Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			Tim Requi	e red	Mil Illum.
Acceleration Sensor	C124F	The lateral accleration signal is stuck at a low magnitude out of range	Lateral accleration magnitude	>= .	-3.85	g's					>=	105	seconds	Special No MIL
		because of a low circuit	Lateral accleration magnitude is within the range above for	>=	120	Sec					out of	120	sample	-
							Lateral accleration magnitude	>=	-3.85	g's				
							Lateral accleration magnitude is within the range above for	>=	105	Sec				
							Sensor Type	=	Voltage Directional Proportion ate					
							Transmission Type	=	Clutch to Clutch Transmissi					
							Lateral acceleration sensor circuit low diagnostic enable	=	on TRUE	Boolean				
							Battery Voltage	<=	31.99902	Volts				
							Battery voltage is within the	>-	9	Sec				
							allowable limits for	-	31 00002	Volte				
							Ignition Voltage	>=	9	Volts				
							Service Fast Learn (SFL) Mode	=	FALSE	Boolean				
							Ignition voltage and SFL conditions met for	>=	0.1	Sec				
						Disable	MIL not Illuminated for	TCM: If calibr	ated to illumina	ate the MIL				
								ECM: None)					
Acceleration Sensor	C1250	I ne lateral accleration signal is stuck at a high magnitude out of range because of a high circuit	Lateral accleration magnitude	>=	3.85	g's					>=	105	seconds	Special No MIL
			Lateral accleration magnitude is within the range above for	>=	120	Sec					out of	120	sample	
							Lateral accleration magnitude	>=	3.85	a's				
									0.00	30				
							Lateral accleration magnitude is within the range above for	>=	105	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr V	eshold alue		Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
								Sensor Type	=	Voltage Directional Proportion ate			
								Transmission Type	=	Clutch to Clutch Transmissi on			
								Lateral acceleration sensor circuit high diagnostic enable	=	TRUE	Boolean		
						Disa Conditic	able pns:	Battery Voltage Battery Voltage Battery voltage is within the allowable limits for Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode Ignition voltage and SFL conditions met for MIL not Illuminated for DTC's:	<= >= <= >= = >= TCM: If calib (U0073, U01 ECM: None	31.99902 9 0.1 31.99902 9 FALSE 0.1 rated to illumin: 00)	Volts Volts Sec Volts Volts Boolean Sec ate the MIL		
		T he lates of a strength of the strength of t											
Acceleration Sensor	C1251	at a high magnitude in range	Lateral accleration magnitude Lateral accleration magnitude Lateral accleration magnitude is within the range above for	<= >= >=	3.85 0.53 120	g's g's Sec							No MIL
								Lateral accleration magnitude	<=	3.85	g's		
								Lateral accleration magnitude	>=	0.53	g's		
								Lateral accleration magnitude is within the range above for	>=	90	Sec		
								Diagnostic shifting override command	=	FALSE	Boolean		
								Attained Gear State	=	1st through 6th			
								Attained Gear Slip	<=	100 Clutch to	RPM		
								Transmission Type	=	Clutch Transmissi			
								High Side Driver 1 On Vehicle Speed	= >=	TRUE 15	Boolean kph		

Component/ System	Fault Code	Monitor Strategy	Malfunction		Thre	eshold alue	Secondary Malfunction		Enable			Tin Regi	ne uired	Mil Illum.
System		Description				ande	Lateral acceleration stuck in range diagnostic enable Battery Voltage Battery voltage is within the allowable limits for Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode Ignition voltage and SFL conditions met for	= <= >= <= = >=	TRUE 31.99902 9 0.1 31.99902 9 FALSE 0.1	Boolean Volts Volts Sec Volts Volts Boolean Sec			meu	
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: If calibr (P0716, P071 P07BF, P07C P215C, U007 ECM: None	ated to illumin 7, P0721, P07 :0, P077B, P0 3)	ate the MIL 722, P0723, 77C, P077D,				
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	=	TRUE	Boolean Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601			>=	5	Fail Counts	One Trip
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	=	TRUE	Boolean		ECM: None			с	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 Disable	MIL not Illuminated for	TCM: P0604			>=	5 16	Fail Counts Sample Counts	One Trip
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		ECM: None			с	Runs Continously		One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Ι	Thre	eshold alue	Secondary Malfunction		Enable Conditions			Re	Time equired	Mil Illum.
						Disable	MIL not Illuminated for	TCM: P062F					•	
						Conditions:	DIC'S	ECM: None						
		Transmission Electro Hydraulia	Fail Case 1											One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature Too High	Substrate Temperature	e >=	142.1016	°C					>=	5	Fail Time (Sec)	One mp
			Fail Case 2 Substrate Temperature	e >=	50	°C					>=	2	Fail Time (Sec)	
			Ignition Voltage	>=	18	Volts								-
			DTC	2										
							Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp H	>= <= >= <=	8.59961 31.99902 0 170	Volts Volts ℃ ℃				
							Substrate Temp Between Temp Range for Time	>=	0.25	Sec				
									Test Failed This Key					
							P0634 Status is	; ≠	On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag) }	TRUE	Boolean					>=	4	Fail Counts	One Trip
											out of	6	Sample Counts	
							P0658 Status is not	: =	Test Failed This Key On or Fault Active					
							High Side Driver 1 On	=	True	Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp ∆) }	Refer to Tabl 19 in supporting documents	e ℃								Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Rec	ime Juired	Mil Illum.
				Refer to Table					1			
			If TCM substrate temp to power	> ^{20 in} ∘C								
			up temp Δ	supporting								
				uocumenta								
			Both conditions above required to						>=	3000	Fail Counts	
			increment fail counter								(100ms loop)	
			the median temp of trans oil temp.						Out		Sample Counts	
			substrate temp and power up						of	3750	(100ms loop)	
			temp.									
			Non-continuous (intermittent) fail conditions will delay resetting fail						>=	700	Pass Counts	
			counter until						· -	100	(100ms loop)	
									Out		Sample Counts	
									of	875	(100ms loop)	
											(
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Accelerator Position Signal	=	TRUE	Boolean				
					Valid		0.50004	Valta				
					Ignition Voltage Lo	>= <=	31 99901	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the	>=	5	Sec				
					allowable limits for Brake torque active	=	FALSE					
					Below describes the brake		TALOL					
					torque entry criteria							
					Engine Torque	>=	90	N*m				
					Transmission Input Speed	>= <=	200	RPM				
					Vehicle Speed	<=	8	Kph				
					Transmission Range	¥	Park					
					Transmission Range	≠	Neutral					
					Set Brake Torque Active	-	NOL ACLIVE					
					TRUE if above conditions are	>=	7	sec				
					met for:							
					Below describes the brake							
					Brake torque entry criteria	=	Not Met					
							Clutch					
					Clutch hydraulic pressure	¥	Hydraulic					
					,,		Air Purge					
							CeTFTD e					
					Clutch used to exit brake	=	_C3_RatlE					
					The above about the		nbl					
					The above clutch pressure is	>-	600	kna				
						~-	000	кра				
					Set Brake Torque Active							
					FALSE if above conditions are	>=	20	Sec				
					met for:				I			I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0667 Status is	Test Failed This Key ≠ On or Fault Active		
				Disabl Conditions	MIL not Illuminated for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module	P0668	TCM internal temperature (substrate)	Type of Sensor Used	CeTFTI_e_Vo = ItageDirectPro				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and	p <= -249 ℃ >= -249 ℃				
			Temp Either condition above will satisfy				>= 60 Fail Timer (Sec))
			the fail conditions		Ignition Voltage Lo Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test Failed		
					P0668 Status is	Ihis Key		
				Disabl Conditions	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used If TCM Substrate Temperature Sensor = Direct Proportional and Temp	CeTFTI_e_Vo = ItageDirectPro p >= 249 °C				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditio	e Ins		Ti Req	ime Juired	Mil Illum.
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= 249 °C							
			Either condition above will satisfy the fail conditions					>=	60	Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is Engine Speed is within the allowable limits for	>= 8.5996 <= 31.999 >= 400 <= 7500 >= 5	31 Volts 02 Volts RPM RPM Sec				
					P0669 Status is	Test Fa This K ≠ On o Fault Activi	iled r : e				
					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	= FALS	E				
					Module Estimated Motor Power Loss Fault	= FALS	E				
				Disabl	e MIL not Illuminated for : DTC's:	TCM: P0716, P0717, Pi ECM: None	0722, P0723				
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	lf TCM power-up temp to substrate temp Δ	Refer to Table > 20 in ℃ supporting documents							Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table 18 in ℃ supporting documents							
			Both conditions above required to increment fail counter					>=	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)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Rea	me uired	Mil Illum.
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean				-
					Accelerator Position Signal	=	TRUE	Boolean				
					Valid		11(0E	Doolean				
					Ignition Voltage Lo	>=	8.59961	Volts				
					Ignition Voltage Hi	<= \-	31.99902	VOIIS				
					Engine Speed Lo	<=	7500	RPM				
					Engine Speed is within the		-					
					allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE					
					Below describes the brake							1
					torque entry criteria							
					Engine Torque	>=	90	N*m				
					Throttle	>=	30.0003	Pct				
					I ransmission input Speed	<=	200	KPM Knh				
					Transmission Pange	×- +	o Park	крп				
					Transmission Range	≁ ≠	Neutral					
					PTO	=	Not Active					
					Set Brake Torque Active							
					TRUE if above conditions are	>=	7	sec				
					met for:							
					Below describes the brake							
					torque exit criteria							
					Brake torque entry criteria	=	Not Met					
							Clutch					
					Clutch hydraulic pressure	¥	Air Purgo					
							Event					
							CeTFTD e					
					Clutch used to exit brake	=	C3 RatlE					
					torque active		nbl					
					The above clutch pressure is							
					greater than this value for one	>=	600	kpa				
					loop							
					Set Brake Torque Active							
					FALSE if above conditions are	>=	20	Sec				
					met for:				1			1
							Test Failed					
							This Key					
					P06AC Status is	¥	On or		1			1
							Fault					
							Active					
									1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		T	hreshol Value	d	Secondary Malfunction		Enable Conditions			T Req	ime Juired	Mil Illum.
							Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658 P06AE, P07 P0722, P072 P0967, P097 P2721, P272 ECM: P010 P0107, P010 P0175, P020 P0205, P020 P0301, P030 P0306, P030	, P0668, P0669 (6, P0712, P07- 3, P0962, P096 0, P0971, P215 9, P2730 1, P0102, P0103 8, P0171, P017 1, P0202, P020 6, P0207, P020 2, P0303, P030 7, P0308, P040	, P06AD, 13, P0717, 3, P0966, C, P2720, 3, P0106, 2, P0174, 3, P0204, 8, P0300, 4, P0305, 1, P042E				
Transmission Control Module	P06AD	TCM power-up thermistor circuit	Power Up Temp	<=	-59	°C						>=	60	Fail Time (Sec)	Two Trips
		Vilage low						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed swithin the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				The
								P06AD Status is	¥	Test Failed This Key On or Fault Active					
								For Hybrids, below conditions must also be met							
								Estimated Motor Power Loss	>=	0	kW				
								Estimated Motor Power Loss greater than limit for time	>=	0	Sec				
								Lost Communication with Hybrid Processor Control	=	FALSE					
								Estimated Motor Power Loss Fault	=	FALSE					
							Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716 ECM: None	, P0717, P0722	2, P0723				
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>=	164	°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 5	Volts Volts RPM RPM Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			T Rec	ime luired	Mil Illum.
					P06AE Status is	¥	Test Failed This Key On or Fault Active					
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ If transmission oil temp to power up temp Δ Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.	Refer to Table 9 in °C supporting documents Refer to Table 18 in °C supporting documents					>= Out of	3000 3750	Fail Counts (100ms loop) Sample Counts (100ms loop)	Two Trips
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>= Out of	700 875	Pass Counts (100ms loop) Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within the allowable limits for Brake torque active Below describes the brake torque entry criteria Engine Torque Throttle Transmission Input Speed Vehicle Speed Transmission Range Transmission Range	= = ,= ,= ,= ,= ,= ,= ,= ,= ,= ,= ,= ,=	TRUE Bc TRUE Bc 8.59961 M 31.99902 M 400 F 7500 F 5 F FALSE 90 30.0003 200 Park Neutral Not Active Not Active	oolean Jolean Volts Volts RPM RPM Sec N*m Pct RPM Kph				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable			Tir Reg	me uired	Mil
oystem	Coue	Description	Onteria	Value	Set Brake Torque Active		Contaitions		+	neq	uncu	
					TPLIE if above conditions are		7	800				
					mot for		1	360				
					Relaw describes the broke							-
					below describes the blake							
					torque exit criteria	1	N. C.M. C					
					Brake torque entry criteria	a =	Not Met					
							Clutch					
					Clutch hydraulic pressure	≠	Hydraulic					
					ciatori ilgandano procedio		Air Purge					
							Event					
					Clutch used to exit brake		CeTFTD_e					
					Ciulcii used to exit brake	, =	_C3_RatlE					
					torque active)	nbl					
					The above clutch pressure is	5						
					greater than this value for one	>=	600	kpa				
					loon			iipu				
					Set Brake Torque Active							
					EALSE if above conditions are		20	Soo				
					FALSE II above conditions are		20	Sec				
					met for:							
							Test Failed					
							This Key					
					P0711 Status is	≠	On or					
						, ,	Fault					
							Activo					
							Active					
				Disable	MIL not Illuminated for	TCM: P0658.	. P0668. P0669	. P06AD.				
				Conditions	DTC's	P06AF P071	16 P0712 P07	13 P0717				
				o on a difference	5100	P0722 P072	3 PN062 PN06	3 P0066				
						P0022, P012	0, F0902, F090	C D0700				
						P0967, P097	0, P0971, P215	OC, P2720,				
						P2/21, P2/2	9, P2730					
						ECM: P0101	I, P0102, P010	3, P0106,				
						P0107, P010	8, P0171, P017	'2, P0174,				
						P0175, P020	1, P0202, P020	3, P0204,				
						P0205 P020	6 P0207 P020	8 P0300				
						P0301 P030	2 P0303 P030	4 P0305				
						P0306 P030	7 00308 0040	1 D042E				
						F0300, F030	7, F0300, F040	/1, F042E				
				CeTFTI e Vo						-		Two
I ransmission Fluid	P0712	I ransmission fluid temperature	Type of Sensor Used	= ItageDirectPro					1			Trips
Temperature Sensor (TFT)		thermistor failed at a low voltage	Type of ochaol osed	n		1			1			inpo
	1		If Transmission Fluid Temperature	Ч		1			1			1
	1			- 74 90		1			1			1
			Sensor = Direct Proportional and	<14 [−] 0					1			
			I emp						1			
	1		If Transmission Fluid Temperature			1			1			1
	1		Sensor = Indirect Proportional and	>= -74 °C		1			1			1
	1		Temp						\vdash			1
			Either condition above will satisfy						>=	60	Fail Time (Sec)	
			the fail conditions							00		
	1				Ignition Voltage Lo) >=	8.59961	Volts	1			1
	1				Ignition Voltage Hi	<=	31.99902	Volts	1			1
	1				Engine Speed Lo) >=	400	RPM	1			1
	1				Engine Speed Hi	<=	7500	RPM	1			1
	1				Engine Speed is within the		_		1			1
					allowable limits for	>=	5	Sec	1			
1	1	I	1	1		1			1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value		Secondary Malfunction		Enable Conditions			T Rec	ime Juired	Mil Illum.
							P0712 Status is	¥	Test Failed This Key On or Fault Active					
							For Hybrids, below conditions must also be met							
							Estimated Motor Power Loss	>=	0	kW				
							Estimated Motor Power Loss greater than limit for time	>=	0	Sec				
							Lost Communication with Hybrid Processor Control Module	=	FALSE					
							Estimated Motor Power Loss Fault	=	FALSE					
					Di Condit	sable ions:	MIL not Illuminated for DTC's:	TCM: P0716 ECM: None	, P0717, P0722	, P0723				
		-		CeTFT	le Vo	_								Two
Transmission Fluid Temperature Sensor (TFT)	P0713	I ransmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	= ItageDi	irectPro									Trips
			If Transmission Fluid Temperature	- 1 ⁻	7/ 00									
			Temp	- 1	14 0									
			Sensor = Indirect Proportional and	<= 1	74 °C									
			Either condition above will satisfy the fail conditions								>=	60	Fail Time (Sec)	-
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.99902	Volts Volts				
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							P0713 Status is	≠	Test Failed This Key On or					
								Γ	Fault Active					
					Di Condil	sable ions:	MIL not Illuminated for DTC's:	TCM: P0713 P0723	, P0716, P0717	, P0722,				
Transmission Input Speed			Transmission Input Speed Separa					ECM: None						One Tria
Sensor (TISS)	P0716	Input Speed Sensor Performance	Drops	>= 9(00 RPM						>=	0.8	Fail Time (Sec)	

Component/ System	Fault	Monitor Strategy	Malfunction		Thre	eshold alue	Secondary Malfunction		Enable			Ti Reg	ime wired	Mil Illum.
System	Coue	Description	Gineria				Engine Torque is	>=	0	N*m		neg	uncu	
							Engine Torque is	<=	8191.88	N*m				
							Engine Speed	>=	400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the		1000					
							allowable limits for	>=	5	Sec				
							Vehicle Speed is	>=	10	Knh				
							Throttle Position is	>=	0	Pct				
								,	0	1.01				
							Transmission Input Speed is	>=	0	RPM				
							The previous requirement has	-	0					
							heen satisfied for	>=	0	Sec				
							been saushed to							
							The change (loop to loop) in							
							transmission input speed is	<	8191.88	RPM/Loop				
							The provious requirement has							
							the previous requirement has	>=	0	Sec				
							been satisfied for							
							Throttle Position Signal Valid	=	TRUE	Boolean				
							Engine Torque Signal Valio	=	TRUE	Boolean				
							Ignition Voltage	>=	8 59961	Volte				
							Ignition Voltage	-	31 00002	Volte				
							Ignition voltage		J1.33302	VOILS				
									Test Failed					
									This Key					
							P0716 Status is no	t =	On or					
									Fault					
									Active					
						D		TO14 00747	D0750 D007	0.0074				
						Disable	MIL not Illuminated for	TCM: P0/1/,	P0752, P0973	3, P0974				
						Conditions	DIC's							
								ECM: P0101,	P0102, P0103	3, P0121,				
								P0122, P0123	3					
Transmission Input Speed	P0717	Input Speed Sensor Circuit Low	Fail Case 1 Transmission Input Speed	s <	33	RPM					>=	4.5	Fail Time (Sec)	One I rip
Sensor (TISS)		Voltage	i i i i i i i i i i i i i i i i i i i	-										
											<u> </u>			4
			Fail Case 2 When P0/22 DTC Status equal	0			Controller uses a single power	r						
			Lest Failed and Transmissio	n <	653.13	RPM	supply for the speed sensors	=	1	Boolean				
			Input Speed	is							<u> </u>			-
				1			Engine Torque is	>=	80	N*m	1			
							Engine Torque is	<=	8191.88	N*m				
							Vehicle Speed	>=	10	Kph				
1		1		1			Engine Torque Signal Valio		TRUE	Boolean	1			
							Ignition Voltage	e >=	8.59961	Volts				
1		1		1			Ignition Voltage	e <=	31.99902	Volts	1			
1		1		1			Engine Speed	>=	400	RPM	1			
1		1		1			Engine Speed	<=	7500	RPM	1			
							Engine Speed is within the		5	Sec				
				1			allowable limits for	r -	5	Sec	1			
				1					Test Failed		1			
		1							Thic Kow		1			1
1		1		1			D0717 Status is no	-	Op or		1			
		1					FUT IT Status IS NO	<u> </u>	UII UI		1			1
		1							rauit		1			1
				1					Active		1			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			T Rec	'ime quired	Mil Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722 ECM: P0101	, P0723 , P0102, P0103					
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<=	35	RPM					>=	4.5	Fail Time (Sec)	One Trip
							P0722 Status is not	: =	Test Failed This Key On or Fault Active					
							Transmission Input Speed	=	TRUE	Boolean				
							Engine Torque Check	. =	TRUE	Boolean				
							Throttle Position Transmission Fluid	>=	8.0002 -40	Pct °C				
							Temperature Disable this DTC if the PTO is		4	Dealana				
							active Engine Torque Signal Valid	=	TRUE	Boolean				
							Throttle Position Signal Valid	=	TRUE	Boolean				
							Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is Engine Speed is within the allowable limits for		8.59961 31.99902 400 7500 5	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	¥	Range shift completed	ENUM				
							OR		Park or					
							I ransmission Range is Engine Torque is Engine Torque is	= >= <=	Neutral 8191.75 8191.75	N*m N*m				
							Engine Torque Condition 2 Engine Torque is Engine Torque is	>= <=	50 8191.75	N*m N*m				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue		Secondary Malfunction		En Con	able ditions			T Ree	'ime quired	Mil Illum.
								The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE	-							
								TIS Check Condition 1 Transmission Input Speed is Transmission Input Speed is		>= 68 <= 5	53.13 5350	RPM RPM				
								TIS Check Condition 2 Engine Speed without the brake applied is		>= 3	3200	RPM				
								Engine Speed with the brake applied is	:	>= 3	3200	RPM				
								Engine Speed is		<= 81	91.88	RPM				
								supply for the speed sensors		=	1	Boolean				
								Powertrain Brake Pedal is Valid		= T	RUE	Boolean				
						Co	Disable nditions:	MIL not Illuminated for DTC's:	TCM: ECM: P0122	P0716, P0717 P0101, P0102 , P0123	7, P072 2, P010	3 3, P0121,				
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit	Transmission Output Speed Sensor Raw Speed	>=	105	RPM							>=	0	Enable Time (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	=	Driven range	e										
					(13,0)			Range_Disable OR		= F/	ALSE	See Below				
								 Neutral_Range_Enable	•	= T	RUE	See Below				
								And Neutral_Speed_Enable are TRUE concurrently 	r -	= т	RUE	See Below				
								Transmission_Range_Enable		= T	RUE	See Below				1
								Transmission_Input_Speed_E		= T	RUE	See Below				
								No Change in Transfer Case Range (High <-> Low) for		>=	5	Seconds				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0723 Status is not	Test Failed This Key = On or Fault Active		
					Disable this DTC if the PTO is	= 1 Boolean		
					Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					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 both of the following conditions are satsified for Input Speed Delta Raw Input Speed	>= 0 Enable Time (Sec) <= 4095.88 RPM >= 500 RPM		
					TIS Condition 2 is TRUE when ALL of the next two conditions are satisfied Input Speed A Single Power Supply is used for all speed sensors	= 0 RPM = TRUE Boolean		
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE Transmission Range is	= Neutral ENUM		-
					Transmission Range is	= eutral ENUM Transitonal		
					Transmission Range is	ve ENUM		
					And when a drop occurs Loop to Loop Drop of Transmission Output Speed is	- 650 RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE Transmission Range is	= Park ENUM		

