COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABLE	CONDITIONS	TIME RE	QUIRED	MIL ILLUM.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE	Boolean				>= 5	Fail Counts	One Trip
						Ignition Voltage Lo Ignition Voltage Hi	>= {	8.5996 Volts 18 Volts			
					Disable Conditions:	MIL not Illuminated for DTC's:	P0601				
							ECM: None				
Transmission Control Module (TCM)	P0602	Transmission Electro-Hydraulic Control Module Not Programmed	Non-Programmed TECHM Failure	= TRUE	Boolean				Runs Contir ously	nu	One Trip
						Ignition Voltage Lo Ignition Voltage Hi	>= {	8.5996 Volts 18 Volts			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0602				
							ECM: None				
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Boolean				Runs Contir ously	nu	One Trip
						Ignition Voltage Lo Ignition Voltage Hi	>= {	8.5996 Volts 18 Volts			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603				
							ECM: None				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	E CONDI	TIONS	TIMI	E REQI	UIRED	MIL ILLUM.
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access	RAM Read/Write Failure (Single Word)		TRUE	Boolean					>=	5	Fail Counts Sample Counts	One Trip
							lgnition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 18	Volts Volts				
						Disable Conditions:		TCM: P0604 ECM: None						
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdowr	=	TRUE	Boolean					C	Runs continu ously		One Trip
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 18	Volts Volts				
						Disable Conditions:		TCM: P062F ECM: None						
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	<u>Fail</u> <u>Case 1</u> Substrate Temperature	>=	142.1015625	°C					>=	5	Fail Time (Sec)	One Trip
			Fail Case 2 Substrate Temperature		50	°C					>=	2	Fail Time (Sec)	
			Ignition Voltage Note: either fail case car set the DTC	>= 1	18	Volts								
							lgnition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 31.999					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDIT	TIONS	TIME	E REQ	UIRED	MIL ILLUM.
					Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	<=	0 170 0.25 Test	°C °C Sec				
					P0634 Status is	≠	Failed This Key On or Fault Active					
				Disable Conditions:		TCM: None ECM: None						
HWIO	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports low voltage (Open or ground short) error flad	= TRUE Boolean					>= out of	3	Fail Counts Sample Counts	One Trip
					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						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
HWIO	P0659	Actuator Supply Voltage Circuit High	During the controller power-up, prior to the HSD being turned on, the hwio reports that power short failure is				>= 3 Fail Counts	Two Trips
							out 5 Sample of Counts	
					P0659 Status is not	Test Failed This = Key On or Fault Active		
				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 Δ	Refer to Table > 21 in supporting °C documents				Two Trips
			If TCM substrate temp to power up temp Δ	Refer to Table > 22 in supporting °C documents				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	: REQI	UIRED	MIL ILLUM.
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						Out 3	750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=		Pass Counts (100ms loop)	
									Out of	075	Sample Counts (100ms loop)	
									Out of	076	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Accelerator Position Signal Valid	=	TRUE					
					Ignition Voltage Lo		8.5996					
					Ignition Voltage Hi Engine Speed Lo		31.999 500	Volts RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE					
					Below describes the brake torque entry criteria							
					Engine Torque		90	N*m				
					Throttle Transmission Input Speed		30	Pct				
					ransmission input Speed Vehicle Speed		200 8	RPM Kph				
					Transmission Range		Park					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITION	S TIME REQUIRED	MIL ILLUM.
					Transmission Range	≠ Neutral		
					PTO	Active		
					Set Brake Torque Active TRUE if above conditions are met for:	>= / Sec		
					Below describes the brake torque exit criteria			
					Brake torque entry criteria	= Not Met		
					Clutch hydraulic pressure	Clutch Hydrau ≠ lic Air Purge Event		
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0667 Status is	Test Failed This ≠ Key On or Fault Active		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		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,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltage	Type of Sensor Used	= CeTFTI_e_Volta geDirectProp				Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp					
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp					
			Either condition above will satisfy the fail conditions				Fail >= 12.75 Timer (Sec)	
					Ignition Voltage Lo	>= 8.5996 Volts		
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi Engine Speed is within the			
					allowable limits for P0668 Status is	Test Failed This		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE COND	ITIONS	TIME REQUIRE	O MIL ILLUM.
				Disable Conditions:		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 If TCM Substrate Temperature Sensor = Indirect Proportional and Temp Either condition above will satisfy the fail conditions	>= 249 °C <= 249 °C	TOSS Speed Toss Speed greater than above cal for TCC Slip TCC Slip greater than above cal for Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	>= 0 >= 0 >= 0 >= 0 >= 8.5996 <= 31.999 >= 500		Fa >= 60 Tim (Se	er
					Engine Speed Hi Engine Speed is within the allowable limits for	_ E	Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0669 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723 ECM: None		
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	Refer to Table > 22 in supporting °C documents				Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table > 20 in supporting °C documents				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out 3750 Sample Counts (100ms loop)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CO	IDITIONS	TIME RE	EQUIRED	MIL ILLUM.
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until					>= 700	loop)	
								Out 875 of	Sample Counts (100ms	
					Engine Torque Signal Valid	= TRI	IE Boolea	n		
					Accelerator Position Signal Valid	= TRI	IE Boolea	n		
					Ignition Voltage Lo	>= 8.59	96 Volts			
					Ignition Voltage Hi		99 Volts			
					Engine Speed Lo	>= 50	RPM			
					Engine Speed Hi		0 RPM			
					Engine Speed is within the allowable limits for	>= 5	Sec			
					Brake torque active	= FAL	SE			
					Below describes the brake torque entry criteria					
					Engine Torque		N*m			
					Throttle	>= 30	Pct			
					Transmission Input Speed	<= 20) RPM			
					Vehicle Speed		Kph			
					Transmission Range					
					Transmission Range					
					PTO	= No				
					Set Brake Torque Active TRUE if above conditions are met for:	>= 7				
					Below describes the brake torque					
					exit criteria Brake torque entry criteria	NI.				
					Clutch hydraulic pressure	Clu Hyd	ch au .ir ge			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P06AC Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CO	ONDITIONS	TIME REQ	UIRED	MIL ILLUM.
						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, P0307, P0308, P0307, P0308, P0401, P042E				
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 °C				>= 60	Fail Time (Sec)	Two Trips
					Ignition Voltage Lo		5996 Volts			
					Ignition Voltage Hi		.999 Volts			
					Engine Speed Lo		500 RPM			
					Engine Speed Hi Engine Speed is within the allowable limits for		500 RPM5 Sec			
					Toss Speed		0 RPM			
					Toss Fail Timer	>=	0 Sec			
					TCC slip	>=	0 RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME R	EQUIRED	MIL ILLUM.
					TCC Fail Timer	>=	0	Sec			
					P06AD Status is	≠	Test Failed This Key On or Fault Active				
				Disab Condition		TCM: P0716, P0717, P0722, P0723 ECM: None					
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	>=	8.5996	Volts			
					Ignition Voltage Hi		31.999	Volts			
					Engine Speed Lo Engine Speed Hi		500 7500	RPM RPM			
					Engine Speed is within the allowable limits for		5	Sec			
					P06AE Status is	≠	Test Failed This Key On or Fault Active				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Mode Switch	P071A	Transmission Mode Switch A Circuit	If Tow Haul / Winter Switch Active	= TRUE Boolean		2222 14 15	>= 600 Time (Sec)	Special No Trip
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 500 RPM <= 7500 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762 ECM: None		
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table > 21 in supporting °C documents				Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table > 20 in supporting °C documents				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQ	UIRED	MIL ILLUM.
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						Out	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
									Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Accelerator Position Signal Valid		TRUE	Boolean				
					Ignition Voltage Lo		8.5996	Volts				
					Ignition Voltage Hi		31.999					
					Engine Speed Lo		500	RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Brake torque active	=	FALSE					
					Below describes the brake torque entry criteria							
					Engine Torque		90	N*m				
					Throttle		30	Pct				
					Transmission Input Speed	<=	200	RPM				
					Vehicle Speed		8	Kph				
					Transmission Range		Park					
					Transmission Range	≠	Neutral					
					РТО	=	Not Active					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Set Brake Torque Active TRUE if above conditions are met for:	/- / Sec		
					Below describes the brake torque exit criteria			
					Brake torque entry criteria	= Not Met		
					Clutch hydraulic pressure	Clutch Hydrau ≠ lic Air Purge Event		
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:		P0658, P0668, P0669, P06AD, P06AE, P0716, P0712,		
						P0713, P0717, P0722,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						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,		
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	= CeTFTI_e_Volta geDirectProp		P042E		Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	.D VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQU	JIRED	MIL ILLUM.
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	<=	-74	°C							
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp		-74	°C							
			Either condition above will satisfy the fail conditions								>= 12.75	Fail Time (Sec)	
							TOSS		0	RPM			
							TOSS above thresh for TCC slip		0	Sec RPM			
							TCC slip above thresh for		0	Sec			
							Ignition Voltage Lo		8.5996	Volts			
							Ignition Voltage Hi		31.999	Volts			
							Engine Speed Lo		500	RPM			
							Engine Speed Hi		7500	RPM			
							Engine Speed is within the allowable limits for	>=	5	Sec			
							P0712 Status is	≠	Test Failed This Key On or Fault Active				
						Disable Conditions:		TCM: P0716, P0717, P0722, P0723					
								ECM: None					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CON	IDITIONS	TIME REG	QUIRED	MIL ILLUM.
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	= CeTFTI_e_Volta geDirectProp						Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>= 174 °C						
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<= 174 °C						
			Either condition above will satisfy the fail conditions					>= 60	Fail Time (Sec)	
					Ignition Voltage Lo	>= 8.59	96 Volts			
					Ignition Voltage Hi					
					Engine Speed Lo					
					Engine Speed Hi Engine Speed is within the allowable limits for	_				
					P0713 Status is	Tes Faile Thi	ed s On			
				Disable Conditions:		P0713, P0716, P0717, P0722,				
						P0723 ECM: None				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME	REQU	IRED	MIL ILLUM.
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	t >= 881.75 RPM					>=		Fail Time (Sec)	One Trip
					Engine Torque is	>=	0	N*m				
					Engine Torque is		8191.9					
					Engine Speed		500	RPM				
					Engine Speed	<=	7500	RPM				
					Engine Speed is within the allowable limits for		5	Sec				
					Vehicle Speed is	>=	0	Kph				
					Throttle Position is	>=	0	Pct				
					Transmission Input Speed is	>=	0	RPM				
					The previous requirement has been satisfied for	>=	0	Sec				
					The change (loop to loop) in transmission input speed is	<	8191	RPM/L oop				
					The previous requirement has been satisfied for	>=	0	Sec				
					Throttle Position Signal Valid		TRUE	Boolean	ı			
					Engine Torque Signal Valid		TRUE	Boolean	l			
					Ignition Voltage			Volts				
					Ignition Voltage	<=	31.999	Volts				
					P0716 Status is not	=	Test Failed This Key On or Fault Active					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME	REQU	IRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0717, P0752, P0973, P0974 ECM: P0101, P0102, P0103, P0121, P0122, P0123						
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	<u>Fail</u> <u>Case 1</u> Transmission Inpu Speed is		32.625	RPM					>=		Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Tes Failed and Transmissior Input Speed is	t 	653.125	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
							Engine Torque is	>=	50	N*m				
							Engine Torque is		8191.9	N*m				
							Vehicle Speed		16	Kph				
							Engine Torque Signal Valid			Boolean				
							Ignition Voltage		8.5996	Volts				
							Ignition Voltage		31.999	Volts				
							Engine Speed	>=	500	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							P0717 Status is not	=	Test Failed This Key On or Fault Active					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE	E CONDITIONS	TIME REQUI	RED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723 ECM: P0101, P0102, P0103				
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<= 100	RPM	P0722 Status is not Transmission Input Speed Check Engine Torque Check Throttle Position Transmission Fluid Temperature Disable this DTC if the PTO is active Engine Torque Signal Valid Throttle Position Signal Valid Ignition Voltage is Ignition Voltage is Engine Speed is The Engine Torque Check is TRUE, if either of the two following conditions are TRUE	>= >= = = =	Test Failed This Key On or Fault Active TRUE Boolean 14.999 Pct -40 C 1 Boolean TRUE Soolean TR	>= 3	Fail Time Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Torque Condition 1			
					Shift Status is not OR			
					Transmission Range is	Dadica		
					Engine Torque is	>= 8191.8 N*m		
					Engine Torque is			
					Engine Torque Condition 2			
					Engine Torque is			
					Engine Torque is			
					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	>= 653.13 RPM		
					Transmission Input Speed is			
					TIS Check Condition 2			
					Engine Speed without the brake	>= 2200 DDM		
					applied is Engine Speed with the brake			
					applied is	>= 3200 RPIVI		
					Engine Speed is Controller uses a single power			
					supply for the speed sensors	= Boolean		
					Powertrain Brake Pedal is Valid	= TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE	E CONDITIONS	TIME	E REQ	UIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0723 ECM: P0101, P0102, P0103, P0121, P0122, P0123					
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	>=	3000	RPM				>=	0	Enable Time (Sec)	One Trip
			Output Speed Delta	<=	8191	RPM				>=	0	Enable Time (Sec)	
			Output Speed Drop	>	3000	RPM				>=	1.5	Output Speed Drop Recove r Fail Time (Sec)	
							Range_Disable		FALSE Boolean				
							Neutral_Range_Enable And Neutral_Speed_Enable are TRUE concurrently	=	TRUE Boolean				
							Transmission_Range_Enable Transmission_Input_Speed_Enab		TRUE Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					Engine Torque Signal Valid		TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active		1	Boolean		
					Ignition Voltage is	>=	8.5996	Volts		
					Ignition Voltage is	<=	31.999	Volts		
					Engine Speed is	>=	500	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission_Input_Speed_Enab le 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 satisfied for	>=	0	Enable Time (Sec)		
					Input Speed Delta	<=	4095.9	RPM		
					Raw Input Speed		500	RPM		
					TIS Condition 2 is TRUE when ALL of the next three conditions		•	DDM		
					Input Speed A Single Power Supply is used for all speed sensors		0 TRUE	RPM Boolean		_

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Powertrain Brake Pedal Applied is	= FALSE Boolean		
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	Revers e/Neutr = al ENUM Transiti onal		
					Transmission Range is	Neutral /Drive Transiti onal		
					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is	= Park ENUM		
					Transmission Range is	Park/R everse Transiti onal		
					Input Clutch is not	ON = (Fully Applied ENUM)		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satisfied for	> 409.59 Seconds		
					Transmission Output Speed	> 0 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					And the acceleration of the Transmission Output Speed is			
					And the acceleration of the Transmission Output Speed is	RPM/L > 0 oop Rate		
					Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE			
					Transmission Range is	= Neutral ENUM		
					Transmission Range is	Revers e/Neutr = al ENUM Transiti onal		
					Transmission Range is	Neutral - /Drive Transiti onal		
					Range Change Delay Timer	>= 5 Sec		
				Disable Conditions:		TCM: P0973, P0974, P0976, P0977		
						ECM: P0101, P0102, P0103, P0121, P0122, P0123		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIMI	E REQ	UIRED	MIL ILLUM.
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure		800	Кра					>=	2	Enable Time (Sec)	Two Trips
			Either Condition (A) or (B) Must be Met											
			(A) TCC Slip Error @ TCC On Mode	>=	Refer to Table in Supporting Documents						>=	6	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode	>=	130	RPM					>=	6	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	2	TCC Stuck Off Fail Counte r	
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	31.999	Volts				
							Engine Speed	>=	500	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for		5	Sec				
							Engine Torque Lo	>=	50	N*m				
							Engine Torque Hi	<=	1492	N*m				
							Throttle Position Lo	>=	8.0002	Pct				
							Throttle Position Hi		99.998					
							2nd Gear Ratio Lo	>=	2.1985 2.5295					
							2nd Gear Ratio High 3rd Gear Ratio Lo	<= >=	1.4248					
							3rd Gear Ratio High		1.6393					
							4th Gear Ratio Lo	>=	1.0714					
							4th Gear Ratio High		1.2327					
							5th Gear Ratio Lo		0.7924	Ratio				
							5th Gear Ratio Hi	<=	0.9116	Ratio				
							6th Gear Ratio Lo	>=	0.6204	Ratio				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	E CONDIT	ΓIONS	TIME REQUIRED	MIL ILLUM.
					6th Gear Ratio High		0.7137	Ratio		
					Transmission Fluid Temperature Lo	>=	20	°C		
					Transmission Fluid Temperature Hi	<=	130	°C		
					TCC Command Lock ON or ON		TRUE E	Boolean		
					mode PTO Not Active		TRUE E			
					Engine Torque Signal Valid		TRUE E			
					Throttle Position Signal Valid		TRUE E	Boolean		
					Dynamic Mode	=	FALSE E	Boolean		
					P0741 Status is	≠	Test Failed This Key On or Fault Active			
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764				
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed TCC Slip Speed If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	d <= 13 RPM	Run TCC Stuck On Test Enable Criteria: Gear Ratio		Fail >= 2.5 Time (Sec) Fail >= 6 Counte r	One Trip
					Gear Ratio Gear Ratio Gear Ratio Engine Speed Hi Engine Speed Lo Vehicle Speed HI Vehicle Speed Lo Stuck On During Upshift Enabled If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>= 0.6204 Ratio <= 6500 RPM >= 500 RPM <= 511 KPH >= 16 KPH = 0 Boolean >= 55 Nm		

FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
				Down Shift In Progress	=	FALSE	Boolean		
				Current Gear	¥	1st Gear Locked	Boolean		
				Engine Torque Hi	<=	1492	Nm		
				Engine Torque Lo		115	Nm		
				Current Range	≠	Neutral	Range		
				Current Range	≠	Reverse	Range		
				Transmission Sump Temperature	<=	130	°C		
				Transmission Sump Temperature		20	°C		
				Throttle Position Hyst High		8.0002	Pct		
				Throttle Position Hyst Low		2.9999	Pct		
				PTO Active		FALSE	Boolean		
				Disable if in D1 and value true			Boolean		
				Disable if in D2 and value true			Boolean		
				Disable if in D3 and value true			Boolean		
				Disable if in D4 and value true			Boolean		
				Disable if in D5 and value true			Boolean		
				Disable if in MUMD and value true Disable if in TUTD and value true			Boolean Boolean		
				4 Wheel Drive Active		FALSE			
				Hydraulic Clutch Air Purge Active	=	FALSE	Boolean		
				Ignore Air Purge if value = true	=	0	Boolean		
				TCC Mode	=	OFF			
				Common Enables:					
				Ignition Voltage	>=	8.5996	V		
				Ignition Voltage	<=	31.999	V		
				Vehicle Speed	<=	511	KPH		
				Engine Speed	>=	500	RPM		
				Engine Speed		7500	RPM		
				Engine Speed is within the allowable limits for		5	Sec		
				Engine Torque Signal Valid	=	TRUE	Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	Throttle Position Signal Valid P0742 Status is MIL not Illuminated for DTC's:	Test Failed This ≠ Key On or Fault Active TCM: P0716, P0717, P0722, P0723, P0741, P2763, P2764 ECM: P0101,		
						P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301,		
						P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E+ W597		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIM	E REQ	UIRED	MIL ILLUM.
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commanded Gear Slip	>=	200	RPM								Two Trips
			Commanded Gear	=	1st Lock	rpm								
			Gear Ratio	<=	1.209594727						>=	0.3	Fail Tmr	
			Gear Ratio	>=	1.094360352						=	8	Fail	
			If the above parameters		1.094300332							U	Counts	
			are true											
											≠	0	Neutral Timer	
											7	U	(Sec)	
													Fail	
											>=	0.3	Timer (Sec)	
											>=	8	Counts	
							Ignition Voltage Lo	>=	8.5996	Volts			Counto	
							Ignition Voltage Hi		31.999	Volts				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi Engine Speed is within the		7500	RPM				
							allowable limits for	>=	5	Sec				
							Transmission Fluid Temperature	>=	0	°C				
							Shift is Complete							
							TPS		0.5005	%				
							OR Output Speed		0	RPM				
							Throttle Position Signal Valid from	_		Boolean				
							ECM		IIIOL	Doolcan				
							Engine Torque Signal Valid from ECM, High side driver is enabled		TRUE	Boolean				
							High-Side Driver is Enabled	=	TRUE	Boolean				
							Input Speed Sensor fault		FALSE					
							Output Speed Sensor fault	=	FALSE	Boolean				
			_				Default Gear Option is not present	=	TRUE					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Di Condi	sable MIL not Illuminated for DTC's tions:	: TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174,		
						P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300,		
						P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip Commanded Gear					One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHO	D VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIME REQUIRE	O MIL ILLUM.
			Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	= TRUE	Boolean						
			C456/CBR1 Pressure Switch	= Pressurized	Boolean						
			C456/CBR1 Pressure Switch Fault If the above parameters are true	= FALSE	Boolean						
										Please Refer to Table 16 in Tim Support ing Docum ents	er c)
						Invition Voltage Le		8.5996	Volts	>= 5 Cou	nts
						lgnition Voltage Lo Ignition Voltage Hi		31.999			
						Engine Speed Lo		500	RPM		
						Engine Speed Hi		7500	RPM		
						Engine Speed is within the allowable limits for	>=	5	Sec		
						High-Side Driver is Enabled	=	TRUE	Boolean		
						Throttle Position Signal Valid from ECM	=	TRUE	Boolean		
						Output Speed	>=	0	RPM		
						OR					
						TPS		0.5005	%		
						Shift is Complete					
						Transmission Fluid Temperature		0	°C		
						Input Speed Sensor fault			Boolean		
						Output Speed Sensor fault	=		Boolean	1	
						Default Gear Option is not present	=	TRUE			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171,		
						P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206,		
						P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	<u>Fail</u> Case 1 Commanded Gear	= 1st Locked		P0306, P0307, P0308, P0401, P042E		One Trip

	AULT	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQI	JIRED	MIL ILLUM.
			Gear Box Slip	>=	200	RPM					R T: >= S:	Please efer to able 5 in upport ing locum ents	Neutral Timer (Sec)	
			Intrusive Shift to 2nd Commanded Gear Previous	=	1st Locked	Gear								
			Gear Ratio Gear Ratio If the above parameters		2.482177734 2.245849609									
			are true				1-2* V-M I		0.5000	Volta	>= >=	1 5	sec counts	
							lgnition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 31.999					
							Engine Speed Lo	>=	500	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							Output Speed	>=	0	RPM				
							OR							
							TPS	>=	0.5005	%				
							Shift is Complete		0	00				
							Transmission Fluid Temperature		0	°C				
							High-Side Driver is Enabled Throttle Position Signal Valid from			Boolean				
							ECM	=		Boolean				
							Input Speed Sensor fault	=	FALSE					
							Output Speed Sensor fault		FALSE	Boolean				
							Default Gear Option is not present	=	TRUE					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				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, P03006, P0307, P0308, P0401,		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	<u>Fail</u> <u>Case 1</u> Case: Steady State 3rd Gear Commanded Gear			P042E		One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gearbox Slip	>= 200 Rpm			Please Refer to Table 5 In Timer Support ing Docum ents	
			Intrusive Test: Command 4th Gear					
			If attained Gear=4th gear for Time	Table Based Time Please >= Refer to Table 3 in supporting documents Table Based Enable Time (Sec)				
			It the above conditions are true, Increment 3rd gear fail counter				3rd Gear Fail Counts or	
			and C35R Fail counter				3-5R Clutch Fail Counts	
			Fail Case: Steady State 5th Case 2 Gear Commanded Gear					
			Gearbox Slip				Please Refer to Table 5 in Neutral Support ing Docum ents	
			Intrusive Test: Command 6th Gear				55	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIO	NS T	TIME REC	QUIRED	MIL ILLUM.
			If attained Gear=6th gear Time	Table Based Time Please >= Refer to Table 3 in supporting documents Compared to the compare							
			It the above conditions are true, Increment 5th gear fail counter					>	= 2	5th Gear Fail Counts or	
			and C35R Fail counter				511.05.0	>	= 14	3-5R Clutch Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag	=	FALSE Boo FALSE Boo TRUE Boo	lean lean			
					Hydraulic System Pressurized Minimum output speed for RVT A OR B	= >=	TRUE Boo	lean			
					(A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria	>= >=	650 RI 0.5005 P				
					lgnition Voltage Lo Ignition Voltage Hi Engine Speed Lo	>= <= >=	8.5996 Vo 31.999 Vo 500 RI	Its			
					Engine Speed Hi Engine Speed is within the allowable limits for Throttle Position Signal valid	>=	7500 RI 5 S TRUE Boo	ec			
					HSD Enabled Transmission Fluid Temperature	= >=	TRUE Boo	lean			
					Input Speed Sensor fault Output Speed Sensor fault		FALSE Boo				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:				
						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,		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B Stuck On [C35R] (Steady State)	<u>Fail</u> <u>Case 1</u> Case: Steady State 1st Attained Gear slip			P0401, P042E		One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table 4 in supporting documents Table Based Enable Time (Sec)				
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio	<= 1.608642578				
				>= 1.455444336			Fail	
							>= 1.1 Timer (Sec)	
							>= 2 count in 1st Gear	
			Fail Case: Steady State 2nd				Total >= 3 Fail Counts	
			Fail Case: Steady State 2nd Case 2 gear Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting				
			Min Delta Output Speed Hysteresis	documents Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				

COMPONENT/ SYSTEM FAI	ULT MONITOR S DDE DESCRII		MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table Sec 19 in supporting documents				
			Intrusive test: (CB26 clutch Gear Ratio Gear Ratio If the above parameters					
			if the above parameters are true				Fail >= 1.1 Timer (Sec)	
							>= 1 Fail Count in 2nd Gear or	
		<u>Fail</u> <u>Case</u>	Case: Steady State 4th <u>e 3</u> gear				Total >= 3 Fail Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				

COMPONENT/ SYSTEM FA	AULT ODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table Sec 19 in supporting documents				
			Intrusive test: (C1234 clutch Gear Ratio Gear Ratio If the above parameters	<= 0.89465332				
			ir the above parameters are true				Fail >= 1.1 Timer (Sec) Fail	
							>= 1 Count in 4th Gear or Total	
			<u>Fail</u> Case: Steady State 6th <u>Case 4</u> gear				>= 3 Fail Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME REQUIRE	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table Sec 19 in supporting documents					
			Intrusive test: (CB26 clutch						
			Gear Ratio	<= 0.89465332				Fa >= 1.1 Tim (Se	er
			Gear Ratio If the above parameters are true	>= 0.809448242				>= 1 cour	ts
								Fa >= 1.1 Tim (Se	er
								Fa >= 1 Cou in 6 Gea	nt h
								or Tot: >= 3 Fa Coui	
					PRNDL State defaulted inhibit RVT		FALSE Boolean		
					IMS fault pending indication output speed TPS validity flag	>=	FALSE Boolean 0 RPM TRUE Boolean		
					HSD Enabled Hydraulic_System_Pressurized Minimum output speed for RVT	=	TRUE Boolean TRUE Boolean 0 Nm		
					A OR B (A) Output speed enable		650 Nm		

COMPONENT/ SYSTEM FA	AULT	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITION	S TIME REQUIRED	MIL ILLUM.
COMPONENT/ SYSTEM FACE	AULT		MALFUNCTION CRITERIA	THRESHOLD VALUE Disable Conditions:	(B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault	>= 0.5005 Nr >= 8.5996 Vol <= 31.999 Vol >= 500 RP <= 7500 RP <= 7500 RP >= 5 Se >= 5.0003 Pc <= 1492 Nr >= 0 °C = FALSE Boold = FALSE Boold TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108,	n ss ss will will be standard to the standard	MIL ILLUM.
						P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	= TRUE	Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized					
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command					
			Range Shift Status Attained Gear Slip	Control	RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:						
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 1.200195313	Fail Time (Sec)				

FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		fail timer 1 (3-2 shifting with Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (3-2 shifting with Closed Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (3-4 shifting with Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (3-4shifting with Closed Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (3-5 shifting with Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (3-5 shifting with Closed Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (5-3 shifting with Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (5-3 shifting with Closed Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (5-4 shifting with Throttle)	>=	1.200195313	Fail Time (Sec)				
		fail timer 1 (5-4 shifting with Closed Throttle)	>=	1.200195313	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (5-6 shifting with Throttle)	th >= 1.200195313 Fail Time				
			fail timer 1 (5-6 shifting with Closed Throttle)	ed >= 1.200195313				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers	al			Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer sec 1, and Referen ce Support ing Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter	nt ail ail				
			3rd gear fail counter	er			3rd >= 3 gear fail counts OR	
			5th gear fail counter	er			5th >= 3 gear fail counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		ENABLE CONDITIONS		E REC	QUIRED	MIL ILLUM.
			Total fail counter						>=	5	OR total fail counts											
					Trans oil temperature	>	0	°C														
					Input Speed Sensor fault		FALSE	Boolean	ı													
					Output Speed Sensor fault	=	FALSE	Boolean	ı													
					Command / Attained Gear	≠	1st	Boolean	ı													
					High Side Driver ON	=	TRUE	Boolean	ı													
					output speed limit for TUT	>=	350	RPM														
					input speed limit for TUT	>=	200	RPM														
					TUT Enable temperature	>=	0	°C														
					PRNDL state defaulted	=	FALSE	Boolean	l													
					IMS Fault Pending	=	FALSE	Boolean	ı													
					Service Fast Learn Mode			Boolean														
					HSD Enabled	=	TRUE	Boolean	ı													
					Default Gear Option is not present	=	TRUE															

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	<u>Fail</u> <u>Case 1</u> Case: Steady State 4th Gear					One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Gear slip	>= 200 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 5th gear If attained Gear ≠5th for	Table Based Time Please >= Refer to Table 3				
			time if the above conditions have been met	documents				
			Increment 4th Gear Fail Counter				>= 2 4th Gear Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			Fail Case: Steady State 5th Case 2 Gear				Please See	
			Gear slip	>= 200 RPM			Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 6th gear					

COMPONENT/ SYSTEM FAU	JLT MONITOR STRATEGY DE DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		If attained Gear ≠ 6th for time					
		if the above conditions have been met					
		Increment 5th Gear Fail Counter				5th Gear Fail Count	
		and C456 Fail Counters				C456 >= 14 Fail Counts	
		<u>Fail</u> <u>Case 3</u> Case: Steady State 6th Gear					
		Gear slip	>= 200 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
		Intrusive test: commanded 5th gear					
		If attained Gear ≠ 5th for time					
		if the above conditions have been met					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Increment 6th Gear Fail Counter and C456 Fail Counter				>= 2 6th Gear Fail Count	
			and C456 Fail Counter				OR C456 >= 14 Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Throttle Position Signal valid HSD Enabled	= FALSE Boolea = FALSE Boolea = TRUE Boolea = TRUE Boolea >= 0 RPM >= 650 RPM >= 0.5005 Pct >= 8.5996 Volts <= 31.999 Volts >= 500 RPM <= 7500 RPM >= 5 Sec = TRUE Boolea = TRUE Boolea	n n n	
					Transmission Fluid Temperature Input Speed Sensor fault OutputSpeed Sensor fault Default Gear Option is not present	= FALSE Boolea = FALSE Boolea		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	MIL not Illuminated for DTC's:	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, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401,		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip			P042E		One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table 4 in supporting documents Table Based Enable Time (Sec)				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio Gear Ratio If the above parameters are true	>= 1.094360352				
							>= 1.1 Fail >= 1.1 Timer (Sec)	
							Fail Count in 1st Gear	
							or Total >= 3 Fail Counts	
			Fail Case Steady State 2nd					
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table Sec 19 in supporting documents				
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio Gear Ratio If the above parameters are true	>= 1.094360352				
							>= 1.1 Fail >= 1.1 Timer (Sec)	
							>= 1 Fail Count in 2nd Gear or	
							Total >= 3 fail counts	
			Fail Case Steady State 3rd					
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				

COMPONENT/ SYSTEM FAULT CODE	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
	Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
	If the Above is True for Time					
	Intrusive test: (C35R clutch					
	Gear Ratio					
	Gear Ratio	>= 1.094360352				
	If the above parameters are true					
					Fail >= 1.1 Timer (Sec)	
					Fail >= 1 Count in 3rd Gear	
					OR	
					Total >= 3 Fail Counts	
			PRNDL State defaulted			
			inhibit RVT			
			IMS fault pending indication output speed			
			TPS validity flag			
			HSD Enabled	= TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Hydraulic_System_Pressurized	=	TRUE	Boolean		
					Minimum output speed for RVT	>=	0	Nm		
					A OR B					
					(A) Output speed enable	>=	650	Nm		
					(B) Accelerator Pedal enable	>=	0.5005	Nm		
					Ignition Voltage Lo	>=	8.5996			
					Ignition Voltage Hi	<=				
					Engine Speed Lo		500	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable		20	Nm		
					if Attained Gear=1st FW Engine Torque Enable	/=	1492	Nm		
					Transmission Fluid Temperature	>=	0	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				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, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)					One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Primary Oncoming Clutch Pressure Command Status	Ш	Maximum pressurized					
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command					
			Range Shift Status Attained Gear Slip		Initial Clutch Control 40	RPM				
			If the above conditions are true increment appropriate Fail 1 Timers							
			Below: fail timer 1 (4-1 shifting with throttle) fail timer 1		1.200195313	Fail Time (Sec) Fail Time				
			(4-1 shifting without throttle) fail timer 1 (4-2 shifting with throttle)		1.200195313	(Sec) Fail Time (Sec)				
			throttle) fail timer 1		1.200195313 1.200195313	Fail Time (Sec) Fail Time				
			(4-3 shifting with throttle) fail timer 1 (4-3 shifting without throttle)		1.200195313	(Sec) Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle) fail timer 1		1.200195313	Fail Time (Sec) Fail Time				
			(5-3 shifting without throttle) fail timer 1 (6-2 shifting with throttle)		1.200195313 1.200195313	(Sec) Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>=	1.200195313	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and Referen ce Support ing Table 15 for	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Fail	
			4th gear fail counter				Fail Counte >= 3 r From 4th Gear OR	:
			5th gear fail counter				Fail Counte >= 3 r From 5th Gear	÷
			6th gear fail counter				OR Fail Counte >= 3 r From 6th Gear OR	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE CONE	ITIONS	TIM	IE REQ	UIRED	MIL ILLUM.
			Total fail counter						>=	5	Total Fail Counte r	
					Trans oil temperature	>	0	°C				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				
					Command / Attained Gear	≠	1st	Boolean				
					High Side Driver ON	=	TRUE	Boolean				
					output speed limit for TUT	>=	350	RPM				
					input speed limit for TUT		200	RPM				
					TUT Enable temperature		0	°C				
					PRNDL state defaulted			Boolean				
					IMS Fault Pending			Boolean				
					Service Fast Learn Mode			Boolean				
					HSD Enabled	=	TRUE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Tap Up Switch Stuck in Case 1 the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range					Special No Trip
			2 Enabled Tap Up Switch Stuck in the Up Position in Range 3 Enabled	= 0 Boolean				

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Т	HRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQU	JIRED	MIL ILLUM.
			Tap Up Switch O NOTE: Both Failcase and Failcase 2 Must E M	:1 Se	TRUE	Boolean					>=	600	Fail Time (Sec)	
							Time Since Last Range Change	>=	1	Enable Time (Sec)				
							Ignition Voltage Lo		8.5996	Volts				
							Ignition Voltage Hi		31.999	Volts				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							P0815 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761						
								ECM: None						
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Tap Down Switch Stude Case 1 in the Down Position Range 1 Enable	in =	0	Boolean								Special No Trip
			Tap Down Switch Stud in the Down Position Range 2 Enable	in =	0	Boolean								
			Tap Down Switch Stud in the Down Position Range 3 Enable	in =	0	Boolean								

