is within the	>=	5	Sec				1
						allowable limits for							1
						Engine Torque Lo Engine Torque Hi	>= <=	50 8191.88	N*m N*m				1
						Throttle Position Lo	>=	8.0002	Pct				1
						Throttle Position Hi	<=	99.9985	Pct				1
						2nd Gear Ratio Lo	>=	2.19482	Ratio				1
						2nd Gear Ratio High	<=	2.52515	Ratio				1
						3rd Gear Ratio Lo	>=	1.42285	Ratio				1
						3rd Gear Ratio High 4th Gear Ratio Lo	<=	1.63708 1.06946	Ratio Ratio				1
						4th Gear Ratio High	>= <=	1.23047	Ratio				1
						5th Gear Ratio Lo	>=	0.79053	Ratio				İ
						5th Gear Ratio Hi	<=	0.90955	Ratio				İ
						6th Gear Ratio Lo	>=	0.62305	Ratio				1
						6th Gear Ratio High	<=	0.71692	Ratio				1
						Transmission Fluid Temperature Lo	>=	-6.6563	°C				İ
						Transmission Fluid							1
						Temperature Hi	<=	130	°C				1
						PTO Not Active	=	TRUE	Boolean				1
						Engine Torque Signal Valid	=	TRUE	Boolean				
						Throttle Position Signal Valid	=	TRUE	Boolean				
						Dynamic Mode	=	FALSE	Boolean				
								Test Failed					1
								This Key					
						P0741 Status is	<b>≠</b>	On or					1
								Fault					İ
								Active					
					Disable	MIL not Illuminated for	TCM: P0716	P0717 P0722	P0723				İ
					Conditions:		P0742, P276		, , 0, 20,				1
													İ
								1, P0102, P010					1
								08, P0171, P017					1
								01, P0202, P020					1
								06, P0207, P020 02, P0303, P030					1
								02, P0303, P030 07, P0308, P040					
rque Converter Clutch	+												One 1
CC)	P0742	TCC System Stuck ON	TCC Slip Speed >=	-50 RP	M								One I

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable				me uirod	Ш
System	Code	Description	Criteria  TCC Slip Speed <=	Value 13 RPM	IMAITUTICTION		Conditions		$\vdash$	Keq	uired	┼
			TCC Slip Speed <=	13 KPW								
									>=	1.5	Fail Time (Sec)	
			If Above Conditions Have been									
			Met, and Fail Timer Expired,						>=	6	Fail Counter	
			Increment Fail Counter						/-	U	I all Counter	ı
		-	increment rail counter		TCC Mode	=	Off					1
					Enable test if Cmnd Gear =	_						L
					1stFW and value true	=	1	Boolean				
					Enable test if Cmnd Gear =							ı
					2nd and value true	=	0	Boolean				ı
					Engine Speed Hi	<=	6000	RPM				L
					Engine Speed Lo	>=	500	RPM				L
					Vehicle Speed HI	<=	511	KPH				L
					Vehicle Speed Lo	>=	1	KPH				L
					Engine Torque Hi	<=	8191.88	Nm				ı
					Engine Torque Lo	>=	80	Nm				ı
					Current Range	<i>&gt;</i> −	Neutral	Range				1
					Current Range	<i>+</i> ≠	Reverse	Range				1
					Transmission Sump			_				1
					Temperature	<=	130	°C				L
					Transmission Sump							ı
					Temperature	>=	18	°C				ı
					Throttle Position Hyst High	>=	5.0003	Pct				L
					AND	-	0.0003	1 00				ı
					Max Vehicle Speed to Meet							ı
					Throttle Enable	<=	8	KPH				ı
					Once Hyst High has been met,							L
					the enable will remain while	>=	2.0004	Pct				ı
					Throttle Position	-	2.0001	1 00				ı
					Disable for Throttle Position	>=	75	Pct				L
					Disable if PTO active and	-						ı
					value true	=	1	Boolean				ı
												L
					Disable if in D1 and value true	=	1	Boolean				L
												L
					Disable if in D2 and value true	=	1	Boolean				L
												ı
					Disable if in D3 and value true	=	1	Boolean				L
												L
					Disable if in D4 and value true	=	1	Boolean				L
												1
					Disable if in D5 and value true	=	1	Boolean				ı
					Disable if in MUMD and value							L
					true	=	1	Boolean				L
												ı
					Disable if in TUTD and value	=	1	Boolean				1
					true 4 Wheel Drive Low Active	=	FALSE	Boolean				П
					Disable if Air Purge active and	=		DUUIEdil				L
					value false	=	0	Boolean				1
							FALCE	Dooloor				П
					RVT Diagnostic Active	=	FALSE	Boolean V				П
					Ignition Voltage	>=	8.59961					П
					Ignition Voltage	<=	31.99902	V				L
					Vehicle Speed	<=	511	KPH				1
	1 I				Engine Speed	>=	400	RPM	1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction		Enable Conditions				ime quired	Mil Illum.
	000.0					Engine Speed is within the	>=	5	Sec				
						allowable limits for Engine Torque Signal Valid	=	TRUE	Boolean				
						Throttle Position Signal Valid	=	TRUE	Boolean				
								Test Failed					
						D0742 Ct-tu- I-	-4	This Key					
						P0742 Status is	<i>≠</i>	On or Fault					
								Active					
					B: 11		TO14 DO74	, 50747 50700	D0700				
					Disable Conditions:	MIL not Illuminated for	P0741, P27		, P0/23,				
					conditions.	D103.	0741,127	05,12704					
								1, P0102, P0103					
								08, P0171, P017 01, P0202, P020					
								01, P0202, P020 06, P0207, P020					
							P0301, P03	02, P0303, P030	4, P0305,				
							P0306, P03	07, P0308, P040	1, P042E				
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400	RPM								Two
viode 2 ividitipiex valve	10751	Still Soletiola valve / Stack Oil	Commanded Gear	= 1st Lock									Trips
			Gear Ratio	<= 1.20959	τριτι					>=	0.2	Fail Tmr	
			Gear Ratio							=	5	Fail Counts	
			If the above parameters are true										
										<b>≠</b>	0	Neutral Timer	
										7	U	(Sec)	
										>=	0.3	Fail Timer (Sec)	
										>=	8	Counts	
						Ignition Voltage Lo	>=	8.59961	Volts				
						Ignition Voltage Hi Engine Speed Lo	<= >=	31.99902 400	Volts RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						Transmission Fluid			20				
						Temperature	>=	-6.6563	°C				
								Range					
						Range Shift State	=	Shift	ENUM				
								Completed					
						TPS	>=	0.5005	%				
						OR		0.3003	70				
						Output Speed	>=	67	RPM				
						Throttle Position Signal Valid from ECM	=	TRUE	Boolean				
						Engine Torque Signal Valid							
						from ECM, High side driver is	=	TRUE	Boolean				
	1	I	l			enabled				I			l