Component/ System	Fault	Monitor Strategy	Malfunction Criteria	Th	nreshold Value	Secondary Malfunction		Enable Conditions			Tim Requi	e red	Mil Illum.
	oode					Transmission Range is	=	Park/Reve rse Transitonal	ENUM				
						Input Clutch is not	t =	ON (Fully Applied)	ENUM				
						Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified	>	1.5	Seconds				
						Transmission Output Speed	>	130	RPM				
						The loop to loop change of the Transmission Output Speed is	<	20	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	=	Neutral	ENUM				
						Transmission Range is	; =	eutral Transitiona	ENUM				
						Transmission Range is	. =	I Neutral/Dri ve Transitiona I	ENUM				
						Time since a driven range (R,D) has been selected	>=	Table Based Time Please Refer to Table 21 in supporting documents	Sec				
						Transmission Output Speed Sensor Raw Speed	>=	500	RPM				
						Output Speed when a fault was detected	>=	500	RPM				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P097 ECM: P010 P0122, P01	3, P0974, P0976 1, P0102, P0103 23	6, P0977 6, P0121,				
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>= 750	Кра					>=	2	Enable Time (Sec)	Two Trips

Symm Code Description Description <thdescription< th=""> Descripion <thdescriptio< th=""><th>Component/</th><th>Fault</th><th>Monitor Strategy</th><th>Malfunction</th><th>Threshold</th><th>Secondary Malfunction</th><th></th><th>Enable</th><th></th><th></th><th>T</th><th>ime guired</th><th>Mil</th></thdescriptio<></thdescription<>	Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable			T	ime guired	Mil
Point to Table Point	Jystem	Coue	Description	Either Condition (A) or (B) Must be	Value	Maranoton		Conditions			Ne	quireu	
(i) (100 Sip Enrol @ Too builded > Line (Red) > Signating Fail Thine (Sec) (ii) 100 Sip @ Load in Mode (P = 100 mm Commands) > Signating > Signating (iii) 100 Sip @ Load in Mode (P = 100 mm Commands) > Signating > Signating > > Signating > Signating > > > > > > > Signating > Signating > > > > Signating > > > > > Signating > > Signating > > Signating > > Signating > > > Signating Signating > Signating Signating<				Met									
Image: Signal production law productions have been image: Signal produc					Refer to Table								
Image: Control of the contro				(A) TCC Slip Error @ TCC On	_ 1 in ppm					\	Б	Eail Time (See)	
Image: Construct Structure Struct				Mode	Supporting					-	5		
Image: Bit Cost On Modes >> 130 RPM P > > > > > 2 0 TGC Stuck OF If Access Control Methemethem the top for Thme Experts Methemet Fail Control TGC Mode = On or Loct > > 2 7 Fail Control Methemet Fail Control TGC Mode = On or Loct > 8.59981 Volts ><					Documents								
Image: Construction of the lower intermet part of all time bases intermet parts into all time bases intermet bases into all time bases into all time bases into a				(B) TCC Slip @ Lock On Mode	>= 130 RPM					>=	5	Fail Time (Sec)	
Induce Colliding Networks Participation Participation Net, and F all The Expending TCC Made = On or Lock Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment Fail Counter Incomment											0	· u ·	
Met dr af i landr Egondo Increment Pal Counter Technet Pal Counter Counter Pal Counter Increment Pal Counter TCC Mode = On r Lock Spoge1 Volta (lightion Voltage IA So 50961 Volta (lightion Voltage IA So 500661 Volta (lightion Voltage IA				If Above Conditions Have been								TCC Stuck Off	
Incenterin Pail Lobuster TCC Mode = On or Look Ignition Voitage to >> 8.59961 Voitage to Engres Speed >> 4.00 RPM Engres Speed >> 5 Sec Engres Torque Lo >> 6.5914 Voitage to Engres Torque Lo >> 6.5914 N*m Throttle Postion Lis >> 6.5924 N*m Throttle Postion Lis >> 6.5924 N*m Throttle Postion Lis >> 8.0002 Pet 2016 Gene Fraich Hym <				Met, and Fail Timer Expired,						>=	2	Fail Counter	
Image: Section of Control (Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Image: Section Vietage Lipe) Section (Section Vietage Lipe) Section (Section Vietage Lipe) Section													-
$ \left \begin{array}{cccc} $						TCC Mode	=	On or Lock					
ignition Vitaige Hit Engine Speed Engine Speed e allowate limits for allowate limits						Ignition Voltage Lo	>=	8 59961	Volts				
Engine Speed						Ignition Voltage Hi	<=	31 99902	Volts				
$\left \begin{array}{ccc} \operatorname{Engine} \operatorname{Engine} & - & & & & & & & & & & & & & & & & & $						Engine Speed	>=	400	RPM				
Engines Torques Lo >= 5 Sec Engines Torques Lo >= 50 N'm Engines Torques Lo >= 8191.88 N'm Throutine Position Li >= 99.9985 Pet 2nd Gaar Ratio Lo >= 2.19442 Ratio 2nd Gaar Ratio Lo >= 2.29454 Ratio 2nd Gaar Ratio Lo >= 1.53796 Ratio 3nd Gaar Ratio High <=						Engine Speed	<=	7500	RPM				
Image: Section of the section of t						Engine Speed is within the		-					
Engine Torque II >> 50 N*m Engine Torque II >> 8191.88 N*m Throttle Position II >> 80002 Pet Zhrid Gear Ratio >> 21.9482 Ratio Zhrid Gear Ratio >> 21.55 Ratio 3rd Gear Ratio >> 1.82705 Ratio 3rd Gear Ratio >> 1.92915 Ratio 3rd Gear Ratio >> 0.92955 Ratio 3rd Gear Ratio >> 0.92955 Ratio 3rd Gear Ratio > 0.92955 Ratio 3rd Gear Ratio > 0.92955 Ratio 3rd Gear Ratio Ratio > 0.7592 Ratio 3rd Gear Ratio Ratio > 0.92955 Ratio 3rd Gear Ratio Ratio = 0.86630 "C Transmission Fluid = 1.820 "C Tariamissi						allowable limits for	>=	5	Sec				
Engine Torque Hi Throttle Position Li Case Ratio Li 2nd Gaer Ratio Li 3dr Gaer Ratio High<=						Engine Torque Lo	>=	50	N*m				
Throttle Position Lio >= 8.0002 Pct Throttle Position Lio >= 2.19482 Ratio 2nd Gear Ratio Lio >= 2.14228 Ratio 3rd Gear Ratio High <=						Engine Torque Hi	<=	8191.88	N*m				
Image: Position High c= 99.9980 Pct 2nd Gear Ratio High c= 2.25215 Ratio 2nd Gear Ratio High c= 1.42285 Ratio 3rd Gear Ratio High c= 1.63748 Ratio 4th Gear Ratio Lo c= 1.63748 Ratio 4th Gear Ratio Lo c= 1.06946 Ratio 4th Gear Ratio Lo c= 1.03948 Ratio 5th Gear Ratio Lo c= 1.03948 Ratio 5th Gear Ratio Lo c= 0.039055 Ratio 6th Gear Ratio Lo c= 0.039055 Ratio 6th Gear Ratio Lo c= 0.039055 Ratio 6th Gear Ratio Lo c= 0.039055 Ratio 7 Transmission Fluid c= 0.71692 Ratio Transmission Fluid c= TRUE Boolean Temperature Hit c= TRUE Boolean Engine Torque Signal Valid c= TRUE Boolean Dynamic Mode c= FALSE Boolean Fauld Falid Trans						Throttle Position Lo	>=	8.0002	Pct				
$ \begin{bmatrix} 2nd \operatorname{Gear} Ratio Lo >= 21.9482 \\ 2nd \operatorname{Gear} Ratio Lo >= 14.2285 \\ Ratio \\ 3dr \operatorname{Gear} Ratio Li >= 10.6946 \\ Ratio \\ 4th \operatorname{Gear} Ratio Li >= 10.6946 \\ Ratio \\ 4th \operatorname{Gear} Ratio Li >= 10.6946 \\ Ratio \\ 4th \operatorname{Gear} Ratio Li >= 0.7905 \\ Ratio \\ 6th \operatorname{Gear} Ratio Li >= 0.7905 \\ Ratio \\ 6th \operatorname{Gear} Ratio Li >= 0.7905 \\ Ratio \\ 6th \operatorname{Gear} Ratio Li >= 0.62305 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 6th \operatorname{Gear} Ratio High <= 0.71692 \\ Ratio \\ 7transmission Fluid \\ Temperature Hi \\ Pirto Not Active = TRUE \\ Boolean \\ Throttle Position Signal Valid = TRUE \\ Boolean \\ This Ke_T \\ This Ke_T \\ Failet \\ Active \\ High \\$						Throttle Position Hi	<=	99.9985	Pct				
2nd Gear Ratio High <=						2nd Gear Ratio Lo	>=	2.19482	Ratio				
$\left \begin{array}{cccc} 3rd Gear Ratio Lo >= 1.42285 & Ratio \\ 3rd Gear Ratio Lo >= 1.06946 & Ratio \\ 4th Gear Ratio Lo >= 1.06946 & Ratio \\ 4th Gear Ratio Lo >= 0.79053 & Ratio \\ 5th Gear Ratio Lo >= 0.82305 & Ratio \\ 6th Gear Ratio Lo >= 0.82305 & Ratio \\ 6th Gear Ratio Light = 0.71692 & Ratio \\ 7tansmission Fluid \\ Temperature Lid \\ Temperature Hi \\ FION Active = TRUE & Boolean \\ FION Active = TRUE & Boolean \\ FION Active = TRUE & Boolean \\ Thottle Position Signal Valid = TRUE & Boolean \\ Thottle Position Signal Valid = TRUE & Boolean \\ Thottle Position Signal Valid = TRUE & Boolean \\ Thottle Position Signal Valid = TRUE & Boolean \\ Thottle Position Signal Valid = TRUE & Boolean \\ Thottle Position Signal Valid = TRUE & Boolean \\ This Key \\ P0741 Status is \neq On or \\ Falid \\ Active \\ \end{array} \right $						2nd Gear Ratio High	<=	2.52515	Ratio				
3rd Gear Ratio Lip - 1.63708 Ratio 4th Gear Ratio Lip -= 1.08946 Ratio 4th Gear Ratio High <=						3rd Gear Ratio Lo	>=	1.42285	Ratio				
Ath Gear Ratio Lo>=1.0846Ratio4th Gear Ratio High<=						3rd Gear Ratio High	<=	1.63708	Ratio				
$\begin{bmatrix} 4 & 11 & 4a & 10 & 1a & 1a & 1a & 1a & 1a & 1a & 1$						4th Gear Ratio Lo	>=	1.06946	Ratio				
Sin Gear Ratio H Sin Gear Ratio H Ght Gear Ratio H Ght Gear Ratio High C Transmission Fluid Transmission Fluid Transmission Fluid C Transmission Fluid Transmission Fluid C Transmission Fluid T Transmission Fluid C Transmission Fluid C						4th Gear Ratio High	<=	1.23047	Ratio				
Sun Gear Ratio High Gith Gear Ratio High C 0.71692 Ratio Gith Gear Ratio High C 0.71692 Ratio Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi PTO Not Active = TRUE Boolean Engine Torque Signal Valid = TRUE Boolean Throttle Position Signal Valid = TRUE Boolean This Key P0741 Status is ≠ 0 or Fault Active -						Stri Gear Ratio Lo	>=	0.79053	Ratio				
Image: Constraint of the constrain						Still Geal Ratio Hi	~-	0.90900	Patio				
Transmission Fluid >= -6.6663 °C Transmission Fluid >= -6.6663 °C Transmission Fluid <=						6th Gear Ratio High	<=	0.02303	Ratio				
Image: Construct of the construction of the constructio						Transmission Fluid	-	0.71002	Natio				
Transmission Fluid Temperature Hi PTO Not Active <=						Temperature Lo	>=	-6.6563	°C				
Temperature Hi <=						Transmission Fluid		(00					
PTO Not Active = TRUE Boolean Engine Torque Signal Valid = TRUE Boolean Throttle Position Signal Valid = TRUE Boolean Dynamic Mode = FALSE Boolean This Key Test Failed This Key P0741 Status is ≠ On or Fault Active Fault						Temperature Hi	<=	130	°C				
Engine Torque Signal Valid = TRUE Boolean Throttle Position Signal Valid = TRUE Boolean Dynamic Mode = FALSE Boolean This Key This Key This Key P0741 Status is ≠ On or Fault Active Active						PTO Not Active	=	TRUE	Boolean				
Throttle Position Signal Valid = TRUE Boolean Dynamic Mode = FALSE Boolean This Key This Key This Key P0741 Status is ≠ On or Fault Active Key						Engine Torque Signal Valid	=	TRUE	Boolean				
Dynamic Mode = FALSE Boolean Test Failed This Key P0741 Status is ≠ On or Fault Active						Throttle Position Signal Valid	=	TRUE	Roolean				
Dynamic Mode = FALSE Boolean Test Failed This Key P0741 Status is ≠ On or Fault Active							_	THE	Doolean				
P0741 Status is Fault Active						Dynamic Mode	=	FALSE	Boolean				
P0741 Status is Fault Active								Test Failed					
P0741 Status is ≠ On or Fault Active		1						This Key		1			
Fault Active						P0741 Status is	¥	On or					
Active		1						Fault		1			
								Active					
		1								1			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr V	eshold alue		Secondary Malfunction		Enable Conditions			T Re	Time quired	Mil Illum.
							Disable	MIL not Illuminated for	TCM: P0716	6. P0717. P072	2. P0723.			•	
						Cor	nditions:	DTC's:	P0742, P276	63, P2764	,,				
									, i						
									ECM: P010	1, P0102, P010	03, P0106,				
									P0107, P010	08. P0171. P01	72. P0174.				
									P0175, P020	01. P0202. P02	03. P0204.				
									P0205, P020	06. P0207. P02	08. P0300.				
									P0301, P030	02. P0303. P03	04. P0305.				
									P0306, P030	07. P0308. P04	01. P042E				
Torque Converter Clutch	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM									One Trip
(TCC)	1 0/ 42	100 Oystelli Oldek Olv		· -	-00										
			TCC Slip Speed	<=	13	RPM									
												>=	15	Fail Time (Sec)	
														1 4.1 1.110 (000)	
			If Above Conditions Have been												
			Met, and Fail Timer Expired,									>=	6	Fail Counter	
			Increment Fail Counter												
								ICC Mode	=	Off					
								Enable test if Cmnd Gear =	=	1	Boolean				
								1stFW and value true							
								Enable test if Cmnd Gear =	=	0	Boolean				
								2nd and value true	-	6000	DDM				
								Engine Speed Hi	<=	6000	RPM				
								Engine Speed Lo	>=	500	KPM KDU				
								Vehicle Speed Hi		511					
								Engine Torque Li		9101.99	Nm				
								Engine Torque Lo	>-	80	Nm				
								Current Range		Neutral	Range				
								Current Range	/ ≠	Reverse	Range				
								Transmission Sumn	-	1000130	Runge				
								Temperature	<=	130	°C				
								Transmission Sump							
								Temperature	>=	18	ъС				
								Throttle Position Hyst High	>=	5.0003	Pct				
								AND							
								Max Vehicle Speed to Meet	-	0	KDU				
								Throttle Enable	<=	0	КРП				
								Once Hyst High has been met,							
								the enable will remain while	>=	2.0004	Pct				
								Throttle Position							
								Disable for Throttle Position	>=	75	Pct				
								Disable if PTO active and	=	1	Boolean				
								value true		•	Dooloan				
								Disable if in D1 and value true	=	1	Boolean				
								Disable if in D2 and value true	=	1	Boolean				
								Disable if in D3 and value true	=	1	Boolean				
				1											
								Disable if in D4 and value true	=	1	Boolean				
				1											
								Disable if in D5 and value true	=	1	Boolean				
				1				Disable if in MUMD and value							
								true	=	1	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	т	hreshold Value		Secondary Malfunction		Enable Conditions			T	ime auired	Mil Illum.
							Disable if in TUTD and value	=	1	Boolean			1	
							true 4 Wheel Drive I ow Active	=	FALSE	Boolean				
							Disable if Air Purge active and	=	0	Boolean				
							value false	_	EALSE	Boolean				
							Ignition Voltage	>=	8.59961	V				
							Ignition Voltage	<=	31.99902	V				
							Vehicle Speed Engine Speed	<= >=	511 400	KPH RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							Engine Torque Signal Valid	=	TRUE	Boolean				
							Throttle Position Signal Valid	=	TRUE	Boolean				
									Test Failed					
									This Key					
							P0742 Status is	≠	On or					
									Fault Active					
						B : 11								
					Co	Disable onditions:	MIL not Illuminated for DTC's:	P0741, P276	5, P0717, P0722 53. P2764	2, P0723,				
								ECM: P010 P0107 P010	1, P0102, P010)8 P0171 P017	3, P0106, 72 P0174				
								P0175, P020	01, P0202, P020	03, P0204,				
								P0205, P020	06, P0207, P020	08, P0300,				
								P0306, P030	02, P0303, P030 07, P0308, P040)4, P0303,)1, P042E				
Mada O Multiplay Value	D0754		Commond Coor Clin	>= 100	DDM									Two
wode 2 wuitiplex valve	P0/51	Shift Solehold Valve A Stuck Off	Commaned Gear Sip	>= 400	RPIM									Trips
			Gear Ratio	= 1st Loc <= 1.2095	к rpm 9						>=	0.2	Fail Tmr	
			Gear Ratio	>= 1.0943	6						=	5	Fail Counts	
			If the above parameters are true										Neutral Timer	
											≠	0	(Sec)	
											>=	0.3	Fail Timer (Sec)	
											>=	8	Counts	
							Ignition Voltage Lo	>= <=	8.59961	Volts Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							allowable limits for	>=	5	Sec				
							Transmission Fluid	>=	-6.6563	°C				
							i emperature		Dener					
							Range Shift State	=	Range Shift	ENUM				
									Completed					