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFI	UNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				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	
			<u>Fail</u> Case 2	Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean				
				Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean				
				Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean				
				Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean				
				Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean				
				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	II	0	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABL	E COND	TIONS	TIM	E REQI	JIRED	MIL ILLUM.
			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	
			IVICO				Time Since Last Range Change	>=	1	Enable Time (Sec)				
							Ignition Voltage Lo		8.5996	Volts				
							Ignition Voltage Hi		31.999	Volts				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi Engine Speed is within the allowable limits for		7500 5	RPM Sec				
							P0816 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	P0815, P0826, P182E, P1876, P1877,						
								P1915, P1761 ECM: None						
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	II	TRUE	Boolean					,	60	Fail Time (Sec)	Special No Trip
							Ignition Voltage Lo	>=	8.5996	Volts				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0826 Status is	>= 500 RPM <= 7500 RPM >= 5 Sec Test Failed This		
				Disable Conditions:		TCM: P1761 ECM: None		
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>= See Table 8 for Delay Timer Cal	Transmission Fluid Temperature Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= 120 °C >= 8.5996 Volts <= 31.999 Volts >= 500 RPM	>= 18 Fail Counts	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min	= FALSE = TRUE = Normal = TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>= See Table 8 for Delay Timer Cal			>= 20 Fail >= Counts	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI) VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition		kpa						
						Transmission Fluid Temperature Lo Transmission Fluid Temperature	>=	0	ů		
						Hi Ignition Voltage Lo	<=	120 8.5996	°C Volts		
						Ignition Voltage Hi		31.999	Volts		
						Engine Speed Lo		500	RPM		
						Engine Speed Hi		7500	RPM		
						Engine Speed is within the allowable limits for		5	Sec		
						Default Gear Action	=	FALSE			
						High Side Driver ON	=	TRUE			
						RVT Status	=	Normal			
						Hydraulic Pressure Available		TRUE			
						Engine Speed Min	>=	550	RPM		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>= See Table 6 for Sec Delay Timer Cal	Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min	\= \<= \<= \	0 120 8.5996 31.999 500 7500 5 FALSE TRUE Normal TRUE 550	°C °C Volts Volts RPM RPM Sec	>= 5 Fail Counts	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	>= See Table 6 for Sec Delay Timer Cal	Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= 120 C	>= 8 Fail Counts	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REC	UIRED	MIL ILLUM.
					Disable Conditions:	Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min MIL not Illuminated for DTC's:	>= = = = = = = = = = = = = = = = = = =	7500 5 FALSE TRUE Normal TRUE 550	RPM Sec			
							P182E ECM: None					One Trip
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage	The HWIO reports an low voltage (ground short) error flag	= TRUE	Boolean					>= 0.3 out of 0.375	Fail Time (Sec) Sample Time (Sec)	One Hip
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for		8.5996 31.999 500 7500 5	Volts Volts RPM RPM Sec		·	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME R	EQUIRED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None					
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage	The HWIO reports an high voltage (open or power short) error flag	= TRUE	Boolean					>= 0.3 out of 0.33	(Sec) Sampl	е
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= >= >= >=	8.5996 31.999 500 7500 5				
					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	The HWIO reports an low voltage (ground short) error flag	= TRUE	Boolean					>= 0.3 out 0.33	(Sec) Sampl	е
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996 31.999 500 7500 5				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0966 Status is not	Test Failed This = Key On or Fault Active		
				Disable Conditions:		TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage	The HWIO reports an high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Time (Sec) out 0.375 Time of 0.375 Time	One Trip
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.999 Volts >= 500 RPM <= 7500 RPM >= 5 Sec Test Failed This	OI (Sec)	
				Disable Conditions:	P0967 Status is not MIL not Illuminated for DTC's:	or Fault Active		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABLE CONDI	TIONS	TIME REQU	JIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage	The HWIO reports an low voltage (ground short) error flag	= TRUE	Boolean					Fail Time (Sec) Sample Time (Sec)	One Trip
						P0970 Status is not	Test Failed This = Key On or Fault Active				
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.999 >= 500 <= 7500	Volts Volts RPM RPM Sec			
					Disable Conditions:		TCM: None ECM: None				
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage	The HWIO reports an high voltage (open or power short) error flag	= TRUE	Boolean				>= 0.3 out 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip
						P0971 Status is not Ignition Voltage	or Fault Active	Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIM	E REQI	UIRED	MIL ILLUM.
					Ignition Voltage	<=	31.999	Volts				
					Engine Speed		500	RPM				
					Engine Speed		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
				Disable Conditions:	MIL not Illuminated for DTC's:	None						
						ECM: None						
Shift Solenoid	P0973	Shift Solenoid A Control Circuit Low	The HWIO reports an low voltage (ground short) error flag	= TRUE Boolean					>=	1.2	Fail Time (Sec)	One Trip
									out of	1.5	Sample Time (Sec)	
					P0973 Status is not	=	Test Failed This Key On or Fault Active					
					Ignition Voltage	>=	8.5996	Volts				
					Ignition Voltage		31.999					
					Engine Speed		500	RPM				
					Engine Speed		7500	RPM				
					Engine Speed is within the allowable limits for		5	Sec				
				Disable Conditions:	MIL not Illuminated for DTC's:	None						
						ECM: None						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIMI	E REQ	UIRED	MIL ILLUM.
Shift Solenoid	P0974	Shift Solenoid A Control Circuit High	The HWIO reports an high voltage (open or power short) error flag	=	TRUE	Boolean					>=	1.2	Fail Time (Sec)	Two Trips
											out of	1.5	Sample Time (Sec)	
							P0974 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage	>=	8.5996					
							Ignition Voltage	<=	31.999	Volts				
							Engine Speed	>=	500	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:		TCM: None						
								ECM: None						
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High	The HWIO reports an high voltage (open or power short) error flag		TRUE	Boolean					>=	1.2	Sec	One Trip
											out of	1.5	Sec	
							P0977 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage	>=	8.5996					
							Ignition Voltage	<=	31.999					
							Engine Speed	>=	500	RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None				
						ECM: None				
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulio pressure							Special No Trip
			Hydraulic Delay Timer (Table Based)							
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter						>= 18 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa						
					Transmission Fluid Temperature	>=	0	°C		
					Transmission Fluid Temperature Hi	<=	120	°C		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi Engine Speed Lo	<=	31.999	Volts RPM		
					Engine Speed Lo Engine Speed Hi	>= <=	500 7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action	=	FALSE			
					High Side Driver ON RVT Status	=	TRUE Normal			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	Hydraulic Pressure Available Engine Speed Min MIL not Illuminated for DTC's:	>= 550 RPM		
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>= See Table 9 for Sec Delay Timer Cal			>= 15 Fail Counts	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Fluid Temperature Lo	>=	0	°C		
					Transmission Fluid Temperature	<=	120	°C		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.999	Volts		
					Engine Speed Lo	>=	500	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action		FALSE			
					High Side Driver ON		TRUE			
					RVT Status		Normal			
					Hydraulic Pressure Available		TRUE			
					Engine Speed Min	>=	550	RPM		
				Disable Conditions		TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0777, P0973, P0974, P0976, P0977, P1915, P182E ECM: None				
Mode 2 Multiplex Valve	P1751	Shift valve 1 performance	Attained Gear Slip is If Slip is Greater than the Above Cal Increment Fail Counter & Sample Counter						>= 5 Fail Counts	Two Trips

COMPONENT/ SYSTEM FAUL COD	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Out 5 Sample of Counts	
			Once this evaluation is complete the system will allow the valve to get back into position by delaying the next test for	= 1 Seconds		
			M2 Solenoid is Commanded On	= TRUE Boolean		
			Current Gear ≠ 2nd Gear	≠ 2nd Gear Gear		
			Calculated line pressure is	>= 1300 kPa		
			The test can begin when the M2 valve is verified to be in place because absolute value of attained gear slip and commanded gear slip is	<= 110 RPM		
			Test is delayed by a calibrated amount of time to allow the M2 valve to get into position	= 0.5 Sec		
			Upshift is In Progress	= FALSE Boolean		
			Input Speed Sensor Signal Hys High (enabled above this value)	>= 1175 RPM		
			Input Speed Sensor Signal Hyst Low (disabled below this value)	<= 900 RPM		
			The torque converter clutch has transition from Locked to Unlocked.			
			TCC Stuck On Enable Criteria: Gear Ratio			

FAULT	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	E COND	DITIONS	TIME REQUIRED	MIL ILLUM.
				Gear Ratio	>=	0.6204	Ratio		
				Engine Speed Hi	<=	6500	RPM		
				Engine Speed Lo	>=	500	RPM		
				Vehicle Speed HI	<=	511	KPH		
				Vehicle Speed Lo	>=	16	KPH		
				Stuck On During Upshift Enabled	=	0	Boolean		
				If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	55	Nm		
				Down Shift In Progress	=	FALSE	Boolean		
				Current Gear		1st Gear Locked			
				Engine Torque Hi		1492	Nm		
				Engine Torque Lo		115	Nm		
				Current Range			I Range		
				Current Range	≠	Reverse	Range		
				Transmission Sump Temperature	<=	130	°C		
				Transmission Sump Temperature	>=	20	°C		
				Throttle Position Hyst High	>=	8.0002	2 Pct		
				Throttle Position Hyst Low	<=	2.9999	Pct		
				PTO Active	=	FALSE	Boolean		
				Disable if in D1 and value true	=	0	Boolean		
				Disable if in D2 and value true	=	0	Boolean		
				Disable if in D3 and value true	=	0	Boolean		
				Disable if in D4 and value true	=	0	Boolean		
				Disable if in D5 and value true	=	0	Boolean		
				Disable if in MUMD and value true	=	0	Boolean		
				Disable if in TUTD and value true	=	0	Boolean		
				4 Wheel Drive Active	=	FALSE	Boolean		
				Air Purge Active			Boolean		
				Ignore Air Purge if value = true		0	Boolean		
				TCC Mode		OFF			
				Common Enables:					

Ignition Voltage	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIO	NS TIME REQUIRED	MIL ILLUM.
P0202, P0203, P0204, P0205, P0206, P0207,						Ignition Voltage Vehicle Speed Engine Speed Engine Speed Engine Speed is within the allowable limits for Engine Torque Signal Valid Throttle Position Signal Valid	<= 31.999	/ PH PM PM ec	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	-	THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIM	E REQ	UIRED	MIL ILLUM.
								P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E						
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	=	TRUE	Boolean					>=	3	Fail Counter Sample Timer (Sec)	Special No Trip
							Tap Up Tap Down Message Health	=	TRUE	Boolean			(000)	
							Engine Speed Lo	>=	500	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected	=	TRUE	Boolean					>=	3	Fail Counter	Special No Trip
											>	10	Sample Timer (Sec)	
							Pattern Switch Message Health	=	TRUE	Boolean			(555)	
							Engine Speed Lo	>=	500	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRE	ESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Di: Condit	sable tions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	<u>Fail</u> <u>Case 1</u> Current range	= "Trans	itional 1" Range S	State				One Trip
					R_e_PR Range S _Drive6 R_e_PR Range S _Drive4					
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"		RUE Boolean					
			Engine Torque Engine Torque		50 Nm 91.75 Nm					
			If the above conditions are present Increment Fail Timer If Fail Timer has Expired then Increment Fail Counter						Fail >= 0.225 Second s >= 15 Fail Counts	
			Fail Current range S3 Pressure Switch indicates "Exhausted"	= TF	itional 1" Range S RUE Boolean					
			Commanded Gear If the above conditions are present Increment Fail Timer	= 1st L	ocked Gear				Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter						>= 15 Fail Counts	
			Fail. Case 3 Current range	= "Transi	tional 13"		Previous range	CeTR GR_e_ != PRND L_Driv e1		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean	Previous range	!=	CeTR GR_e_ PRND L_Driv e1		
			Engine Torque	>=	-8192	Nm	IMS is 7 position configuration	=	1 Boolean		
			Engine Torque	<=	8191.75	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satisfied when the "current range" = "Transitional 13"				
			If the above conditions are present Increment Fail Timer If Fail Timer has Expired then Increment Fail Counter							>= 0.225 Seconds >= 15 Fail Counts	
			Fail Case 4 Current range	=	"Transitional 2' or "Transitional 8"		Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					
			Steady State Engine Torque	>=	100	Nm					
			Steady State Engine Torque		8191.75	Nm					
			If the above conditions are present Increment Fail Timer							>= 0.225 Seconds	
			If the above Conditions have been met, Increment Fail Counter							>= 15 Fail Counts	
			Fail Current range		"Transitional						
			Engine Torque Either the S1 or S3	>=	-50	Nm					
			Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALF	UNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME REQUIRED	MIL ILLUM.
				If the above conditions are present Increment Fail Timer If the above Conditions have been met, Increment Fail Counter	t						>= 0.225 Second s >= 15 Fail Counts	
			Fail Case 6	Current range	=	"Illegal"		A Open Circuit Definition (flag set false if the following conditions are met):				
				or ECM Park/Neutral				Current Range	≠	"Transi tional		
				Message and	_	"Park/Neutral"		or Last positive state	≠	Neutral		
				Current Range	: ≠	Park, Neutral, Reverse, Transitional 8, or Transitional 11		or				
				and				Previous transitional state	≠	Transiti onal 8 and Illegal		
				A Open Circuit (See Definition)	=	FALSE	Boolean	and				
								PRNDL Circuit A PRNDL Circuit B PRNDL Circuit C	=	Open Circuit Closed Circuit Open		
								PRNDL Circuit P		Circuit Open Circuit		
			Fail	If the above Conditions are present, Increment Fail timer		DDND:					>= 6.25 Seconds	
			Fail Case 7	Current PRNDL State		PRNDL circuit ABCP = 1101						
				Previous valid state	=	PRNDL encoded value of ABCP =1111						
				Input Speed	>=	150	RPM					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Т	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			Reverse Trans Ratio	<= 2	2.795898438 ratio						
			Reverse Trans Ratio	>= 3	3.149047852 ratio						
			If the above Conditions are present, Increment							>= 6.25 Seconds	
			Fail timer							7- 0.20 Occords	
			P182E will report test fail								
			when any of the above 7 fail cases are met								
						Ignition Voltage Lo	>=	8.5996	Volts		
						Ignition Voltage Hi	<=	31.999	Volts		
						Vehicle Speed Lo	<=	511	KPH		
						Engine Speed Lo		500	RPM		
						Engine Speed Hi		7500	RPM		
						Engine Speed is within the allowable limits for	>=	5	Sec		
						Engine Torque Signal Valid		TRUE	Boolean		
					Disable	MIL not Illuminated for DTC's:	TCM:				
					Conditions:		P0722, P0723				
							ECM: P0101,				
							P0102,				
							P0103, P0106,				
							P0106, P0107,				
							P0108,				
							P0171, P0172,				
							P0174,				
							P0175, P0201,				
							P0202,				
							P0203,				
							P0204, P0205,				
							P0206,				
							P0207, P0208,				
							P0300,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME F	EQUIRED	MIL ILLUM.
								P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E					
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is		Park or Neutra	I Enumeration							One Trip
			must occur Sequentially Initial Engine speed Then	<=	50	RPM					>= 0.2	Enable 25 Time (Sec)	-
			Engine Speed Between Following Cals Engine Speed Lo Hist		50	RPM							
			Engine Speed Hi Hist	<=	480	RPM					>= 0.00	Enable 888 Time (Sec)	-
			Then Final Engine Speed Final Transmission Input Speed	>=	525 200	RPM RPM					>= 1.1		
			Speed				DTC has Ran this Key Cycle? Ignition Voltage Lo Ignition Voltage His Ignition Voltage Hyst High (enables above this value) Ignition Voltage Hyst Low (disabled below this value)	= >= <= >= <=	FALSE 6 31.999 6 2	Boolean V V V		(Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI) VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME	REQUIRED	MIL ILLUM.
							P1915 Status is	≠	Test Failed This Key On or Fault Active			
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723 ECM: None				
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	Run crank active (based on voltage thresholds below) Ignition Voltage High Hyst (run crank goes true when above this value)	=	FALSE	Volts				>= 2	Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	ł	2	Volts				Out 2 of	Sample Counts (25ms loop)	
							Normal CAN Comm Enabled ECM run/crank active status		TRUE Boolean			
						Disable Conditions:		TCM: None ECM: None				
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case: Steady State 2nd Case 1 Gear							S	ease ee	One Trip
			Gear slip	>=	200	RPM				>= F Ne Ti	ole 5 Neutral for Timer utral (Sec) me	

COMPONENT/ SYSTEM FAUL CODE	T MONITOR STRATEGY E DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		Intrusive test: commanded 3rd gear If attained Gear = 3rd for Time If Above Conditions have been met Increment 2nd gear fail	Table Based Time Please see >= Table 2 in Supporting Documents			2nd Sear = 2 Fail Count	
		and CB26 Fail Count Fail Case: Steady State 6th Case 2 Gear				>= 14 Count Please See Table 5 Neutral	
		Gear slip Intrusive test: commanded 5th gear If attained Gear = 5th For Time	Table Based Time Please see >= Table 2 in (2002)			>= For Timer Neutral (Sec) Time Cal	
		For Time If Above Conditions have been met, Increment 5th gear fail counter	Supporting Documents			5th Sear Fail Count or CB26	
		and CB26 Fail Count		PRNDL State defaulted inhibit RVT IMS fault pending indication	= FALSE Boolean	>= 14 Fail Count	

TPS validity flag	COMPONENT/SYSTEM	DLD VALUE SECONDARY PARAMETERS ENABLE CONDITIONS TIME REQUIRED	ED MIL ILLUM
Minimum output speed for RVT >= 0 RPM		TPS validity flag = TRUE Boolean	
A OR B (A) Output speed enable >= 650 RPM (B) Accelerator Pedal enable >= 0.5005 Pct Common Enable Criteria Ignition Voltage Lc = 8.5996 Volts Ignition Voltage Lc = 31.999 Volts Engine Speed Lc >= 500 RPM Engine Speed Lc = 7500 RPM Engine Speed Lc = 7500 RPM Engine Speed In = 7500 RPM Engine S		Hydraulic System Pressurized = TRUE Boolean	
(A) Output speed enable (B) Accelerator Pedal enable (B) Accelerator Pedal enable (Common Enable Citteria Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed Hi Engine Speed Hi Engine Speed Is within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present Default Gear Option is not present Disable Conditions: MilL not Illuminated for DTC's: TCM: P0714, P0717, P0712, P0713, P0714, P0714, P0715, P0716, P0716, P0717, P0717, P0718, P0719, P0719		Minimum output speed for RVT >= 0 RPM	
(B) Accelerator Pedal enable		A OR B	
Common Enable Criteria Ignition Voltage Lc >= 8.5996 Volts		(A) Output speed enable >= 650 RPM	
Ignition Voltage Lo >= 8.5996 Volts Ignition Voltage Hi <= 31.999 Volts Engine Speed Lo >= 500 RPM Engine Speed is within the allowable limits for Throttle Position Signal valid HSD Enabled = TRUE Boolea Transmission Fluid Temperature >= 0 °C Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE Disable MIL not Illuminated for DTC's: TCM: P0717, P0722, P0723, P182E ECM: P0101,		(B) Accelerator Pedal enable >= 0.5005 Pct	
Ignition Voltage Hi <= 31.999 Volts Engine Speed Lo >= 500 RPM Engine Speed Hi <= 7500 RPM Engine Speed I within the allowable limits for Throttle Position Signal valid = TRUE Boolea HSD Enabled = TRUE Boolea Transmission Fluid Temperature >= 0 °C Input Speed Sensor fault Output Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present = TRUE Disable Conditions: MIL not Illuminated for DTC's: P0717, P0722, P0723, P182E ECM: P0101,		Common Enable Criteria	
Engine Speed Lo Engine Speed HI Engine Speed HI Engine Speed HI Engine Speed HI Engine Speed Is within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present Engine Speed Lo Sec 7500 RPM TRUE Boolea TRUE Boolea TRUE Boolea Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault FALSE Boolean Default Gear Option is not present TRUE TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101,			
Engine Speed Ii Engine Speed is within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present Disable Conditions: MIL not Illuminated for DTC's:			
Engine Speed is within the allowable limits for Throttle Position Signal valid = TRUE Boolea HSD Enabled = TRUE Boolea HSD Enabled = TRUE Boolea Transmission Fluid Temperature >= 0 °C Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE Disable Conditions: MIL not Illuminated for DTC's: TCM: P0716, P0717, P0722, P0723, P182E			
allowable limits for Throttle Position Signal valid Throttle Position Signal Value Transmission Fluid Temperature Transmissi			
HSD Enabled = TRUE Boolea Transmission Fluid Temperature >= 0 °C Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE Disable Conditions: MIL not Illuminated for DTC's: Conditions: TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101,		allowable limits for	
Transmission Fluid Temperature >= 0 °C Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE Disable Conditions: MIL not Illuminated for DTC's: TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101,			
Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE MIL not Illuminated for DTC's: TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101,		HSD Enabled = TRUE Boolea	
Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE Disable Conditions: MIL not Illuminated for DTC's: TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101,		Transmission Fluid Temperature >= 0 °C	
Output Speed Sensor fault = FALSE Boolean Default Gear Option is not present = TRUE Disable Conditions: MIL not Illuminated for DTC's: TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101,		Input Speed Sensor fault = FALSE Boolean	
Disable Conditions: MIL not Illuminated for DTC's: TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101,		Output Speed Sensor fault = FALSE Boolean	
Conditions: P0716, P0717, P0722, P0723, P182E ECM: P0101,		Default Gear Option is not present = TRUE	
P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174,		Conditions: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172,	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
								P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, 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 Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip If above conditions are true, increment appropriate Fail 1 Timers Below: fail timer 1 (2-1 shifting with throttle) fail timer 1 (2-1 shifting without throttle)	= = = = >=	TRUE Maximum pressurized Clutch exhaust command Initial Clutch Control 40 1.200195313	RPM Fail Time (Sec) Fail Time (Sec)				One Trip

	NITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		fail timer 1 (2-3 shifting with throttle) fail timer 1	>= 1.200195313	(360)				
		(2-3 shifting without throttle)	>= 1.20019531	(000)				
		fail timer 1 (2-4 shifting with throttle)	>= 1.200195313	Fail Time (Sec)				
		fail timer 1 (2-4 shifting without throttle)	>= 1.200195313	Fail Time (Sec)				
		fail timer 1 (6-4 shifting with throttle)	>= 1.20019531	Fail Time (Sec)				
		fail timer 1 (6-4 shifting without throttle)	>= 1.200195313	Fail Time (Sec)				
		fail timer 1 (6-5 shifting with throttle)	>= 1.200195313	Fail Time (Sec)				
		fail timer 1 (6-5 shifting without throttle)	>= 1.200195313	Fail Time (Sec)				
		If Attained Gear Slip is Less than Above Cal Increment Fail Timers					Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer sec 1, and Referen ce Support ing Table 15 for Fail Timer 2	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME	E REQ	UIRED	MIL ILLUM.
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter									
			2nd gear fail counter						>=	3	Fail Counter From 2nd Gear OR	
			6th gear fail counter						>=	3	Fail Counter From 6th Gear	
			total fail counter						>=	5	OR Total Fail Counter	
					Trans oil temperature		0	°C				
					Input Speed Sensor fault			Boolean				
					Output Speed Sensor fault			Boolean				
					Command / Attained Gear	≠	1st	Boolean				
					High Side Driver ON			Boolean				
					output speed limit for TUT		350	RPM				
					input speed limit for TUT		200	RPM				
					TUT Enable temperature		0	°C				
					PRNDL state defaulted	=		Boolean				
					IMS Fault Pending			Boolean				
					Service Fast Learn Mode			Boolean				
					HSD Enabled	=	IKUE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Toil	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, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E		One Trip
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip If the Above is True for Time	>= 200 RPM Table Based Time Please Enable Time				One Trip