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
Gyatan	0000	- Description	STROT IN		•	Disable Conditions:	High-Side Driver is Enabled Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present  MIL not Illuminated for DTC's:		TRUE FALSE FALSE TRUE	Boolean Boolean Boolean				
								ECM: P0101 P0107, P010 P0175, P020 P0205, P020 P0301, P030	, P0102, P0103 18, P0171, P017 11, P0202, P020 16, P0207, P020 12, P0303, P030 17, P0308, P040	2, P0174, 3, P0204, 8, P0300, 4, P0305,				
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>=	400	RPM								One Tri
			Commanded Gear Commanded Gear has Achieved	=	3rd	Gear								
			1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	=	TRUE	Boolean								
				>=	400 3.82568	RPM					to Tabl	orting	Neutral Timer (Sec)	
			And Gear Ratio	<=	4.22839						>= 1.	.5	Fail Timer (Sec)	
											>= {		Counts	
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500	Volts Volts RPM RPM Sec				
							High-Side Driver is Enabled Throttle Position Signal Valid	=	TRUE	Boolean				
							from ECM Output Speed	= >=	TRUE 67	Boolean RPM				
							OR TPS	>=	0.5005	%				
							Range Shift State	=	Range Shift Completed	ENUM				
							Transmission Fluid Temperature	>=	-6.6563	°C				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			shold Ilue	Secondary Malfunction		Enable Conditions			Time Requi		Mil Illum.
System	Code	Description	Griefia			inuc	Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= =	FALSE FALSE TRUE	Boolean Boolean		rtequi	, cu	
						Disable Conditions:	MIL not Illuminated for DTC's:		o, P0717, P0722	, P0723,				
								P0107, P010 P0175, P020 P0205, P020 P0301, P030	1, P0102, P0103 08, P0171, P017 01, P0202, P020 06, P0207, P020 02, P0303, P030 07, P0308, P040	72, P0174, 03, P0204, 08, P0300, 04, P0305,				
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gea	ar =	1st Locked						DI	ease Refer		One Tr
			Gear Box Sli	ip >=	400	RPM					>= to S	Table 5 in apporting ocuments	Neutral Timer (Sec)	
			Intrusive Shift to 2n Commanded Gear Previou Gear Rati Gear Rati	IS = io <=	1st Locked 2.48218 2.24585	Gear						ocuments		
			If the above parameters are tru	ie							>= >=	1 3	sec counts	
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Output Speed OR TPS	>= <= >= <= >= >=	8.59961 31.99902 400 7500 5 67	Volts Volts RPM RPM Sec RPM	>=	3	Counts	
							Range Shift State	>=	Range Shift Completed	ENUM				
							Transmission Fluid Temperature	>=	-6.6563	°C				
							High-Side Driver is Enabled Throttle Position Signal Validi from ECM Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= = =	TRUE TRUE FALSE FALSE TRUE	Boolean Boolean Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction	Enable Conditions		Tir Requ		M IIIu
System	Coue	Description	Griteria		Disable		TCM: P0716, P0717, P072		Keqt		
					Conditions:	DTC's:		27. 07207			
							ECM: P0101, P0102, P010				
							P0107, P0108, P0171, P01				
							P0175, P0201, P0202, P02				
							P0205, P0206, P0207, P02 P0301, P0302, P0303, P03				
							P0306, P0307, P0308, P04				
								01,10122			
able Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd Gear								On
		Stuck Off [C35R]	Commanded Gear	= 3rd	Gear						
			Gearbox Slip		RPM						
			i i						Please Refer		
										n Neutral Timer	
									Supporting	(Sec)	
			Command 4th Gear once Output						Documents		
			Shaft Speed	<= 400	RPM						
			If Gear Ratio	>= 1.09436							
			And Gear Ratio	<= 1.20959							
									>= 3	Fail Timer (Sec)	)
			It the above condiations are true,							3rd Gear Fail	
			Increment 3rd gear fail counter						>= 3	Counts	
										or	
			and C35R Fail counter						>= 14	3-5R Clutch Fail Counts	ı
			Fail Case 2 Case: Steady State 5th Gear							Counts	1
			Commanded Gear	= 5th	Gear						
									Please Refer		
			Gearbox Slip	>= 400	Rpm				>= to Table 5 in Supporting	Neutral Timer (Sec)	
									Documents	(360)	
			Internal of Total Communication Communication						Documents		
			Intrusive Test: Command 6th Gear								
				Please refe	er						
			If attained Gear=6th gear Time	>= to Table 3	in Shift Time (Sec)						
				supporting	1						
			that has a branch a south at the	uocument	3					File Coope E "	
			It the above condiations are true, Increment 5th gear fail counter						>= 3	5th Gear Fail Counts	1
			increment our gear fall counter								1
									1	Or	1
			and C35R Fail counter						>= 14	3-5R Clutch Fail Counts	1
						PRNDL State defaulted	= FALSE	Boolean	+	Couris	1
						inhibit RVT	= FALSE	Boolean			
						IMS fault pending indication	= FALSE	Boolean	1		1
						TPS validity flag	= TRUE	Boolean	1		1
						Hydraulic System Pressurized	= TRUE	Boolean	1		1
			1			,					1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Minimum output speed for	>= 67 RPM		
					RVT A OR B			
					(A) Output speed enable			
					(B) Accelerator Pedal enable			
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi			
					Engine Speed Lo Engine Speed Hi	>= 400 RPM <= 7500 RPM		
					Engine Speed is within the			
					allowable limits for			
					Throttle Position Signal valid			
					HSD Enabled			
					Transmission Fluid Temperature			
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault			
					Default Gear Option is not present			
					ргезени			
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,		
				Conditions:	DTC's:			
						ECM: P0101, P0102, P0103, P0106,		
						P0107, P0108, P0171, P0172, P0174,		
						P0175, P0201, P0202, P0203, P0204,		
						P0205, P0206, P0207, P0208, P0300,		
						P0301, P0302, P0303, P0304, P0305,		
						P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case 1 Case: Steady State 1st					One Trip
		Stack on [ossix] (Steady State)	Attained Gear slip	>= 400 RPM				
				Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table Enable Time 4 in (Sec)				
				4 in (Sec) supporting				
				documents				
			Intrusive test:					
			(CBR1 clutch exhausted)	1 (00/4				
			Gear Ratio Gear Ratio					
			If the above parameters are true	7- 1.43344				
			ii the above parameters are true					
							>= 1.1 Fail Timer (Se	
							>= 2 Fail Count i	n
							1st Gear	
							Total Fail	
İ							>= 3 Total Pall Counts	_
l			Fail Case 2 Case: Steady State 2nd gear				Courits	+