Component/ Fa	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions		Τ	T	'ime ouired	Mil Illum.
Component/ System Fr Odd Cd	Fault Code	Monitor Strategy Description	Malfunction Criteria Gear Box Slip Commanded Gear	>=		Disable Conditions: RPM Gear	Secondary Malfunction TPS OR Output Speed Throttle Position Signal Valid from ECM, High side driver is enabled 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:	>= = = = = = TCM: P0716 P182E ECM: P0101 P0107, P010 P0175, P020 P0205, P020 P0301, P030 P0306, P030	Enable Conditions 0.5005 67 TRUE TRUE TRUE FALSE FALSE TRUE 5, P0717, P0722 9, P0102, P010 98, P0171, P01 91, P0202, P02 96, P0207, P02 92, P0303, P03 97, P0308, P04	% RPM Boolean Boolean Boolean Boolean Boolean 2, P0723, 3, P0106, 72, P0174, 03, P0204, 08, P0300, 04, P0305, 01, P042E		T Ret	ime quired	Mil Illum.
			Commanded Gear has Achieved Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On If the above parameters are true Command 4th Gear once Output Shaft Speed If Gear Ratio And Gear Ratio	= <= >= <=	400 3.82568 4.22839	Boolean RPM	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed swithin the allowable limits for High-Side Driver is Enabled Throttle Position Signal Valid from ECM	>=	8.59961 31.99902 400 7500 5 TRUE TRUE 67	Volts Volts RPM RPM Sec Boolean Boolean	>= >= >=	Please Ref to Table 16 Supporting Document	er in Neutral Timer g (Sec) s Fail Timer (Sec Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction		Thre: Va	shold lue	Secondary Malfunction		Enable Conditions			Tim Requi	e ired	Mil Illum.
- Cystom	0000	Decemption	C. Norma				TPS	>=	0.5005	%				
							Range Shift State	. =	Range Shift Completed	ENUM				
							Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	>= = = =	-6.6563 FALSE FALSE TRUE	°C Boolean Boolean				
						Disabl Conditions	e MIL not Illuminated for : DTC's:	TCM: P071	6, P0717, P0722,	, P0723,				
								ECM: P010 P0107, P01 P0175, P02 P0205, P02 P0301, P03 P0306, P03	1, P0102, P0103 08, P0171, P017 01, P0202, P020 06, P0207, P020 02, P0303, P030 07, P0308, P040	, P0106, 2, P0174, 3, P0204, 8, P0300, 4, P0305, 1, P042E				
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gear	r = `	1st Locked									One Trip
			Gear Box Slip) >=	400	RPM					>=	Please Refer to Table 5 in Supporting Documents	Neutral Timer (Sec)	
			Commanded Gear Previous Gear Ratio Gear Ratio If the above parameters are true	; = ' ; <= ' ; >=	1st Locked 2.48218 2.24585	Gear						4		
											>=	1	sec counts	
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	>= <= >=	8.59961 31.99902 400	Volts Volts RPM				
							Engine Speed Hi	<=	7500	RPM				
							allowable limits for	>=	5	Sec				
							Output Speed	>=	67	RPM				
							TPS	>=	0.5005	%				
							Range Shift State	. =	Range Shift Completed	ENUM				
							Transmission Fluid	>=	-6.6563	°C				
							Temperature High-Side Driver is Enabled	=	TRUE	Boolean				
							Throttle Position Signal Valid	=	TRUE	Boolean				
							Input Speed Sensor fault Output Speed Sensor fault	t = t =	FALSE FALSE	Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Default Gear Option is not	- TRUE		
				Disa	present	TCM: P0716, P0717, P0722, P0723,		
				Conditio	is: DIC'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		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B	Fail Case 1 Case: Steady State 3rd Gea	ar				One Trip
			Commanded Gea Gearbox Sli	ar = 3rd Gear ip >= 400 RPM			Please Refer >= to Table 16 in Neutral Timer Supporting (Sec)	
			Command 4th Gear once Outpu Shaft Spee If Gear Rati And Gear Rati	ut d io >= 1.09436 io <= 1.20959			Documents	
			It the above condiations are true	e, ar			>= 3 Fail Timer (Sec) >= 3 3rd Gear Fail	:)
			and C35R Fail counter	er			or >= 14 Counts	il
			Fail Case 2 Case: Steady State 5th Gea Commanded Gea	ar ar = 5th Gear			Divers Dafe	
			Gearbox Sli	ip >= 400 Rpm			<pre>>= to Table 5 in Neutral Timer >= Supporting (Sec) Documents</pre>	
			Intrusive Test: Command 6th Gea	ar Please refer				
			If attained Gear=6th gear Tim	e >= supporting documents	ic)			
			It the above conditations are true Increment 5th gear fail counte	e, er			>= 3 5th Gear Fail Counts or	
			and C35R Fail counter	er			>= 14 3-5R Clutch Fai	11
					PRNDL State defaulted inhibit RVT IMS fault pending indication	= FALSE Boolean = FALSE Boolean = FALSE Boolean		

Component/ System	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable	Time	Mil Illum.
- Cjotom		Decemption	<u>critoria</u>		TPS validity flag	a = TRUE Boolean		
					Hydraulic System Pressurized	d = TRUE Boolean		
					Minimum output speed for	r >= 67 RPM		
					A OR B	3		
					(A) Output speed enable	e >= 67 RPM		
					(B) Accelerator Pedal enable	e >= 0.5005 Pct		
					Ignition Voltage Lo	a >= 8.59961 Volts		
					Ignition Voltage H	li <= 31.99902 Volts		
					Engine Speed Lo	o >= 400 RPM		
					Engine Speed H	li <= 7500 RPM		
					Engine Speed is within the	e >= 5 Sec		
					allowable limits for	r TDUE Doubor		
					I nrottle Position Signal Valid	a = IRUE Boolean		
					HSD Enabled Transmission Eluid	a = IRUE Boolean		
					Temperature	>= -6.6563 °C		
					Input Speed Sensor fault	t = FALSE Boolean		
					Output Speed Sensor fault	t = FALSE Boolean		
					Default Gear Option is not	t – TRUE		
					present	t		
				Disable	MIL not Illuminated for	r TCM: P0716, P0717, P0722, P0723,		
				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		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B	Fail Case 1 Case: Steady State 1st					One Trip
		Stuck On [CSSK] (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)				
				supporting				
			Intrusive test:	uocuments				
			(CBR1 clutch exhausted)					
			Gear Ratio	<= 1.60864				
			Gear Ratio	>= 1.45544				
			If the above parameters are true					
							>= 1.1 Fail Timer	(Sec)
							S- 2 Fail Cou	nt in
							2 1st Ge	ar
							Or Total F	ail
							>= 3 Count	s

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 2 Case: Steady State 2nd gear					
				Table Based			1	
				value Please			1	
			Max Delta Output Speed	>= Refer to 3D			1	
			Hysteresis	Table 1 in			1	
				supporting			1	
				Table Based			1	
				value Please			1	
			Min Delta Output Speed	Refer to 3D			1	
			Hysteresis	>= Table 2 in rpm/sec			1	
				supporting			1	
				documents			1	
				Table Based			1	
				Defer to Table			1	
			If the Above is True for Time	>= Refer to Table Sec				
				supporting			1	
			laterative test.	documents			1	
			(CP26 clutch expansion)				1	
			(CB20 clutch exhausted) Gear Ratio	<= 1.60864			1	
			Gear Ratio	>= 1.45544			1	
			If the above parameters are true				1	
							>= 1.1 Fail Timer (Sec))
							>= 3 Fail Count in	
							2nd Gear or	
							>= 3 Total Fail Counts	
			Fail Case 3 Case: Steady State 4th gear					-
				Table Based			1	
				value Please			1	
			Max Delta Output Speed	>= Refer to 3D rpm/sec			1	
			Hysteresis				1	
				documents			1	
				Table Based			1	
				value Please			1	
			Min Delta Output Speed	Refer to 3D			1	
			Hysteresis	Table 2 in			1	
				supporting			1	
				documents			1	
				Time Please			1	
				Refer to Table			1	
			If the Above is True for Time	>= 17 in Sec			1	
				supporting				
				documents			1	
			Intrusive test:				1	
			(C1234 clutch exhausted)	. 0.00405			1	
			Gear Ratio	<= 0.89465				
			Gear Ratio	- 0.00940			1	
			in the above parameters are the					
							>= 1.1 Fail Timer (Sec))

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			T Rec	ime juired	Mil Illum.
									>=	3	Fail Count in	
											4th Gear or	
									>=	3	Total Fail	
			Fail Case 4							0	Counts	
			<u>Fair Case 4</u> Case: Steady State of gear	Table Based								
				value Please								
			Max Delta Output Speed	>= Refer to 3D rpm/sec								
			Hysteresis	Lable T In Supporting								
				documents								
				Table Based								
			Min Delta Output Speed	Refer to 3D								
			Hysteresis	>= Table 2 in 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:									
			(CB20 cluich exhausted)	0.00105							E 1 F (0)	
			Gear Ratio	<= 0.89465					>=	1.1	Fall Timer (Sec)	
			Gear Ratio	>= 0.80945					>=	3	counts	
									~-	1 1	Foil Timor (Coo)	
									-	1.1		
									>=	3	Fail Count in 6th Gear	
											or	
									>=	3	Total Fail	
					PRNDL State defaulted	=	FALSE	Boolean			Counts	
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					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	>=	8.59961	Volts				
					Ignition Voltage Hi	<=	31.99902	Volts				
					Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM				
					Engine Speed is within the	>=	5	Sec				
					allowable limits for		5	050				
					Accelerator Pedal enable	>=	5.0003	Pct				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	shold lue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
							if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault	>= <= >= =	5 8191.88 -6.6563 FALSE FALSE	Nm Nm °C Boolean Boolean		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, F P182E ECM: P0101, F P0107, P0108, P0175, P0201	P0717, P072 P0102, P010 , P0171, P01 P0202 P02	2, P0723, 3, P0106, 72, P0174, 03, P0204		
								P0205, P0206, P0301, P0302, P0306, P0307,	, P0207, P02 , P0303, P03 , P0308, P04	208, P0300, 208, P0300, 304, P0305, 401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip If the above conditions are true run appropriate Fail 1 Timers Below:	= = _ <=	TRUE Maximum pressurized Clutch exhaust command Initial Clutch Control 40	Boolean						One Trip
			fail timer 1 (3-1 shifting with Closed Throttle) fail timer 1 (3-2 shifting with Throttle)	>=	0.5 0.2998	Fail Time (Sec) Fail Time (Sec)						
			fail timer 1 (3-2 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)						
			fail time 1 (3-4 shifting with Throttle)	>=	0.2998	Fail Time (Sec)						
			tail timer 1 (3-4shifting with Closed Throttle) fail timer 1 (3-5 shifting with Throttle)	>=	0.5 0.2998	Fail Time (Sec) Fail Time (Sec)						
			fail timer 1 (3-5 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)						
			fail timer 1 (5-3 shifting with Throttle)	>=	0.2998	Fail Time (Sec)						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr V	eshold alue	Secondary Malfunction		Enable Conditions			T	ime Iuired	Mil Illum.
			fail timer 1 (5-3 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (5-4 shifting with Throttle)	>=	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)	>=	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 If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 3rd gear fail counter								T >=	Total Fail "ime = (Fail + Fail 2) Se Enable Timers for Fail Timer ' and Reference Supporting Table 15 fc Fail Timer 3	1 le 1, sec 3 or 2 3rd gear fail	
			5th gear fail counter								>=	3	OR 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 Reguin	ed	Mil Illum.
				Disabl	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,			
				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			
		Pressure Control (PC) Solenoid C	Enil Caso 1						Ono Trin
Variable Bleed Solenoid (VBS)	P0796	Stuck Off [C456] (Steady State)	Case: Steady State 4th Gear	r					One mp
							Please See		
			Gearslin	>= 400 RPM			Table 5 For	Neutral Timer	
				- +00 RTW			Neutral Time	(Sec)	
			Intrucivo tost				Cal		
			commanded 5th gear	-					
			commanded our gear	Please refer					
			If attained Gear. ≠5th for time	to Table 3 in Shift Time (Sec)					
				Supporting Shint Time (Sec)					
			if the choice conditions have been	Documents					
			II THE ADOVE CONDITIONS Have been						
			ine	L C C C C C C C C C C C C C C C C C C C				4th Gear Fail	
			Increment 4th Gear Fail Counter	ſ			>= 3	Count	
								OR	
			and C456 Fail Counters				>= 14	C456 Fail	
			Fail Case 2 Case: Steady State 5th Gear					Counts	-
							Please See		
			Goardin	>- 400 PPM			Table 5 For	Neutral Timer	
			Gear sip	- 400 KFW			Neutral Time	(Sec)	
			Interview foot				Cal		
			Intrusive test:	-					
			commanded our gear	Please Refer					
			If attained Coop of 6th factions	to Table 3 in Chiff Time (Coo)					
				Supporting Shift Time (Sec)					
			10 the second second 20 and have been	Documents					
			If the above conditions have been						
				L				5th Gear Fail	
			Increment 5th Gear Fail Counter	ſ			>= 3	Count	
								OR	1
			and C456 Fail Counters	;			>= 14	C456 Fail	1
			Fail Case 3 Case: Steady State 6th Geor					Counts	1
							Please See		1
			0	- 400 DDM			_ Table 5 For	Neutral Timer	1
			Gear siip	- 400 REIVI			Neutral Time	(Sec)	1
							Cal		1
			Intrusive test:						1
I	I	1	commanded 5th gear	I	1	1	I		1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If attained Gear ≠ 5th for time if the above conditions have been met	Please refer to Table 3 in Supporting Documents				
			Increment 6th Gear Fail Counter and C456 Fail Counter				>= 3 6th Gear Fail Count	
			and C456 Fail Counter				>= 14 OR C456 Fail Counts	
				Disable Conditions:	PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR E (A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Lc Ignition Voltage Lc Engine Speed L Engine Speed H Engine Speed H Engine Speed H HSD Enabled Transmission Fluid Temperature Input Speed Sensor faul OutputSpeed Sensor faul Default Gear Option is not present	=FALSEBoolean=FALSEBoolean=FALSEBoolean=TRUEBoolean=TRUEBoolean=TRUEBoolean>=67RPM>=67RPM>=0.5005Pct>=8.59961Volts<=		
						P0107, P0108, P0171, P0172, P0174, P0107, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1 Case: Steady State 1st				1	One Trip
			Attained Gear slip	>= 400 RPM		1		1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	ļ	Time Required	Mil Illum.
			If the Above is True for Time	Table Based Time Please >= Refer to Table Enable Time 4 in (Sec)					
			Intrusive test;	supporting documents					
			(CBR1 clutch exhausted) Gear Ratio Gear Ratio	<= 1.20959 >= 1.09436					
			If the above parameters are true				>= 1.1	Fail Timer (Sec)	
							>= 2	Fail Count in 1st Gear	
							>= 3	or Total Fail Counts	
			Fail Case 2 Case Steady State 2nd	Table Based				oounta	
			Max Delta Output Speed Hysteresis	value Please >= Refer to 3D Table 1 in					
				supporting documents Table Based					
			Min Delta Output Speed Hysteresis	<pre>>= Refer to 3D Table 2 in curporting</pre>					
				documents Table Based Time Please					
			If the Above is True for Time	>= Refer to Table 17 in supporting					
			Intrusive test: (CB26 clutch exhausted)	documents					
			Gear Ratio Gear Ratio If the above parameters are true	<= 1.20959 >= 1.09436					
							>= 1.1	Fail Timer (Sec)	
							>= 3	Fail Count in 2nd Gear or	
							>= 3	Total fail counts	
			Fail Case 3 Case Steady State 3rd	Table Based					
			Max Delta Output Speed Hysteresis	>= Refer to 3D Table 1 in supporting					
				documents	l		1		

Min Delta Cobjectioner hystersen sagenfing documents in den Read sagenfing documents in den Acove at rank to The sagenfing documents (CSR data homawated) Gare Read (CSR data homawated) (CSR data homawated) Gare Read (CSR data homawated) (CSR	Γ	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	i		Ti Rec	ime juired	Mil Illum.
nrecent = IRUE		Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	Threshold Value Table Based value Please >= Refer to 3D Table 2 in rpm/sec supporting documents Table Based Time Please 17 in supporting documents <= 1.20959 >= 1.09436	Secondary Malfunction PRNDL State defaulted inhibit RVT IMS fault pending indication output speed TPS validity flag HSD Enabled Hydraulic_System_Pressurize d A OR B (A) Output speed enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Speed Lo Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature Input Speed Sensor fault Default Gear Option is not	Enable Condition: = FALSE = FALSE = FALSE = TRUE = TRUE = TRUE = TRUE = TRUE = TRUE = TRUE = 5 = 67 >= 0.5005 >= 8.59961 <= 31.99902 >= 400 <= 7500 >= 5 >= 5.0003 >= 5 <= 8191.88 >= -6.6563 = FALSE = FALSE = FALSE = FALSE	Boolean Boolean Boolean Boolean Boolean Boolean Boolean Boolean Mm Nm Volts RPM RPM Sec Pct Nm Sec Pct Nm Nm Sec Pct Nm Nm Sec Pct Nm Sec Pct Nm	>= >= >=	1.1 3 0R 3	ime juired Fail Timer (Sec) Fail Count in 3rd Gear Total Fail Counts	Mil Illum.
							Default Gear Option is not present	= FALSE = TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Thre	shold	Secondary Malfunction	Enable	Time	Mil Illum
System	coue	Description	ontena			Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,	Required	
						Conditions:	DTC's:	P182E		
								ECM: 80101 80102 80103 80106		
								P0107, P0108, P0171, P0172, P0108,		
								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 Trip
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C	exhausted (See Table 11 in	=	TRUE	Boolean				
		Stuck On [C456] (Dynamic)	Supporting Documents for Exhaust Delay Timers)							
			Primary Oncoming Clutch	1	Maximum					
			Pressure Command Status	-	pressurized					
			Primary Offgoing Clutch Pressure		Clutch					
			Command Status	-	exnaust					
					Initial Clutch					
			Range Shift Status	≠	Control					
			Attained Gear Slip	<=	40	RPM				
			If the above conditions are true	4						
			increment appropriate Fail 1							
			Timers Below:	:						
			fail timer 1	>=	0.2998	Fail Time (Sec)				
			(4-1 snifting with throttie) fail timer 1	1						
			(4-1 shifting without throttle)) >=	0.5	Fail Time (Sec)				
			fail timer 1	>=	0 2998	Fail Time (Sec)				
			(4-2 shifting with throttle)		0.2000					
			rail umer 1 (4-2 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1		0.0000					
			(4-3 shifting with throttle)	>=	0.2998	Fall Time (Sec)				
			fail timer 1	>=	0.5	Fail Time (Sec)				
			(4-3 shifting without throttle) fail timer 1	1		· · /				
			(5-3 shifting with throttle)) >=	0.2998	Fail Time (Sec)				
			fail timer 1	\	0.5	Fail Time (Sec)				
			(5-3 shifting without throttle)	1	0.5	i ali Time (Sec)				
			fail timer 1 (6.2 shifting with throttle)	>=	0.2998	Fail Time (Sec)				1
			fail timer 1		0.5	E 11 F (O)				1
			(6-2 shifting without throttle)	>=	0.5	Fail Time (Sec)				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Th	reshold /alue	Secondary Malfunction		Enable Conditions			Tir Regr	me uired	Mil Illum.
Gystem	oouc	Description	onena		ando						Total Fail		
										Tir	ne = (Fail	1	
										+	Fall 2) See	9	
										1	Timers for		
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers							>= Fa	ail Timer 1	, sec	
											and		
											Reference		
										T	able 15 for	r	
										E	ail Timer 2	2	
			If fail timer is greater than										
			threshold increment corresponding										
			counter										
			4th gear fail counter							>=	з	Fail Counter	
										-	0	From 4th Gear	
												OR Fail Counter	
			5th gear fail counter							>=	3	From 5th Gear	
												OR	
			6th gear fail counter							>=	3	Fail Counter	
												From 6th Gear	
			Tatal fail any da								-	Total Fail	
										>=	5	Counter	
						TUT Enable temperature	>=	-6.6563	°C Pooloon				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Command / Attained Gear	≠	1st	Boolean				
						High Side Driver ON	=	TRUE	Boolean				
						output speed limit for TUT	>=	100	RPM				
						INPUT Speed limit for TUT PRNDL state defaulted	>=	150 FALSE	RPM Boolean				
						IMS Fault Pending	=	FALSE	Boolean				
						Service Fast Learn Mode	=	FALSE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
					Disable	MIL not Illuminated for	TCM: P0716. P	0717. P0722	2. P0723.				
					Conditions:	DTC's:	P182E	- , -	,,				
								0102 0010	2 D0106				
							P0107, P0108,	P0171, P01	72. P0174.				
							P0175, P0201,	P0202, P02	03, P0204,				
							P0205, P0206,	P0207, P02	08, P0300,				
							P0301, P0302,	P0303, P03	04, P0305,				
							P0306, P0307,	P0308, P04	01, P042E				
Tap Up Tap Down Switch	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up	= 1	Boolean								Special
(1010)			Position in Range 1 Enabled	, i									No MIL
			Position in Range 2 Enabled	= 1	Boolean								
			Tap Up Switch Stuck in the Up	= 1	Boolean								
	I	1	Position in Range 3 Enabled	- '	DUIEan					l			I