COMPONENT/ SYSTEM CODE	T MONITOR STRATEGY E DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 2.482177734 >= 2.245849609			Fail >= 1.1 Timer (Sec) Fail Count in 1st Gear or	
		Fail Case: Steady State 3rd Case 2 Gear Max Delta Output Speed Hysteresis	Table Based value Please			Total >= 3 Fail Counts	
		Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
		If the Above is True for Time					
		Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 2.482177734 >= 2.245849609				

COMPONENT/ SYSTEM FAUL COD	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
	Eail Case: Steady State 4rd Case 3 Gear Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (C1234 clutch exhausted)	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents Table Based Time Please >= Refer to Table Sec 19 in supporting documents	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED Fail >= 1.1 Timer (Sec) Fail Count in 3rd Gear or Total >= 3 Fail Counts	MIL ILLUM.
		>= 0.633666992			Fail >= 1.1 Timer (Sec) Fail >= 1 Count in 4th Gear	

AULT MONITOR STRATEGY CODE DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
	<u>Fail</u> Case: Steady State 5th				or Total >= 3 Fail Counts	
	Case 4 Gear Max Delta Output Speed Hysteresis	Table Based				
	Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
	If the Above is True for Time	19 in supporting documents				
	Gear Ratio	<= 0.700317383 >= 0.633666992				
	If the above parameters are true				Fail >= 1.1 Timer (Sec) Fail	
					>= 1 Count in 5th Gear or Total	
			PRNDL State defaulted inhibit RVT		>= 3 Fail Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	E CONDITI	ONS	TIME REQUIRED	MIL ILLUM.
					IMS fault pending indication	=	FALSE B	oolean		
					output speed	>=	0	RPM		
					TPS validity flag	=	TRUE B	oolean		
					HSD Enabled	=	TRUE B			
					Hydraulic_System_Pressurized		TRUE B	oolean		
					Minimum output speed for RVT	>=	0	Nm		
					A OR B					
					(A) Output speed enable			Nm		
					(B) Accelerator Pedal enable			Nm		
					Ignition Voltage Lo			Volts		
					Ignition Voltage Hi			Volts		
					Engine Speed Lo			RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is within the allowable limits for	/-	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	1492	Nm		
					Transmission Fluid Temperature		0	°C		
					Input Speed Sensor fault	=	FALSE B			
					Output Speed Sensor fault	=	FALSE B	oolean		
					Default Gear Option is not present	=	TRUE			
				Disable						
				Conditions:		P0716, P0717,				
						P0722,				
						P0723, P182E				
						F 10ZE				
						ECM: P0101,				
						P0102,				
						P0103,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0306, P0307, P0308, P0307, P0308, P0301, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low	The HWIO reports an low voltage (ground short) error flag	= TRUE Boolean	P2770 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed	or Fault Active >= 8.5996 Volts <= 31.999 Volts >= 500 RPM	>= 0.3 Time (Sec) Sample of 0.375 Time (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		/-	5	Sec		
						ECM: None				
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High	The HWIO reports an high voltage (open or power short) error flag	= TRUE Boolean					>= 0.3 Time (Sec) out 0.375 Time (Sec)	One Trip
					P2721 Status is not	=	Test Failed This Key On or Fault			
					Ignition Voltage	>=	Active 8.5996	Volts		
					Ignition Voltage Engine Speed		31.999 500	Volts RPM		
					Engine Speed		7500	RPM		
					Engine Speed is within the allowable limits for		5	Sec		
				Disable Conditions:		TCM: None ECM: None				
Variable Blood Selencid		Proceure Central (PC) Salancid E	Fail Casa: Standy State 1st			None				One Trip
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case: Steady State 1st Case 1 Gear Gear Slip	>= 200 RPM					Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	One trip

COMPONENT/ SYSTEM FAULT CODE	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
	Intrusive test: commanded 2nd gear	Table based				
	If attained Gear ≠ 2nd for Time	Timer, Please Enable Time				
	If Above Conditions have been met, Increment 1st gear fail counter				1st >= 2 Gear Fail Count or	
	and C1234 fail counter				>= 14 Clutch Fail Count	
	Fail Case: Steady State 2nd Case 2 Gear				Please	
	Gear slip	>= 200 RPM			See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
	Intrusive test: commanded 3rd gear					
	lf attained Gear ≠ 3rd for Time	Timer, Please				
	If Above Conditions have been met, Increment 2nd gear fail counter				>= 2 2 Gear Fail Count	
	and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
	<u>Fail</u> Case: Steady State 3rd <u>Case 3</u> Gear					

COMPONENT/ SYSTEM FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		Gear slip	>= 200 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
		Intrusive test: commanded 4th gear				Cal	
		If attained Gear ≠ 4th for time	Timer, Please Enable Time				
		If Above Conditions have been met, Increment 3rd gear fail counter				3rd Gear Fail Count or	
		and C1234 fail counter				C1234 >= 14 Clutch Fail Count	
		Fail Case: Steady State 4th Case 4 Gear				Please See	
		Gear slip	>= 200 RPM			Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
		Intrusive test: commanded 5th gear				Gui	
		If attained Gear = 5th For Time	Table based Timer, Please >= See Table 3 in Supporting Documents Table based Enable Time (Sec)				
		If Above Conditions have been met, Increment 4th gear fail counter				>= 2 4th Gear Fail Count or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENAB	LE COND	ITIONS	TIME REQU	IRED	MIL ILLUM.
			and C1234 fail counter						>= 14	C1234 Clutch Fail Count	
					PRNDL State defaulted	=	FALSE	Boolean			
					inhibit RVT	=	FALSE	Boolean			
					IMS fault pending indication	=	FALSE	Boolean			
					TPS validity flag	=	TRUE	Boolean			
					Hydraulic System Pressurized	=	TRUE	Boolean			
					Minimum output speed for RVT	>=	0	RPM			
					A OR B						
					(A) Output speed enable		650	RPM			
					(B) Accelerator Pedal enable		0.5005	Pct			
					Common Enable Criteria						
					Ignition Voltage Lo		8.5996				
					Ignition Voltage Hi		31.999				
					Engine Speed Lo		500	RPM			
					Engine Speed Hi		7500	RPM			
					Engine Speed is within the allowable limits for		5	Sec			
					Throttle Position Signal valid	=	TRUE	Boolean			
					HSD Enabled	=	TRUE	Boolean			
					Transmission Fluid Temperature	>=	0	°C			
					Input Speed Sensor fault	=	FALSE	Boolean			
					Output Speed Sensor fault		FALSE	Boolean			
					Default Gear Option is not present		TRUE				

COMPONENT/ SYSTEM	FAULT CODE		MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0306, P0307, P0308, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized					
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command					
			Range Shift Status	≠	Initial Clutch Control					
			Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below:		40	RPM				
			fail timer 1 (2-6 shifting with throttle)	>=	1.200195313	sec				
			fail timer 1 (2-6 shifting without throttle)	>=	1.200195313	sec				
			fail timer 1 (3-5 shifting with throttle)	>=	1.200195313	sec				
			fail timer 1 (3-5 shifting without throttle)	>=	1.200195313	sec				
			fail timer 1 (4-5 shifting with throttle)	>=	1.200195313	sec				
			fail timer 1 (4-5 shifting without throttle)	>=	1.200195313	sec				
			fail timer 1 (4-6 shifting with throttle)	>=	1.200195313	sec				
			fail timer 1 (4-6 shifting without throttle)	>=	1.200195313	sec				

ULT MONITOR STRATEGY DDE DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
	If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer sec 1, and Referen ce Support ing Table 15 for Fail Timer 2	
	If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					
	2nd gear fail counter				Fail Counte >= 3 r From 2nd Gear	
	3rd gear fail counter				Fail Counte >= 3 r From 3rd Gear	
	4th gear fail counter				Fail Counte >= 3 r From 4th Gear	
	total fail counter				Total >= 5 Fail Counte r	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Trans oil temperature	> 0 °C		
					Input Speed Sensor fault	= FALSE Boolea	ו	
					Output Speed Sensor fault	= FALSE Boolea	ו	
					Command / Attained Gear	≠ 1st Boolea	ו	
					High Side Driver ON	= TRUE Boolea	ו	
					output speed limit for TUT	>= 350 RPM		
					input speed limit for TUT	>= 200 RPM		
					TUT Enable temperature	>= 0 °C		
					PRNDL state defaulted	= FALSE Boolea	ו	
					IMS Fault Pending	= FALSE Boolea	ו	
					Service Fast Learn Mode	= FALSE Boolea	ו	
					HSD Enabled	= TRUE Boolea	n	
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case: 5th Gear Case 1 Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				One Trip
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
			If the Above is True for Time	Table Based Time Please >= Refer to Table Sec 19 in supporting documents				
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true				Fail >= 1.1 Timer (Sec) Fail Count in 5th	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
							OR Total >= 3 Fail Counts	
			<u>Fail</u> Case: 6th Gear <u>Case 2</u>					
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
			Min Delta Output Speed Hysteresis					
			If the Above is True for Time					
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.209594727				
			Gear Ratio If the above parameters are true	>= 1.094360352				
							Fail >= 1.1 Timer (Sec) Fail	
							>= 1 Count in 6th Gear	
							OR Total >= 3 Fail	
					PRNDL State defaulted	= FALSE Boolean	Counts	
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		

April Apri	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
P0103, P0106, P0107,					Disable	TPS validity flag HSD Enabled Hydraulic_System_Pressurized Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed limits for if Attained Gear=1st FW Accelerator Pedal enable if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= = = = >= >= >= >= >= >= >= >= = = = TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0106,	TRUE TRUE 0 0.5005 8.5996 31.999 500 7500 5 1492 0 FALSE FALSE	Boolean Boolean Nm Nm Nm Volts Volts RPM RPM Sec Pct Nm Nm Nm		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CON	DITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low	The HWIO reports an low voltage (ground short) error flag	= TRUE Boolean	P2729 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed Engine Speed is within the allowable limits for	or Fau Activ >= 8.59 <= 31.9 >= 500 <= 750	d Dn t e 6 Volt 9 Volt RPM	>= 0.3 Time (Sec) out 0.375 Time of (Sec)	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQU	IIRED	MIL ILLUM.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
						Conditions:								
								ECM: None						
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High	The HWIO reports an high voltage (open or power short) error flag	=	TRUE	Boolean					>= out of		Fail Time (Sec) Sample Time (Sec)	One Trip
							P2730 Status is not	=	Test Failed This Key On or Fault Active				(Sec)	
							Ignition Voltage	>=	8.5996	Volt				
							Ignition Voltage	<=	31.999	Volt				
							Engine Speed		500	RPM				
							Engine Speed		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	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)	=	TRUE	Boolean					>=		Fail Time (Sec) Sample	One Trip
											out of		Time (Sec)	
							P2763 Status is not	П	Test Failed This Key On or Fault Active					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<pre><= 31.999 Volt >= 500 RPM <= 7500 RPM >= 5 Sec = TRUE Booles TCM: P0658, P0659 ECM:</pre>		
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports an high pressure/low voltage (ground short) error flag	= TRUE Boolean	P2764 Status is not	•	>= 4.4 MPH out 5 MPH	Two Trips
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<pre><= 31.999 Volt >= 500 RPM <= 7500 RPM >= 5 Sec</pre>		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659 ECM: None		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIM	IE REQ	UIRED	MIL ILLUM.
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	= TRUE	Boolean					>=	250	Fail counts (12.25 ms loop)	One Trip
			Delay timer	>= 0.1125	sec					Out of	253	Sample Counts (12.25 ms loop)	
						Stabilization delay	>=	3	sec				
						Power Mode	=	Run					
						Ignition Voltage Lo	>=	8.5996	Volt				
						Ignition Voltage Hi	<=	31.999	Volt				
					Disable Conditions:		TCM: None ECM: None						
Communication	U0100	Lost Communications with Engine Control System	Communication Message Invalid From	= TRUE	Boolean					>=	12	sec	One Trip
			ECM			Stabilization delay	>=	3	sec				
						Power Mode		Run					
						Ignition Voltage Lo	>=	8.5996	Volt				
						Ignition Voltage Hi	<=	31.999	Volt				
					Disable Conditions:		TCM: U0073 ECM: None						

**** Initial Pick--Look-up Tables ****

Table 1						Un	its			Units
	Axis	0	64	128	192	256	320	384	448	512 N-m
	Curve	50	50	50	50	50	50	50	50	50 RPM
Table 2	Axis	-0.00781	0	Units	S					
T.11.0	Curve	409.5938	2	2 Sec						
Table 3	Axis Curve	-0.00781 409.5938	0 5.5	Units 40 °C 5.5 Sec	5					
Table 4	Axis Curve	-0.00781 409.5938	0	Units 40 °C 2 Sec	S					
Table 5	Axis Curve	-0.00781 409.5938	0 5	Units 40 °C 5 Sec	5					
Table 6	Axis Curve	-40 409	-0.00781 409	40 1.6	80 1.4	Un 120 °C 1.4 Se				
Table 7	Axis	-40	-0.00781	40	80	Un 120 ºC	its			
	Curve	409	409	1.4	1.3	1.2 Se	С			

Table 8							Units
	Axis	-40	-0.00781	40	80	120	°C
	Curve	409	409	1.6	1.5	1.4	Sec
Table 9							Units
	Axis	-40	-0.00781	40	80	120	
	Curve	409	409	1.3	1.2	1.1	Sec
Table 10							Units
	Axis	-40	-20	0	30	110	
	Curve	3.029297	1.857422	1.00293	0.754883	0.583984	Sec
Table 11	Axis Curve	-40 1.720703	-20 1.108398	0 0.595703	30 0.359375	110	Units °C Sec
Table 12							Units
	Axis	-40	-20	0	30	110	°C
	Curve	2.121094	1.393555	0.841797	0.642578	0.332031	Sec
Table 13	Axis Curve	-40 2.507813	-20 0.952148	0 0.499023	30 0.292969	110	Units ºC Sec
<u>Table 14</u>							Units
	Axis	-40	-20	0	30	110	°C
	Curve	2.972656	0.818359	0.47168	0.204102	0.132813	Sec

<u>Table 15</u>										Units
	Axis		-30	-20	-10	0	10	20	30	40 °C
	Curve	0	0	0	0	0	0	0	0	0 Sec
Table 16				ι	Jnits					
Tubic 10	Axis	-0.00781	0	40						
		409.5938	1.5	1.5						
<u>Table 17</u>		0.00704			Jnits •					
	Axis Curve		0 1676	40 °						
	Curve	0191.75	1070	1070	pm/sec					
<u>Table 18</u>				ι	Jnits					
	Axis		0	40						
	Curve	8191.75	500	500 r	pm/sec					
Table 19					Jnits					
Table 13	Axis	-0.00781	0	40						
	Curve	0.4	0.35	0.3						
<u>Table 20</u>										Units
	Axis		-40	-20	0	30	60	100		149.1016 °C
	Curve	255.9961	50	45	40	34	35	20	20	255.9961 ° C
Table 21										Units
	_									

40

Axis -40.1016

Curve 255.9961

-40

50

-20

45

60

25

100

20

30

34

149 149.1016 °C

20 255.9961 °C

<u>Table 22</u>

Units

Axis	-40.1016	-40	-20	0	30	60	100	149	149.1016	3
Curve	255.9961	10	8	8	8	8	8	8	255.9961 °C)

Table 28

Axis

Curve

<u>Table 29</u>

Axis

Curve

Table 30

Axis

Curve

Table 31

Axis

Curve

Table 32

Axis

Curve

Table 33

Axis

Curve

Table 34

Axis

Curve

Table 35

Axis

Curve

Table 36

Axis

Curve

<u>Table 37</u>

Axis

Curve

<u>Table 38</u>

Axis

Curve

Table 39

Axis

Curve

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	ITIONS	TIME	REQU	IRED	MIL ILLUM.
Transmission Range Switch (Neutral Safety Back Up Switch NSBU)	P0706	NSBU Performance	NSBU state	DL_Neutral					>=	3	Sec	Two Trips
			or NSBU state	CeTRGR_PRN = DL_Transitional 2								
			or NSBU state	CeTRGR_PRN = DL_Transitional 11								
					Ignition Voltage	>=	8	volts				
					Ignition Voltage	<=	18	volts				
					Engine Speed		500	RPM				
					Engine Speed	<=	6500	RPM				
					Engine speed between min/max for	>=	5	Sec				
					Output speed		50	RPM				
					Throttle position		10.001					
					Engine Torque		45	Nm				
					Engine Torque		1492	Nm				
					Trans Temp		20	Deg C				
					Ratio		2.184	Ratio				
					Ratio		2.4041					
					PSM state		Reverse					
					Engine Torque Signal Valid		TRUE					
					Throttle Position Signal Valid		TRUE					
					Engine Speed Status Valid	=	TRUE					
				Disable Conditions:		P0716,	P0101,					
							P0102, P0103,					
						P0723,	P0106,	P0345,				
							P0107,					
							P0108, P0171,					
						P0757,	P0172,	P0390,				
							P0174, P0175,					
						P0768,	P0175, P0201,	P0401,				
						P0974,	P0202,					
4						P0976,	P0203,					ļ