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	
Oyotom	0000	Description	Ontona	Table Based		••••••		+
				value Dieses	1			
			Max Delta Output Speed	>= Refer to Table prpm/sec	1			
			Hysteresis	>= rpm/sec	1			
			1 Tystorosis	supporting	1			
				documents	1			
				Table Based	1			
				value Dieses	1			
			Min Delta Output Speed	Refer to Table	1			
			Hysteresis	Refer to Table rpm/sec	1			
			Trysteresis	supporting	1			
				documents	1			
				Table Based	1			
				Time Please	1			
					1			
			If the Above is True for Time	>= Refer to Table Sec	1			
					1			
				supporting documents	1			
			Intrusive test:	documents	1			
			(CB26 clutch exhausted)		1			
			(CB26 Cluich exhausted) Gear Ratio	<= 1.60864				
			Gear Ratio		1			
				>= 1.40044	1			
			If the above parameters are true		1			
					1			
					1		>= 1.1 Fail Timer (	Sec)
					1		<sub>2</sub> Fail Coun	in
					1		>= 3 2nd Gea	
					1		Or Or	'
					1		Total Fa	ı
					1		>= 3 Counts	
			Fail Case 3 Case: Steady State 4th gear		+		Counts	
			Case. Steady State 411 year	Table Based	1			
				value Please	1			
			Max Delta Output Speed	>= Refer to Table rpm/sec	1			
			Hysteresis	>= Refer to Table rpm/sec	1			
			Tiysteresis	supporting	1			
				documents	1			
				Table Based				
				value Dioces				
			Min Delta Output Speed	>= Refer to Table rpm/sec	1			
			Hysteresis	>= Refer to Table rpm/sec	1			
			Tiysteresis	supporting	1			
				Supporting	1			
				documents Table Based	1			
				Time Please	1			
				Defer to Toble	1			
			If the Above is True for Time	>= Refer to Table Sec	1			
				17 10				
				supporting	1			
			Internal tt	documents	1			
			Intrusive test:		1			
			(C1234 clutch exhausted)	0.004/5	1			
				<= 0.89465	1			
			Gear Ratio	>= 0.80945	I			- 1
			Geal Ratio	0.00710				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				ime Juired	Mil Illum.
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 4th Gear	
									>=	3	or Total Fail Counts	
			Fail Case 4 Case: Steady State 6th gear								Counts	
				Table Based value Please								
			Max Delta Output Speed	Refer to Table								
			Hysteresis	>= 22 in rpm/sec supporting								
				documents								
				Table Based value Please								
			Min Delta Output Speed	Refer to Table								
			Hysteresis	23 in supporting								
				documents								
				Table Based Time Please								
			If the Above is True for Time	Refer to Table Soc								
				17 in Supporting								
				documents								
			Intrusive test: (CB26 clutch exhausted)									
			Gear Ratio	<= 0.89465					>=	1.1	Fail Timer (Sec)	
			Gear Ratio						>=	3	counts	
			If the above parameters are true	0.007.10						Ü	oounio	
									>=	1.1	Fail Timer (Sec)	
										3	Fail Count in	
									>=	3	6th Gear	
									>=	3	or Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT IMS fault pending indication	= =	FALSE FALSE	Boolean Boolean				
					output speed	>=	0	RPM				
					TPS validity flag HSD Enabled	= =	TRUE TRUE	Boolean Boolean				
					Hydraulic_System_Pressurize	=	TRUE	Boolean				
					d A OR B							
					(A) Output speed enable	>=	67	Nm				
					(B) Accelerator Pedal enable	>=	0.5005	Nm				
					Ignition Voltage Lo	>=	8.59961	Volts				
					Ignition Voltage Hi Engine Speed Lo	<= >=	31.99902 400	Volts RPM				
					Engine Speed Ed	<=	7500	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						Engine Speed is within the allowable limits for if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable	>= >= >= <=	5 5.0003 5 8191.88	Sec Pct Nm Nm	·	
						Transmission Fluid Temperature	>=	-6.6563	°C		
						Input Speed Sensor fault Output Speed Sensor fault	= =	FALSE FALSE	Boolean Boolean		
					Disable Conditions:	MIL not Illuminated for DTC's:		P0717, P0722	, P0723,		
							P0107, P0108 P0175, P020 P0205, P0206 P0301, P0302	P0102, P0103 3, P0171, P017 1, P0202, P020 5, P0207, P020 2, P0303, P030 7, P0308, P040	72, P0174, 03, P0204, 08, P0300, 04, P0305,		
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) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure	= TRUE  Maximum pressurized Clutch	Boolean						One Trip
			Command Status Range Shift Status Attained Gear Slip	Control	n RPM						
			If the above conditions are true run appropriate Fail 1 Timers Below:								
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)						
			fail timer 1 (3-2 shifting with Throttle)	>= 0.2998	Fail Time (Sec)						
			fail timer 1 (3-2 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)						
			fail timer 1 (3-4 shifting with Throttle) fail timer 1	>= 0.2998	Fail Time (Sec)						
			(3-4shifting with Closed Throttle) fail timer 1	>= 0.5	Fail Time (Sec)						
			(3-5 shifting with Throttle)	>= 0.2998	Fail Time (Sec)						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions			Tiı Requ	me uired	Mil Illum
			fail timer 1 (3-5 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (5-3 shifting with Throttle)	>= 0	0.2998	Fail Time (Sec)								
			fail timer 1 (5-3 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (5-4 shifting with Throttle)	>= 0	0.2998	Fail Time (Sec)								
			fail timer 1 (5-4 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (5-6 shifting with Throttle)	>= C	0.2998	Fail Time (Sec)								
			fail timer 1 (5-6 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers								Tii + En fo >= I	Total Fail me = (Fail Fail 2) See hable Timer r Fail Time 1, and Reference Supporting fable 15 for all Timer 2	ers rs er sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total faill counter											
			3rd gear fail counter								>=	3	3rd gear fail counts OR	
			5th gear fail counter								>=	3	5th gear fail counts	
			Total fail counter								>=	5	OR total fail counts	
							TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled Default Gear Option is not present	>= = = # >= >= = = = =	-6.6563 FALSE FALSE 1st TRUE 100 150 FALSE FALSE FALSE TRUE TRUE	°C Boolean Boolean Boolean RPM RPM Boolean Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Cystem	Oout	Везеприон	Ontona	Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,	Roquiou	
				Conditions:	DTC's:	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		
'ariable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C	Fail Case 1 Case: Steady State 4th Gear					One T
anabie bieeu Solenolu (VBS)	F0/90	Stuck Off [C456] (Steady State)	Case. Steady State 4th Geal				Diago Coo	
							Please See Table 5 For Neutral T	mer
			Gear slip	>= 400 RPM			>= Neutral Time (Sec)	
			Intrusive test:				Cal	
			commanded 5th gear					
				Please refer				
			If attained Gear ≠5th for time	>= to Table 3 in Supporting Shift Time (Sec)				
				Documents				
			if the above conditions have been					
			met				4th Gear	Fail
			Increment 4th Gear Fail Counter				>= 3 411 Geal Coun	
							OR	all.
			and C456 Fail Counters				>= 14 C456 F Count	
			Fail Case 2 Case: Steady State 5th Gear				DI O	
							Please See Table 5 For Neutral T	mer
			Gear slip	>= 400 RPM			>= Neutral Time (Sec)	
			Introduction took				Cal	
			Intrusive test: commanded 6th gear					
				Please Refer				
			If attained Gear ≠ 6th for time	>= to Table 3 in Supporting Shift Time (Sec)				
				Supporting Documents				
			if the above conditions have been					
			met				5th Gear	Fail
			Increment 5th Gear Fail Counter				>= 3 Coun	
							OR O457.5	-"
			and C456 Fail Counters				>= 14 C456 F Count	
			Fail Case 3 Case: Steady State 6th Gear					
							Please See	imor
			Gear slip	>= 400 RPM			>= Table 5 For Neutral T Neutral Time (Sec)	
							Cal	
			Intrusive test:					
	I	l	commanded 5th gear			I	I	ı

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Component/ System		Monitor Strategy Description		Please refer to Table 3 in Supporting Documents Shift Time (Sec)	PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Li Engine Speed Lo Engine Speed Id	= FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE Boolean >= 67 RPM >= 67 RPM >= 0.5005 Pct  >= 8.59961 Volts <= 31.99902 Volts >= 400 RPM	Time Required  >= 3 6th Gear Fail Count OR >= 14 C456 Fail Counts	
				Disable Conditions:	Engine Speed is within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault OutputSpeed Sensor fault Default Gear Option is not present	>= 5 Sec = TRUE Boolean = TRUE Boolean >= -6.6563 °C = FALSE Boolean = FALSE Boolean = TRUE  TCM: P0716, P0717, P0722, P0723, P182E  ECM: P0101, P0102, P0103, P0106,		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	<u>Fail Case 1</u> Case: Steady State 1st Attained Gear slip			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 Tri

Component/ System	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	III
System	Code	Description	Criteria	Table Based	Walluffction	Conditions	_	nequireu	IIII
				Time Please					
			If the Above is True for Time	Refer to Table Enable Time					
				4 in (Sec)					
				supporting					
				documents					
			Intrusive test:						
			(CBR1 clutch exhausted)						
			Gear Ratio						
			Gear Ratio	>= 1.09436					
			If the above parameters are true						
			ii tile above parameters are tide						
							1	1 F-11 Thurs (C)	,
							>= 1.	1 Fail Timer (Sec)	)
								Fail Count in	
							>= 2	1st Gear	
								or	1
								Total Fail	
							>= 3	Counts	
			Fail Case 2 Case Steady State 2nd					Odditio	1
			Substitute 2110	Table Based					
				value Please					
			Max Delta Output Speed	Pefer to Table					
			Hysteresis	>= Refer to Table rpm/sec 22 in					
			Hysteresis	22 111					
				supporting					
				documents Table Based					
			Min Dalla Outsid Count	value Please					
			Min Delta Output Speed	>= Refer to Table rpm/sec 23 in					
			Hysteresis	23 in					
				supporting					
				documents					
				Table Based					
				Time Please					
			If the Above is True for Time	>= Refer to Table Sec 17 in					
			ii tile Above is The for Tillie						
				supporting					1
				documents					
			Intrusive test:						
			(CB26 clutch exhausted)						
			Gear Ratio	<= 1.20959					
			Gear Ratio	>= 1.09436					
			If the charge person store are true						
			If the above parameters are true						
							. 4	1 Foil Times (C)	,
							>= 1.	1 Fail Timer (Sec)	7
								Fail Count in	1
							>= 3	2nd Gear	1
								or	
									1
							>= 3	Total fail counts	ŝ
									1
			Fail Case 3 Case Steady State 3rd						-