Component/	Fault	Monitor Strategy	Malfunction		Thre	shold	Secondary		Enable			Tim	e	Mil
System	Code	Description	Criteria		Va	lue	Malfunction		Conditions			Requi	red	Illum.
			Tap Up Switch Stuck in the Up	-	1	Boolean								
			Position in Range 4 Enabled	-	1	Doolean								
			Tap Up Switch Stuck in the Up	_	4	Dealasa								
			Position in Range 5 Enabled	-	I	DODIEGI								
			Tap Up Switch Stuck in the Up			D 1								
			Position in Range 6 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up											
			Position in Neutral Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up											
			Position in Park Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up											
			Position in Reverse Enabled	=	1	Boolean								
			Tap Up Switch ON	=	IRUE	Boolean					>=	1	Fail Time (Sec)	
			Fail Case 2 Tap Up Switch Stuck in the Up			Dealers								
			Position in Range 1 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up											
			Position in Range 2 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up			Dealers								
			Position in Range 3 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up			D 1								
			Position in Range 4 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up			D 1								
			Position in Range 5 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up			D 1								
			Position in Range 6 Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up			Dealers								
			Position in Neutral Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up			Dealers								
			Position in Park Enabled	=	1	Boolean								
			Tap Up Switch Stuck in the Up	_	4	Dealasa								
			Position in Reverse Enabled	-	1	DODIEGI								
			Tap Up Switch ON	=	TRUE	Boolean								
			NOTE: Both Failcase1 and								~-	600	Eail Time (See)	
			Failcase 2 Must Be Met								/-	000	Fail Time (Sec)	
							Time Since Last Range	>=	1	Enable Time				
							Change			(Sec)				
							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	-	0	000				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction	Enable Conditions	T Re	ime luired	Mil Illum.			
							P0815 Status is	Test Failed This Key ≠ On or Fault Active						
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761						
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	e d =	1	Boolean		ECM: None			Special No MIL			
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range Neutra Enabled	e II = d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range Park Enablec	e k = d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range Reverse Enablec	e e =	1	Boolean								
			Tap Down Switch ON	1 =	TRUE	Boolean			>= 1	sec				
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	e d	1	Boolean					-			
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	e d	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	e d	1	Boolean								
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr V	eshold alue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
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			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	1	Boolean								
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	=	TRUE	Boolean					>=	600	sec	
							Time Since Last Range Change	>= >=	1 8 59961	Enable Time (Sec) Volts				
							Ignition Voltage Hi Engine Speed Lo	<= >=	31.99902 400	Volts RPM				
							Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec				
									Test Failed This Key					
							P0816 Status is	¥	On or Fault Active					
						Dischla	MIL week Illow to she difference		D0000 D400	E D4070				
						Conditions:	MIL not illuminated for DTC's:	P1877, P191	5, P1761	E, P1876,				
Tap Up Tap Down Switch	P0826	Lin and Down Shift Switch Circuit	TUTD Circuit Reads Invalid	-	TRUE	Boolean		ECM: None			>-	60	Fail Time (Sec)	Special
(TUTD)	1 0020	op and bown onne ownen oneale	Voltage	_	INCL	Boolean	Ignition Voltage Lo	>=	8.59961	Volts	-			No MIL
							Ignition Voltage Hi	<=	31.99902	Volts				
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enable Conditions			T Rec	ime quired	Mil Illum.
						P0826 Status is	ź	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	= TRU	E Boolean					>=	4.4	Fail Time (Sec)	Two Trips
						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	out of	5	Sample I ime (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	= TRU	E Boolean					>= out	1.5	Fail Time (Sec) Sample Time	One Trip
					Disable	Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for MIL not Illuminated for	>= <= >= >= TCM: None	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec	of	1.010	(Sec)	-
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage	The HWIO reports a high voltage	= TRU	E Boolean	DICS.	ECM: None			>=	4.4	Fail Time (Sec)	Two Trips
		(Line Pressure VBS)				Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.59961 31.99902 400 7500	Volts Volts RPM RPM	out of	5	Sample Time (Sec)	
						Engine Speed is within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			T Rec	ime Juired	Mil Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TI	RUE	Boolean					>= out	0.3 0.375	Fail Time (Sec) Sample Time	One Trip
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for P0966 Status is not	>= <= <= >= =	8.59961 31.99902 400 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec			(380)	
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TI	RUE	Boolean					>= out	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip
						Disable Conditions:	Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for P0967 Status is not MIL not Illuminated for DTC's:	>= <= >= <= = TCM: None ECM: None	8.59961 31.99902 400 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec			(Ucc)	
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	= TI	RUE	Boolean					>= out of	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu	old e	Secondary Malfunction		Enable Conditions			T Rec	ime Juired	Mil Illum.
							P0970 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 5	Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= T	IRUE E	Boolean					>= out of	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip
							P0971 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 5	Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= T	FRUE E	Boolean					>= out	1.2	Fail Time (Sec) Sample Time	One Trip
							P0973 Status is not	=	Test Failed This Key On or Fault Active		of	1.0	(Sec)	-
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.59961 31.99902 400 7500	Volts Volts RPM RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	shold Ilue	Secondary Malfunction		Enable Conditions			T Re	'ime quired	Mil Illum.
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TI	RUE	Boolean					>= out	1.2 1.5	Fail Time (Sec) Sample Time	Two Trips
									Test Felled		OT		(Sec)	-
							P0974 Status is not	t =	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 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	= TI	RUE	Boolean					>=	1.2	Sec	One Trip
									Test Failed		out of	1.5	Sec	-
							P0977 Status is not	t =	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						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thr V	reshold /alue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE	Boolean					>=	3	Fail Counter Sample Timer	Special No MIL
						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			(580)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 0	Boolean								Special No MIL
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled Tap Up Switch Stuck in the Up	= 0	Boolean								
			Position in Range 3 Enabled Tap Up Switch Stuck in the Up	= 0	Boolean								
			Position in Range 4 Enabled Tap Up Switch Stuck in the Up	= 0	Boolean								
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 0	Boolean								
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 1	Boolean								
			Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up	= 1	Boolean								
			Position in Reverse Enabled	= 0	Boolean								
			Tap Up Switch ON	= IRUE	Boolean					>=	1	Fail Time (Sec)	
			Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled	= 1	Boolean								
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled Tap Up Switch Stuck in the Up	= 1	Boolean								
			Position in Range 3 Enabled Tap Up Switch Stuck in the Up	= 1	Boolean								
			Position in Range 4 Enabled Tap Up Switch Stuck in the Up	= 1	Boolean								
			Position in Range 5 Enabled Tap Up Switch Stuck in the Up	= 1	Boolean								
			Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 0	Boolean								
			Tap Up Switch Stuck in the Up Position in Park Enabled	= 0	Boolean								
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0	Boolean								
1	I	I	Tap Up Switch ON	= IRUE	Roolean	l l	I			I			I I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
			NOTE: Both Failcase1 and								>=	600	Fail Time (Se	:)
			Palicase 2 Must be Met				Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within the allowable limits for P1765 Status is	>= >= <= >= <= >=	1 8.59961 31.99902 400 7500 5 Test Failed This Key On or Fault Active	Enable Time (Sec) Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767 ECM: None	, P1761, P182E,	, P1915				
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	0	Boolean								Special No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	0	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	0	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	0	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	0	Boolean								
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1	Boolean								
			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								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	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	>=	1	Sec				
							Ignition Voltage Lo	>=	8.59961	Volts				
							Ignition Voltage Hi Engine Speed Lo	<= >=	18 400	Volts RPM				
							Engine Speed Hi	<=	7500	RPM				
							allowable limits for	>=	5	Sec				
									Test Failed					
							P1766 Status is	≠	This Key On or					
							1 1700 010103 13	7-	Fault Active					
						Disable	MIL not Illuminated for	TCM: P176	7, P1761, P182E	, P1915				
						Conditions:	DIC'S:	ECM: None	1					
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	=	TRUE	Boolean					>=	60	Fail Time (Sec)	Special No MIL
							Ignition Voltage Lo	>=	8.59961	Volts Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi Engine Speed is within the	<=	7500	RPM				
							allowable limits for	>=	5	Sec				
									Test Failed					
							P1767 Status is	¥	On or					
									Fault					
	1			1					/101110		1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre Va	shold Iue	Secondary Malfunction	Enable Conditions		Tin Requ	ne iired	Mil Illum.
					Dischla	Mill, mot Illuminated for	TO14 04704				
					Conditions:	MIL not illuminated for DTC's:	TCM: P1761				
							ECM: None				
			5 10 4	Transition 4							0 T.
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	= (bit state	Range						One Trip
			g-	1110)							
				CeTRGR_e_							
			Previous range	≠ PRNDL_Drive	e Range						
				CeTRGR_e_							
			Previous range	≠ PRNDL_Drive	e Range						
				5 Range Shift							
			Range Shift State	= Completed	ENUM						
			Absolute Attained Gear Slip	<= 50	rpm						
			Attained Gear Attained Gear	<= Sixtn							
			Throttle Position Available	= TRUE							
			Throttle Position	>= 8.0002	pct						
			Output Speed Engine Torque	>= 200	rpm Nm						
			Engine Torque	<= 8191.75	Nm						
			If the above conditions are met					>=	1	Fail Seconds	
			then Increment Fall Timer If Fail Timer has Expired then								
			Increment Fail Counter					>=	5	Fail Counts	
			Fail Case 2 Output Speed	<= 70	rpm						
			The following PRNDL sequence								
			events occur in this exact order:								
			PRNDL state	= Drive 6 (bit	Range						
			PRNDL state = Drive 6 for	>= 1	Sec						
				Transition 8							
			PRNDL state	= (bit state	Range						
				Drive 6 (bit	_						
			PRNDL state	= state 0110)	Range						
				Transition 1	Deserve						
			PRNDL state	= (bit state 1110)	Range						
			Above sequencing occurs in	<= 1	Sec						
			Neutral Idle Mode	= Inactive							
			IT All CONDITIONS Above are met								
			If the below two conditions are met					>-	3	Fail Secondo	
			Increment Fail Timer		0			[J		
			delay timer	>= 1 >= 400	Sec						
			If Fail Timer has Expired then	007				>-	2	Fail Counte	
			Increment Fail Counter	Transition 40			0.7000		2		
			<u>Fail Case 3</u> Current range	I ransition 13	Range	Previous range	CeikGk_ ≠ e PRNDI				
			Gunditrange	0010)	. ungo	r revious range	_Drive5				

System Code Description Centerial value manufactorial Centrolis Required interval System Engine Torque >= -8192 Nm Previous range ≠ e_PRNDL
Image: Second
If the above conditions are met then, Increment Fail Timer If the "IMS of Position configuration is a book in the "previous range" is a book in the "current range" = "Transition 13" >= 0.225 Seconds
Engine Torque <= 8191.75 Nm
Image: Second
If the above conditions are met then, Increment Fail Timer If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13" >= 0.225 Seconds
If the above conditions are met then, Increment Fail Timer If the invest Position coming = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13"
If the above conditions are met then, Increment Fail Timer 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13" >= 0.225 Seconds
then, Increment Fail Timer then, Increment Fail Timer range" = "Transition 13"
satsified when the "current range" = "Transition 13"
ranger = "transition 1.5"
If Fail Timer has Expired then >= 15 Fail Counts
Increment Fail Counter
Fail Case 4 Transition 8 Disable Fail Case 4 if last
Current range = (bit state Range positive range was Drive 6 and
0111) Current range is transition 8
Set jekibit krup if DDNDL –
Intivities definition = EALSE
Set inhibit bit (See Common) = TAEDE
Steady State Engine Torque >= 30 Nm
Steady State Engine Torque <= 8191.75 Nm
If the above conditions are met
then Increment Fail Timer
If the above Conditions have been
met. Increment Fail Counter >= 15 Fail Counts
rail Case 3 infolder rosinoli Avairable - IROE Boblean
The following PRNDL sequence
events occur in this exact order:
PRNDI State - Reverse (bit Page
state 1100) Kange
Transition 11
PRNDL State = (bit state Range
0100) Noutrel (##
PRNDL State = recurat (UIC Range
Transition 11
PRNDL State = (bit state Range
Above sequencing occurs in <= 1 Sec
Then delay timer increments
Delay timer >= 5 sec
Range Shift State = Range Shift
Complete
Ausoinite Attained Geer C = Sivth
Attained Gear >= First
Throttle Position >= 8.0002 pct
Output Speed >= 200 rpm
If the above conditions are met
Increment Fail Timer

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Fail Case 6 Current range	lllegal (bit = state 0000 or 1000 or 0001)	A Open Circuit Definition (flag set false if the following conditions are met):			
			and	e	Current Range	Transition ≠ 11 (bit state 0100)		
			A Open Circuit (See Definition)) = FALSE Boolean	or Last positive state	Neutral (bit ≠ state 0101)		
					or Previous transition state	Transition ≠ 8 (bit state 0111)		
			If the above Condtions are me then, Increment Fail timer	t r	Fail case 5 delay timer	= 0 sec	>= 6.25 Seconds	-
			Current PRNDL State	e = PRNDL circuit ABCP = 1101 Range				
			Previous PRNDL state	e = PRNDL circuit ABCP =1111 Range d >= 150 RPM				
			Reverse Trans Ration Reverse Trans Ration If the above Conditions are met then, Increment Fail times	c <= 2.97995 ratio c >= 3.42395 ratio t r			>= 6.25 Seconds	
			P182E will report test fail wher	1				-
			any of the above 7 fail cases are mei	e t	Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	<= 31.99902 Volts >= 400 RPM <= 7500 RPM		
					allowable limits for Engine Torque Signal Valid	= TRUE Boolean		
				Disable Conditions	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P07C0, P07BF, P077C, P077D ECM: P0101, P0102, P0103, P0106.		
						P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Secondary Value Malfunction		Secondary Malfunction		Enable Conditions			Tir Requ	ne Iired	Mil Illum.	
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range TUTD Enable Switch is Active	=	Park or Reverse or Neutral TRUE	Range State Boolean								Special No MIL
											>=	3	Fail Time (Sec)	
							Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	X & & X & X	8.59961 31.99902 511 400 7500 5 Test Failed This Key	Volts Volts KPH RPM RPM Sec	>=	5	Fail Counts	
							P1876 Status is	¥	On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0815, P1825, P187 ECM: None	, P0816, P0826 7, P1915, U010	, P1761, 10				
		Internal Mode Switch Does Not			Park or									One Trip
Internal Mode Switch (IMS)	P1915	Indicate Park/Neutral (P/N) During Start	PRNDL State is The following events must occur Sequentially	¥	Neutral	Enumeration								
			Initial Engine speed	<=	50	RPM					>=	0.25	Enable Time	
			Then Engine Speed Between Following Cals										(000)	
			Engine Speed Lo Hist	>=	50	RPM							Enable Time	
			Engine Speed Hi Hist	<=	480	RPM					>=	0.06875	(Sec)	
			Final Engine Speed	>=	525	RPM								
			Final Transmission Input Speed	>=	100	RPM					>=	1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle?	=	FALSE	Boolean				
							Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage Hyst High	>= <=	6 31.99902	V V				
							(enables above this value) Ignition Voltage Hyst Low (disabled below this value)	>= <=	5	V				
1		I					manamiaalon Output Speed	\	30	ipin	1			I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre V	eshold alue	Secondary Malfunction		Enable Conditions			Tim Regu ⁱ	ie ired	Mil Illum.
							P1915 Status is	; ≠	Test Failed This Key On or Fault Active					
						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	=	FALSE	Boolean Volts					>=	280	Fail Counts (25ms loop)	One Trip
			value) Ignition Voltage Low Hyst (run crank goes false when below this value)	;	2	Volts	501				Out of	280	Sample Counts (25ms loop)	
							ECM run/crank active status available ECM run/crank active status	=	TRUE TRUE	Boolean Boolean				
						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	=	TRUE 5	Boolean Volts					>=	280	Fail Counts (25ms loop)	One Trip
			value) 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	>=	400	RPM					>= N	Please See Table 5 For Veutral Time Cal	Neutral Timer (Sec)	One Trip
			Intrusive test: commanded 3rd gear											

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Mil Required Illur
			If attained Gear = 3rd for Time	Table Based Time Please >= see Table 2 in (Sec) Supporting Documents			
			If Above Conditions have been	Dooumonto			
			Increment 2nd gear fail count				>= 3 2nd Gear Fail Count
			and CB26 Fail Count				>= 14 CB26 Fail
			Fail Case 2 Case: Steady State 6th Gear				Count
			Gear slip	>= 400 RPM			Please See Table 5 For Neutral Timer Neutral Time (Sec)
			Intrusive test:				Cal
			commanded 5th gear	Table Based			
			If attained Gear = 5th For Time	Time Please >= see Table 2 in Supporting			
			If Above Conditions have been met. Increment 5th oear fail	Documents			>= 3 5th Gear Fail
			counter				Count
			and CB26 Fail Count				>= 14 CB26 Fail Count
					PRNDL State defaulted inhibit RVT	= FALSE Boolean = FALSE Boolean	
					IMS fault pending indication	= FALSE Boolean = TRUE Boolean	
					Hydraulic System Pressurized	= TRUE Boolean	
					Minimum output speed for	>= 0 RPM	
					A OR B	>= 67 RPM	
					(B) Accelerator Pedal enable	>= 0.5005 Pct	
					Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi	>= 8.59961 Volts <= 31.99902 Volts	
					Engine Speed Lo	>= 400 RPM	
					Engine Speed is within the	<= /500 RPM >= 5 Sec	
					allowable limits for Throttle Position Signal valid	= TRUE Boolean	
					HSD Enabled	= TRUE Boolean	
					Temperature	>= -6.6563 °C	
					Input Speed Sensor fault Output Speed Sensor fault	= FALSE Boolean = FALSE Boolean	
					Default Gear Option is not present	= TRUE	

Component/	Fault	Monitor Strategy	Malfunction	Three	eshold	Secondary Malfunction	Enable	Time	Mil
			Unitid		Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip If above coditons are true, increment appropriate Fail 1 Timers Below: fail timer 1 (2-1 shifting with throttle) fail timer 1 (2-1 shifting with throttle) fail timer 1 (2-3 shifting with throttle) fail timer 1 (2-3 shifting with throttle) fail timer 1 (2-4 shifting with throttle) fail timer 1 (2-4 shifting with throttle) fail timer 1 (2-4 shifting with throttle) fail timer 1 (6-4 shifting with ut throttle) fail timer 1 (6-5 shifting with ut throttle) fail timer 1 (6-5 shifting without throttle) fail timer 1 (6-5 shifting without throttle) fail timer 1 (6-5 shifting without throttle)	 = TRUE = Maximum pressurized Clutch = exhaust command Initial Clutch <= 0.2998 >= 0.2998 >= 0.5 	Boolean RPM Fail Time (Sec) Fail Time (Sec)				One Trip