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIM	E REQI	UIRED	MIL ILLUM
						P0977, P1810, P1815, P1816, P1817, P1818, P1759, P175A, P175B, P175C, P0705.	P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304,					
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	Fail Case 1 TFT Delta from Startup	<= 2 C°					>=	80	Fail Time (Sec)	Special No Trip
					Vehicle Speed		8	Kph	l			
					Vehicle Speed Above min for		300	Sec				
					TCC Slip TCC Slip above min for		120 300	RPM Sec				
					Transmission Fluid Temperature		-39	C°				
					Lo Transmission Fluid Temperature High		20	C°				
					Engine Coolant Temp	>=	70	C°				
					Engine Coolant Temp Delta	>=	55	C°				
			Fail Case 2 TFT Delta from startup	< 2 C°					>=	80	Fail Time (Sec)	
					Vehicle Speed		8	Kph	l			
					Vehicle Speed Above min for TCC Slip		300 -20	Sec RPM	l			
					TCC Slip above min for		-20	Sec	l			
					Transmission Fluid Temperature		129	C°				
					Transmission Fluid Temperature	<=	149	C°				
					Engine Coolant Temp Engine Coolant Temp Delta from startup		70 55	C°				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRE	SHOLD VALU	E	SECONDARY PARAMETERS	ENABL	LE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case 3 TFT Delta	>= 2	0 C°						>= 14	
			<u>Fail</u> Transmission Fluid <u>Case 4</u> Temperature	<= 2	0 C°		Engine Torque Lo	>=	50	N*m	>= Refer to Time Table 1 (Sec)	
							Engine Torque Hi		1492	N*m		
,							Throttle Position Lo		8.0002			
							Throttle Position Hi		89.999			
							Vehicle Speed Lo	>=	8	Kph		
							Vehicle Speed Hi	<=	511.99	Kph		
							Engine Speed Lo	>=	500	RPM		
							Engine Speed Hi		6500	RPM		
							Engine Coolant Lo	>=	-39	C°		
							Engine Coolant Hi	<=	149	C°		
							Engine Torque Signal Valid	=	TRUE			
							Throttle Position Signal Valid	=	TRUE			
							Engine Speed Status Valid	=	TRUE			
							P0711 Common Enable Conditions					
							Transmission Fluid Temperature Lo	>=	-39	C°		
							Transmission Fluid Temperature Hi	<=	149	C°		
							Ignition Voltage	>=	8	V		
							Ignition Voltage	<=	18	V		
							Engine speed	>=	Refer to Table 4	RPM		
							Engine speed above min for	>=	Refer to Table 5	Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CO	NDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	Engine speed above min for Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid Engine Coolant Sensor Signal Valid MIL not Illuminated for DTC's:	>= 500 <= 656 >= TRI = TRI = TRI TCM: EC P0716, P01 P0717, P01 P0722, P01 P0723, P01 P0742 P01	0 RPM 00 RPM Sec JE Boolear M: P0301, 01, P0302, 02, P0303, 06, P0305, 07, P0306, 08, P0307, 16, P0308, 17, P0336, 17, P0346, 17,		
Transmission Fluid Temperature Sensor (TFT)		Transmission fluid temperature thermistor failed at a high temperature (short to ground).	TFT resistance	<= 48 Ω	Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for	<= 18 >= 50 <= 650 >= 5	V 3 V 0 RPM 00 RPM	Fail >= 12 Time (Sec)	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE C	ONDITIONS	TIME REQ	UIRED	MIL ILLUM.
					Engine Speed Status Valid	= TI	RUE			
				Disable Conditions:	MIL not Illuminated for DTC's:	None PC PC PC PC PC PC PC PC	ECM: 1935, 1936, 19340, 19345, 19346, 19365, 19390, 19390,			
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a low temperature (open or short to power).	TFT resistance	>= 97292 Ω				>= 80	Fail Time (Sec)	Special No Trip
		J 5 5			Output Speed	>= 2	200 RPM			
					Output Speed above min for		200 Sec			
					TCC Slip speed		120 RPM			
					TCC Slip Speed above min for		200 sec			
					Ignition Voltage		8 V			
					Ignition Voltage Engine Speed		18 V 500 RPM			
					Engine Speed		5500 RPM			
					Engine speed between min/max for		5 Sec			
					Engine Speed Status Valid	= Ti	RUE			
				Disable Conditions:		P0716, P0 P0717 P0 P0 P0 P0 P0 P0 P0	CM: 1935, 19340, 19345, 19345, 19346, 19366, 19390, 19391			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	ITIONS	TIMI	E REQ	UIRED	MIL ILLUN
Shift solenoid A Performance	P0751	Shift Solenoid Valve A Stuck Off 2-2-3-3	<u>Fail</u> 1st gear low rati <u>Case 1</u> multiplie		0.949951172 Pct					=	2	Sec	Two Trips
			1st gear high rati multiplie		1.050048828 Pct								
			Fail 4th gear low rati	0	0.949951172 Pct					=	2	Sec	
			4th gear high rati	0	1.050048828 Pct								
			1 17							=	2	counts	
						Ignition Voltage		8	volts				
						Ignition Voltage		18	volts				
						Engine Speed		500	RPM				
						Engine Speed	<=	6500	RPM				
						Engine speed between min/max for	>=	5	Sec				
						Engine Speed Status Valid	=	TRUE					
						Gear Slip	>=	150	RPM				
						Gear Slip Fail Time	>=	0.5	Sec				
						Throttle	>=	8.0002	Pct				
						Engine Torque	>=	50	N*m				
						Output Speed	>=	50	RPM				
						Input Speed	>=	50	RPM				
						4WD Range Timer	>=	6	Sec				
						Range Change Timer	>=	6	Sec				
						PTO Active	=	FALSE					
						Trans Temp	>=	20	С				
						Trans Temp	<=	130	С				
						Engine Torque Signal Valid	=	TRUE					
						Throttle Position Signal Valid	=	TRUE					
					Disable Conditions:		P0716, P0717, P0722, P0723, P0973, P0974, P0976,	ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172,	P0305, P0306, P0307, P0308, P0335, P0336,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESH	OLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	ТІМІ	E REQ	UIRED	MIL ILLUM.
							P182C, P182D, P182E, P182F, P0741, P0742, P2763, P2764, P2769,	P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302.	P0365, P0366, P0390, P0391, P0401,				
Shift solenoid A Performance	P0752	Shift Solenoid Valve A Stuck On 1-1-4-4	Fail 2nd gear low ratio Case 1 multiplier 2nd gear high ratio multiplier	>= 0.949951 <= 1.050048						=	2	Sec	Two Trips
			Fail 3rd gear low ratio Case 2 multiplier 3rd gear high ratio multiplier	>= 0.949951 <= 1.050048						=	2	Sec	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed between min/max for Engine Speed Status Valid Gear Slip Gear Slip Fail Time Throttle Engine Torque Output Speed Input Speed 4WD Range Timer Range Change Timer PTO Active Trans Temp	<= >=	8 18 500 6500 5 TRUE 150 0.5 8.0002 50 50 6 6 FALSE 20	volts volts RPM RPM Sec RPM Sec Pct N*m RPM RPM Sec Sec C	=	2	counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONI	DITIONS	TIME	: REQUIRED	MIL ILLUM.
					Engine Torque Signal Valid Throttle Position Signal Valid					
				Disable Conditions		TCM: ECM P0716, P0101 P0717, P0102 P0722, P0103 P0723, P0106 P0973, P0107 P0974, P0106 P0976, P0177 P0977, P0172 P182A, P0176 P182D, P0202 P182E, P0203 P182F, P0204 P0741, P0206 P0742, P0206 P0744, P0206 P2763, P0206 P2764, P0206 P2769, P0300	2, P0304, 3, P0305, 5, P0306, 7, P0307, 8, P0308, 9, P0336, 1, P0346, 1, P0346, 1, P0366, 1, P0390, 1, P0390, 1, P042E			
Shift solenoid B Performance	P0756	Shift Solenoid Valve B Stuck On 4-3-3-4	<u>Fail</u> 1st gear low ratio <u>Case 1</u> multiplier	>= 0.949951172 PCl		P2770 P0301	,	=	2 Sec	One Trip
			1st gear high ratio multiplier	<= 1.050048828 Pct						
			Fail 2nd gear low ratio Case 2 multiplier 2nd gear high ratio multiplier	>= 0.949951172 Pct <= 1.050048828 Pct				=	2 Sec	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid Gear Slip	<= 18 >= 500 <= 6500 >= 5 = TRUE	RPM Sec	=	2 counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Gear Slip Fail Time Throttle Engine Torque Output Speed Input Speed 4WD Range Timer Range Change Timer PTO Active Trans Temp Trans Temp Engine Torque Signal Valid	>= 8.0002 Pct >= 50 N*m >= 50 RPM >= 50 RPM >= 6 Sec >= 6 Sec = FALSE >= 20 C <= 130 C = TRUE		
				Disable Conditions:		TCM: ECM: P0302, P0716, P0101, P0303, P0717, P0102, P0304, P0722, P0103, P0305, P0723, P0106, P0307, P0974, P0108, P0308, P0976, P0171, P0335, P0977, P0172, P0336, P1915, P0174, P0340, P182A, P0175, P0345, P182C, P0201, P0346, P182D, P0202, P0365, P182E, P0203, P0366, P182F, P0204, P0390, P0741, P0205, P0391, P0742, P0206, P0401, P2763, P0208, P02770, P0301, P0770, P0301, P0770, P0301, P0301		
Shift solenoid B Performance	P0757	Shift Solenoid Valve B Stuck Off 1-2-2-1	Fail 3rd gear low ratio multiplier 3rd gear high ratio	>= 0.949931172 FCI			= 2 Sec	One Trip
			multiplier Fail 4th gear low ratio Case 2 multiplier	>= 0.040051172 Pot			= 2 Sec	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME R	EQUIRED	MIL ILLUM.
			4th gear high ratio multiplier	<= 1.050048828 Pct							
					Ignition Voltage	>=	8	volts	= 2	counts	
					Ignition Voltage	<=	18	volts			
					Engine Speed	>=	500	RPM			
					Engine Speed		6500	RPM			
					Engine speed between min/max for	>=	5	Sec			
					Engine Speed Status Valid	=	TRUE				
					Gear Slip	>=	150	RPM			
					Gear Slip Fail Time	>=	0.5	Sec			
					Throttle	>=	8.0002	Pct			
					Engine Torque		50	N*m			
					Output Speed		50	RPM			
					Input Speed		50	RPM			
					4WD Range Timer		6	Sec			
					Range Change Timer PTO Active		6 FALSE	Sec			
					Trans Temp		20	С			
					Trans Temp		130	С			
					Engine Torque Signal Valid		TRUE	Ŭ			
					Throttle Position Signal Valid		TRUE				
				Disable Conditions:	MIL not Illuminated for DTC's:	P0716,	P0101,				
						P0722,	P0102, P0103, P0106,	P0305,			
						P0973, P0974,	P0107, P0108,	P0307, P0308,			
						P0977,	P0171, P0172, P0174,	P0336,			
						P182A, P182C,	P0175, P0201,	P0345, P0346,			
						P182E,	P0202, P0203, P0204,	P0366,			
						P0741,	P0205, P0206,	P0391,			

Shift Solenoid P0976 P0976	MIL ILLUM.	QUIRED	E REQ	TIM	TIONS	CONDI	ENABLE	SECONDARY PARAMETERS	THRESHOLD VALUE	MALFUNCTION CRITERIA	MONITOR STRATEGY DESCRIPTION	FAULT CODE	COMPONENT/ SYSTEM
Shift Solenoid P0976 Shift Solenoid P0976 Cow Voltage P0976 P0976 Cow Voltage P0976 P0976 Cow Voltage P0976						P0208, P0300,	P2764, P2769,						
Ignition Voltage 2	s	Fail Count (100ms loop)	44	>=						detects open or short to	Shift Solenoid B Control Circuit Low Voltage	P0976	Shift Solenoid
Ignition Voltage <= 18 volts	s	Sample Counts (100ms loop)	50	Out of									
Engine Speed Figure Speed Status Valid Figure Speed Status													
Engine speed between min/max for Engine Speed Status Valid		ļ											
Disable Conditions: MIL not Illuminated for DTC's: TCM: None ECM: P0335, P0336, P0340, P0345, P0346, P034		ļ			RPM	6500	<=						
Engine Speed Status Valid		ļ			Sec	5	>=						
Conditions: None ECM: P0335, P0336, P0340, P0345, P0346, P0346, P0365, P0366, P0390, P0391 P175A NSBU-Circuit A Low NSBU circuit A low = TRUE TRUE >= 8 s						TRUE	=						
P0335, P0336, P0340, P0345, P0345, P0346, P0346, P0365, P0366, P0390, P0390, P0391								MIL not Illuminated for DTC's:					
P0336, P0340, P0345, P0346, P0346, P0365, P0366, P0390, P0391 P039		ļ											
P0340, P0345, P0346, P0346, P0365, P0366, P0390, P0391 P03							P0335,						
P0346, P0365, P0366, P0390, P0391 Transmission Range Switch (Neutral Safety Back Up P175A NSBU-Circuit A Low NSBU circuit A low TRUE P0346, P0390, P0391 P0391 P175A P175A							P0340,						
P0365, P0366, P0390, P0391 Transmission Range Switch (Neutral Safety Back Up P175A NSBU-Circuit A Low NSBU circuit A low = TRUE >= 8 s													
P0390, P0391 Transmission Range Switch (Neutral Safety Back Up P175A NSBU-Circuit A Low NSBU circuit A low = TRUE >= 8 s		ļ					P0365,						
(Neutral Safety Back Up P175A NSBU-Circuit A Low NSBU circuit A low = TRUE >= 8 s							P0390,						
	Two Trips	sec	8	>=					= TRUE	NSBU circuit A low	NSBU-Circuit A Low	P175A	Transmission Range Switch (Neutral Safety Back Up Switch NSBU)
>= 1 co	_	count	1	>=									
Engine Torque >= 50 N*m													
Engine Torque <= 1492 N*m Ignition Voltage >= 8 volts		ļ											

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	REQUIR	ED	MIL ILLUM.
					Ignition Voltage		18	volts				
					Engine Speed		500	RPM				
					Engine Speed		6500	RPM				
					Engine speed between min/max for	>=	5	Sec				
					Engine Speed Status Valid	=	TRUE					
					Engine Torque Signal Valid	=	TRUE					
					Range = Park for	>=	1	sec				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
						ECM:						
						P0101,	P0301,					
						P0102, P0103.	P0302, P0303,					
						P0106,	P0304,					
							P0305, P0306,					
						P0171,	P0307,					
						P0172,	P0308,					
						P0174,	P0335, P0336,					
						P0201,	P0340,					
						P0202,	P0345, P0346,					
						P0204,	P0365,					
						P0205,	P0366,					
						P0206,	P0390, P0391,					
						P0208,	P0401,					
Transmission Range Switch						P0300,	P042E					Two Trips
(Neutral Safety Back Up Switch NSBU)	P175B	NSBU-Circuit B High	NSBU circuit B High	= TRUE					>=	8 9	ес	Two Trips
									>=	1 c	ount	
					Engine Torque	>=	50	N*m				
					Engine Torque		1492	N*m				
					Ignition Voltage		8	volts				
					Ignition Voltage		18	volts				
					Engine Speed		500	RPM				
					Engine Speed	<=	6500	RPM				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQI	UIRED	MIL ILLUM.
					Engine speed between min/max for Engine Speed Status Valid Engine Torque Signal Valid Range = Park for	=	5 TRUE TRUE 1	Sec				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None	·	300				
						P0102, P0103, P0106, P0107,	P0301, P0302, P0303, P0304, P0305,					
						P0171, P0172, P0174, P0175, P0201,	P0306, P0307, P0308, P0335, P0336, P0340,					
						P0203, P0204, P0205, P0206, P0207, P0208,	P0345, P0346, P0365, P0366, P0390, P0391, P0401,					
Transmission Range Switch (Neutral Safety Back Up	P175C	NSBU-Circuit C High	NSBU circuit C High	= TRUE		P0300,	P042E		>=	8	sec	Two Trips
Switch NSBU)									>=	1	count	
					Engine Torque		50	N*m				
					Engine Torque Signal Valid Ignition Voltage		TRUE 8	volts				
					Ignition Voltage	<=	18	volts				
					Vehicle Speed	>=	16	kph				
					1st gear ratio low		2.8448					
					1st gear ratio High 2nd gear ratio low		3.274 1.511	Ratio Ratio				
					2nd gear ratio High		1.74	Ratio				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQU	IRED	MIL ILLUM.
						3rd gear ratio low	>=	0.9301	Ratio				
						3rd gear ratio High	<=	1.0699	Ratio				
						4th gear ratio low		0.65	Ratio				
						4th gear ratio High	<=	0.7469	Ratio				
					Disable ditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723						
							P0102, P0103, P0106, P0107, P0108, P0171,	P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301,	P0307, P0308, P0401, P042E				
Fransmission Range Switch							P0174, P0175, P0201,	P0302, P0303, P0304, P0305,					Torra Taina
Neutral Safety Back Up Switch NSBU)	P1759	NSBU-Circuit P Low	NSBU circuit P Low	= TRUE						>=	8	sec	Two Trips
										>=	1	count	
						Engine Torque		50	N*m				
						Engine Torque		1492	N*m				
						Ignition Voltage		8	volts				
						Ignition Voltage		18	volts				
						Engine Speed		500	RPM				
						Engine Speed Engine speed between min/max	<= >=	6500 5	RPM Sec				
						for	_						
						Engine Speed Status Valid Engine Torque Signal Valid		TRUE					
								TRUE	000				
						Range = Park for	>=	1	sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Range Switch (Neutral Safety Back Up Switch NSBU)	P1815	Transmission Range Switch-Start in Wrong Range	Range= Park or Neutral	Disable Conditions: = FALSE Disable Conditions:	Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Power Mode Crank request	None	>= 2 sec	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Т	HRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQ	UIRED	MIL ILLUM.
Internal Mode Switch (IMS)	P182A	Internal Mode Switch-Circuit A	IMS circuit A low	=	TRUE					>= >=	8	sec count	Two Trips
						Engine Torque Engine Torque Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed Engine Speed Status Valid Engine Torque Signal Valid Range = Park for	<= >= <= >= <= = = =	50 1492 8 18 500 6500 5 TRUE TRUE	N*m N*m volts volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207,	P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0335, P0336, P0346, P0346, P0365, P0366, P0390, P0391, P0401, P042E					
Internal Mode Switch (IMS)	P182C	Internal Mode Switch-Circuit B	IMS circuit B High	=	TRUE					>= >=	8	sec count	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	CONDI	ΓIONS	TIME REG	QUIRED	MIL ILLUM.
				Disable Conditions:	Engine Torque Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed Engine Speed Engine Speed Status Valid Engine Torque Signal Valid Range = Park for	<= >= >= = = = = = = >= TCM: None ECM: P0101, P0102, P0103, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0203,	P0304, P0305, P0306, P0307, P0308, P0335, P0340, P0345, P0346, P0365, P0366.	N*m volts volts RPM RPM Sec			
						P0204, P0205, P0206, P0207, P0208, P0300,	P0391, P0401.				Two Trips
Internal Mode Switch (IMS)	P182D	Internal Mode Switch-Circuit P	IMS circuit P Low	= TRUE	Engine Torque Engine Torque Ignition Voltage Ignition Voltage	<= >=	50 1492 8 18	N*m N*m volts	>= 8 >= 1	sec	τωο πιρο

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE (CONDIT	TIONS	TIME RE	QUIRED	MIL ILLUM.
					Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid Engine Torque Signal Valid Range = Park for	<= >= =		RPM RPM Sec			
				Disable Conditions:	MIL not Illuminated for DTC's:	None FECM: FP0101, FP0102, FP0106, FP0107, FP0108, FP0171, FP0172, FP0174, FP0175, FP0201, FP0202, FP0203, FP0204, FP0205, FP0206, FP0207, FP0	P0303, P0304, P0305, P0306, P0307, P0308, P0335, P0336, P0340, P0345, P0346, P0366, P0390, P0391,				
Internal Mode Switch (IMS)	P182E	Internal Mode Switch-Invalid	IMS Range Illegal	= TRUE	Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine speed between min/max for Engine Speed Status Valid	<= >= <= >=		volts volts RPM RPM Sec	>= 8	sec	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQI	UIRED	MIL ILLUM.
				Disable								
				Conditions		None						
						ECM:						
						P0335, P0336,						
						P0330,						
						P0345,						
						P0346, P0365,						
						P0366,						
						P0390, P0391						
						1 0001						T . T.
Internal Mode Switch (IMS)	P182F	Internal Mode Switch-Circuit C	IMS circuit C High	= TRUE					>=	8	sec	Two Trips
									>=	1	count	
					Engine Torque	>=	50	N*m				
					Engine Torque Signal Valid	=	TRUE					
					Ignition Voltage		8	volts				
					Ignition Voltage		18	volts				
					Vehicle Speed		16	kph				
					1st gear ratio low		2.8448	Ratio				
					1st gear ratio High		3.274	Ratio				
					2nd gear ratio low 2nd gear ratio High		1.511	Ratio Ratio				
					3rd gear ratio low		1.74 0.9301					
					3rd gear ratio High		1.0699					
					4th gear ratio low		0.65	Ratio				
					4th gear ratio High		0.7469					
				Disable			P0205,					
				Conditions	1	P0722, P0723	P0206,					
							P0207, P0208,					
						ECM: P0101,	P0300,					
						P0102,	P0301, P0302,					
						P0103, P0106,	P0302, P0303,					
						P0106, P0107,	P0304,					
						P0108, P0171,	P0305, P0306,					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0172, P0307, P0174, P0308, P0175, P0401, P0201, P042E P0202, P0203, P0204,		
TCC Enable Solenoid	P2769	TCC enable solenoid circuit low voltage	Hardware circuitry detects open or short to ground	= TRUE	Ignition Voltage Ignition Voltage Engine Speed	e <= 18 V	>= 44	9
				Disa	Engine Speed Engine speed between min/max fo Engine Speed Status Valid TCC Enable solenoid command	d <= 6500 RPM X >= 5 Sec d = TRUE d = OFF		
				Conditio	ns:	None ECM: P0335, P0336, P0340, P0345, P0346, P0365, P0366, P0390, P0391		
TCC Enable Solenoid	P2770	TCC enable solenoid circuit high voltage	Hardware circuitry detects a short to voltage	= TRUE			Fail Count (100m: loop)	5