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions				ime uired	III
System	Code	Description	Criteria	Table Based	manunction	Conditions			neq	uneu	+
				value Diegos							
			Max Delta Output Speed								
			Hysteresis	>= rpm/sec							
			,	supporting							
				documents							
				Table Based							
				value Please							
			Min Delta Output Speed	>= Refer to Table rpm/sec							
			Hysteresis	>= rpm/sec							
			_	supporting							
				documents							
				Table Based							
				Time Please							
			If the Above is True for Time	>= Refer to Table Sec							
			ii the Above is True for Time	17 111							
				supporting							1
				documents							1
			Intrusive test:								1
			(C35R clutch exhausted)								1
			Gear Ratio	<= 1.20959							1
			Gear Ratio	>= 1.09436							
			If the above parameters are true								
			·								ı
								>=	1.1	Fail Timer (Sec)	j
										Fail Count in	
								>=	3	3rd Gear	
									OR		
								>=	3	Total Fail	1
								>=	3	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_Pressurize	= TRUE	Boolean				1
					A OR B						l
					(A) Output speed enable	>= 67	Nm				
											ı
					(B) Accelerator Pedal enable	>= 0.5005	Nm				
					Ignition Voltage Lo	>= 8.59961	Volts				
					Ignition Voltage Hi	<= 31.99902	Volts				1
					Engine Speed Lo	>= 400	RPM				1
					Engine Speed Hi	<= 7500	RPM				1
					Engine Speed is within the		Soo				1
					allowable limits for	>= 5	Sec				1
					if Attained Gear=1st FW	>= 5.0003	Det				1
					Accelerator Pedal enable	>= 5.0003	Pct				1
					if Attained Gear=1st FW	>= 5	Nm				
					Engine Torque Enable	>= 3	INIII				1
					if Attained Gear=1st FW	<= 8191.88	Nm				1
	1 1				Engine Torque Enable	\- 0171.00	INIII	1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Disable Conditions:	Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present  MIL not Illuminated for DTC's:	>= -6.6563 °C = FALSE Boolean = FALSE Boolean = TRUE		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status	= TRUE  Maximur pressurize Clutch exhaust	ed		1 5550,1 5557,1 5550,1 5151,1 5122		One Trip
			Range Shift Status Attained Gear Slip	Control					
			If the above conditions are true increment appropriate Fail 1 Timers Below: fail timer 1	>= 0.2998	Fail Time (Sec)				
			(4-1 shifting with throttle) fail timer 1 (4-1 shifting without throttle) fail timer 1	>= 0.5 >= 0.2998	Fail Time (Sec)				
			(4-2 shifting with throttle) fail timer 1 (4-2 shifting without throttle) fail timer 1	>= 0.5	Fail Time (Sec)				
			(4-3 shifting with throttle) fail timer 1 (4-3 shifting without throttle)	>= 0.2998 >= 0.5	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle) fail timer 1 (5-3 shifting without throttle)	>= 0.2998 >= 0.5	Fail Time (Sec) Fail Time (Sec)				
			(5-3 shifting without undule) fail timer 1 (6-2 shifting with throttle) fail timer 1	>= 0.2998 >= 0.5	Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions		Tin Requ		Mil Illum.
			If Attained Gear Slip is Less than Above Cal Increment Fall Timers					Tin + En   Foi   F	Total Fail me = (Fail 1 Fail 2) See able Timer r Fail Timer 1, and Reference Supporting able 15 for	S	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					F	ail Timer 2		
			4th gear fail counter					>=	3	Fail Counter From 4th Gear OR	
			5th gear fail counter					>=	3	Fail Counter From 5th Gear OR	
			6th gear fail counter					>=	3	Fail Counter From 6th Gear OR	
			Total fail counter					>=	5	Total Fail Counter	
					Disable Conditions:	TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled  MIL not Illuminated for DTC's:	>= -6.6563 °C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean TRUE Boolean				
							ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up	= 0	Boolean						Special No MIL
			Position in Range 2 Enabled Tap Up Switch Stuck in the Up Position in Range 3 Enabled		Boolean Boolean						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Т	hreshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
-,			Tap Up Switch Stuck in the Up	= 0	Boolean			- 4	
			Position in Range 4 Enabled		DUUICAII				
			Tap Up Switch Stuck in the Up	= 0	Boolean				
			Position in Range 5 Enabled		200.00				
			Tap Up Switch Stuck in the Up	= 0	Boolean				
			Position in Range 6 Enabled 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		Boolean				
			Position in Reverse Enabled	= 0	Боогеан				
			Tap Up Switch ON	= TRUE	Boolean			>= 1 Fail Time (Sec)	
			Tup op omisit on	11102	Booloan				
			Fail Case 2 Tap Up Switch Stuck in the Up						ł
			Position in Range 1 Enabled	= 1	Boolean				
			Tap Up Switch Stuck in the Up		Daalaan				
			Position in Range 2 Enabled	= 1	Boolean				
			Tap Up Switch Stuck in the Up	= 1	Boolean				
			Position in Range 3 Enabled		Boolcan				
			Tap Up Switch Stuck in the Up	= 1	Boolean				
			Position in Range 4 Enabled Tap Up Switch Stuck in the Up						
			Position in Range 5 Enabled	= 1	Boolean				
			Tap Up Switch Stuck in the Up						
			Position in Range 6 Enabled	= 1	Boolean				
			Tap Up Switch Stuck in the Up	= 0	Boolean				
			Position in Neutral Enabled		DOOLEGIT				
			Tap Up Switch Stuck in the Up	= 0	Boolean				
			Position in Park Enabled		Booloan				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0	Boolean				
			Tap Up Switch ON	= TRUE	Boolean				
			NOTE: Both Failcase1 and	- 1102	Doolcan				
			Failcase 2 Must Be Met					>= 600 Fail Time (Sec)	
						Time Since Last Range	>= 1 Enable Time		
						Change	(Sec)		
						Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 31.99902 Volts		
						Engine Speed Lo	<= 31.99902 Voits >= 400 RPM		
						Engine Speed Hi	<= 7500 RPM		
						Engine Speed is within the			
	1		1	I		allowable limits for	>= 5 Sec	I	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold 'alue	Secondary Malfunction	Enable Conditions		Time Required	t t	Mil Illum.
						P0815 Status is	Test Failed This Key ≠ On or Fault Active				
					Disable Conditions:		TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761				
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 0	Boolean		ECM: None				Special No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	= 0	Boolean						
			Tap Down Switch ON	= TRUE	Boolean			>=	1	sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1	Boolean						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean								
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	= 0	Boolean								
			Tap Down Switch Stuck in the Down Position in Park Enabled	= 0	Boolean								
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0	Boolean								
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE	Boolean					>=	600	sec	
						Time Since Last Range Change	>=	1	Enable Time (Sec)				
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	>= <= >=	8.59961 31.99902 400	Volts Volts RPM				
						Engine Speed Ei Engine Speed Hi Engine Speed is within the	<=	7500	RPM				
						allowable limits for	>=	5 Test Failed	Sec				
						P0816 Status is	<b>≠</b>	This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0815, P1877, P191!	P0826, P182E	E, P1876,				
Tap Up Tap Down Switch			TUTD Circuit Reads Invalid				ECM: None						Cassial
(TUTD)	P0826	Up and Down Shift Switch Circuit	Voltage	= TRUE	Boolean	Innition Volt L-		0.500/1	Velte	>=	60	Fail Time (Sec)	Special No MIL
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= <= >= <=	8.59961 31.99902 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		eshold alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
-,				-		P0826 Status is	<i>≠</i>	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761 ECM: None						
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE	Boolean					>= out	4.4	Fail Time (Sec) Sample Time	Two Trips
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec	of	5	(Sec)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>= out	1.5 1.875	Fail Time (Sec) Sample Time	One Trip
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec	of	1.075	(Sec)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>= out	4.4	Fail Time (Sec) Sample Time	Two Trips
						lgnition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.59961 31.99902 400 7500	Volts Volts RPM RPM	of	5	(Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
5,						Engine Speed is within the allowable limits for	>=	5	Sec		- 1		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
						Ignition Voltage	>=	8.59961	Volts	out of	0.375	Sample Time (Sec)	
						Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<=	31.99902 400 7500 5	Volts RPM RPM Sec				
						P0966 Status is not		Test Failed This Key On or Fault					
					Disable	MIL not Illuminated for	TCM: None	Active					
					Conditions:	DTC's:	ECM: None						
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec) Sample Time	One Trip
						Ignition Voltage Ignition Voltage Engine Speed	>= <= >=	8.59961 31.99902 400	Volts Volts RPM	out of	0.375	(Sec)	
						Engine Speed Engine Speed is within the allowable limits for	<=	7500 5	RPM Sec				
						P0967 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
Variable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>= out of	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	One Tri