Component/ System	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable	Τ	Tin	1e ired	Mil Illum.
Gystelli	ooue	Description	onena	, and			T/	otal Fail		
							Time	e = (Fail 1		
								Enable		
			If Attained Gear Slin is Less than				Ti	mers for		
			Above Cal Increment Fail Timers				>= Fai	I Timer 1,	sec	
							R	and		
							Su	pporting		
							Tah	ble 15 for		
			If fail timer is greater than				Fai	li Timer 2		
			threshold increment corresponding							
			gear fail counter and total fail							
			Counter						Feil Country	
			2nd gear fail counter				>=	3	From 2nd Gear	
									OR	
			6th goar fail countar				\	2	Fail Counter	
			our gear fair courter				-	5	From 6th Gear	
								_	OR Total Fail	
			total fail counter				>=	5	Counter	
					TUT Enable temperature	>= -6.6563 °C				
					Output Speed Sensor fault	= FALSE Boolean				
					Command / Attained Gear	≠ 1st Boolean				
					High Side Driver ON	= TRUE Boolean				
					input speed limit for TUT	>= 150 RPM				
					PRNDL state defaulted	= FALSE Boolean				
					IMS Fault Pending Service Fast Learn Mode	= FALSE Boolean				
					HSD Enabled	= TRUE Boolean				
				Disable	MIL not Illuminated for	TCM: P0716 P0717 P0722 P0723				
				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, P042F				
										0 T.
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Case: Steady State 1st							One I rip
			Attained Gear slip	>= 400 RPM						
				Table Based						
				Refer to Table Enable Time						
			It the Above is True for Time	>= 4 in (Sec)						
				supporting						
I	1	1	1	aocuments		1	1			I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		T Ree	ime quired	Mil Illum.
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 2.48218 >= 2.24585			>=	1.1	Fail Timer (Sec)	
							>=	5	Fail Count in 1st Gear	
							>=	5	or Total Fail Counts	
			Fail Case 2 Case: Steady State 3rd Gear	Table Based value Please						
			Max Delta Output Speed Hysteresis	>= Refer to 3D Table 1 in supporting documents Table Based						
			Min Delta Output Speed Hysteresis	>= Refer to 3D Table 2 in supporting documents Table Based Time Please						
			If the Above is True for Time	>= Refer to Table 17 in supporting documents						
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio	<= 2.48218 >= 2.24585						
			If the above parameters are true				>=	1.1	Fail Timer (Sec)	
							>=	3	Fail Count in 3rd Gear	
							>=	5	or Total Fail Counts	
			Fail Case 3 Case: Steady State 4rd Gear Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents						
			Min Delta Output Speed Hysteresis	i able tased value Please >= Refer to 3D Table 2 in supporting documents						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			T Rec	ime Juired	Mil Illum.
				Table Based							
			Kitha Abasa is Tasa Ka Tisa	Refer to Table							
			If the Above is True for Time	>= 17 in Sec							
				documents							
			Intrusive test:								
			(C1234 clutch exhausted) Gear Ratio	<= 0.70032							
			Gear Ratio	>= 0.63367							
			If the above parameters are true							Fail Times (0)	
								>=	1.1	Fall Timer (Sec)	
								>=	3	4th Gear	
										or Tatal Fail	
								>=	5	Counts	
			Fail Case 4 Case: Steady State 5th Gear	Table Based							
				value Please							
			Max Delta Output Speed	>= Refer to 3D							
			Hysteresis	l able 1 in ' supporting							
				documents							
				value Please							
			Min Delta Output Speed	>= Refer to 3D							
			Hysteresis	Table 2 in supporting							
				documents							
				Table Based							
			If the Above is True for Time	>= Refer to Table Sec.							
				17 in supporting							
				documents							
			Intrusive test: (C35R_clutch_exhausted)								
			Gear Ratio	<= 0.70032							
			Gear Ratio	>= 0.63367							
								>=	11	Fail Timer (Sec)	
								-		Fail Count in	
								>=	3	5th Gear	
										or Total Fail	
								>=	5	Counts	
					PRNDL State defaulted	= FALSE	Boolean Boolean				
					IMS fault pending indication	= FALSE	Boolean				
					output speed TPS validity flag	>= 0 = TRUE	RPM Boolean				
					HSD Enabled	= TRUE	Boolean				
					Hydraulic_System_Pressurize	= TRUE	Boolean				
	1	1	1		ŭ						

Component/ System	Fault Code	Monitor Strategy	Malfunction Criteria	Thr	eshold alue	Secondary Malfunction		Enable Conditions		Τ	Tir Regi	ne Jired	Mil Illum.
Gystein	0000	Description	onona			A OR B		oonanono		<u> </u>	iteq		
						(A) Output speed enable	>=	67	Nm				
						(P) Accelerator Podal anabla	>-	0 5005	Nm				
						(D) Accelerator Pedal eriable	-	0.5005	INITI				
						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 FVV	>=	5.0003	Pct				
						Accelerator Pedal enable							
						If Attained Gear=1st FVV	>=	5	Nm				
						Engine Torque Enable							
						If Attained Gear=1st FVV	<=	8191.88	Nm				
						Engine Torque Enable							
							>=	-6.6563	°C				
						I emperature	_		Declass				
						Input Speed Sensor fault	_	FALSE	Boolean				
						Default Coor Option is not	=	FALSE	Boolean				
						Default Gear Option is not	=	TRUE					
						present							
					Dicablo	MIL not Illuminated for		6 00717 0072	0 00703				
					Conditions		D192E	0, FUI 11, FUI 22	2, FU/23,				
					Conditions.	DIC 3.	FIOZE						
								1 00102 0010	D0106				
								100 D0171 D01	72 D0174				
							P0107, P0	100, PU171, PU1	12, PU1/4,				
							P0175, P02	201, PU202, PU2	JS, FUZU4, Ng DO200				
							P0205, P02	200, FU207, FU2	JO, PUJUU,				
							P0301, P03	002, P0303, P03	J4, PU3U3, 11 D042E				
							P0300, P03	507, P0506, P04	JI, PU42E				
		Pressure Control (PC) Solenoid D											One Trip
Variable Bleed Solenoid (VBS)	P2720	Control Circuit Low	The HWIO reports a low voltage	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	
		(CB26 VBS)	(ground short) error flag										
		. ,								out	0.275	Sample Time	
										of	0.375	(Sec)	
								Test Failed					
								This Kov					
						P2770 Status is not	_	On or					
						FZITO SIdius IS HOL		Eault					
								Activo					
								Active					
						Ignition Voltage	>=	8.59961	Volts				
		1				Ignition Voltage	<=	31.99902	Volts	1			
						Engine Speed	>=	400	RPM				
						Engine Speed	<=	7500	RPM				
		1				Engine Speed is within the	>=	5	Sec	1			
						allowable limits for							
		1								1			
1	I	1	I	I			I			1			l

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tim Requi	e red	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= out	0.3	Fail Time (Sec) Sample Time	One Trip
					P2721 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	Test Failed This Key = On or Fault Active >= 8.59961 <=	of	0.010	(Sec)	
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case 1 Case: Steady State 1st Gear Gear slip Intrusive test commanded 2nd gear If attained Gear ≠ 2nd for Time If Above Conditions have beer met, Increment 1st gear fai counter and C1234 fail counter	r p >= 400 RPM : Please refer to Table 3 in Supporting Documents r			>=	Please See Table 5 For Neutral Time Cal 3 14	Neutral Timer (Sec) 1st Gear Fail Count or C1234 Clutch Fail Count	One Trip
			Fail Case 2 Case: Steady State 2nd Gear Gear slip Intrusive test commanded 3rd gear If attained Gear ≠ 3rd for Time	r p >= 400 RPM r Please refer p >= to Table 3 in Supporting Documents			>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Requir	ed	Mil Illum.
			If Above Conditions have been								2nd Gear Fail	
			met, Increment 2nd gear fail						>=	3	Count	
			Counter								or	
			and C1224 fail counter						~-	14	C1234 Clutch	
									/-	14	Fail Count	
			Fail Case 3 Case: Steady State 3rd Gear							Plazza Saa		
									-	Table 5 For	Neutral Timer	
			Gear slip	>= 400 RPM					>= N	Veutral Time	(Sec)	
										Cal		
			Intrusive test:									
			commanded 4th gear	Please refer								
			If attained Goar \neq 4th for time	to Table 3 in Shift Time (See)								
				Supporting Shint Time (Sec)								
			If Above Conditions have been	Documents								
			met. Increment 3rd gear fail						>=	3	3rd Gear Fail	
			counter								Count	
											or	
			and C1234 fail counter						>=	14	C1234 Clutch Fail Count	
			Fail Case 4 Case: Steady State 4th Gear								i ali count	
									F	Please See		
			Gear slip	>= 400 RPM					>=	Table 5 For	Neutral Timer	
									N	Cal	(Sec)	
			Intrusive test:							oui		
			commanded 5th gear									
				Please refer								
			If attained Gear = 5th For Time	>= Supporting Shift Time (Sec)								
				Documents								
			If Above Conditions have been								4th Gear Fail	
			met, Increment 4th gear fail						>=	3	Count	
			counter								or	
			and C1224 fail counter						>-	14	C1234 Clutch	
							FALOE	Dealers		17	Fail Count	
					PRIVUL State defaulted inhihit RV/T	=	FALSE FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag	=	TRUE	Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for			5514				
					RVT	>=	0	RPM				
					A OR B		C7					
					(A) Output speed enable	>=	67	RPM				
					(B) Accelerator Pedal enable	>=	0.5005	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	8.59961	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre Va	shold	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
Gysten						Engine Speed is within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor faul Output Speed Sensor faul Default Gear Option is not present	>= = = >= = = =	5 TRUE TRUE -6.6563 FALSE FALSE TRUE	Sec Boolean Boolean °C Boolean		
					Disable Conditions	MIL not Illuminated for DTC's:	TCM: P0716, P182E ECM: P0101 P0107, P010 P0175, P020 P0205, P020 P0301, P030 P0306, P030	, P0717, P072 , P0102, P010 8, P0171, P01 1, P0202, P02 6, P0207, P02 2, P0303, P03 7, P0308, P04	2, P0723, 3, P0106, 72, P0174, 203, P0204, 208, P0300, 304, P0305, 301, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below: fail timer 1 (2-6 shifting with throttle) fail timer 1 (3-5 shifting without throttle) fail timer 1 (4-5 shifting without throttle) fail timer 1 (4-6 shifting without throttle) fail timer 1 (4-6 shifting without throttle) fail timer 1 (4-6 shifting without throttle) fail timer 1	TRUE Maximum pressurized Clutch exhaust command Initial Clutch d0 0.2998 0.5 0.2998 0.5 0.2998 0.5 0.2998 0.5 0.5 0.2998	Boolean RPM sec sec sec sec sec sec sec sec						One Trip

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable		Tin	ne	Mil
System	Code	Description	Chiena	value	Wandheton	Conditions	7	Total Fail	lieu	mann.
							Tim	ne = (Fail 1		
							+ F	ail 2) See		
								Enable		
			If Allacian d One a Olivia in Lange theory				Т	imers for		
			If Attained Gear Slip is Less than				>= Fa	il Timer 1,	sec	
			Above Cal Increment Fall Timers					and		
							R	leference		
							S	upporting		
							Ta	able 15 for		
							Fa	ail Timer 2		
			If fail timer is greater than							
			threshold increment corresponding							
			gear fail counter and total fail							
			counter							
			Orden of the sector					2	Fail Counter	
			2nd gear fail counter				>=	3	From 2nd Gear	
									Eail Counter	
			3rd gear fail counter				>=	3	From 3rd Gear	
									1 Iom ord Ocdi	
									Fail Counter	
			4th gear fail counter				>=	3	From 4th Gear	
								-	Total Fail	
			total fail counter				>=	5	Counter	
					TUT Enable temperature	≥ >= -6.6563 °C				
					Input Speed Sensor fault	t = FALSE Boolean				
					Output Speed Sensor fault	t = FALSE Boolean				
					Command / Attained Gear	r ≠ 1st Boolean				
					High Side Driver ON	= TRUE Boolean				
					output speed limit for TUT	>= 100 RPM				
					input speed limit for TUT	>= 150 RPM				
					PRNDL state defaulted	= FALSE Boolean				
					IMS Fault Pending	= FALSE Boolean				
					Service Fast Learn Mode	= FALSE Boolean				
					HSD Enabled	I = IRUE Boolean				
				Disable	MIL not Illuminated for	TCM: P0716 P0717 P0722 P0723				
				Conditions	DTC's	P182F				
				conditions.	5103.					
						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					P0306, P0307, P0308, P0401, P042E				
						,, ,				
Variable Bleed Solenoid (VRS)	P2724	Pressure Control (PC) Solenoid E	Fail Case 1 Case: 5th Gear							One Trip
	1 2124	Stuck On (Steady State)					1			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D rpm/sec Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 1.20959 >= 1.09436				
							>= 1.1 Fail Ti	mer (Sec)
							>= 3 Fail (5th	Count in າ Gear OR
							>= 3 Tot C	al Fail ounts
			Fail Case 2 Case: 6th Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents Table Based				
			Min Delta Output Speed Hysteresis	value Please Refer to 3D rpm/sec Table 2 in supporting documents Table Based Time Please				
			If the Above is True for Time Intrusive test: (CB26 clutch exhausted)	>= Refer to Table Sec 17 in supporting documents				
			Gear Ratio Gear Ratio If the above parameters are true	<= 1.20959 >= 1.09436			>= 1.1 Fail Ti	mer (Sec)

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Tł	nreshold Value	Secondary Malfunction		Enable Conditions			T Rec	ime juired	Mil Illum.
										>=	3	Fail Count in 6th Gear OR	
										>=	3	Total Fail Counts	
						PRNDL State defaulted	=	FALSE	Boolean				1
						inhibit RVT	=	FALSE	Boolean				
						IMS fault pending indication	=	FALSE	Boolean				
						output speed	>=	0	RPM				
							_	TRUE	Boolean				
						Hydraulic System Pressurize	-	TRUE	DUDIEdi				
						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				
						allowable limits for	>=	5	Sec				
						if Attained Gear=1st FW	>-	5 0003	Dot				
						Accelerator Pedal enable	/-	5.0005	1.01				
						If Attained Gear=1st FW	>=	5	Nm				
						Engine Torque Enable							
						Engine Torque Enable	<=	8191.88	Nm				
						Transmission Fluid							
						Temperature	>=	-6.6563	°C				
						Input Speed Sensor fault	=	FALSE	Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not	_	TDUE					
						present	. –	INOL					
					Disable	MIL not Illuminated for	TCM: P0716	6, P0717, P072	2, P0723,				
					Conditions:	DICS	PIOZE						
							ECM: P010	1, P0102, P010 08 P0171 P01	3, P0106, 72 P0174				
							P0107, P01	00, F0171, F01	12, FU114, N3 PN204				
							P0205 P02	06 P0207 P02	08 P0300				
							P0301, P03	02, P0303, P03	04, P0305,				
							P0306, P03	07, P0308, P04	01, P042E				
		Pressure Control (PC) Solenoid F	l							-			One Trip
Variable Bleed Solenoid (VBS)	P2729	Control Circuit Low	The HWIO reports a low voltage	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	Cire rip
		(C1234 VBS)	(ground short) error flag										1
										out of	0.375	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thi V	reshold /alue	Secondary Malfunction		Enable Conditions			T Rec	ime juired	Mil Illum.
						P2729 Status is not	t =	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 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					>= out	0.3 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip
						P2730 Status is not	t =	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	Volt Volt RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE	Boolean					>= out	4.4	Fail Time (Sec) Sample Time	Two Trips
						P2763 Status is not	: =	Test Failed This Key On or Fault Active		of	-	(Sec)	-
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.59961 31.99902 400 7500	Volt Volt RPM RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre	eshold alue	Secondary Malfunction		Enable Conditions			T	ime suired	Mil Illum.
							Engine Speed is within the allowable limits for High Side Driver Enabled	>= =	5 TRUE	Sec Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, ECM: None	P0659					
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	4.4 5	Fail Time (Sec) Sample Time	One Trip
							P2764 Status is not	=	Test Failed This Key On or Fault Active		of		(Sec)	-
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	>= <= >= <= =	8.59961 31.99902 400 7500 5 TRUE	Volt Volt RPM RPM Sec Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, ECM: None	P0659					
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	=	TRUE	Boolean					>=	62	Fail counts (≈ 10 seconds)	One Trip
			Delay timer	>=	0.1125	sec					Out of	70	Sample Counts (≈ 11 seconds)	
							Stabilization delay Ignition Voltage Ignition Voltage Power Mode	>= >= =	3 8.59961 31.99902 Run	sec Volt Volt				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	=	TRUE	Boolean	Stabilization delay	>=	3	Sec	>=	12	sec	One Trip
							Ignition Voltage Ignition Voltage Power Mode	>= <= =	8.59961 31.99902 Run	Volt Volt				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable	MIL not Illuminated for	TCM: U0073		
				Conditions:	DTC's:			
						ECM: None		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage	P0563	System Voltage High	Battery Voltage	> 18 [V]	Ignition Voltage The Input Speed signal is available from the Input Speed Sensor Input Speed P0720 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) OR Ignition Voltage Engine speed Engine speed Engine speed signal validity U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A")	> 9000 [mV] = TRUE > 400 [rpm] for [> 2 sec] = NOT DETECTED = NOT DETECTED = NOT DETECTED > 9000 [mV] > 400 [rpm] for [> 2 sec] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED	10 sec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Main Processor Failure This TCM is an ISO 26262 (System Functional Safety) compliant module. In order to confirm that the TCM control system functioning properly, the TCM is equipped with a secondary CPU which validates the basic operation / calculations of the primary CPU (and ultimately, the control system software). There are several Safety Integrity Functions which are capable of detecting microprocessor or TCM hardware related malfunctions, which would require the activation of safe state reactions. The TCM performs checks on the processor performance every 10 msec. If any of the following checks fail a single time, then this malfunction is confirmed. CPU Core Check malfunction confirmed ROM Check malfunction confirmed RAM Check malfunction confirmed Prorame Tlew Check malfunction confirmed	= TRUE = TRUE = TRUE = TRUE = TRUE	(none)	(none)	10 msec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Communication Failure with Sub Processor The Main and Sub Processor both check for correct communication with eachother every 10 msec. If either processor detects a communication error a single time, this malfunction is confirmed. Communication Error between Main and Sub Processors is detected	= TRUE	(none)	(none)	10 msec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Solenoid Cut Malfunction (Main OR Sub Processor Solenoid Cut Line) During a TCM power-down, both the Primary and Secondary CPU's perform a test on their ability to cut (override) the command current to the linear		TCM is powering down (Ignition Voltage transitions from High to Low)	= TRUE	100 msec	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			shift solenoids. The basic test performed by each CPU is as follows: • After commanding an all solenoid current cut, the feedback current from linear solenoids SL1 to SL5 (all drive clutch linear solenoids) is less than a calibrated threshold for a calibrated time period. (Note that this calibrated threshold is less than the solenoid standby current) If the above test does NOT pass, a malfunction is assumed and a flag is stored in the TCM non- volatile memory. Upon the next TCM power-up, the OBD system will report the malfunction and illuminate the MIL.					
			Main Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5) OR Sub Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5)	= ACTIVE > 20 [mA] = ACTIVE > 20 [mA]				
Transmission Range Sensor "A" Circuit	P0705	Transmission Range Switch Circuit	Transmission Range Sensor P,R,N, and D Circuits Vehicle Speed P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse)	> (Battery Voltage - 2 [V]) >= 30 [kph] = NOT DETECTED = NOT DETECTED = NOT DETECTED	Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE	30 sec	1
Transmission Range Sensor "A" Circuit	P0706	Transmission Range Switch Performance	2 or more Transmission Range Sensor P,R,N, or D Circuits	< 2 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	5 sec	1
Gear Ratio (6th Gear)	P0729	Gear 6 Incorrect Ratio	Difference between actual Gear Ratio and 6th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been	= 6TH GEAR > 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 81 [sec]	12 sec (cumulatively)	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962 P2764 P0778 P0798 P2716 P2725			
					P2734 P0748 P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BE (Ipput/Turbing Speed Sensor "A" Circuit			
					Low			
					D0717 /Input/Turbing Speed Septer "A" Circuit No.			
					P0717 (Input/Turbine Speed Sensor A Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)	D Danga		
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T. GarageEin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T ShiftEin (*1)		
					The Input Speed signal is available from the Input	1_31mu m (1)		
					Speed Sensor	= TRUE		
					Speed Selisoi			
					The Output Speed signal is available from the	= TRUE		
					Output Speed Sensor	0011 01		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (^Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh GE (*1)		
					amount of time continuously			
					The TCM is not commanding a neutral condition as	= TRUF		
					a reaction to Safe Gear Control.	intoL		
					AND the following condition	s are NOT satisfied		
					Difference between actual Gear Ratio and 7th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
	0.0700			1.01			-	
Gear Ratio (6th Gear Stuck)	P0729	Gear 6 Incorrect Ratio	Difference between actual Gear Ratio and 7th	< 4 %	Current Gear	= 6TH GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
					Input Torque	>= 50 [Nm] OR <= -50 [Nm]		
					here days	(occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			Noutral Avaidance Control		Required	mum.
					Neutral Avoluance Control			
					Time since Selengid Cut (*Note 3)	= NUTACTIVE		
					Inne since Solenoid Cut (Note 3) control has been	> 0 [Sec]		
					INACTIVE	ALL Malfunctions - NOT DETECTED		
					P0074 (Shift Salanoid "A" Control Circuit High)	ALL MAINTCHORS = NOT DETECTED		
					P0774 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Coar Patio malfunctions:			
					P3763 P0666 P0070 P3730 P3730 P3739			
					P0062 P2764 P0778 P0708 P2716 P2725			
					P2734 P0748 P2761)			
					P07C0 (Input/Turbing Speed Sensor "A" Circuit			
					High)			
					P07BE (Input/Turbine Speed Sensor "A" Circuit			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of	-		
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input	TRUE		
					Speed Sensor	= IRUE		
					The Output Speed signal is available from the	TRUE		
					Output Speed Sensor	= IRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh GE (*1)		
					amount of time continuously			
					The TCM is not commanding a neutral condition as	= TRUF		
					a reaction to Safe Gear Control.			
	D0704			4.00/1			0.05	1
Gear Ratio (1st Gear Stuck)	P0731	Gear 1 Incorrect Ratio	Dilierence between actual Gear Ratio and 2nd	< 4 [%]	Current Gear	= 1ST GEAR	2.25 SEC	
			OR	1	Output Speed	>= 60 [rpm]		
			Difference between actual Gear Ratio and 3rd	< 4 [%]	Input Speed	<= 6000 [rpm]		
			Gear Kallo	1		(if ATE Tomp >= 0 [dogC])		
						{ir ATF Temp >= 0 [degC]}		
			OR		Engine Torque	2 = 00 [NIII]		
						(1 - 150 [Nm])		
			Difference between actual Gear Ratio and 4th	< 4 [%]	Ignition Voltage	> 9000 [m\/] for 10 [msoc]		
			Gear Ratio	2 1 [10]	Battery Voltage	> 10 2 [V]		
				Į.	Battery Voltage	- 32 0 [V]		1
			Difference between actual Gear Ratio and 5th	< 4 [%]	Engine Speed	< 32.0 [V]		
			Gear Ratio	[0/] +	Engine Speed Engine Speed Signal Validity			
I	I	I		1	Engine speed signal validity	- VALID	I	I