COMPONENT/ SYSTEM	FAULT CODE	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME	E REQUIRE	D MIL ILLUM.
								Out of	50 San Cou (100 loc	nts ms
				Ignition Voltage		8	V			
				Ignition Voltage		18	V			
				Engine Speed		500	RPM			
				Engine Speed		6500	RPM			
				Engine speed between min/max for	>=	5	Sec			
				Engine Speed Status Valid	=	TRUE				
				TCC Enable solenoid command	=	ON				
			Disable Conditions:		TCM: None ECM: P0335, P0336, P0340, P0345, P0366, P0390, P0391					

**** Additional Diagnostics--Look-up Tables (Trucks) ****

Table 1	Axis Curve	-40 1900	-25 1000	-10 800	5 520		Units Sec Sec											
Table 2	Axis Curve	0	6.248474 60	12.49695 120	18.74542 180	24.9939 280		37.49084 480	49.98779 600	56.23627 624	62.48474 624	68.73322 624	74.98169 624	81.23016 624	87.47864 624	93.72711 624	99.97559 P	
Table 3	Axis Curve	0 100	64 100	128 100	192 100	256 100	320 100	384 150	512	Units Nm RPM								
Table 4	Axis Curve	-40 600	-16.25 400	7.5 400	31.25 400	55 400		102.5 400	150	Units Deg C RPM								
<u>Table 5</u>	Axis Curve	-40 0.1	7.5 0.15	55 0.2	102.5 0.3	150	Units Deg C Sec											

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIM	E REQ	UIRED	MIL ILLUM.
Mode 3 Multiplex Valve	P0976	Shift Solenoid BControl Circuit Low	The HWIO reports an low voltage (ground short) error flag	=	TRUE	Boolean					>= out of	1.2	Sec Sec	Two Trips
							P0976 Status is not	Ш	Test Failed This Key On or Fault Active					
							Ignition Voltage	>=	8.5996	Volts				
							Ignition Voltage	<=	31.99	Volts				
							Engine Speed		500	RPM				
							Engine Speed		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:		TCM: None ECM:						
								None						

**** Additional Diagnostics Car 1--Look-up Tables *******

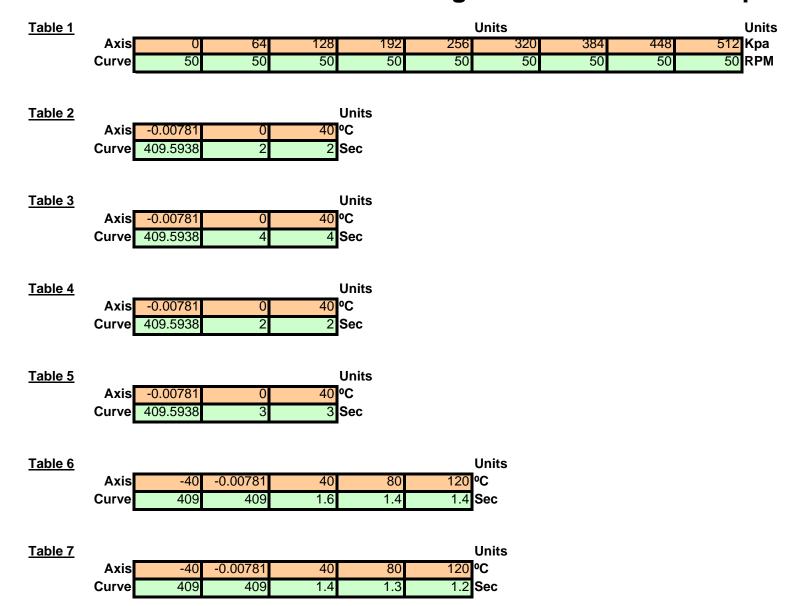


Table 8						ı	Units
	Axis	-40	-0.00781	40	80	120	oC .
	Curve	409	409	1.6	1.5	1.4	Sec
Table 9							Units
	Axis	-40	-0.00781	40	80	120	С
	Curve	409	409	1.3	1.2		Sec
				-			
Table 10						ı	Units
	Axis	-40	-20	0	30	110	°C
	Curve	3.029297	1.857422	1.00293	0.754883	0.583984	Sec
Table 11							Units
	Axis	-40	-20	0	30	110	°C
	Curve	1.720703	1.108398	0.595703	0.359375		Sec
Table 12						ı	Units
	Axis	-40	-20	0	30	110	
	Curve	2.121094	1.393555	0.841797	0.642578		Sec
	Ou. Vo	2.121001	1.000000	0.011707	0.012010	0.002001	
Table 13							Units
14010 10	Axis	-40	-20	0	30	110	
	Curve	2.507813	0.952148	0.499023	0.292969		Sec
	Ourve	2.007010	0.332140	0.433023	0.232303	0.120333	occ
Table 14						i	Units
1 abit 14	Axis	-40	-20	0	30	110	
				_			
	Curve	2.972656	0.818359	0.47168	0.204102	0.132813	Sec

<u>Table 15</u>	-									Units
	Axis	-40	-30	-20	-10	0	10	20	30	40 °C
	Curve	0	0	0	0	0	0	0	0	0 Sec
Table 16				U	nits					
	Axis	-0.00781	0	40 00						
	Curve	409.5938	1.5	1.5 S	ec					
Table 17				U	nits					
	Axis	-0.00781	0	40 °C						
	Curve	8191.75	1676	1676 U	nknown Ur	nit				
	_									
Table 18				U	nits					
14010 10	Axis	-0.00781	0	40 00						
	Curve	8191.75	500	500 U	nknown Ur	nit				
	•									
Table 19					nits					
Table 13	Axis	-0.00781	0	40 00						
	Curve	0.4	0.35	0.3 S						
	ı									
Table 00										11:45
Table 20	Axis	-40.1016	-40	-20	0	30	60	100	149 1	Units 49.1016 °C
		255.9961	50	45	40	34	25	20		55.9961 °C
<u>Table 21</u>	اء بدم	40 4040	40	20	0	20	60	100	1.40	Units
	Axis	-40.1016	-40	-20	0	30	60	100	149 1	49.1016 °C

40

34

Curve 255.9961

50

45

25

20

20 255.9961 °C

Table 22

Units

Axis	-40.1016	-40	-20	0	30	60	100	149	149.1016	٥С
Curve	255.9961	10	8	8	8	8	8	8	255.9961	٥С

Table 28

Axis

Curve

Table 29

Axis

Curve

Table 30

Axis

Curve

Table 31

Axis

Curve

Table 32

Axis

Curve

Table 33

Axis

Curve

Table 34

Axis

Curve

Table 35

Axis

Curve

Table 36

Axis

Curve

Table 37

Axis

Curve

Table 38

Axis

Curve

Table 39

Axis

Curve

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	LD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIM	ME REC	UIRED	MIL ILLUM
Transmission Fluid Temperature Sensor (TFT)	P0667	TCM internal temperature thermistor failed at a constant value or toggling at high frequency.	Fail Case 1 Enable Vehicle Speed	>=	8	Kph			>=	300	Vehicle Speed Enable Time (Sec)	Special No Trip
			Enable TCC Slip	>	150	RPM			>=	150	TCC Slip Enable Time (Sec)	
			Enable Transmission Fluid Temperature Enable Transmission	1	70	°C					(360)	
			Fluid Temperature Delta from startup		55	°C					Temp	
			Enable Substrate Temp Delta		2	°C			>=	100	Delta Enable Time (Sec)	
			Startup Substrate Temperature Lo Enable	>=	-55	°C					(555)	
			Startup Substrate Temperature HI Enable When Above FC1 Enable Conditions have been Met, Increment Fail	\-	21	°C			>	100	Fail Timer (Sec)	
			Timer Fail Case 2 Vehicle Speed	>=	8	RPM			>=	300	Vehicle Speed Enable Time (Sec)	
			TCC Slip	>	-12	RPM			>=	-12	TCC Slip Enable Time (Sec)	
			Transmission Fluid Temperature	>=	70	°C					/	
			Transmission Fluid Temperature Delta from startup	>=	55	°C						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLE) VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIMI	E REQ	UIRED	MIL ILLUM.
			Enable Substrate Temp Delta	<	2	°C					>=	100	Temp Delta Enable Time (Sec)	
			Startup Substrate Temperature Lo Enable	>=	120	°C								
			Startup Substrate Temperature HI Enable	\-	150	°C								
			When Above FC2 Enable Conditions have been Met, Increment Fail Timer								>	100	Fail Timer (Sec)	
			Fail TCM Internal temp delta	>=	20	°C					>=	14 7	Fail Counts Sample Time	
							TOM lateral Terral Le			00			(Sec)	
							TCM Internal Temp Lo	>= <=	-55 150	°C				
							TCM Internal Temp Hi Ignition Voltage Lo		8.5996	Volts				
							Ignition Voltage Hi		18	Volts				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi		7500	RPM				
							Engine Speed is within the allowable limits for		5	Sec				
						Disable Conditions:		TCM: P0667,P 0716,P0						
								717,P07 22,P072 3						
								ECM: None						
Mode Switch	P071D	Transmission Mode Switch B Circuit	If Sport Mode Switch is Active		TRUE	Boolean					>=	600	Fail Time (Sec)	Special No Trip
							Sport Mode Switch Diagnostic Enabled		TRUE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	7	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	ITIONS	TIMI	E REQI	UIRED	MIL ILLUM.
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	18	Volts				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762						
								ECM: None						
			<u>Fail</u>										Vehicle	Special No
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	Case 1 Vehicle Speed	>=	8	Kph					>=		Speed Enable Time	Trip
													(Sec) TCC Slip	
			TCC Slip	>=	150	RPM					>=	0	Enable Time (Sec)	
			Transmission Fluid Temperature Lo	>=	-50	°C							` ,	
			Transmission Fluid Temperature High	<=	21	°C								
			Engine Coolant Temp		70	°C								
			Engine Coolant Temp Delta	/-	55	°C								
			TFT Delta from Startup		2	°C								
			If the Above Enable Conditions are Met, Then Increment Fail Counter								>=	100	Fail Time (Sec)	
			<u>Fail</u> <u>Case 2</u> Vehicle Speed	>=	8	Kph					>=		Vehicle Speed Enable Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIME F	EQUIRED	MIL ILLUM
			TCC Slip	>=	-12	RPM					>= (Time	
			Transmission Fluid Temperature	>=	129	°C						(Sec)	
			Transmission Fluid Temperature	<=	170	°C							
			Engine Coolant Temp	>=	70	°C							
			Engine Coolant Temp Delta	>=	55	°C						TFT	
			TFT Delta from startup	<	2	°C					>= 1(Delte	
			If the Above Enable Conditions are Met, Then Increment Fail Counter								>= 1(Fail Time (Sec)	
			<u>Fail</u> <u>Case 3</u> TFT Delta	>=	20	°C					= {	Sample	
			Fail Case 4 Transmission Fluid Temperature	<=	20	°C					Plea Refe Tab ii supp >= n Doo ents C	er to e 1 Fail Time G (Sec) for	
							Engine Torque Lo Engine Torque Hi Throttle Position Lo Throttle Position Hi Vehicle Speed Lo	>= <=	50 1492 8.0002 99.998 8	N*m N*m Pct Pct Kph			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLI	E COND	ITIONS	TIME REQUIRED	MIL ILLUN
					Vehicle Speed Hi	<=	511	Kph		
					Engine Speed Lo	>=	500	RPM		
					Engine Speed Hi	<=	6500	RPM		
					Engine Coolant Lo	>=	-39	°C		
					Engine Coolant Hi	<=	149	°C		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Engine Crank Position Sensor Signal Valid	=	TRUE	Boolean		
					Transmission Fluid Temperature Lo	>=	-50	°C		
					Transmission Fluid Temperature Hi	<=	170	°C		
					Ignition Voltage Lo	>=	8.5996			
					Ignition Voltage Hi	<=	18	Volts		
					Engine Speed Lo	>=	500	RPM		
					Engine Speed Hi Engine Coolant Sensor Signal	<=	7500	RPM		
					Valid Engine Speed is within the	=	IRUE	Boolean		
					allowable limits for	>=	5	Sec		
				Disable Conditions:		P0711, P0716,				
						P0717,				
						P0722, P0723,				
						P0742,				
						P2726				
						ECM:				
						P0101,				
						P0102, P0103,				
						P0116,				
						P0117,				
						P0118, P0121,				
						P0122,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MAL	FUNCTION CRITERIA	TH	IRESHOLD) VALUE	SECONDARY PARAMETERS	ENABI	LE COND	ITIONS	TIM	E REQI	JIRED	MIL ILLUM.
									P0336 P0337 P0338	,					
Mode Switch	P1763	Winter Mode Switch		Serial Data Signal is Corrupted or Missing	=	TRUE	Boolean					>=	600	Fail Time (Sec)	Special No Trip
								Rolling Count Diagnostic Enabled	=	TRUE	Boolean				
								Winter Mode Switch Diagnostic Enabled		TRUE	Boolean				
								Ignition Voltage Lo	>=	8.5996	Volts				
								Ignition Voltage Hi	<=	18	Volts				
								Engine Speed Lo	>=	500	RPM				
								Engine Speed Hi Engine Speed is within the	<=	7500	RPM				
								allowable limits for	>=	5	Sec				
							Disable Conditions:	MIL not Illuminated for DTC's:							
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	<u>Fail</u> <u>Case 1</u>	Tap Up Switch Stuck in the Up Position in Gear 1 Enabled	=	0	Boolean	Time Since Last Range Change	>=	1	Enable Time (Sec)				Special No Trip
				Tap Up Switch Stuck in the Up Position in Gear 2 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 3 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 4 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 5 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 6 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean								
				Tap Up Switch Stuck in the Up Position in Park Enabled		1	Boolean								

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	D VALUE	SECONDARY PARAMETERS	ENABLE	CONDITION	ıs -	TIME REQ	UIRED	MIL ILLUM.
			Tap Up Switch Stuck in the Up Position in Reverse Enabled		0	Boolean						Fail	
			Tap Down Switch ON	=	TRUE	Boolean				>	>= 1	Time (Sec)	
			Fail Tap Up Switch Stuck in Case 2 the Up Position in Gear 1 Enabled Tap Up Switch Stuck in	=	1	Boolean	Time Since Last Range Change	>=	Ena 1 Tin (Se	пе			
			the Up Position in Gear 2 Enabled Tap Up Switch Stuck in		1	Boolean							
			the Up Position in Gear 3 Enabled Tap Up Switch Stuck in the Up Position in Gear 4		1	Boolean Boolean							
			Enabled Tap Up Switch Stuck in the Up Position in Gear 5		1	Boolean							
			Enabled Tap Up Switch Stuck in the Up Position in Gear 6 Enabled	=	1	Boolean							
			Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in	=	0	Boolean							
			the Up Position in Park Enabled Tap Up Switch Stuck in	=	0	Boolean							
			the Up Position in Reverse Enabled		0	Boolean						Fail	
			Tap Down Switch ON	=	TRUE	Boolean				>	>= 600	Time (Sec)	
			NOTE: Both Failcase1 and Failcase 2 Must Be Met										
							Ignition Voltage Lo		8.5996 Vo				
							Ignition Voltage Hi Engine Speed Lo	<= >=	18 Vo 500 RF				
							Engine Speed Lo Engine Speed Hi		500 RF 7500 RF				
							Engine Speed in Engine Speed in Engine Speed is within the allowable limits for	>=	5 Se				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD V	ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1765 P182E, P1761 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Case 1 Tap Down Switch Stuck in the Down Position in Gear 1 Enabled	= 0 E	Boolean	Time Since Last Range Change	>= 1 Sec		Special No Trip
			Tap Down Switch Stuck in the Down Position in Gear 2 Enabled	= 0 E	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 3 Enabled	= 0 E	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 4 Enabled	= 0 E	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 5 Enabled	= 0 E	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 6 Enabled	= 0 E	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear Neutral Enabled	= 1 E	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear Park Enabled	= 1 E	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM
			Tap Down Switch Stuck in the Down Position in Gear Reverse Enabled	= 0	Boolean				
			Tap Down Switch ON	= TRUE	Boolean			>= 1 sec	
			Fail Tap Down Switch Stuck Case 2 in the Down Position in Gear 1 Enabled		Boolean	Time Since Last Range Change	>= 1 Sec		
			Tap Down Switch Stuck in the Down Position in Gear 2 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 3 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 4 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 5 Enabled		Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 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		Boolean				
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0	Boolean				
			Tap Down Switch ON	= TRUE	Boolean			>= 600 sec	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIME	REQUIRED	MIL ILLUM.
			NOTE: Both Failcase1 and Failcase 2 Must Be Met									
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= >= <=	8.5996 18 500 7500 5	Volts Volts RPM RPM Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1766, P182E, P1761 ECM: None					
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean					>= (Fail Time (Sec)	
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	8.5996 18 500 7500 5	Volts Volts RPM RPM Sec		(555)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1761 ECM: None					
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range TUTD/MUMD Mode is Selected	- TDIIE	Range State Boolean							Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA				SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIM	E REQI	UIRED	MIL ILLUM.
			Enable Switch is Active	=	TRUE	Boolean								
			The above conditions are present for	=	TRUE	Boolean					>=	2	Fail Time (Sec)	
							Ignition Voltage Lo	>=	8.5996	Volts			, ,	
							Ignition Voltage Hi	<=	18	Volts				
							Vehicle Speed Lo		511	KPH				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:		TCM: P0815, P0816, P0826, P182E, P1876, U0100 ECM: None						

**** Additional Diagnostics-- Car 2 (Look-up Tables) ****

Table 1						Uni				Units
	Axis	0	64	128	192	256	320	384	448	512 Nm
	Curve	50	50	50	50	50	50	50	50	50 RPM
T										
Table 2	Axis -	0.00781	0	Units	3					
	Curve 4		2	2 Sec						
Table 3	A	0.00704		Units	3					
	Axis Curve 4	0.00781	0 4	40 °C 4 Sec						
	_	<u> </u>								
Table 4				Units	;					
	Axis - Curve 4	0.00781	0 2	40 °C 2 Sec						
	Curve	.03.3330	۷	Z Jec						
Table 5				Units	;					
		0.00781	0	40 °C						
	Curve 4	.09.5938	3	3 Sec						
Table C						11	4-			
Table 6	Axis	-40 -0	.00781	40	80	Uni 120 ºC	ts			
	Curve	409	409	1.6	1.4	1.4 Sec	:			
Table 7	Axis	-40 -0	.00781	40	80	Uni 120 ºC	ts			
	Curve	409	409	1.4	1.3	1.2 Sec	;			