						P0970 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed Engine Speed	= >= <= >= <=	Test Failed This Key On or Fault Active 8.59961 31.99902 400 7500	Volts Volts RPM RPM	OI		(Sec)	
					Disable Conditions:	allowable limits for  MIL not Illuminated for  DTC's:	>= TCM: None ECM: None	5	Sec				
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					>= out of	0.3	Fail Time (Sec) Sample Time (Sec)	One T
						P0971 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	= >= <= >= <= >=	Test Failed This Key On or Fault Active 8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec			Yanay	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	1.2	Fail Time (Sec)	One T
										out of	1.5	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	eshold alue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					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	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	Boolean					>=	1.2	Fail Time (Sec)	Two Trips
									out of	1.5	Sample Time (Sec)	
					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	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	Boolean					>= out	1.2	Sec Sec	One Trip
					P0977 Status is not	=	Test Failed This Key On or Fault Active		of	1.0		
					Ignition Voltage		8.59961 31.99902	Volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
Oyston	Jour	Description	O'ACIA			Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >=	400 7500 5	RPM RPM Sec		71044		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
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		Boolean					>=	3	Fail Counter	Special No MIL
						T 11 T 0 11				>	10	Sample Timer (Sec)	
						Tap Up Tap Down Message Health Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	= >= <= >=	TRUE 400 7500 5	Boolean RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	Transition 1 = (bit state 1110)	Range								One Tri
			Previous range	≠ CeTRGR_e_P ≠ RNDL_Drive6	Range								
			Previous range	≠ CeTRGR_e_P ≠ RNDL_Drive4	Range								
			Range Shift State Absolute Attained Gear Slip Attained Gear Attained Gear Throttle Position Available Throttle Position	<pre></pre>	ENUM rpm pct								
			Output Speed Engine Torque Engine Torque If the above conditions are met then Increment Fail Timer	>= 200 >= 50 <= 8191.75	rpm Nm Nm					>=	1	Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter Fail Case 2 Output Speed The following PRNDL sequence events occur in this exact order:	<= 70	rpm					>=	5	Fail Counts	
			PRNDL state	= Drive 6 (bit state 0110)	Range								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	7	Threshold Value	Secondary Malfunction	-	Enable Conditions			Tii Requ		
		, and pro-	PRNDL state = Drive 6 for >		Sec						•		Т
				Transitio									
			PRNDL state										
				0111									
			PRNDL state	Drive 6									Т
			1 11152 51415	state 01	10)								Т
			DDND1 -1-1-	Transitio									ı
			PRNDL state	= (bit sta 1110									ı
			Above sequencing occurs in <		Sec								ı
				= Inactiv									Т
			If all conditions above are met	madir									
			Increment delay Timer										Т
			If the below two conditions are met							١.	3	Fail Seconds	ı
			Increment Fail Timer							>=	3	Fall Seconds	ı
			, ,	= 1	Sec								1
				= 400	Sec								1
			If Fail Timer has Expired then							>=	2	Fail Counts	ı
			Increment Fail Counter Fail Case 3	Transitio	n 12			CeTRGR_					4
						Previous range	<b>≠</b>	e_PRNDL					ı
			Current range	0010		Frevious range	+	_Drive1					ı
				0010	,			CeTRGR_					
			Engine Torque >	= -8192	2 Nm	Previous range	<b>≠</b>	e_PRNDL					
			3			3.		_Drive2					
			Engine Torque <	= 8191.7	75 Nm	IMS is 7 position configuration	=	1	Boolean				
			Eligilie Torque (	= 0171.	'S INIII	livis is 7 position configuration	-	'	Duolean				ı
						If the "IMS 7 Position config" =							Т
						1 then the "previous range"							Т
			If the above conditions are met			criteria above must also be				>=	0.225	Seconds	ı
			then, Increment Fail Timer			satsified when the "current							ı
						range" = "Transition 13"							ı
			If Fail Timer has Expired then										ı
			Increment Fail Counter							>=	15	Fail Counts	ı
			Fail Case 4	Transitio	on 0	Disable Fail Case 4 if last							1
			Current range	4		positive range was Drive 6 and							Т
			Current range	0111		current range is transition 8							ı
				UIII	,								1
						Set inhibit bit true if PRNDL =							ı
			Inhibit bit (see definition)	= FALS	_	1100 (rev) or 0100 (Rev-Neu transition 11)							ı
			minibit bit (see demittion)	= FALS	E.	Set inhibit bit false if PRNDL =							ı
						1001 (park)							
			Steady State Engine Torque >	= 100	Nm	TooT (park)							
				= 8191.7									1
			If the above conditions are met							>=	0.225	Seconds	
			then Increment Fail Timer							>=	0.223	Seconds	1
			If the above Condtions have been										
			met, Increment Fail Counter							>=	15	Fail Counts	1
				TDU	- Poolog-								4
			Fail Case 5 Throttle Position Available	= TRUI	Boolean								1
			The following PRNDL sequence										1
	1 1		events occur in this exact order:							1			- 1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requ		Illu
			PRNDL State	Reverse (bit						- 1-		1
			1 KNDL State	State 1100)								
			PRNDL State	Transition 11 = (bit state Range								
			T KIVDE State	0100)								
			PRNDL State	Neutral (bit Range								
				state 0101) Transition 11								
			PRNDL State									
				0100)								
			Above sequencing occurs in	<= 1 Sec								
			Then delay timer increments Delay timer	>= 5 sec								
			Range Shift State	_ Range Shift								
				_ Complete								
			Absolute Attained Gear Slip Attained Gear									
			Attained Gear									
			Throttle Position	>= 8.0002 pct								
			Output Speed	>= 200 rpm								
			If the above conditions are met Increment Fail Timer						>=	20	Seconds	
			Fail Case 6	Illegal /hit	A Onen Circuit Definition (flee							1
			Current range	Illegal (bit = state 0000 or	A Open Circuit Definition (flag set false if the following							
			Guitelik fullige	1000 or 0001)	conditions are met):							
				·			Transition					
					Current Denge	<b>≠</b>	11 (bit					
			and		Current Range	7	state					
			A Conser Classifi (Cons Definition)	FALCE Dealers			0100)					
			A Open Circuit (See Definition)	= FALSE Boolean	or	1	Neutral (bit					
					Last positive state	≠ .	state					
					,		0101)					
					or		Transition					
					Previous transition state		Transition 8 (bit state					
					r revious transition state	,	0111)					
					Fail case 5 delay timer	=	0	sec				
			If the above Condtions are met						>=	6.25	Seconds	
			then, Increment Fail timer Fail Case 7									-
			Current PRNDL State	= PRNDL circuit ABCP = 1101 Range								
			and									
			Previous PRNDL state	= PRNDL circuit ABCP =1111 Range								
			Input Speed									
			Reverse Trans Ratio Reverse Trans Ratio									
			If the above Condtions are met	>- 3.27411 TANU								
			then, Increment Fail timer						>=	6.25	Seconds	
		i										- 1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction		Enable Conditions				me uired	Mil Illum
•			P182E will report test fail when any of the above 7 fail cases are met										
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Engine Torque Signal Valid	<= >= <= >=	8.59961 31.99902 400 7500 5 TRUE	Volts Volts RPM RPM Sec Boolean				
					Disable Conditions:		TCM: P0710 P07C0, P07	6, P0717, P0722 BF, P077C, P07	, P0723, 7D				
							P0107, P01 P0175, P02 P0205, P02 P0301, P03	01, P0102, P010 08, P0171, P017 01, P0202, P020 06, P0207, P020 02, P0303, P030 07, P0308, P040	2, P0174, 13, P0204, 18, P0300, 14, P0305,				
ternal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is ≠	Park or Neutral	Enumeration								One 1
		Start	The following events must occur Sequentially Initial Engine speed <=	= 50	RPM					>=	0.25	Enable Time	
			Then Engine Speed Between Following	= 50	KFIVI					>=	0.25	(Sec)	
			Cals Engine Speed Lo Hist Engine Speed Hi Hist <=		RPM RPM					>=	0.06875	Enable Time (Sec)	
			Then Final Engine Speed >=	= 525	RPM							(3ec)	
			Final Transmission Input Speed >=	= 100	RPM					>=	1.25	Fail Time (Sec)	
						DTC has Ran this Key Cycle?  Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage Hyst High (enables above this value) Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speed	>= <= <=	FALSE 6 31.99902 5 2 90 Test Failed This Key On or Fault	Boolean V V V rpm				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions			Tim Requi		Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, ECM: None	P0723					
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below) Ignition Voltage High Hyst (run crank goes true when above this value) Ignition Voltage Low Hyst (run	= FALSE	Boolean Volts					>= Out	280	Fail Counts (25ms loop) Sample Counts	One Trip
			crank goes false when below this value)	2	Volts	ECM run/crank active status available ECM run/crank active status	= =	TRUE TRUE	Boolean Boolean	of	280	(25ms loop)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Control Module (TCM)	P2535	Ignition Switch Run/Start Position Circuit High	TCM Run crank active (based on voltage thresholds below) Ignition Voltage High Hyst (run crank goes true when above this value)	= TRUE 5	Boolean Volts					>=	280	Fail Counts (25ms loop)	One Trip