		Illum
		mum.
The TCM bas completed the read operation of its		
non-volatile menory (all 8 criteria for 2 [sec] continuously)		
Emergency Mode (*4) = NOT ACTIVE		
Neutral Avoidance Control = NOT ACTIVE		
Solenoid Cut Condition ('Note 3) = NOT ACTIVE		
Time since Solenoid Cut (*Note 3) control has been > 8 [sec]		
INACTIVE		
ALL Malfunctions = NOT DETECTED		
P0974 (Shift Solenoid "A" Control Circuit High)		
P0973 (Shift Solenoid "A" Control Circuit Low)		
Status of all of the Gear Ratio malfunctions:		
(P0967, P0971, P2731, P2730, P2739, P0963,		
P2763, P0966, P0970, P2720, P2729, P2729, P2738,		
P0962, P2764, P078, P078, P2716, P2725,		
P2734, P0748, P2761		
PU/LU (input/ luraine Speed Sensor A' Circuit		
riign) Dogor (anat/Garbing Count (Carbing Count (Carbing Count))		
PU/JS (input/) urbine Speed Sensor A Circuit		
LOW) DOTAT (Jury 470 white Second Second Second Second Marchine		
PUT/ Input/urbine Speed Sensor A Circuit No		
Siglial) DOTD (Output Copert Circuit Louid)		
POT/D (Output Speed Sensor Circuit Lide)		
POT/C (Output Speed Series) Circuit right		
DDSD2 (Sustem Voltand Law Sumply 2) (*Nota 1)		
PU32 (System Voltage Live Supply 2) (Note 1) DDEA2 (System Voltage Live)		
P 0005 (Spitelli Volage Fingli) D0552 (Initian Dirich Durch Start Desition Circuit		
High)		
Range Selector Position Switch = D Range		
Proto (Transmission Range Switch Darformanca) – NOT DETECTED		
Garage Shift Control has here NMCTIVE for the		
amount of time contraction where the test of the former of		
Shift Control has been INACTIVE for this amount of		
time continuous/v T ShiftFin (*1)		
The Input Speed signal is available from the Input		
Speed Sensor		
The Output Speed signal is available from the		
Output Speed Sensor = IRUE		
ATF Temperature >= -20 [deg C]		
Quick Stop Detection Flag (*Note 4) = FALSE		
Safe Gear Control has been INACTIVE for this Immeriate GF (*1)		
amount of time continuously		
The TCM is not commanding a neutral condition as TRUE		
a reaction to Safe Gear Control.		
Gear Ratio (2nd Gear) P0732 Gear 2 Incorrect Ratio Difference between actual Gear Ratio and 2nd > 20 [%] Current Gear = 2ND GFAR 12 sec (cur	nulatively)	1
Gear Ratio		
Output Speed >= 500 [rpm]		
Ignition Voltage > 9000 [mV] for 10 [msec]		
Battery Voltage > 10.2 [V]		
Battery Voltage <= 32.0 [V]		
Engine Speed > 400 [KP/M]		
Engine Speed Signal values = VALIU = VALIU		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725,			
					P2/34, P0/48, P2/61)			
					P0/C0 (Input/Turbine Speed Sensor "A" Circuit			
					Hign)			
					PU/BF (Input/Turbine Speed Sensor "A" Circuit			
					LOW) D0717 (Innut/Turking Council Councer #A# Circuit No.			
					P0/17 (input/Turbine Speed Sensor A Circuit No			
					Signal) D077D (Output Speed Sensor Circuit Low)			
					P077D (Output Speed Sensor Circuit Lliph)			
					P077C (Output Speed Sensor No Dulso)			
					P0722 (Output Speed Sensor No Puise)			
					P0592 (System Voltage Low Supply 2) (Note 1)			
					P2535 (Junition Switch Pun/Start Position Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of	- 5 ()		
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input	TDUE		
					Speed Sensor	= IRUE		
					The Output Speed signal is available from the	TRUE		
					Output Speed Sensor	= IRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh GF (*1)		
					amount of time continuously			
					The TCM is not commanding a neutral condition as	= TRUE		
					a reaction to Safe Gear Control.			
					AND the following condition	s are NOT satisfied		
					Difference between actual Gear Ratio and 3rd Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
					Difference between actual Gear Ratio and 4th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
					Dilierence between actual Gear Ratio and 8th Gear	< 4 [%]		
					Ralio	I or i [sec] continuously		
Gear Ratio (2nd Gear Stuck)	P0732	Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 3rd	< 4 %			5 sec	1
Land Cour Stably			Gear Ratio		Current Gear	= 2ND GEAR	- 555	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Output Speed	>= 60 [rpm]		
			OR			>= 50 [Nm] OR <= -50 [Nm]		
			Difference between actual Gear Ratio and 4th	< 4 %	Input Torque	(occur at loast 1 time during detection)		
			Gear Ratio			(occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
			OR	-	Battery Voltage	> 10.2 [V]		
			Difference between actual Gear Ratio and 8th	< 4 %	Battery Voltage	<= 32.0 [V]		
			Gear Ratio		Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					The TCM has completed the read operation of its			
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Patio malfunctions:			
					(D0047 D0071 D2721 D2720 D2720 D0042			
					(F0707, F0771, F2721, F2730, F2737, F0703, D2742 D0044 D0070 D2720 D2720 D2720			
					P2/03, P0900, P09/0, P2/20, P2/29, P2/30, D0042, D2744, D0779, D0709, D2714, D2725			
					D2724 D0749 D2741)			
					P2734, F0740, F2701) D07C0 (Input/Turbing Speed Sensor "A" Circuit			
					High)			
					D07BE (Input/Turbing Speed Sepsor "A" Circuit			
					Low			
					D0717 (Input/Turbing Speed Sensor "A" Circuit No			
					Signal)			
					DOTTD (Output Speed Sensor Circuit Low)			
					P077D (Output Speed Sensor Circuit Ligh)			
					P077C (Output Speed Sensor No Pulso)			
					P0722 (Output Speed Sensor No Fuise)			
					D0542 (System Voltage Llow Supply 2) (Note 1)			
					D2E2E (Ignition Switch Dun/Start Desition Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	I_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	I_ShiftFin (*1)		
					The Input Speed signal is available from the Input	= TRUE		
					Speed Sensor			
					The Output Speed signal is available from the	= TRUE		
					Output Speed Sensor	20 [des C]		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag ("Note 4)	= FALSE		
					Sale Gear Control has been INACTIVE for this	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral and difference			
					The TOM IS NOT COmmanding a neutral condition as	= TRUE		
								1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Gear Ratio (3rd Gear)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 3rd	> 20 [%]	Current Goar	- 3PD CEAP	12 sec (cumulatively)	1
			Gear Ratio		Current Gear	- SILD GEAR		
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967 P0971 P2721 P2730 P2739 P0963			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962 P2764 P0778 P0798 P2716 P2725			
					P2734 P0748 P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BE (Input/Turbing Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			1
					amount of time continuously	T_GarageFin (*1)		1
					Shift Control has been INACTIVE for this amount of	-		1
					time continuously	T_ShiftFin (*1)		1
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the			1
					Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		1
					Quick Stop Detection Flag (*Note 4)	= FALSE		1
					Safe Gear Control has been INACTIVE for this	tmr inh CF (*1)		1
					amount of time continuously	uni_nii_GE(1)		1
					The TCM is not commanding a neutral condition as			1
					a reaction to Safe Gear Control.	- INUE		1
						1		1
					AND the following condition	s are NOT satisfied		1
					Dilierence between actual Gear Ratio and 7th Gear	< 4 [%]		
1					Rallo	Ior I [sec] continuously		1
Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
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System	Code	Description					Required	Illum.
Gear Ratio (3rd Gear Stuck)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%]	Current Gear	= 3RD GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
					Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been INACTIVE	> 8 [sec]		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725,			
					P2734, P0748, P2761)			
					P0/C0 (Input/Turbine Speed Sensor "A" Circuit			
					Hign) DOZDE (Input/Turbing Speed Separt "A" Circuit			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Rango Switch Circuit)			
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T_GarageFin (*1)		
					time continuously	T ShiftEin (*1)		
					The Input Speed signal is available from the Input			
					Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh CE (*1)		
					amount of time continuously			
					The TCM is not commanding a neutral condition as	= TRUF		
					a reaction to Safe Gear Control.	_ ···		
1	1	1	1				1	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Gear Ratio (4th Gear)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 4th	> 20 [%]	Curront Coar		12 sec (cumulatively)	1
			Gear Ratio		Current Ocar	- THOLAN		
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962 P2764 P0778 P0798 P2716 P2725			
					P2734 P0748 P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit Ligh)			
					P0772 (Output Speed Sensor No Pulso)			
					P0502 (System Voltage Lew Supply 2) (*Note 1)			
					P0563 (System Voltage Low Supply 2) (Note 1)			
					P2535 (Ignition Switch Pun/Start Position Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input	= TRUF		
					Speed Sensor	- 1102		
					The Output Speed signal is available from the	= TRUF		
					Output Speed Sensor			
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Sate Gear Control has been INACTIVE for this	tmr_inh_GE (*1)		
					amount of time continuously			
					The TOM is not commanding a neutral condition as	= TRUE		
					a reaction to Safe Gear Control.			
					AND the following condition	are NOT caticfied		
					AIND the following condition			
					Patio	for 1 [sec] continuously		
1	1	1	1	1	Nauo	ior i [acc] continuousiy		1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			Difference between actual Gear Ratio and 6th Gear	< 4 [%]	Required	mum.
					Ratio	for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
Gear Ratio (4th Gear Stuck)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio	< 4 %	Current Gear	= 4TH GEAR	5 sec	1
					Output Speed	>= 60 [rpm]		
			OR	1.4.04	land Tanua	>= 50 [Nm] OR <= -50 [Nm]		
			Gear Ratio	< 4 %	Input Torque	(occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (4)			
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE	- []		
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P2734, P0748, P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					LOW) P0717 (Input/Turbine Speed Sensor "A" Circuit No.			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		'
					amount of time continuously	T GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T ShiftFin (*1)		
					The Input Speed signal is available from the Input			
					Speed Sensor	= IKUE		
					The Output Speed signal is available from the	= TRUF		
					Output Speed Sensor			
					ATF Temperature	>= -20 [deg C]		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh GF (*1)		
					amount of time continuously			
					The TCM is not commanding a neutral condition as	= TRUE		
					a reaction to Safe Gear Control.	_		
Coar Patio (5th Coar)	D0725	Coar 5 Incorroct Patio	Difference between actual Gear Patie and 5th	> 20 [%]			12 soc (cumulativoly)	1
Geal Nallo (Sill Geal)	F0733		Gear Ratio	20 [70]	Current Gear	= 5TH GEAR	12 Sec (cumulatively)	'
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
1					P0973 (Shift Solenoid "A" Control Circuit Low)			
1					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2/63, P0966, P09/0, P2/20, P2/29, P2/38,			
					P0962, P2764, P078, P0798, P2716, P2725,			
					P2/34, P0/48, P2/61) D07C0 (Input/Turbing Speed Sensor "A" Circuit			
					PO/CO (Input/Turbine Speed Sensor A Circuit			
					FIGUE POTRE (Input/Turbing Speed Sensor "A" Circuit			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High) Range Selector Position Switch	- D Range		
					Kange Sciector i Usition Switch	- D Nange		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input	= TRUF		
					Speed Sensor			
					The Output Speed signal is available from the	= TRUE		
					Output Speed Sensor			
					AIF remperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Sale Gear Control has been INACTIVE for this	tmr_inh_GE (*1)		
	1	1			amount of time continuously			1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
					AND the following condition	s are NOT satisfied		
					Difference between actual Gear Ratio and 6th Gear			
					Ratio	for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
					Difference between actual Gear Ratio and 8th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
Gear Ratio (5th Gear Stuck)	P0735	Gear 5 Incorrect Ratio	Difference between actual Gear Ratio and 6th	< 4 %	Current Coor		5 sec	1
			Gear Ratio			= 5TH GEAR		
			OR	1	Output Speed	>= 60 [rpm]		
			Difference between actual Gear Ratio and 7th	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm]		
			Gear Ratio	< 170	input forquo	(occur at least 1 time during detection)		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
			OR		Battery Voltage	> 10.2 [V]		
			Difference between actual Gear Ratio and 8th	< 4 %	Battery Voltage	<= 32.0 [V]		
			Gear Ratio		Engine Speed	> 400 [RPM]		
					LI0100 (Lost Communication with ECM/PCM "A")	= VALID = NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					The TCM has completed the read operation of its			
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (Note 3) control has been	> 8 [sec]		
					INACTIVE	ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725,			
					P2734, P0748, P2701) P07C0 (Input/Turbing Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
	1				POTTO (Output Speed Sensor Circuit Llow)			
	1				P0722 (Output Speed Sensor No Pulse)			
	1				P0592 (System Voltage Low Supply 2) (*Note 1)			
	1				P0563 (System Voltage High)			
	1				P2535 (Ignition Switch Run/Start Position Circuit			
					High) Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
	1				P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
	1				Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T_GarageFin (*1)		

Component /	Fault Code	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
					Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Pressure Control Solenoid "A" Control Circuit (SLT Solenoid)	P0748	Pressure Control Solenoid "A" Electrical	 sum_ie (*) (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed 	> 60000 [mA]	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition ("Note 3) P0962 (Pressure Control Solenoid "A" Control Circuit Low) P0963 (Pressure Control Solenoid "A" Control Circuit High) Emergency Mode ("4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	1 to 3 sec cumulatively	1
Goar Patio (7th Gear)	D076F	Gaar 7 Incorract Patio	OR ie (*) (*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current"	> 50 [mA]	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0962 (Pressure Control Solenoid *A* Control Circuit Low) P0963 (Pressure Control Solenoid *A* Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	2 sec	1
	r U/UF		Gear Ratio	20[/0]	Current Gear	= 7TH GEAR	12 Sec (cumulatively)	'

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Output Speed	>= 500 [rpm]		
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Engine Speed Signal Validity			
					LI0100 (Lost Communication with ECM/DCM "A")			
						NOT DETECTED		
					Emorgonov Mode (*4)			
					Noutral Avoidance Control			
					Selencid Cut Condition (*Note 2)	NOT ACTIVE		
					Time cines Selencid Cut (*Note 3)			
					Time since solehold Cut (Note 3) control has been	> 8 [Sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725,			
					P2734, P0748, P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			1
					amount of time continuously	T GarageFin (*1)		1
					Shift Control has been INACTIVE for this amount of	=		
					time continuously	T ShiftFin (*1)		
					The Input Speed signal is available from the Input			
					Speed Sensor	= IRUE		
					The Output Speed signal is available from the	TRUE		
					Output Speed Sensor	= IKUE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	here into CE (*1)		
					amount of time continuously	(mr_inn_GE (~1)		
					The TCM is not commanding a neutral condition as	TOUE		
					a reaction to Safe Gear Control.	= IKUE		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Reguired	MIL Illum.
Output Speed Sensor Circuit	P077C	Output Speed Sensor Circuit High	Output Speed Sensor Circuit Voltage	< 0.206 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Output Speed Sensor Circuit	P077D	Output Speed Sensor Circuit Low	Output Speed Sensor Circuit Voltage	> 2.727 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid)	P0798	Pressure Control Solenoid "C" Electrical	 sum_ie (*) (*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed 	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0970 (Pressure Control Solenoid "C" Control Circuit Low) P0971 (Pressure Control Solenoid "C" Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE	1 to 3 sec cumulatively	1
			OR			1		
			 ie (*) (*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current" 	> 50 [mA]	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0970 (Pressure Control Solenoid *C* Control Circuit Low) P0971 (Pressure Control Solenoid *C* Control Circuit High) Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT ACTIVE	2 sec	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Reguired	MIL Illum.
Input/Turbine Speed Sensor "A" Circuit	P07BF	Input/Turbine Speed Sensor "A" Circuit Low	Input Speed Sensor Circuit Voltage	< 0.206 V	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Input/Turbine Speed Sensor "A" Circuit	P07C0	Input/Turbine Speed Sensor "A" Circuit High	Input Speed Sensor Circuit Voltage	> 2.727 V	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Gear Ratio (8th Gear)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 8th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P0717 (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Output Speed Sensor Circuit Low) P0717 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0722 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P2535 (Ignition Switch P0705 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of	 = 8TH GEAR > 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] = 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED = NOT DETECTED = T_GarageFin (*1) T_CREFER (*1) 	12 sec (cumulatively)	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					The Input Speed signal is available from the Input Speed Sensor The Output Speed Signal is available from the Output Speed Sensor ATF Temperature Outick Stop Detection Flag ('Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control. AND the following condition : Difference between actual Gear Ratio and 6th Gear Ratio	= TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE s are NOT satisfied < 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously		
Gear Ratio (8th Gear Stuck)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Current Gear	= 8TH GEAR	5 sec	1
			OR Difference between actual Gear Ratio and 6th Gear Ratio	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
					Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2739, P0963, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit Low) P077D (Output Speed Sensor Circuit Low) P077D (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage Linph) P238, P0716 (Inputor Postion Circuit High)	 > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID NOT DETECTED NOT ACTIVE NOT ACTIVE > NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED 		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Ouick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Manual Mode Switch	P0827	Up and Down Shift Switch Circuit Low Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	< 5.0 [%]	Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0102 (CAN RING, OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Manual Mode Switch	P0828	Up and Down Shift Switch Circuit High Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	> 25.5 [%]	Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) Un012 (CAN Rus. //EF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = MOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Transmission Fluid Pressure Sensor/Switch "A" Circuit	P0842	Transmission Fluid Pressure Sensor/Switch "A" Circuit Low	Transmission Fluid Pressure Sensor Status	= ON	The following parameters must be met for a calibrated period of time. Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low)	Time_SwONfailw (*2) > 9000 [mV] for 10 [msec] continuously > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	1 sec	2