Table 8	Avia	0.00704	40	90	120	Units			
	Axis -40 Curve 409	-0.00781 409	40 1.6	80 1.5		Sec			
		•		•					
Table 9						Units			
	Axis -40	-0.00781	40	80	120	٥С			
	Curve 409	409	1.3	1.2	1.1	Sec			
<u>Table 10</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 3.029297	1.857422	1.00293	0.754883	0.583984	Sec			
<u>Table 11</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 1.720703	1.108398	0.595703	0.359375	0.21582	Sec			
<u>Table 12</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 2.121094	1.393555	0.841797	0.642578	0.332031	Sec			
<u>Table 13</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 2.507813	0.952148	0.499023	0.292969	0.126953	Sec			
<u>Table 14</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 2.972656	0.818359	0.47168	0.204102	0.132813	Sec			
Table 15		60	0.01	4.01		10	22	2.2	
	Axis -40	-30	-20	-10	0	10	20	30	

Curve

0

Units 40 °C

0 Sec

Table To			Unii	S					
	Axis -0.00781	0	40 °C						
	Curve 409.5938	1.5	1.5 Sec						
	Cuive 409.3930	1.5	1.5						
Table 17			Unit	s					
	Axis -0.00781	0	40 °C						
				1/0					
	Curve 8191.75	1676	1676 RPN	/i/Sec					
Table 18			Unit	s					
140.0 .0	Axis -0.00781	0	40 °C						
	Curve 8191.75	500	500 RPN	/I/Sec					
Table 19			Unit	·e					
Table 15	Avia 0.00701	0		.5					
	Axis -0.00781	0	40 °C						
	Curve 0.4	0.35	0.3 Sec						
Table 20								11	nits
Table 20	40.4040	40	0.0	0	0.0	0.0	400		
	Axis -40.1016	-40	-20	0	30	60	100	149 149.1016 °C	
	Curve 255.9961	50	45	40	34	25	20	20 255.9961 °C	3
		-	_	_					
Table 21								11	nits
<u>Table 21</u>	40.4040	10					100		
	Axis -40.1016	-40	-20	0	30	60	100	149 149.1016 °C	3

40

34

30

Units

Table 16

Table 22

Curve 255.9961

Axis -40.1016

Curve 255.9961

50

-40

10

45

-20

8

25

60

20

100

20 255.9961 °C

149.1016 **°C**

255.9961 **℃**

149

Units

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	LD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIM	ME REC	UIRED	MIL ILLUM
Transmission Fluid Temperature Sensor (TFT)	P0667	TCM internal temperature thermistor failed at a constant value or toggling at high frequency.	Fail Case 1 Enable Vehicle Speed	>=	8	Kph			>=	300	Vehicle Speed Enable Time (Sec)	Special No Trip
			Enable TCC Slip	>	150	RPM			>=	150	TCC Slip Enable Time (Sec)	
			Enable Transmission Fluid Temperature Enable Transmission	1	70	°C					(360)	
			Fluid Temperature Delta from startup		55	°C					Temp	
			Enable Substrate Temp Delta		2	°C			>=	100	Delta Enable Time (Sec)	
			Startup Substrate Temperature Lo Enable	>=	-55	°C					(555)	
			Startup Substrate Temperature HI Enable When Above FC1 Enable Conditions have been Met, Increment Fail	\-	21	°C			>	100	Fail Timer (Sec)	
			Timer Fail Case 2 Vehicle Speed	>=	8	RPM			>=	300	Vehicle Speed Enable Time (Sec)	
			TCC Slip	>	-12	RPM			>=	-12	TCC Slip Enable Time (Sec)	
			Transmission Fluid Temperature	>=	70	°C					/	
			Transmission Fluid Temperature Delta from startup	>=	55	°C						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLE) VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIMI	E REQ	UIRED	MIL ILLUM.
			Enable Substrate Temp Delta	<	2	°C					>=	100	Temp Delta Enable Time (Sec)	
			Startup Substrate Temperature Lo Enable	>=	120	°C								
			Startup Substrate Temperature HI Enable	\-	150	°C								
			When Above FC2 Enable Conditions have been Met, Increment Fail Timer								>	100	Fail Timer (Sec)	
			Fail TCM Internal temp delta	>=	20	°C					>=	14 7	Fail Counts Sample Time	
							TOM lateral Terral Le			00			(Sec)	
							TCM Internal Temp Lo	>= <=	-55 150	°C				
							TCM Internal Temp Hi Ignition Voltage Lo		8.5996	Volts				
							Ignition Voltage Hi		18	Volts				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi		7500	RPM				
							Engine Speed is within the allowable limits for		5	Sec				
						Disable Conditions:		TCM: P0667,P 0716,P0						
								717,P07 22,P072 3						
								ECM: None						
Mode Switch	P071D	Transmission Mode Switch B Circuit	If Sport Mode Switch is Active		TRUE	Boolean					>=	600	Fail Time (Sec)	Special No Trip
							Sport Mode Switch Diagnostic Enabled		TRUE	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	7	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	ITIONS	TIMI	E REQI	UIRED	MIL ILLUM.
							Ignition Voltage Lo	>=	8.5996	Volts				
							Ignition Voltage Hi	<=	18	Volts				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1762						
								ECM: None						
			<u>Fail</u>										Vehicle	Special No
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	Case 1 Vehicle Speed	>=	8	Kph					>=		Speed Enable Time	Trip
													(Sec) TCC Slip	
			TCC Slip	>=	150	RPM					>=	0	Enable Time (Sec)	
			Transmission Fluid Temperature Lo	>=	-50	°C							` ,	
			Transmission Fluid Temperature High	<=	21	°C								
			Engine Coolant Temp		70	°C								
			Engine Coolant Temp Delta	/-	55	°C								
			TFT Delta from Startup		2	°C								
			If the Above Enable Conditions are Met, Then Increment Fail Counter								>=	100	Fail Time (Sec)	
			<u>Fail</u> <u>Case 2</u> Vehicle Speed	>=	8	Kph					>=		Vehicle Speed Enable Time (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIME F	EQUIRED	MIL ILLUM
			TCC Slip	>=	-12	RPM					>= (Time	
			Transmission Fluid Temperature	>=	129	°C						(Sec)	
			Transmission Fluid Temperature	<=	170	°C							
			Engine Coolant Temp	>=	70	°C							
			Engine Coolant Temp Delta	>=	55	°C						TFT	
			TFT Delta from startup	<	2	°C					>= 1(Delte	
			If the Above Enable Conditions are Met, Then Increment Fail Counter								>= 1(Fail Time (Sec)	
			<u>Fail</u> <u>Case 3</u> TFT Delta	>=	20	°C					= {	Sample	
			Fail Case 4 Transmission Fluid Temperature	<=	20	°C					Plea Refe Tab ii supp >= n Doo ents C	er to e 1 Fail Time G (Sec) for	
							Engine Torque Lo Engine Torque Hi Throttle Position Lo Throttle Position Hi Vehicle Speed Lo	>= <=	50 1492 8.0002 99.998 8	N*m N*m Pct Pct Kph			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLI	E COND	ITIONS	TIME REQUIRED	MIL ILLUN
					Vehicle Speed Hi	<=	511	Kph		
					Engine Speed Lo	>=	500	RPM		
					Engine Speed Hi	<=	6500	RPM		
					Engine Coolant Lo	>=	-39	°C		
					Engine Coolant Hi	<=	149	°C		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Engine Crank Position Sensor Signal Valid	=	TRUE	Boolean		
					Transmission Fluid Temperature Lo	>=	-50	°C		
					Transmission Fluid Temperature Hi	<=	170	°C		
					Ignition Voltage Lo	>=	8.5996			
					Ignition Voltage Hi	<=	18	Volts		
					Engine Speed Lo	>=	500	RPM		
					Engine Speed Hi Engine Coolant Sensor Signal	<=	7500	RPM		
					Valid Engine Speed is within the	=	IRUE	Boolean		
					allowable limits for	>=	5	Sec		
				Disable Conditions:		P0711, P0716,				
						P0717,				
						P0722, P0723,				
						P0742,				
						P2726				
						ECM:				
						P0101,				
						P0102, P0103,				
						P0116,				
						P0117,				
						P0118, P0121,				
						P0122,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MAL	FUNCTION CRITERIA	TH	IRESHOLD) VALUE	SECONDARY PARAMETERS	ENABI	LE COND	ITIONS	TIM	E REQI	JIRED	MIL ILLUM.
									P0336 P0337 P0338	,					
Mode Switch	P1763	Winter Mode Switch		Serial Data Signal is Corrupted or Missing	=	TRUE	Boolean					>=	600	Fail Time (Sec)	Special No Trip
								Rolling Count Diagnostic Enabled	=	TRUE	Boolean				
								Winter Mode Switch Diagnostic Enabled		TRUE	Boolean				
								Ignition Voltage Lo	>=	8.5996	Volts				
								Ignition Voltage Hi		18	Volts				
								Engine Speed Lo		500	RPM				
								Engine Speed Hi Engine Speed is within the		7500	RPM				
								allowable limits for	>=	5	Sec				
							Disable Conditions:	MIL not Illuminated for DTC's:							
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	<u>Fail</u> <u>Case 1</u>	Tap Up Switch Stuck in the Up Position in Gear 1 Enabled	=	0	Boolean	Time Since Last Range Change	>=	1	Enable Time (Sec)				Special No Trip
				Tap Up Switch Stuck in the Up Position in Gear 2 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 3 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 4 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 5 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Gear 6 Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean								
				Tap Up Switch Stuck in the Up Position in Park Enabled		1	Boolean								

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= 0	Boolean			Fail	
			Tap Down Switch ON	= TRUE	Boolean			Fail >= 1 Time (Sec)	
			Fail Tap Up Switch Stuck in Case 2 the Up Position in Gear 1 Enabled Tap Up Switch Stuck in	= 1	Boolean	Time Since Last Range Change	>= 1 Time (Sec)		
			the Up Position in Gear 2 Enabled Tap Up Switch Stuck in	= 1	Boolean				
			the Up Position in Gear 3 Enabled Tap Up Switch Stuck in		Boolean				
			the Up Position in Gear 4 Enabled Tap Up Switch Stuck in		Boolean				
			the Up Position in Gear 5 Enabled Tap Up Switch Stuck in		Boolean				
			the Up Position in Gear 6 Enabled Tap Up Switch Stuck in the Up Position in		Boolean Boolean				
			Neutral Enabled Tap Up Switch Stuck in the Up Position in Park		Boolean				
			Enabled Tap Up Switch Stuck in the Up Position in		Boolean				
			Reverse Enabled Tap Down Switch ON		Boolean			Fail >= 600 Time	
			NOTE: Both Failcase1					(Sec)	
			and Failcase 2 Must Be Met			Ignition Voltage Lo	>= 8.5996 Volts		
						Ignition Voltage Hi Engine Speed Lo	<= 18 Volts		
						Engine Speed Hi Engine Speed is within the allowable limits for	<= 7500 RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD V	/ALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1765 P182E, P1761 ECM: None		
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Case 1 Tap Down Switch Stuck in the Down Position in Gear 1 Enabled	= 0	Boolean	Time Since Last Range Change	>= 1 Sec		Special No Trip
			Tap Down Switch Stuck in the Down Position in Gear 2 Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 3 Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 4 Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 5 Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 6 Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear Neutral Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear Park Enabled	= 1	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM
			Tap Down Switch Stuck in the Down Position in Gear Reverse Enabled	= 0	Boolean				
			Tap Down Switch ON	= TRUE	Boolean			>= 1 sec	
			Fail Tap Down Switch Stuck Case 2 in the Down Position in Gear 1 Enabled		Boolean	Time Since Last Range Change	>= 1 Sec		
			Tap Down Switch Stuck in the Down Position in Gear 2 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 3 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 4 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 5 Enabled		Boolean				
			Tap Down Switch Stuck in the Down Position in Gear 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		Boolean				
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0	Boolean				
			Tap Down Switch ON	= TRUE	Boolean			>= 600 sec	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIME	REQUIRED	MIL ILLUM.
			NOTE: Both Failcase1 and Failcase 2 Must Be Met									
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= >= <=	8.5996 18 500 7500 5	Volts Volts RPM RPM Sec			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1766, P182E, P1761 ECM: None					
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean					>= 6	Fail Time (Sec)	
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	8.5996 18 500 7500 5	Volts Volts RPM RPM Sec		(555)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, P1761 ECM: None					
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range TUTD/MUMD Mode is Selected	- TDIIE	Range State Boolean							Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		O VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS		ITIONS	S TIME REQUIRED		UIRED	MIL ILLUM.
			Enable Switch is Active	=	= TRUE Boolean									
			The above conditions are present for	=	TRUE	Boolean					>=	2	Fail Time (Sec)	
							Ignition Voltage Lo	>=	8.5996	Volts			, ,	
							Ignition Voltage Hi	<=	18	Volts				
							Vehicle Speed Lo		511	KPH				
							Engine Speed Lo		500	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:		TCM: P0815, P0816, P0826, P182E, P1876, U0100 ECM: None						

**** Additional Diagnostics-- Car 2 (Look-up Tables) ****

Table 1		Units								
	Axis	0	64	128	192	256	320	384	448	512 Nm
	Curve	50	50	50	50	50	50	50	50	50 RPM
T										
Table 2	Axis -	0.00781	0	Units	5					
	Curve 4		2	2 Sec						
Table 3	A	0.00704		Units	3					
	Axis Curve 4	0.00781	0 4	40 °C 4 Sec						
	_									
Table 4				Units	5					
	Axis - Curve 4	0.00781	0 2	40 °C 2 Sec						
	Curve	.09.5950	۷	Z Jec						
Table 5				Units	.					
		0.00781	0	40 °C						
	Curve 4	.09.5938	3	3 Sec						
Table C						11	4-			
Table 6	Axis	-40 -0	.00781	40	80	Uni 120 ºC	ts			
	Curve	409	409	1.6	1.4	1.4 Sec	:			
Table 7	Axis	-40 -0	.00781	40	80	Uni 120 ºC	ts			
	Curve	409	409	1.4	1.3	1.2 Sec	;			

Table 8	Avia	0.00704	40	90	120	Units			
	Axis -40 Curve 409	-0.00781 409	40 1.6	80 1.5		Sec			
		<u> </u>		•					
Table 9						Units			
	Axis -40	-0.00781	40	80	120	٥С			
	Curve 409	409	1.3	1.2	1.1	Sec			
<u>Table 10</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 3.029297	1.857422	1.00293	0.754883	0.583984	Sec			
<u>Table 11</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 1.720703	1.108398	0.595703	0.359375	0.21582	Sec			
<u> Table 12</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 2.121094	1.393555	0.841797	0.642578	0.332031	Sec			
<u>Table 13</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 2.507813	0.952148	0.499023	0.292969	0.126953	Sec			
<u> Table 14</u>						Units			
	Axis -40	-20	0	30	110				
	Curve 2.972656	0.818359	0.47168	0.204102	0.132813	Sec			
Table 15		25	22	4.5.5		4.5.1		2.5	
	Axis -40	-30	-20	-10	0	10	20	30	

Curve

0

Units 40 °C

0 Sec

Table 16			Uni	เร					
	Axis -0.00781	0	40 °C						
	Curve 409.5938	1.5	1.5 Sec						
	Cuive 409.5938	1.5	1.5 360	•					
Table 17			Unit	ts					
<u> </u>	Axis -0.00781	0	40 °C						
	Curve 8191.75	1676	1676 RPI	M/Sec					
	· · · · · · · · · · · · · · · · · · ·								
Table 40			Uni	4-					
<u>Table 18</u>				เร					
	Axis -0.00781	0	40 °C						
	Curve 8191.75	500	500 RPI	M/Sec					
<u>Table 19</u>			Uni	ts					
	Axis -0.00781	0	40 °C						
	Curve 0.4	0.35	0.3 Sec						
	0.4	0.33	0.5	•					
Table 20								Unit	ts
<u> </u>	Axis -40.1016	40	20	0	30	60	100	149 149.1016 °C	
		-40	-20				100		
	Curve 255.9961	50	45	40	34	25	20	20 255.9961 °C	
Table 21								Unit	40
I ADIE Z I	40.40.5	10					100		12
	Axis -40.1016	-40	-20	0	30	60	100	149 149.1016 °C	