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2	Volts					Out of	280	Sample Counts (25ms loop)	
						ECM run/crank active status available ECM run/crank active status	=	TRUE FALSE	Boolean Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case 1 Case: Steady State 2nd Gear Gear slip		RPM					_ T	Please See Table 5 For eutral Time Cal	Neutral Timer (Sec)	One Trip
			Intrusive test: commanded 3rd gear If attained Gear = 3rd for Time	Table Based Time Please	e Enable Time								
			If Above Conditions have been met Increment 2nd gear fail count	Documents						>=	3	2nd Gear Fail Count	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requi	red	Mil Illum.
			and CB26 Fail Count						>=	14	or CB26 Fail Count	
			Fail Case 2 Case: Steady State 6th Gear  Gear slip  Intrusive test:	>= 400 RPM					. Т	lease See able 5 For eutral Time Cal	Neutral Timer (Sec)	
			commanded 5th gear  If attained Gear = 5th For Time	Table Based Time Please								
			If Above Conditions have been met, Increment 5th gear fail counter	Documents					>=	3	5th Gear Fail Count	
			and CB26 Fail Count						>=	14	or CB26 Fail Count	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag	= = = =	FALSE FALSE FALSE TRUE	Boolean Boolean Boolean Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT A OR B	>=	0	RPM				
					(A) Output speed enable	>=	67	RPM				
					(B) Accelerator Pedal enable	>=	0.5005	Pct				
					Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed In Engine Speed is within the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				
					Throttle Position Signal valid HSD Enabled Transmission Fluid	=	TRUE TRUE	Boolean Boolean				
					Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	>= = = =	-6.6563 FALSE FALSE TRUE	°C Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		I nre: Va	shold lue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illun
System	Code	Description	Criteria		v a	Disable		TCM: P0716, P0717, P0722, P0723,	Kequireu	- IIIuii
						Conditions:	DTC's:			
								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		
			Primary Offgoing Clutch is							One
		Pressure Control (PC) Solenoid D	exhausted (See Table 13 in							Onc
able Bleed Solenoid (VBS)		Stuck On [CB26] (Dynamic)	Supporting Documents for	=	TRUE	Boolean				
		, (,	Exhaust Delay Timers)							
			Primary Oncoming Clutch		Maximum					
			Pressure Command Status	=	pressurized					
			Primary Offgoing Clutch Pressure		Clutch					
			Command Status	=	exhaust					
			Command Status		command					
			Range Shift Status	<sub>≠</sub> 1	nitial Clutch					
					Control					
			Attained Gear Slip	<=	40	RPM				
			If above coditons are true,							
			increment appropriate Fail 1							
			Timers Below:							
			fail timer 1							
			(2-1 shifting with throttle)	>=	0.2998	Fail Time (Sec)				
			fail timer 1		0.5	F-!! T! (C)				
			(2-1 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1	\	0.2998	Fail Time (Sec)				
			(2-3 shifting with throttle)	/-	0.2770	Tall Tille (Sec)				
			fail timer 1	>=	0.5	Fail Time (Sec)				
			(2-3 shifting without throttle)	_	0.0	ruii riine (See)				
			fail timer 1	>=	0.2998	Fail Time (Sec)				
			(2-4 shifting with throttle)			` '				
			fail timer 1	>=	0.5	Fail Time (Sec)				
			(2-4 shifting without throttle) fail timer 1							
			(6-4 shifting with throttle)	>=	0.2998	Fail Time (Sec)				
			fail timer 1							
			(6-4 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1		0.0000	F 11 T1 (0 )				
			(6-5 shifting with throttle)	>=	0.2998	Fail Time (Sec)				
			fail timer 1		٥٢	Fail Time (Ca-)				
			(6-5 shifting without throttle)	>=	0.5	Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer >= 1, and Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
			2nd gear fail counter				>= 3 Fail Coun From 2nd 0 OR	
			6th gear fail counter				>= 3 Fail Coun From 6th C	
			total fail counter				>= 5 Total Fa	
					TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	>= -6.6563 °C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean >= TRUE Boolean >= 100 RPM >= 150 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case: Steady State 1st  Attained Gear slip  If the Above is True for Time	>= 400 RPM Table Based Time Please				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	
Oyatem	Code	Description	Intrusive test:	Tuluo	man arrows	Conditions	Required	<del>-   "</del>
			(CBR1 clutch exhausted)					
			Gear Ratio	<= 2.48218				
				>= 2.24585				
			If the above parameters are true					
			ii tile above parameters are true					
							>= 1.1 Fail 1	Timer (Sec)
								Count in
							1	st Gear
							_	or otal Fail
								Counts
			Fail Case 2 Case: Steady State 3rd Gear		<u> </u>		(	Julius
			Tall Gase 2 Gase. Steady State Srd Gear	Table Based				
				value Please				
			Max Delta Output Speed	Refer to Table ,				
			Hysteresis	>= Refer to Table rpm/sec 22 in				
				supporting				
				documents				
				Table Based				
				value Please				
			Min Delta Output Speed	>= Refer to Table rpm/sec 23 in				
			Hysteresis					
				supporting				
				documents Table Based				
				Time Please				
				Defeate Table				
			If the Above is True for Time	>= Refer to Table Sec				
				supporting				
				documents				
			Intrusive test:	documents				
			(C35R clutch exhausted)					
			Gear Ratio	<= 2.48218				
			Gear Ratio	>= 2.24585				
			If the above parameters are true					
			ii the above parameters are true					
							>= 1.1 Fail 7	imer (Sec)
								Count in
								rd Gear
							3	or or
							_ т	otal Fail
								Counts
			Fail Case 3 Case: Steady State 4rd Gear					
			,	Table Based				
				ualua Diagga				
			Max Delta Output Speed	>= Refer to Table rpm/sec				
			Hysteresis					
				supporting				
				documents	1			- 1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	1
System	Code	Description	Griteria	Table Based	mananoton	CONTUNIONS	Nequiled	+"
				ualua Diagga				
			Min Delta Output Speed	Refer to Table				
			Hysteresis	Refer to Table >= 23 in rpm/sec				
			1.ijotorosio	supporting				
				documents				
				Table Based				
				Time Please				
				Pofor to Table				
			If the Above is True for Time	>= 17 in Sec				
				supporting				
				documents				
			Intrusive test:					
			(C1234 clutch exhausted)					
			Gear Ratio	<= 0.70032				
			Gear Ratio	>= 0.63367				
			If the above parameters are true					
			ii the above parameters are true					
							>= 1.1 Fail Timer (S	ec)
							>= 3 Fail Count i	in
							4th Gear	
							or	
							>= 5 Total Fail	
			Fall Care 4 Coop Chook Chok Eth Coop				>= 5 Counts	-
			Fail Case 4 Case: Steady State 5th Gear	Table Based				
				value Diegos				
			Max Delta Output Speed	Refer to Table >= 22 in rpm/sec				
			Hysteresis	>= 10 rable rpm/sec				
			Trystolesis	supporting				
				documents				
				Table Based				
				value Please				
			Min Delta Output Speed					
			Hysteresis	>= Refer to Table rpm/sec 23 in				
			,	supporting				
				documents				
				Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table Sec				
			ii tile Above is Tide for Tillie	17 In				
				supporting				
				documents				
			Intrusive test:					
			(C35R clutch exhausted)	0.70000				
			Gear Ratio					
			Gear Ratio	>= 0.63367				
			If the above parameters are true					
			, , , , , , , , , , , , , , , , , , , ,					
							>= 1.1 Fail Timer (S	ec)
							Fail Count i	
							>= 3 Fail Count 1	111
	1						or or	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions			Tiı Requ	me uired	Mil Illum.
•										>=	5	Total Fail	
						PRNDL State defaulted	=	FALSE	Boolean			Counts	-
						inhibit RVT		FALSE	Boolean				
						IMS fault pending indication	=	FALSE	Boolean				
						output speed	>=	0	RPM				
						TPS validity flag	=	TRUE	Boolean				
						HSD Enabled Hydraulic_System_Pressurize	=	TRUE	Boolean				
						d d	=	TRUE	Boolean				
						A OR B							
						(A) Output speed enable	>=	67	Nm				
						(B) Accelerator Pedal enable	>=	0.5005	Nm				
						Ignition Voltage Lo	>=	8.59961	Volts				
						Ignition Voltage Hi	<=	31.99902	Volts				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the	>=	5	Sec				
						allowable limits for if Attained Gear=1st FW							
						Accelerator Pedal enable	>=	5.0003	Pct				
						if Attained Gear=1st FW							
						Engine Torque Enable	>=	5	Nm				
						if Attained Gear=1st FW		0404.00					
						Engine Torque Enable	<=	8191.88	Nm				
						Transmission Fluid	>=	-6.6563	°C				
						Temperature	>=						
						Input Speed Sensor fault	=	FALSE	Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not	=	TRUE					
						present							
					Disable	MIL not Illuminated for	TCM: P0716	5. P0717. P0722	2. P0723.				
					Conditions:	DTC's:							
							FCM: D0101	1, P0102, P0103	2 D0106				
								08, P0171, P01					
								01, P0202, P02					
								06, P0207, P020					
								02, P0303, P03					
								07, P0308, P04					
	1	Pressure Control (PC) Solenoid D	The HWIO reports a low voltage							<del>                                     </del>			One Tr
ariable Bleed Solenoid (VBS	) P2720	Control Circuit Low	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	
	1	(CB26 VBS)	.5 ,,,,,,							out		Sample Time	
	1	1					l			of	0.375	(Sec)	l