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			· · · · · · · · · · · · · · · · · · ·		Required	Illum.
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725,			
					P2734, P0748, P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)			
					P0601 (Internal Control Module Memory Checksum			
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T_ShiftFin (*1)		
					ATF Temperature	>= 20 [deg C]		
					P0713 (Transmission Fluid Temperature Sensor A	= NOT DETECTED		
					Circuit Hign) D0712 (Transmission Eluid Temperature Sensor "A"	NOT DETENTED		
					P0712 (Transmission Fluid Temperature Sensor A	= NOT DETECTED		
					CITCUIL LOW)	D or D or N Dongo		
					Range Selector Position Switch	= P ULR ULN Ralige		
					The lanut Speed signal is qualiable from the lanut	Time_SwDivFill (2)		
					Speed Soper	= TRUE		
					The Output Speed signal is available from the			
					Output Speed Sensor	= TRUE		
					Ouiput Speed Serison			
					Safe Gear Control has been INACTIVE for this	- TALSE		
					amount of time continuously	tmr_inh_GE (*1)		
					Gear Ratio Failure Status			
					(P0731 P0732 P0733 P0734 P0735 P0729	ALL = NOT DETECTED		
					P076F, P07D9)			
					The TCM is not commanding a neutral condition as			
					a reaction to Safe Gear Control.	= TRUE		
Transmission Fluid Pressure	P0843	Transmission Fluid Pressure	Current Gear	= 1st, 2nd, 3rd, 4th, or 5th	The following parameters must be met for a	Time SwOEEfailw (*2)	2 sec	2
Sensor/Switch "A" Circuit		Sensor/Switch "A" Circuit High			calibrated period of time continuously.			
			Difference between actual Gear Ratio and	< 4 %	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously		
			Expected Gear Ratio		Battery Voltage	> 10.2 [V]		
			ATF Pressure Command	>= 1600 [kPa]	Battery Voltage	<= 32.0 [V]		
			ATF Pressure Switch Status	= OFF	Engine Speed	> 400 [RPM]		
			Engine Speed	> 500 [rpm]	Engine Speed Signal Validity	= VALID		
			Time since Engine Speed exceeded threshold	> 1000 [msec]	U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
			above		U0073 (CAN Bus-OFF)	= NOT DETECTED		
			Output Speed	>= 60 [rpm]	The TCM has completed the read operation of its			
			Engine Torque without Acceleration	>= 80 [Nm]	non-volatile memory	(all 8 criteria for 2 [sec] continuously)		
			Input Speed	<= 6000 [rpm]	Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		1
1	I			1	Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]	1	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					INACTIVE			
					P0974 (Shift Solenoid "A" Control Circuit High)	ALL Malfunctions = NOT DETECTED		
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725,			
					P2734, P0748, P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					Hinh)			
					Range Selector Position Switch	= D Range		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T_ShiftFin (*1)		
					ATF Temperature	>= OT_Sw_det (*14)		
					P0/13 (Transmission Fluid Temperature Sensor "A"	= NOT DETECTED		
					Circuit High)			
					P0/12 (Transmission Fluid Temperature Sensor "A"	= NOT DETECTED		
					Circuit Low)			
					The Input Speed signal is available from the Input	= TRUF		
					Speed Sensor			
					The Output Speed signal is available from the	= TRUE		
					Output Speed Sensor	intoL		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh GE (*1)		
					amount of time continuously			
					Gear Ratio Failure Status			
					(P0731, P0732, P0733, P0734, P0735, P0729,	ALL = NOT DETECTED		
					P076F, P07D9)			
					The TCM is not commanding a neutral condition as	= TRUE		
Manual Mada C. 211	DOOLE	Us and Davin Chill C. 11 J. Cl. 11	Manual Mada Collada Cit. 11 144	10.4.00(1. Magazillo 11.0.	a reaction to Safe Gear Control.	0000 [m]/] [m 10 [1 1 1	20	NI- A4P
wanual Mode Switch	P085F	Up and Down Shift Switch Circuit	wanuai wode Switch Signal Level (")	10.4 [%] < Manual Switch < 14.8	Ignition voltage	> YOUU [mV] for TU [msec] continuously	30 Sec	NO MIL
		Sluck in Range	(*) The Menuel Mode Switch Street Level	[70]	Dattery Voltage	> 10.2 [V]		Special
			() The Manual Mode SWICh signal level is		Dattery Vollage	<= 32.0 [V]		C.
			determined as a percentage of ignition Voltage		Engine Speed			
			(= Ivianual Mode Switch Voltage / Ignition Voltage		Engine Speed Signal Validity			
			[70])		UDITUD (LOST COMMUNICATION WITH ECM/PCM "A")			
					Ignition Voltage	9 [V] <= IG <= 32 [V]		
					P2534 (Ignition Voltage Low Supply)	= NOT DETECTED		
					P2535 (Ignition Switch Run/Start Position Circuit	NOT DETENTED		
					High)	= NUT DETECTED		
Manual Mode Switch	P085F	Up and Down Shift Switch Circuit	Manual Mode Switch Signal Level (*)	14.8 [%] <= Manual Switch < 25.5	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	34 sec (cumulative between P/R/N	No MIL
		Stuck in Range		[%]	Battery Voltage	> 10.2 [V]	and D range tests)	"Special
			(*) The Manual Mode Switch signal level is		Battery Voltage	<= 32.0 [V]		C"
-	•	•		•		• • • • • • • •	•	

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%]) The time period is based on the Gear Selector Position: - for 4 sec continuously in P,R, or N range AND - for 30 sec continuously in D range		Engine Speed Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) Ion72 (CAN BRIGGE) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High) P0705 (Transmission Range Switch Performance)	> 400 [RPM] = VALID = NOT DETECTED - NOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED		
Transmission Control Module (TCM)	P16F3	Control Module Redundant Memory Performance	Downshift commanded (*) (*) The solenoid patterns for the currently engaged gear, target gear, and minimum allowed gear (which is dependent on the vehicle speed) are compared, and the downshift to be commanded would cause unintended vehicle deceleration.	< Minimum Safe Gear (*)	P0606 (Control Module Processor) - Solenoid Cut Malfunction Solenoid Cut Request	= NOT DETECTED = INACTIVE	150 msec	1
Un-usual shifting with Max Pressure Pressure Control Solenoid "B" Control Circuit (SL1 Solenoid) Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid) Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid) Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P170A P170B P170C P170D P170E	Pressure Control Solenoid Valve "2" Max Pressure Not Achieved Pressure Control Solenoid Valve "3" Max Pressure Not Achieved Pressure Control Solenoid Valve "4" Max Pressure Not Achieved Pressure Control Solenoid Valve "5" Max Pressure Not Achieved Pressure Not Achieved	Each component (C1, C2, C3, C4, and B1) diagnosed has its own unique error counter, which will diagnose the failed component if the malfunction is detected. These counters are shared between all of the algorithms. If any one of those counters becomes equal to a calibrated total value, the malfunction will be confirmed and a DTC will be stored. There are (7) unique algorithms which run simultaneously in order to attempt to detect a MAX pressure malfunction. These algorithms are fairly complex: therefore they have been described in detail in section 5. count_fail_SLC1MAX_usft (*) count_fail_SLC3MAX_usft (*) count_fail_SLC3MAX_usft (*) count_fail_SLC3MAX_usft (*) count_fail_SLC3MAX_usft (*) count_fail_SLC3MAX_usft (*) count_fail_SLC3MAX_usft (*)	>= 5 >= 5 >= 5 >= 5 >= 5 >= 5	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A* Circuit High)	> 9000 [mV] for 10 [msec] > 10.2 [V] << 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	(Shift time dependent) 300 msec to 2 sec, 5 times cumulatively.	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	mum.
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0502 (System Voltage Low Supply 2) (*Note 1)			
					D0F42 (System Voltage Low Supply 2) (Note 1)			
					P0503 (System Vollage Right)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T. GarageFin (*1)		
					Paper Soloctor Position Switch	- D Pango		
					Wheel Spin Detected	ENISE		
					Output Canad	- I ALSL		
						>= 300 [rpm]		
					ATF temperature	>= - 100 [degC]		
					The input Speed signal is available from the Input	= TRUE		
					Speed Sensor			
					The Output Speed signal is available from the			
					Output Speed Sensor	- INGE		
					Safe Gear Control has been INACTIVE for this	tmr inh CE (*1)		
					amount of time continuously	uiii_iiii_GE (I)		
			Unusual Shifting Test A-1: Up-shift with Tie-up	(C1, C3, C4, or B1 not released)	·]	
			If a pressure control malfunction exists during an u	up-shift, it may be impossible to				
			release the element commanded to disengage. S	Such a malfunction is possible to				
			detect when the transmission takes an excessive	y long time to start the up-shift				
			(Input Speed change from current gear to target o	ear) while the engagement				
			When the following conditions are ALL satisfied, the	hen the criteria is considered to be	1			
			met. Based on the Upshift that was occurring the	e associated counter is				
			for up-shifts (2-8, 3-7, 4-6, 5-6, 5-7, 5-8)	count fail SI C1MAX usft	1			
			for up-shifts (3-4, 3-5, 7-8)	count fail SI C3MAX usft				
			for up-shifts (4-5, 6-7, 6-8)	count fail SI CAMAX usft				
			for up-shifts (2-3-2-4-2-5)	count_fail_SLB1MAX_usft				
			During any of the following Lin Shifts		1			
			During any of the following op-stillts	25794547492234				
				5-5, 7-0, 4-5, 0-7, 0-8, 2-3, 2-4, 2- E)				
			Shift Control for Torgue Dhase P has begun					
			Time since beginning of Tergue Dhase D	TimoTrn P (*10)				
			And a Constant Constant And	>= IIIIeIIp_B(IU)				
			Applied Element Command Pressure	> 2.5 [Kg/cm·2]				
			Snifting does not begin despite of shifting	= IKUE				
			commanded. (No change in inRpm eventhough					
			the shift command is made)					
			Max of engine flare ratio	<= 50 [rpm]				
			The gear ratio before shift control began is	= TRUE				
			normal (*A)					
			OR					
			The gear ratio at the beginning of the shift is					
			normal (*B)					
			Input Torque	>= 50 [Nm]				
			n na har an t	OR				
				<= -50 [Nm]				
				so trand				
			(*A) This condition is met if the followina is true:					
			, , , , , , , , , , , , , , , , , , ,					
			Difference between actual Gear Ratio and	< 4 [%]				
			expected Gear Ratio					
			(*B) This condition is met if the following is true:					
			ay this condition is more the following is the.					
I	1	I	I	1	I		1	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
	1		Difference between actual Gear Ratio and	< 8 [%]		Î	1	Î
			expected Gear Ratio	[]				
			onpoolod eour nallo					
			Unusual Shifting Test A-2: Down-shift with Tie	un (C1_C3_C4_or B1 not release	ad)		-	
			If a proceure control malfunction evicts during a d	own shift it may be impossible to			-	
			li a pressure control manufiction exists during a d	own-smit, it may be impossible to				
			release an element which is supposed to disenga	ge. Such a mailunction is possible				
			to detect when the transmission takes an excessi	vely long time to start a down-shift				
			(Input Speed change from current gear to target of	gear) while the engagement	-			
			When the following conditions are ALL satisfied, t	hen the criteria is considered to be				
			met. Based on the Down-shift that was occurring	, the associated counter is				
			for down-shifts (5-2, 5-3, 5-4, 6-4,7-3, 8-2)	count_fail_SLC2MAX_usft				
			for down-shifts (3-2, 7-5, 7-6)	count_fail_SLC3MAX_usft				
			for down-shifts (4-2, 4-3, 6-5)	count_fail_SLC4MAX_usft				
			for down-shifts (8-5, 8-6, 8-7)	count_fail_SLB1MAX_usft				
			During any of the following Down-Shifts	(3-2, 4-2, 4-3, 5-2, 5-3, 5-4, 6-4, 6-	-			
				5, 7-3, 7-5, 7-6, 8-2, 8-5, 8-6, 8-7)				
			After "Start of initial release pressure control	= TRUE				
			phase"					
	1		Release Pressure Control Phase Duration	>= Time failA down1 (*10)				
				AND				
				\geq Time fail down2 (*10)				
			Applied Element Command Pressure	$> 3.0 [kg/cm^2]$				
			Applied Element Command Pressure	when Input Torque with No				
				Accoloration < 100 [Nm]				
			Shifting doos not begin dospite of shifting					
			commanded (No change in inDom eventhough	- INDE				
			commanded. (No change in incent eventiough					
			the shift command is made)	EQ [ram]				
			min or engine hare ratio	>= -50 [rpm]				
			The gear ratio before shift control began is	= IRUE				
			normal (^A)					
			OR					
			The gear ratio at the beginning of the shift is					
			normal (*B)					
			Input Torque	>= 50 [Nm]				
				OR				
				<= -50 [Nm]				
			(*A) This condition is met if the following is true:					
	1			1				
	1		Difference between actual Gear Ratio and	< 4%				
	1		expected Gear Ratio					
	1		(*B) This condition is met if the following is true:	1				
	1		, i i i i i i i i i i i i i i i i i i i					
	1		Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio					
			. F					
	1		Unusual Shifting Test B-1: Up-shift with Engin	e Flare (C1, C4, or B1 not release	ed)	•	1	
	1		The TL80SN 8-Speed transmission is equipped w	vith failsafe valves to mitigate any			1	
	1		effects of falsely engaged brakes or clutches. How	wever, during some shift types if an				
	1		element is falsely engaged, the torque transfer fro	om the expected clutches and/or				
	1		brakes will be disrupted	sin the superior differes analyti				
	1		When ALL of the conditions of a state are satisfie	d the function then moves to the	1			
	1		next state Based on the Un-shift that was occur	ing the associated counter is				
			for un-shifts (6.7 6.8)	count fail SI C1MAX usft	1			
	1		for up shifts (7.9)	count fail SLC/MAX unit				
			for up shifts $(2.4, 2.5, 4.5)$	count_tail_SLC4WAA_USIL				
			101 up-Shints (3-4, 3-5, 4-5)	COUNT_INT_SED INTAA_USI	4			
	1	1			1			

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			State 1 (Start Detection due to Deviation from Ex	pected Transmission Input Speed)				
			If ALL conditions are met:					
			During any of the following single clutch to clutch	(6-7, 6-8, 7-8, 3-4, 3-5, 4-5)				
			Up-shifts					
			Input Speed - (Output Speed x Gear Ratio of	>= flare_fail_up (*11)				
			current dear before shifting)	· indio_idii_dp (i i)				
			NOT in multiploy shifting					
			No Fin malapiex shirting	- INGE				
			State 2 (Determine the Fault Type or check for In	put Speed Deviation Correction)				
			Criteria 2-1: if ALL conditions are met:					
			Input Speed - (Output Speed x Gear Ratio of	<= flare fail up (*11) - 200 [rpm]				
			current gear before shifting)					
			TCM currently commanding a Clutch-to-Clutch	= FALSE				
			LID-shift					
			Criteria 2-2: if ALL conditions are met:	1				
			The TCM is commanding a (3-4, 3-5, or 4-5 up-	= TRUE				
			shift)	1110L				
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec]			1	
			input opeca Acceleration	for 0.03 [soc]				
			Time since the start of the apply pressure control					
			Time since the start of the apply pressure control	< 1.0 [Sec]				
			Criteria 2-3: if ALL conditions are met:					
			The TCM is commanding a (6-7 or 6-8 up-shift)	= TRUE				
			"Time Since State 1" timer	> Time324 (^10) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			I me since the start of the apply pressure control	< 1.0 [sec]				
			Criteria 2-4: if ALL conditions are met:					
			The TCM is commanding a (7-8 up-shift)	= TRUF				
			"Time Since State 1" timer	> Time324 (*X) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec]				
			········	for 0.03 [sec]				
			Time since the start of the apply pressure control	< 1.0 [sec]				
				. [===]				
			Criteria 2-5: if condition (A) AND (condition (B) C	R (C)) are met:				
			(A) "Time Since State 1" timer	> TimeFailB (*10) [sec]				
			(B) "Release Element Pressure at Flare Start"	> 2.0 [kg/cm^2]				
			(C) Applied Element Commanded Pressure	> 2.0 [kg/cm^2]				
			State 3 (Conclude Malfunction Detection and Res	sume Normal Operations)				
			if ALL conditions are met:	•				
			"Exit Unusual Shifting Test B-1" timer	> TimeFailB (*10) [sec]				
			Unusual Shifting Test B-2: Down-shift with En	gine Flare (B1 not released)		1	4	
			The TL80SN 8-Speed transmission is equipped w	vith failsafe valves to mitigate any				
			effects of falsely engaged brakes or clutches. How	wever, during some shift types if an				
			element is falsely engaged, the torque transfer fro	om the expected clutches and/or				
			brakes will be disrupted. A symptom of such a m	alfunction is a large Input Speed				
			State 1 (Start Detection due to Deviation from Ex	noctod Transmission Input Spood				
)	peoloa manamisalon input apeeu				
			Criteria 1-1: if ALL conditions are met:					
			During the following Down-shift	(4-3)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
				- *				