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		R	Time equired	Mil Illum.
					P2770 Status is no		Test Failed This Key On or Fault Active				
					Ignition Voltag Ignition Voltag Engine Spee Engine Spee Engine Speed is within th allowable limits fo	e <= d >= d <=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec			
				Di Condi	sable MIL not Illuminated fo ons: DTC's						
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 out of 0.375	Fail Time (Sec Sample Time (Sec)	
					P2721 Status is no		Test Failed This Key On or Fault Active			(cos)	
					Ignition Voltag Ignition Voltag Engine Spee Engine Spee Engine Speed is within th allowable limits fo	e <= d >= d <=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec			
				Di Condi	sable MIL not Illuminated fo ons: DTC's						
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear Gear slip	>= 400 RPM					Please 5 >= Table 5 Neutral 1	For Neutral Timer	One Trip
			Intrusive test: commanded 2nd gear If attained Gear ≠ 2nd for Time	Please refer to Table 3 in	Sec)				Cal		
			If Above Conditions have been met, Increment 1st gear fail counter	Documents					>= 3	1st Gear Fail Count	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	M Illu
•							or C1234 Clut	°h
			and C1234 fail counter				>= 14 Fail Coun	
			Fail Case 2 Case: Steady State 2nd Gear				Please See	
			Gear slip	>= 400 RPM			Table 5 For Neutral Tim	er
			God. dip				Neutral Time (Sec) Cal	
			Intrusive test:				ou.	
			commanded 3rd gear	Please refer				
			If attained Gear ≠ 3rd for Time	>= to Table 3 in Shift Time (Sec)				
				Supporting Documents				
			If Above Conditions have been met, Increment 2nd gear fail				>= 3 2nd Gear F	ail
			counter				Count	
							or C1234 Clut	<sub>ch</sub>
			and C1234 fail counter				>= 14 Fail Coun	
			Fail Case 3 Case: Steady State 3rd Gear				Please See	
			Gear slip	>= 400 RPM			>= Table 5 For Neutral Time Neutral Time (Sec)	er
							Neutral Time (Sec) Cal	
			Intrusive test: commanded 4th gear					
			Commanded 4th gear	Please refer				
			If attained Gear ≠ 4th for time	>= to Table 3 in Supporting Shift Time (Sec)				
				Documents				
			If Above Conditions have been met, Increment 3rd gear fail				>= 3 3rd Gear Fa	ail
			counter				Count	
			and C1234 fail counter				or C1234 Clute	ch
			Fail Case 4 Case: Steady State 4th Gear				>= 14 Fail Coun	
			Case. Steady State 4th Geal				Please See	
			Gear slip	>= 400 RPM			>= Table 5 For Neutral Time Neutral Time (Sec)	er
							Cal	
			Intrusive test: commanded 5th gear					
				Please refer				
			If attained Gear = 5th For Time	>= to Table 3 in Supporting Shift Time (Sec)				
			If Above Conditions have been	Documents				
			if Above Conditions have been met, Increment 4th gear fail				>= 3 4th Gear Fa	ail
			counter				count	
			and C1234 fail counter				C1234 Clut	
			anu C1254 faii Couffel		PRNDL State defaulted	= FALSE Boolean	>= 14 Fail Coun	
					inhibit RVT			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						IMS fault pending indication TPS validity flag	=	FALSE TRUE	Boolean Boolean		
						Hydraulic System Pressurized		TRUE	Boolean		
						Minimum output speed for					
						RVT A OR B	>=	0	RPM		
						(A) Output speed enable		67	RPM		
						(B) Accelerator Pedal enable	>=	0.5005	Pct		
						Common Enable Criteria		0.500/4			
						Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.99902	Volts Volts		
						Engine Speed Lo	>=	400	RPM		
						Engine Speed Hi Engine Speed is within the		7500	RPM		
						allowable limits for	>=	5	Sec		
						Throttle Position Signal valid HSD Enabled		TRUE TRUE	Boolean Boolean		
						Transmission Fluid		-6.6563	°C		
						Temperature					
						Input Speed Sensor fault Output Speed Sensor fault		FALSE FALSE	Boolean Boolean		
						Default Gear Option is not		TRUE			
						present					
					Disable	MIL not Illuminated for		6, P0717, P0722	2, P0723,		
					Conditions:	DTC's:	P182E				
								)1, P0102, P0103 108, P0171, P01			
								201, P0202, P020			
								206, P0207, P020			
								302, P0303, P030 307, P0308, P040			
	+		Primary Offgoing Clutch is								One Trip
Variable Bleed Solenoid (VBS	) P2724	Pressure Control (PC) Solenoid E	exhausted (See Table 10 in	= TRUE	Boolean						One mp
Variable bleed Solelloid (VBS	1 2724	Stuck On (Dynamic)	Supporting Documents for Exhaust Delay Timers)	- INOL	Doolcan						
			Primary Oncoming Clutch	Maximum							
			Pressure Command Status	pressurized							
			Primary Offgoing Clutch Pressure	Clutch = exhaust							
			Command Status	command							
			Range Shift Status	≠ Initial Clutch Control							
			Attained Gear Slip		RPM						
			If the above conditions are true increment appropriate Fail 1								
			Timers Below:								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresho Value		Secondary Malfunction		Enable Conditions				me uired	ı
			fail timer 1 (2-6 shifting with throttle)	>= 0.2	2998 se	ес								
			fail timer 1	>= C	).5 se	ec								
			(2-6 shifting without throttle) fail timer 1	0.3	2998 se	20								
			(3-5 shifting with throttle) fail timer 1											
			(3-5 shifting without throttle)	>= 0	).5 se	ec								
			fail timer 1 (4-5 shifting with throttle)	>= 0.2	2998 se	ec								
			fail timer 1 (4-5 shifting without throttle)	>= 0	).5 se	ec								
			fail timer 1 (4-6 shifting with throttle)	>= 0.2	2998 se	ec								
			fail timer 1	>= (	).5 se	20								
			(4-6 shifting without throttle)	- 0	, 30							Total Fa''		
												Total Fail me = (Fail		ĺ
												Fail 2) Sea able Time		
			If Attained Gear Slip is Less than									r Fail Time		l
			Above Cal Increment Fail Timers									1, and Reference		l
											9	Supporting		
												able 15 fo all Timer 2		
			If fail timer is greater than											
			threshold increment corresponding gear fail counter and total fail											
			counter											
			2nd gear fail counter								>=	3	Fail Counter From 2nd Gear	
													FIOIII ZIIU Geal	
			3rd gear fail counter								>=	3	Fail Counter	
			g									-	From 3rd Gear	
			4th gear fail counter								>=	3	Fail Counter From 4th Gear	
			total fail counter								>=	5	Total Fail Counter	
							TUT Enable temperature Input Speed Sensor fault	>= =	-6.6563 FALSE	°C Boolean				1
							Output Speed Sensor fault	=	FALSE	Boolean				
							Command / Attained Gear High Side Driver ON	≠ =	1st TRUE	Boolean Boolean				
							output speed limit for TUT	>=	100	RPM				ĺ
							input speed limit for TUT PRNDL state defaulted	>=	150 FALSE	RPM Boolean				ĺ
							IMS Fault Pending	=	FALSE	Boolean				
							Service Fast Learn Mode HSD Enabled	= =	FALSE TRUE	Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time equired	Mil Illum.
-,	- 540								
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723,			
				Conditions.	D10 3.	1 1022			
						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			
/ariable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E	Fail Case 1 Case: 5th Gear						One T
anabic bicca solenola (VBS)	1 2/27	Stuck On (Steady State)	Case. sin Cear	Table Based					
				value Dioces					
			Max Delta Output Speed	>= Refer to Table >= 22 in rpm/sec					
			Hysteresis						
				supporting documents					
				Table Based					
			Min Delta Output Speed	value Please					
			Hysteresis	>= Refer to Table rpm/sec					
				supporting					
				documents Table Based					
				Time Please					
			If the Above is True for Time	>= Refer to Table Sec					
				17 in Supporting					
				documents					
			Intrusive test:						
			(C35R clutch exhausted) Gear Ratio						
			Gear Ratio						
			If the above parameters are true						
							. 11	Fall Times (Cas)	
							>= 1.1	Fail Timer (Sec)	1
							>= 3	Fail Count in 5th Gear	
								OR	
							>= 3	Total Fail	
			Fail Case 2 Case: 6th Gear					Counts	-
				Table Based					
			May Dalta Output Creed	value Please					
			Max Delta Output Speed Hysteresis	>= Refer to Table rpm/sec 22 in					
			.,,	supporting					
				documents					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				ime Juired	Mi Illui
- Cystein	Jue	Description	O Relia	Table Based			20			11.00	1	
				value Please								
			Min Delta Output Speed									
			Hysteresis									
				supporting documents								
				Table Based								
				Timo Dloaco								
			If the Above is True for Time	Refer to Table								
			ii tile Above is True for Tillie	17 111								
				supporting								
			Intrusive test:	documents								
			(CB26 clutch exhausted)									
			Gear Ratio	<= 1.20959								
			Gear Ratio	>= 1.09436								
			If the above parameters are true									
			alo wao									
									>=	1.1	Fail Timer (Sec)	
										1	Fail Count in	
									>=	3	6th Gear	1
											OR	
									>=	3	Total Fail	
					PRNDL State defaulted	=	FALSE	Boolean			Counts	1
					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_Pressurize	=	TRUE	Boolean				
					A OR B							
					(A) Output speed enable	>=	67	Nm				
					(B) Accelerator Pedal enable	>=	0.5005	Nm				
					Ignition Voltage Lo Ignition Voltage Hi	>=	8.59961 31.99902	Volts Volts				l
					Engine Speed Lo	<= >=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the		5	Sec				
					allowable limits for	>=	3	Sec				
					if Attained Gear=1st FW	>=	5.0003	Pct				
					Accelerator Pedal enable if Attained Gear=1st FW							
					Engine Torque Enable	>=	5	Nm				1
					if Attained Gear=1st FW		0404.00	N.				
					Engine Torque Enable	<=	8191.88	Nm				
					Transmission Fluid	>=	-6.6563	°C				
					Temperature							
					Input Speed Sensor fault Output Speed Sensor fault	=	FALSE FALSE	Boolean Boolean				
					Default Gear Option is not	=		DUURAII				
					present	=	TRUE					
				l	F. 30011				I			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre: Va	shold lue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:		, P0717, P0722,	P0723,				
							P0107, P010 P0175, P020 P0205, P020 P0301, P030	, P0102, P0103, 8, P0171, P0172 1, P0202, P0203 6, P0207, P0208 2, P0303, P0304 7, P0308, P0401	2, P0174, 3, P0204, 3, P0300, 4, P0305,				
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					>= out of	0.3	Fail Time (Sec) Sample Time (Sec)	One Trip
						P2729 Status is not	=	Test Failed This Key On or Fault Active		OI .		(300)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volt Volt RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Tri
										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 is within the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500	Volt Volt RPM RPM Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions			me uired	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE	Boolean			>= out of	4.4	Fail Time (Sec) Sample Time (Sec)	Two Trips
						P2763 Status is not	Test Failed This Key = On or Fault Active				
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<= 31.99902 Volt >= 400 RPM <= 7500 RPM >= 5 Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659 ECM: None				
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE	Boolean			>= out of	4.4	Fail Time (Sec) Sample Time (Sec)	One Tr
						P2764 Status is not	Test Failed This Key = On or Fault Active			(100)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<= 31.99902 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 Tr