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of	>= 500 [rpm]				
			gear expected after the shift)					
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			The gear ratio before shift control began is	= TRUE				
			normal (*A)					
			OR					
			The gear ratio at the beginning of the shift is					
			normal (*B)					
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and	< 4%				
			expected Gear Ratio					
			(*B) This condition is met if the following is true:					
			Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio					
			Criteria 1-2: if ALL conditions are met:					
			During the following Down-shift	(5-4, 5-3)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
				TDUE				
			NOT in multiplex shifting	= IRUE				
			Input Speed - (Output Speed X Gear Ratio of	>= 500 [rpm]				
			year expected aner the shift)	E000 [rpm/cool				
			Input Speed Acceleration	for 0.02 [coc]				
			The gear ratio at the beginning of the shift					
			indicates 8th near	- HOL				
			indicates our gear					
			State 2 (Increment the malfunction counter or wa	it for the shift to complete)				
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) O	R (C)) are met:				
			(A) During the following Down-shift	(4-3)				
			(B) The shift has completed	= TRUE				
	1		(C) Input Speed - (Output Speed x Gear Ratio of	< 500 [rpm]				1
			gear expected after the shift)					
			Criteria 2-3: if condition (A) AND (condition (B) O	R (C)) are met:				
	1		(A) During the following Down-shift	(5-4, 5-3)				1
			(B) The shift has completed	= TRUE				
	1		(C) Input Speed - (Output Speed x Gear Ratio of	< 500 [rpm]				1
	1		gear expected after the shift)	Nerral Occertions)				1
			State 3 (Conclude Malfunction Detection and Res	sume Normal Operations)				
			If ALL conditions are met:	Time (000 (*10) ()				
			"Exit Unusual Shifting Test B-2" timer	> Time423B (TU) [Sec]		ļ	-	
			Undsual Similing Test B-3. Down-simil with En	the faile of a values to mitigate any			-	
	1		offects of falsely engaged brakes or clutches. Here	www.ansare valves to mittyate any				1
			element is falsely engaged blakes of clucules. How	om the expected clutches and/or				
	1		brakes will be disrupted. A symptom of such a m	alfunction is a large Innut Sneed				1
			and a sub- a sub- a sub- a sub- a sub- a sub-	ananoaon is a large input Specu				
	1		State 1 (Start Detection due to Deviation from Ex	pected Transmission Input Speed				1
)					
	1		Criteria 1-1: if ALL conditions are met:					1
	1		During the following Down-shift	(8-7, 8-6, 7-6)				1
			Time since the start of the apply pressure control	< 1.0 [sec]				
						1		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of	>= 300 [rpm]				
			gear expected after the shift)					
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			The gear ratio before shift control began is	= IRUE				
			OR The gear ratio at the beginning of the shift is					
			normal (*B)					
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and	< 4 [%]				
			expected Gear Ratio					
			(*B) This condition is met if the following is true:					
			Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio					
			State 2 (Increment the malfunction counter or wa	it for the shift to complete)				
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time857a (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) O	R (C)) are met:				
			(A) During the following Down-shift	(8-7, 8-6, 7-6)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of	< 300 [rpm]				
			gear expected after the shift) State 2 (Conclude Malfunction Detection and Det	Sumo Normal Operations)				
			if ALL conditions are met.	sume Normal Operations (
			"Exit Unusual Shifting Test B-3" timer	> Time857b (*X) [sec]				
			Unusual Shifting Test B-4: Down-shift with En	gine Flare (C3 not released)			-	
			The TL80SN 8-Speed transmission is equipped w	vith failsafe valves to mitigate any				
			effects of falsely engaged brakes or clutches. How	wever, during some shift types if an				
			element is falsely engaged, the torque transfer fro	om the expected clutches and/or				
			brakes will be disrupted. A symptom of such a m	alfunction is a large Input Speed				
			State 1 (Start Detection due to Deviation from Ex	pected Transmission Input Speed				
)	postou manomosion mput opoou				
			Criteria 1-1: if ALL conditions are met:	(5.1)				
			During the following Down-shift	(5-4)				
			Time since the start of the apply pressure control	< 1.0 [SEC]				
			NOT in multiplay shifting					
			Input Sneed - (Output Sneed x Gear Ratio of	>= 300 [rpm]				
			near expected after the shift)	> - 500 [[piii]				
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			The gear ratio at the beginning of the shift is 7th	= TRUE				
			gear					
			State 2 (Increment the malfunction counter or wa	it for the shift to complete)				
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time54a (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) O	R (C)) are met:				
			During the following Down-shift	(5-4)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of	< 300 [rpm]				
1			gear expected after the shift)				1	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			State 3 (Conclude Malfunction Detection and Res	ume Normal Operations)				
			if ALL conditions are met:					
			"Exit Unusual Shifting Test B-4" timer	> Time54b (*X) [sec]				
			Unusual Shifting Test E: Gear Ratio Malfunctio	on during Shifting				
			Noto: To confirm if a shift ratio is fulfilled, the follo	wing critoria is usod:			1	
			If all of the following conditions are moti	wing chiena is used.				
			If all of the following conditions are met:					
			During the following shifts	(1-2, 1-3, 1-4, 1-5)				
			5th gear ratio fulfilled at the beginning of the shift	= IRUE				
			IOF 1.0 Sec	50.01.1				
			Input Forque	<= -50 [NM]				
				OR				
				>= 50 [Nm]				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			If all of the following conditions are met:					
			During the following shifts	(2-8)				
			8th gear ratio fulfilled at the beginning of the shift	= TRUE				
			for 1.0 sec					
			Input Torque	<= -50 [Nm]				
				OR				
				>= 50 [Nm]			1	
			If all of the following conditions are met:				1	
			During the following shifts	(3-7)				
			7th gear ratio fulfilled at the beginning of the shift					
			for 1.0 sec	- INOL				
				<= 50 [Nm]				
			input forque					
			If all of the following conditions are mot-	>= 50 [NIII]				
			If all of the following conditions are met.	(4.4)				
			Utility the following stills	(4-0) TDUE				
			our gear ratio runnieu at trie beginning of trie shirt	= IRUE				
			for I.U sec	50 (0) 1				
			Input Forque	<= -50 [NM]				
				UR .				
				>= 50 [Nm]				
			If all of the following conditions are met:					
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 4-				
				5, 4-3, 4-2, 4-1, 2-1, 2-1EB, 1EB-				
				1, 1-1EB)				
			3rd gear ratio fulfilled at the beginning of the shift	= TRUE				
			for 1.0 sec				1	
			Input Torque	<= -50 [Nm]			1	
				OR			1	
				>= 50 [Nm]				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			(this condition only applies to the following shifts	-				
			(1-2, 1-3, 1-4, 1-5)					
			If all of the following conditions are met:					
			During the following shifts	(5-6, 5-7, 5-8, 6-5, 6-7, 6-8, 8-7, 8-				
				6, 8-5, 8-2)			1	
			7th gear ratio fulfilled at the beginning of the shift	= TRUF				
			for 1.0 sec				1	
			Input Torque	<= -50 [Nm]				
			inpart orque	OR			1	
				>= 50 [Nm]			1	
			If all of the following conditions are met-	>= 50 [INIII]			1	
			In all of the following conditions are met:	(1 2 1 2 1 4 1 5 2 2 2 4 2 5 2				
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 2-			1	
1	I	l	I	1, Z-1EB, 1EB-1, 1-1EB)		l	1	I

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System	coue	Description	4th gear ratio fulfilled at the beginning of the shift	= TRUE			Kequireu	inum.
			for 1.0 sec					
			Input Forque	<= -50 [NM]				
				OR >= 50 [Nm]				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			(this condition only applies to the following shifts					
			(1-2, 1-3, 1-4, 1-5)					
			If all of the following conditions are met:		-			
			Ath gear ratio fulfilled at the beginning of the shift	(5-6, 5-7, 5-8, 8-7, 8-6, 8-5) – TRUF				
			for 1.0 sec	- 1100				
			Input Torque	<= -50 [Nm]				
				OR				
				>= 50 [Nm]				
			If all of the following conditions are met:	(1 2 1 2 1 / 1 5 1EB 1 1 1EB)	-			
			During the following strints	(1-2, 1-3, 1-4, 1-3, 1ED-1, 1-1ED)				
			2nd gear ratio fulfilled at the beginning of the shift	= TRUE				
			for 1.0 sec					
			Input Torque	<= -50 [Nm]				
				OR >= 50 [Nm]				
			Applied Element Command Pressure	$> 2.5 [kg/cm^2]$				
			(this condition only applies to the following shifts					
			(1-2, 1-3, 1-4, 1-5)					
			If all of the following conditions are met:	(5 (5 3 5 0)				
			During the following shifts 8th goar ratio fulfilled at the beginning of the shift	(5-6, 5-7, 5-8) _ TRUE				
			for 1.0 sec	- INOL				
			Input Torque	<= -50 [Nm]				
				OR				
				>= 50 [Nm]				
Lateral Acceleration Sensor	P175F	Acceleration Sensor Signal message	The "Longitude/Latitude Acceleration Sensor	= 5 counts	Ignition Voltage	> 9000 [mV] for 3 sec continuously	250 msec	No MIL
Signal (Rolling Count)		Counter incorrect	undated for a calibratable number of counts		Battery Voltage	> 10.2 [V]		C"
			consecutively.		Battery Voltage	<= 32.0 [V]		Ŭ
			,		The TCM has completed the read operation of its	6 3		
					non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
					Dia manific Canaira Danuari ta Diankia Namual			
					Communication	= NOT PRESENT		
					U0140 (Lost Communication with Body Control			
					Module)	= NOT DETECTED		
Pressure Control Solenoid "F"	P2734	Pressure Control Solenoid "F"	sum_ie (*)	> 60000 [mA]	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	1 to 3 sec cumulatively	1
Control Circuit (SL5 Solenoid)		Electrical			Battery Voltage	> 10.2 [V]		
					Battery voltage	<= 32.0 [V]		
					non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
						(
			(*) The first algorithm checks the cumulative sum		Battery Voltage	> 11 [V] for [> 500 msec]		
			of the difference of the linear solenoid feedback		Linear Solenoid Feedback current	< 1358 [mA]		
			current and commanded current. This sum,		Solenoid Cut Condition (*Note 3) P2738 (Pressure Control Solenoid "E" Control	= NOT ACTIVE		
			cycle of the microprocessor (10 msec) If the		Circuit Low)	= NOT DETECTED		
			value of the sum becomes greater than a		P2739 (Pressure Control Solenoid "F" Control			
			calibrated threshold, a malfunction will be		Circuit High)			
		1	confirmed.		Emergency Mode (*4)	= NOT ACTIVE	l	

Component /	Fault Code	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
			ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed					
			OR	-				
			ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. ie : Absolute value of ie ie: Difference between "commanded current" and "foodback current"		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition ("Note 3) P2738 (Pressure Control Solenoid "F" Control Circuit Low) P2739 (Pressure Control Solenoid "F" Control Circuit High) Emergency Mode ("4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
Draggura Captral Calanaid "F"	02720	Drossura Cantral Salanaid "E" Cantral	"feedback current"	· 20mA	Institut Matters	0000 [E00 moon	1
Control Circuit (SL5 Solenoid)	P2738	Circuit Low	Linear Solenoid Feedback Current	< 20004	Ignition voitage Battery Voltage The TCM has completed the read operation of its non-volatile memory Solenoid Cut Condition ("Note 3) P2739 (Pressure Control Solenoid "F" Control Circuit High)	 > 9000 [mV] for 10 [mSec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec] 	SUU IISEL	
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2739	Pressure Control Solenoid "F" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory P2738 (Pressure Control Solenoid "F" Control Circuit Low)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) = NOT DETECTED for [1 sec]	500 msec	1
Torque Converter Clutch Pressure Control Solenoid Control Circuit (SLU Solenoid)	P2761	Torque Converter Clutch Pressure Control Solenoid Control Circuit/Open	sum_ie (*) (*) The first algorithm checks the cumulative sum	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) > 11 [V] for [> 500 msec]	1 to 3 sec cumulatively	1
			ot the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the		Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low)	< 1358 [mA] = NOT ACTIVE = NOT DETECTED		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			value of the sum becomes greater than a		P2763 (Torque Converter Clutch Pressure Control	= NOT DETECTED		
			calibrated threshold, a malfunction will be		Emergency Mode (*4)	= NOT ACTIVE		
			commed.		Emergency would (4)	- NOT ACTIVE		
			ie: Difference of "commanded current" and					
			"feedback current"					
			ie added to "sum_ie" every 10 msec					
			sum_ie is cleared if at least one of the following					
			conditions are satisfied					
			2) -50mA = $<$ ie = $<$ 50mA					
			3) Sign of ie is changed					
			, , , , , , , , , , , , , , , , , , , ,					
			OR	-				-
			ie (*)	> 50 [mA]	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	2 sec	1
					Battery Voltage	> 10.2 [V]		
					The TCM has completed the read operation of its	<= 32.0 [V]		
					non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
					non volume memory			
			(*) The second algorithm checks the absolute		Battery Voltage	> 11 [V] for [> 500 msec]		
			value of the difference of the linear solenoid		Linear Solenoid Feedback current	< 1358 [mA]		
			feedback current and commanded current over		Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
			time. If the absolute value of the difference of		P2764 (Torque Converter Clutch Pressure Control Selenaid Centrel Circuit Lew)	= NOT DETECTED		
			commanded current exceeds a calibrated		P2763 (Torque Converter Clutch Pressure Control			
			threshold for a calibrated period of time		Solenoid Control Circuit High)	= NOT DETECTED		
			continuously, a malfunction will be detected.		Emergency Mode (*4)	= NOT ACTIVE		
			5.					
			ie : Absolute value of ie					
			ie: Difference between "commanded current" and	1				
Torque Convertor Clutch (TCC)	D2760	Torque Converter Clutch Circuit Low	Comparison of SL solonoid Commanded State to	Actual State is "OEE" when	Ignition Voltago	> 9000 [mV] for 10 [msoc] continuously	500 msoc	2
Enable Solenoid	12/0/	Torque converter ciuteri circuit Eow	Actual State	Commanded State is "ON"	Battery Voltage	> 10.2 [V]	300 11300	2
(SL solenoid)					Battery Voltage	<= 32.0 [V]		
			(*) The TCM software does not directly determine	5	The TCM has completed the read operation of its			
			the Actual State of the solenoid. This is done by		non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
			the solenoid driver hardware. The software just		CL Calancid Commond			
			reads the state as ON or OFF. The solenoid		SL Solenoid Command Time elansed since last solenoid state change	= UN		
Torque Converter Clutch (TCC)	P2770	Torque Converter Clutch Circuit High	Comparison of SL solenoid Commanded State to	Actual State is "ON" when	Ignition Voltage	> 9000 [mV] for 10 [msec] continuously	500 msec	2
Enable Solenoid			Actual State	Commanded State is "OFF"	Battery Voltage	> 10.2 [V]		_
(SL solenoid)					Battery Voltage	<= 32.0 [V]		
			(*) The TCM software does not directly determine	5	The TCM has completed the read operation of its			
			the Actual State of the solenoid. This is done by		non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
			the solehold driver hardware. The software just		SL Solonoid Command	- OFF		
			driver determines the state is ON at Battery		Time elansed since last solenoid state change	> 10 msec		
Anti-Lock Brake System (ABS)	U0121	Lost Communication with Anti-Lock	CAN frame:	= NOT RECEIVED	Ignition Voltage	> 9000 [mV] for 5 sec continuously	4 sec	No MIL
Module		Brake System (ABS) Control Module	"PPEI_Chassis_General_Status_1"		Ignition Voltage	> 9000 [mV]		"Special
					Battery Voltage	> 10.2 [V]		C"
					Battery Voltage	<= 32.0 [V]		
					The TCM has completed the read operation of its	(all 4 aritaria far E laga) continuerusta)		
					10073 (CAN Bus-OFF)			
					Diagnostic Service Request to Disable Normal			
					Communication	= NUT PRESENT		
Body Control Module (BCM)	U0140	Lost Communication with Body	CAN frame:	= NOT RECEIVED	Ignition Voltage	> 9000 [mV] for 5 sec continuously	4 sec	No MIL

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
		Control Module	"PPEI_Platform_Trans_Requests"		Ignition Voltage	> 9000 [mV]		"Special
					Battery Voltage	> 10.2 [V]		C"
					Battery Voltage	<= 32.0 [V]		
					The TCM has completed the read operation of its			
					non-volatile memory	(all 4 criteria for 5 [sec] continuously)		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Diagnostic Service Request to Disable Normal	NOT DRESENT		
					Communication	= NOT PRESENT		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr V	eshold alue	Secondary Malfunction		Enable Conditions			T Rec	ime quired	Mil Illum.
Mode Switch	P07CE	Transmission Mode Switch D Circuit	Tour Mode Switch state	=	TRUE	Boolean					>=	600	Fail Time (Sec)	Special No MII
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= <= >=	8.5996094 31.999023 400 7500 5	Volts Volts RPM RPM Sec				NO WILL
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None						
Mode Switch	P07D1	Transmission Mode Switch E Circuit	Comfort Mode Switch state	=	TRUE	Boolean					>=	600	Fail Time (Sec)	Special No MIL
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed si within the allowable limits for	>= <= >= <= >=	8.5996094 31.999023 400 7500 5	Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None						
Mode Switch	P07D4	Transmission Mode Switch F Circuit	Normal Mode Switch state	=	TRUE	Boolean					>=	600	Fail Time (Sec)	Special No MIL
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.999023 400 7500 5	Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None						
Mode 3 Multiplex Valve	P0976	Shift Solenoid BControl Circuit Low (Mode 3 Solenoid)	The HWIO reports a low voltage (ground short) error flag	=	TRUE	Boolean					>=	1.2	Sec	Two Trips
											out of	1.5	Sec	
							P0976 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996094 31.999023 400 7500	Volts Volts RPM RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>=	5	Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Tł	reshold Value	Secondary Malfunction		Enable Conditions			T Rec	ime quired	Mil Illum.
Mode Switch	P071D	Transmission Mode Switch B Circuit	Sport Mode Switch state	= TRUE	Boolean					>=	600	Fail Time (Sec)	Special No MIL
						Ignition Voltage Lo	>=	8.5996094	Volts				1
						Ignition Voltage Hi	<=	31.999023	Volts				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the	>=	5	Sec				
						allowable limits for							
					Dicabla	MIL not Illuminated for	TCM. D1742						
					Conditions		TCIVI: PT/02						
					Conditions.	D103.	FCM: None						
		Transmission Mode Switch Signal	Rolling count value received from										Special
Mode Switch	P1762	Circuit (rolling count)	BCM does not match expected	= TRUE	Boolean					>=	3	Fail Counter	No MIL
			value									Sampla Timor	
										>	10	(Sec)	
						Pattern Switch Message	=	TRUE	Boolean				1
						Health			DDU				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed is within the	<=	7300	KE IVI				
						allowable limits for	>=	5	Sec				
					Disable	MIL not Illuminated for	TCM: None						
					Conditions:	DIC's:	ECM Name						1
							ECIVI: NONE						1
							1						1

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 RPM
Table 2	A: a	0.07	0.00	40.00						
	AXIS	-0.07	-0.00	40.00 °C	,					
	Curve	409.59	2.00	2.00 36						
Table 3										
	Axis	-6.67	-6.66	40.00 °C	;					
	Curve	409.59	4.00	4.00 Se	ec					
Table 4	A ta	0.07	0.00	40.00						
	AXIS	-6.67	-6.66	40.00 %	,					
	Curve	409.59	2.00	2.00 36						
Table 5										
	Axis	-6.67	-6.66	40.00 °C	;					
	Curve	409.59	3.00	3.00 Se	ec					
.										
Table 6		6.67	6.66	40.00	80.00	120.00.00	<u>_</u>			
		109.00	-0.00	40.00	1.40	1 40 9				
		+03.00	5.00	1.00	1.+0	1.40				
Table 7										
	Axis	-6.67	-6.66	40.00	80.00	120.00 °(C			
	Curve	409.00	3.40	1.40	1.30	1.20 S	ec			
Table 0										
	Avie	-6.67	-6.66	40.00	80.00	120.00.00	C			
	Curve	409.00	3.60	1 60	1.50	1 40 5	ec.			
		100.00	0.00	1.00	1.00	1.40				

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 Se	C
Table 10	_						
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C	
	Curve	3.10	1.90	1.10	0.80	0.60 Se	C
Table 11	_						
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C	
	Curve	1.80	1.20	0.60	0.40	0.30 Se	C
Table 12	_						
	Axis	-40.00	-20.00	0.00	30.00	110.00 °C	
	Curve	2.20	1.40	0.90	0.70	0.40 Se	C
<u>Table 13</u>	_						
	Axis	-40.00	-20.00	0.00	30.00	<u>110.00</u> °C	
	Curve	2.60	1.00	0.50	0.30	0.20 Se	C
Table 14	_						
	Axis	-40.00	-20.00	0.00	30.00	<u>110.00</u> °C	
	Curve	3.00	0.90	0.50	0.30	0.20 Se	C
Table 15							
	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00
	Curve	0.00	0.00	0.00	0.00	0.00	0.00
Table 16							

T	а	b	le	1	6	
-						

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	2.50	2.50	Sec

<u>Table 17</u>

20.00

0.00

30.00

0.00

40.00 °C 0.00 Sec

15 OBDG06 TCM Diagnostic 2D Tables (Common)

Axis	-6.67	-6.66	40.00	°C
Curve	0.40	0.35	0.30	Sec

<u>Table 18</u>

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

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 ^o	°C
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °	°C

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

<u>Table 21</u>

Axis	-40.00	-20.00	40.00	°C
Curve	5.00	3.00	1.00	Sec

<u>Table 22</u>

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

Table 23

Axis	-6.67	-6.66	40.00 °C	
Curve	8191.75	8191.75	8191.75 RF	PM/Sec