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions				ime quired	Mil Illum.
			Delay timer	>= 0.11	25 sec				Out of	70	Sample Counts (≈ 11 seconds)	
						Stabilization delay Ignition Voltage Ignition Voltage Power Mode	3 8.59961 31.99902 Run	sec Volt Volt				
					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		JE Boolean				>=	12	sec	One Tri
						Stabilization delay Ignition Voltage Ignition Voltage Power Mode	3 8.59961 31.99902 Run	sec Volt Volt				
					Disable Conditions:	MIL not Illuminated for DTC's:						

#### Table 1

Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00 RPI

#### Table 2

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

#### Table 3

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	4.00	4.00	Sec

#### Table 4

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	2.00	2.00	Sec

#### Table 5

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	3.00	3.00	Sec

#### Table 6

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

#### Table 7

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

Table 8						
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C
	Curve	409.00	3.60	1.60	1.50	1.40 Sec
T-1.1- 0						
Table 9	Axis	-6.67	-6.66	40.00	80.00	120.00 °C
	Curve	409.00	3.30	1.30	1.20	1.10 Sec
	Curve	409.00	3.30	1.50	1.20	1.10 360
Table 10						
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C
	Curve	3.03	1.86	1.00	0.75	0.58 Sec
Table 11						
Table 11	Axis	-40.00	-20.00	0.00	30.00	110.00 °C
	Curve	1.72	1.11	0.60	0.36	0.22 Sec
				0.00	0.00	0.22
Table 12						
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C
	Curve	2.12	1.39	0.84	0.64	0.33 Sec
Table 13						
14510 10	Axis	-40.00	-20.00	0.00	30.00	110.00 °C
	Curve	2.51	0.95	0.50	0.29	0.13 Sec
		•	•	•		
Table 14	—	10.00			22.22	110.00
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C
	Curve	2.97	0.82	0.47	0.20	0.13 Sec

Table 15										
	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00 °C
	Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Sec
Table 16										
Table 10	Axis	-6.67	-6.66	40.00 °C						
	Curve	409.59	2.50	2.50 Sec						
		100100								
Table 17	_									
	Axis	-6.67	-6.66	40.00 °C						
	Curve	0.40	0.35	0.30 Sec						
Table 18										
	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
Table 19										
Table 19	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
		200.00	00.00	.0.00		0 1100	_0.00	20.00	20.00	200.00
Table 20	—									
	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	Curve	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00 °C

-20.00

3.00

40.00 °C

1.00 Sec

<u>Table 21</u>

Axis

Curve

-40.00

5.00

#### Table 22

Axis	-6.67	-6.66	40.00	°C
Curve	8191.75	8191.75	8191.75	RPM/Sec

#### <u>Table 23</u>

Axis	-6.67	-6.66	40.00	°C
Curve	8191.75	8191.75	8191.75	RPM/Sec