40

34

30

Units

Table 16

Table 22

Curve 255.9961

Axis -40.1016

Curve 255.9961

50

-40

10

45

-20

8

25

60

20

100

20 255.9961 °C

149.1016 **°C**

255.9961 **℃**

149

Units

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDITION:	S TIM	ME REC	QUIRED	MIL ILLUN
ransmission Control lodule (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table > 21 in supporting °C documents							Two Trips
			If TCM substrate temp to power up temp Δ								
			Both conditions above required to increment fail counter					>=	3000	Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.					Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until					>=	700	Pass Counts (100ms loop)	
								Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid	=	TRUE Boole	an			
					Accelerator Position Signal Valid	=	TRUE Boole	an			
					Ignition Voltage Lo	>=	8.5996 Volt	;			
					Ignition Voltage Hi	<=	31.99 Volt	;			
					Engine Speed Lo	>=	500 RPM				
					Engine Speed Hi Engine Speed is within the	<= >=	7500 RPM 5 Sec				
					allowable limits for		FALSE				
					Brake torque active Below describes the brake torque	=	ralot				
					entry criteria						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Throttle	>=	30	Pct		
					Transmission Input Speed	<=	200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					РТО	=	Not Active			
					Set Brake Torque Active TRUE if above conditions are met for:	>=	7	sec		
					Below describes the brake torque exit criteria					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure	≠	Clutch Hydrau lic Air Purge Event			
					Clutch used to exit brake torque active	_	CeTFT D_e_C 3_Ratl Enbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>=	20	Sec		
					P0667 Status is	≠	Test Failed This Key On or Fault Active			
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712.				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0713, P0717,		
						P0722,		
						P0723,		
						P0962, P0963,		
						P0966,		
						P0967,		
						P0970,		
						P0971,		
						P215C,		
						P2720, P2721,		
						P2721, P2729,		
						P2730		
						ECM:		
						P0101,		
						P0102,		
						P0103, P0106,		
						P0107,		
						P0108,		
						P0171,		
						P0172,		
						P0174,		
						P0175, P0201,		
						P0201, P0202,		
						P0203,		
						P0204,		
						P0205,		
						P0206, P0207,		
						P0207, P0208,		
						P0300,		
						P0301,		
						P0302,		
						P0303,		
						P0304,		
						P0305, P0306,		
						P0307,		
						P0308,		
						P0401,		
						P042E		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REQUIR	ED MIL IL	LLUM.
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	Refer to Table > 22 in supporting °C documents						Two	Trips
			If transmission oil temp to power up temp Δ	Refer to Table > 20 in supporting °C documents							
			Both conditions above required to increment fail counter						>= 3000 Co	ail unts Oms op)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.						Out 3750 Co of (10	nple unts Oms op)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>= 700 Co (10 lo Sai	unts Oms op) nple	
									of 875 (10	unts Oms op)	
					Engine Torque Signal Valid		TRUE				
					Accelerator Position Signal Valid			Boolean			
					Ignition Voltage Lo Ignition Voltage Hi		8.5996 31.99	Volts Volts			
					Engine Speed Lo	>=	500	RPM			
					Engine Speed Hi		7500	RPM			
					Engine Speed is within the allowable limits for		5	Sec			
					Brake torque active	=	FALSE				
					Below describes the brake torque entry criteria						
					Engine Torque		100	N*m			
					Throttle	>=	30	Pct			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Input Speed	<=	200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					РТО	=	Not Active			
					Set Brake Torque Active TRUE if above conditions are met for:	>=	7	sec		
					Below describes the brake torque					
					exit criteria Brake torque entry criteria		Not Met			
					Clutch hydraulic pressure	≠	Clutch Hydrau lic Air Purge Event			
					Clutch used to exit brake torque active		CeTFT D_e_C 3_Ratl Enbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:		20	Sec		
					P06AC Status is	≠	Test Failed This Key On or Fault Active			
				Disable Conditions:		P0658, P0668, P0669, P06AD, P06AE, P0716,	P0102, P0103, P0106,			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0713, P0172, P0717, P0174, P0722, P0175, P0723, P0201, P0962, P0202, P0963, P0203, P0966, P0204, P0967, P0205, P0970, P0206, P0971, P0207, P215C, P0208, P2720, P0300, P2721, P0301, P2729, P0302, P2730 P0303, P0304, P0305, P0306, P0307, P0308, P0308, P0401, P042E		
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table > 21 in supporting °C documents				Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table > 20 in supporting °C documents				
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and				>= 3000	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	ITIONS	TIME REG	UIRED	MIL ILLUM.
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>= 700 Out 975	Pass Counts (100ms loop) Sample Counts	
									of 875	(100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal Valid			Boolean Boolean			
					Ignition Voltage Lo		8.5996				
					Ignition Voltage Ed		31.99				
					Engine Speed Lo		500	RPM			
					Engine Speed Hi		7500	RPM			
					Engine Speed is within the allowable limits for	>=	5	Sec			
					Brake torque active		FALSE				
					Below describes the brake torque entry criteria						
					Engine Torque		100 30	N*m Pct			
					Throttle Transmission Input Speed		200	RPM			
					Vehicle Speed		8	Kph			
					Transmission Range		Park	•			
					Transmission Range	≠	Neutral				
					РТО	=	Not Active				
					Set Brake Torque Active TRUE if above conditions are met for:	>=	7	sec			
					Below describes the brake torque exit criteria						
					Brake torque entry criteria	=	Not Met				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Clutch hydraulic pressure	Clutch Hydrau ≠ lic Air Purge Event		
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:			
					P0711 Status is	Failed This		
				Disable Conditions:		TCM: P0658, ECM: P0668, P0101, P0303, P0669, P0102, P0304, P06AD, P0103, P0305, P06AE, P0106, P0306, P0716, P0107, P0307, P0712, P0171, P0401, P0717, P0172, P0174, P0722, P0174, P0723, P0175, P0962, P0201, P0963, P0202, P0966, P0203, P0966, P0203, P0971, P0204, P0970, P0204, P0970, P0206, P215C, P0207, P2720, P0208, P2721, P0300, P2729, P0301, P2720, P0301, P2730, P0302,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIM	E REQI	UIRED	MIL ILLUM.
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 881.75	RPM					>=	0.8	Fail Time (Sec)	One Trip
						Engine Torque is	>=	0	N*m				
						Engine Torque is		8192	N*m				
						Engine Speed		500	RPM				
						Engine Speed		7500	RPM				
						Engine Speed is within the allowable limits for		5	Sec				
						Vehicle Speed is	>=	0	Kph				
						Throttle Position is	>=	0	Pct				
						Transmission Input Speed is	>=	0	RPM				
						The previous requirement has been satisfied for	>=	0	Sec				
						The change (loop to loop) in transmission input speed is	<	8191.8	RPM/L oop				
						The previous requirement has been satisfied for	>=	0	Sec				
						Throttle Position Signal Valid			Boolean				
						Engine Torque Signal Valid			Boolean				
						Ignition Voltage		8.5996	Volts				
						Ignition Voltage P0716 Status is not		31.99 Test Failed This Key On or Fault Active	Volts				
					Disable Conditions:		P0717, P0752, P0973,	ECM: P0101, P0102, P0103, P0121, P0122, P0123					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALF	UNCTION CRITERIA		THRESHOLI) VALUE	SECONDARY PARAMETERS	ENABL	E COND	ITIONS	TIM	IE REQ	UIRED	MIL ILLUM.
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	<u>Fail</u> Case 1	Transmission Input Speed is	<	32.625	RPM					>=	4.5	Fail Time (Sec)	One Trip
			<u>Fail</u> <u>Case 2</u>	When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	<	653.125	RPM	Controller uses a single power supply for the speed sensors		1	Boolean			(232)	
								Engine Torque is	>=	50	N*m				
								Engine Torque is	<=	8192	N*m				
								Vehicle Speed	>=	16	Kph				
								Engine Torque Signal Valid	=	TRUE	Boolean	1			
								Ignition Voltage	>=	8.5996	Volts				
								Ignition Voltage		31.99					
								Engine Speed		500	RPM				
								Engine Speed		7500	RPM				
								Engine Speed is within the allowable limits for		5	Sec				
								P0717 Status is not	=	Test Failed This Key Or or Fault Active	1				
							Disable Conditions:		TCM: P0722, P0723						
									ECM: P0101, P0102, P0103						
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage		Transmission Output Speed Sensor Raw Speed	<=	35	RPM	P0722 Status is not	=	Test Failed This Key Or or Fault Active	1	>=	4.5	Fail Time (Sec)	One Trip

	AULT ODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	ITIONS	TIME REQUIRED	MIL ILLUM.
					Transmission Input Speed Check	=	TRUE	Boolean		
					Engine Torque Check	=	TRUE	Boolean		
					Throttle Position	>=	8.0002	Pct		
					Transmission Fluid Temperature	>=	-40	°C		
					Disable this DTC if the PTO is active	=	1	Boolean		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage is	>=	8.5996			
					Ignition Voltage is	<=	31.99			
					Engine Speed is	>=	500	RPM		
					Engine Speed is Engine Speed is within the	<=	7500	RPM		
					allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE					
					Engine Torque Condition 1					
					Shift Status is not	=	complete	•		
					OR					
					Transmission Range is	=	Park or Neutral			
					Engine Torque is	>=	8191.8	N*m		
					Engine Torque is	<=	8191.8	N*m		
					Engine Torque Condition 2					
					Engine Torque is	>=	50	N*m		
					Engine Torque is	<=	8191.8	N*m		
					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABL	E COND	DITIONS	TIME	REQUIR	ED	MIL ILLUM.
							TIS Check Condition 1 Transmission Input Speed is Transmission Input Speed is	>= <=	653.13 5350	RPM RPM				
							TIS Check Condition 2 Engine Speed without the brake applied is Engine Speed with the brake	>=	3200 3200					
							applied is Engine Speed is Controller uses a single power supply for the speed sensors	<= =	8191.8 1	Boolean				
							Powertrain Brake Pedal is Valid	=	TRUE	Boolean				
						Disable Conditions:		P0716, P0717,						
								P0723 ECM: P0101, P0102,						
								P0103, P0121, P0122, P0123						
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	>=	105	RPM					>=	0 T	able me sec) able	One Trip
			Output Speed Delta	<=	8191.75	RPM					>=	0 T (S Ou	me sec) itput	
			Output Speed Drop	>	650	RPM					>=	D 1.5 Re r Ti	rop cove Fail me sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDIT	IONS	TIME REQUIRED	MIL ILLUM.
					Range_Disable OR		Boolean		
					Neutral_Range_Enable And		Boolean		
					Neutral_Speed_Enable are TRUE concurrently	= TRUE E	Boolean		
					Transmission_Range_Enable		Boolean		
					Transmission_Input_Speed_Enab le No Change in Transfer Case	- INOL L	Boolean		
					Range (High <-> Low) for Engine Torque Signal Valid	/= 5 S	Seconds		
					Throttle Position Signal Valid				
					P0723 Status is not	Failed This			
					Disable this DTC if the PTO is active	Δctive = 1 F	Boolean		
					lgnition Voltage is Ignition Voltage is		Volts Volts		
					Engine Speed is	>= 500	RPM		
					Engine Speed is Engine Speed is within the allowable limits for		RPM Sec		
					Enable_Flags Defined Below				
					Transmission_Input_Speed_Enab le 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 satisfied for Input Speed Delta	>= 0	Enable Time (Sec) RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Raw Input Speed	>= 500 RPM		
					TIS Condition 2 is TRUE when ALL of the next three conditions are satisfied Input Speed A Single Power Supply is used for	= 0 RPM		
					all speed sensors Powertrain Brake Pedal Applied is	- INOL Boolean		
						= FALSE Boolean		
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE			
					Transmission Range is	= Neutral ENUM Revers e/Neutr		
					Transmission Range is	= al ENUM Transiti onal		
					Transmission Range is	Neutral /Drive Transiti onal		
					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is	Park/R		
					Transmission Range is	= everse ENUM Transiti onal		
					Input Clutch is not	ON (Fully Applied ENUM)		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satisfied for Transmission Output Speed	> 410 Seconds		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLI) VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						And the acceleration of the Transmission Output Speed is And the acceleration of the Transmission Output Speed is	< 0 oop Rate RPM/L		
						Transmission_Range_Enable is TRUE when one of the next four conditions is TRUE Transmission Range is Transmission Range is	= Neutral ENUM Revers e/Neutr		
						Transmission Range is Range Change Delay Timer	onal Neutral Porive Transiti onal		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0973, P0974, P0976, P0977		
							ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met		Кра			Enable >= 2 Time (Sec)	Two Trips

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	Ξ	SECONDARY PARAMETERS	ENABL	LE CONDI	TIONS	TIM	E REQ	UIRED	MIL ILLUM.
			(A) TCC Slip Error @ TCC On Mode	Refer to Table 1 >= in Supporting RPM Documents						>=	6	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode If Above Conditions	>= 130 RPM						>=	6	Fail Time (Sec) TCC	
			Have been Met, and Fail Timer Expired, Increment Fail Counter					0.5000	V 16	>=	2	Stuck Off Fail Counte	
						lgnition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 31.99	Volts Volts				
						Engine Speed		500	RPM				
						Engine Speed		7500	RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						Engine Torque Lo	>=	50	N*m				
						Engine Torque Hi	<=	1492	N*m				
						Throttle Position Lo	>=	8.0002					
						Throttle Position Hi	<=	99.998					
						2nd Gear Ratio Lo		2.2051					
						2nd Gear Ratio High 3rd Gear Ratio Lo	<= >=	2.537 1.4424	Ratio				
						3rd Gear Ratio Lo	<= <=	1.6595					
						4th Gear Ratio Lo	>=	1.0393	Ratio				
						4th Gear Ratio High	<=	1.238	Ratio				
						5th Gear Ratio Lo	>=	0.7933					
						5th Gear Ratio Hi	<=	0.9127					
						6th Gear Ratio Lo	>=	0.6268	Ratio				
						6th Gear Ratio High	<=	0.7212	Ratio				
						Transmission Fluid Temperature Lo	>=	20	°C				
						Transmission Fluid Temperature Hi	<=	130	°C				
						TCC Command Lock ON or ON mode PTO Not Active	=		Boolean Boolean				
						Engine Torque Signal Valid			Boolean				
						Throttle Position Signal Valid			Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	Т	HRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME RE	QUIRED	MIL ILLUM.
							Dynamic Mode P0741 Status is		FALSE Boolean Test Failed This Key On or Fault Active			
Torque Converter Olitab						Disable Conditions:	MIL not Illuminated for DTC's:	P0716, P0717, P0722, P0723, P0742, P2763, P2764 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0202, P0202, P0203,	P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			One Trip
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed TCC Slip Speed If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter		-12 13	RPM RPM	Run TCC Stuck On Test Enable Criteria:			>= 2.5	Fail Time Fail Counte	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					Gear Ratio		1.6393			
					Gear Ratio	>=	0.6268			
					Engine Speed Hi	<=	6500	RPM		
					Engine Speed Lo		500	RPM		
					Vehicle Speed HI		511	KPH		
					Vehicle Speed Lo	>=	16	KPH		
					Stuck On During Upshift Enabled	=	0	Boolean		
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	8191	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear	≠	1st Gear Locked	Boolean		
					Engine Torque Hi	<=	1492	Nm		
					Engine Torque Lo	>=	80	Nm		
					Current Range	≠	Neutral	Range		
					Current Range	≠	Reverse	Range		
					Transmission Sump Temperature	<=	130	°C		
					Transmission Sump Temperature		20	°C		
					Throttle Position Hyst High		8.0002	Pct		
					Throttle Position Hyst Low		2.9999			
					PTO Active		FALSE			
					Disable if in D1 and value true			Boolean		
					Disable if in D2 and value true			Boolean		
					Disable if in D3 and value true			Boolean		
					Disable if in D4 and value true			Boolean		
					Disable if in D5 and value true			Boolean		
					Disable if in MUMD and value true	=	0	Boolean		
					Disable if in TUTD and value true	=	0	Boolean		
					4 Wheel Drive Active	=	FALSE	Boolean		
					Hydraulic Clutch Air Purge Active	=	FALSE	Boolean		
					Ignore Air Purge if value = true	=	0	Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					TCC Mode	=	OFF			
					Common Enables:					
					Ignition Voltage	>= {	8.5996	V		
					Ignition Voltage	<=	31.99	V		
					Vehicle Speed	<=	511	KPH		
					Engine Speed	>=	500	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		
					P0742 Status is	≠ ŀ	Test Failed This Key On or Fault Active			
				Disable Conditions:	MIL not Illuminated for DTC's:	P0716, P0717, P0722, P0723, P0741, P2763, P2764 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171,	P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E +W597			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRES	HOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIMI	E REQ	UIRED	MIL ILLUM.
								P0202, P0203, P0204, P0205,						
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off			ock 4727	RPM rpm	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Transmission Fluid Temperature Shift is Complete TPS OR Output Speed Throttle Position Signal Valid from ECM Engine Torque Signal Valid from ECM, High side driver is enabled High-Side Driver is Enabled	>= >= = =	8.5996 31.99 500 7500 5 0 0.5005 0 TRUE TRUE	Volts RPM RPM Sec °C RPM Boolean	>= =	0.3 1 0 0 0.3 8	Fail Tmr Fail Counts Neutral Timer (Sec) Fail Timer (Sec) Counts	Two Trips
							ECM, High side driver is enabled	=		Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME REQUIRED	MIL ILLUM.
							Output Speed Sensor fault	=	FALSE Boolean		
							Default Gear Option is not present	=	TRUE		
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E			
								P0172, P0174	P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308,		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>=	200	Rpm					One Trip
			Commanded Gear Commanded Gear has	=	3rd	Gear					
			Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	=	TRUE	Boolean					
			C456/CBR1 Pressure Switch	=	Pressurized	Boolean					
			C456/CBR1 Pressure Switch Fault If the above parameters are true	=	FALSE	Boolean					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	CONDI	TIONS	TIME RE	QUIRED	MIL ILLUM.
					Ignition Voltage Lo	>=	8.5996	Volts	Pleasi Refer 1 Table 16 in Suppo ing Docur ents >= 1	Neutral Timer (Sec)	
					Ignition Voltage Hi		31.99	Volts			
					Engine Speed Lo		500	RPM			
					Engine Speed Hi		7500	RPM			
					Engine Speed is within the allowable limits for	/-	5	Sec			
					High-Side Driver is Enabled Throttle Position Signal Valid from		TRUE				
					ECM	_	TRUE	Boolean			
					Output Speed OR		0	RPM			
					TPS Shift is Complete		0.5005	%			
					Transmission Fluid Temperature	>=	0	°C			
					Input Speed Sensor fault	=	FALSE	Boolean			
					Output Speed Sensor fault	=	FALSE	Boolean			
					Default Gear Option is not present	=	TRUE				
				Disable Conditions:		P0716, P0717, P0722, P0723, P182E	P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306,				

Case 1 Commanded Gear Stuck Off Case 1 Commanded Gear Stucked Case 1 Commanded Gear Commanded Gear Commanded Gear Commanded Gear Previous Gear Ratio Case Ratio	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	TI	HRESHOLD '	VALUE	SECONDARY PARAMETERS	ENABLE	E CONDI	TIONS	TIME R	EQUIRED	MIL ILLUM.
Case 1 Commanded Gear Stuck Off Case 1 Commanded Gear Stucked Case 1 Commanded Gear Commanded Gear Commanded Gear Commanded Gear Previous Gear Ratio Case Ratio									P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203,	P0308, P0401,				
Gear Box Slip >= 200 RPM	Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	<u>Fail</u> Commanded Gear	= 1	1st Locked								One Trip
Commanded Gear Previous Gear Ratio Sear Ratio S				Gear Box Slip	>=	200	RPM					Table >= in Supp ing Docu	Neutral Timer oort (Sec)	
Commanded Gear Previous Gear Ratio Sear Ratio S				Intrusive Shift to 2nd										
Gear Ratio >= 2.245849609				Commanded Gear	_ 1	1st Locked	Gear							
If the above parameters are true														
Sec				If the above parameters	ł	.245849609								
Ignition Voltage Lo >= 8.5996 Volts Ignition Voltage Hi <= 31.99 Volts Engine Speed Lo >= 500 RPM Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for Output Speed >= 0 RPM OR TPS >= 0.5005 %												>= 1	sec	
Ignition Voltage Hi <= 31.99 Volts Engine Speed Lo >= 500 RPM Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for Output Speed >= 0 RPM OR TPS >= 0.5005 %												>= 1	counts	
Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed is within the allowable limits for Output Speed OR TPS >= 0.5005 %									>=	8.5996	Volts			
Engine Speed Hi <= 7500 RPM Engine Speed is within the allowable limits for Output Speed >= 0 RPM OR TPS >= 0.5005 %									<=					
Engine Speed is within the allowable limits for Speed														
allowable limits for Sec Output Speed >= 0 RPM OR TPS >= 0.5005 %									<=	7500	RPM			
OR TPS >= 0.5005 %								⊏ngine Speed is within the allowable limits for	>=	5	Sec			
TPS >= 0.5005 %								Output Speed	>=	0	RPM			
								TPS Shift is Complete		0.5005	%			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:		= TRUE Boolean = TRUE Boolean = FALSE Boolean = FALSE Boolean = TRUE		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case: Steady State 3rd Case 1 Gear Commanded Gear Gearbox Slip				Please Refer to Table 5 in Timer Support ing Docum ents	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive Test: Command 4th Gear If attained Gear=4th gear for Time	Table Based Time Please >= Refer to Table 3 in supporting documents Table Based Enable Time (Sec)				
			It the above conditions are true, Increment 3rd gear fail counter and C35R Fail counter				>= 3 Gear Fail Counts or 3-5R Clutch	
			Fail Case: Steady State 5th Case 2 Gear Commanded Gear				Fall Counts Please	
			Gearbox Slip	>= 200 Rpm			Refer to Table 5 Neutral in Timer Support ing Docum ents	
			Intrusive Test: Command 6th Gear If attained Gear=6th gear Time	Table Based				
			It the above conditions are true, Increment 5th gear fail counter	documents			5th Gear >= 3 Fail Counts or	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDIT	TIONS	TIMI	E REQI	UIRED	MIL ILLUM.
			and C35R Fail counter						>=	14	3-5R Clutch Fail Counts	
					PRNDL State defaulted	=	FALSE I	Boolean				
					inhibit RVT	=	FALSE I	Boolean				
					IMS fault pending indication	=	FALSE I	Boolean				
					TPS validity flag	=	TRUE I	Boolean				
					Hydraulic System Pressurized	=	TRUE I	Boolean				
					Minimum output speed for RVT	>=	0	RPM				
					A OR B							
					(A) Output speed enable	>=	16	RPM				
					(B) Accelerator Pedal enable	>=	0.5005	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi	<=	31.99	Volts				
					Engine Speed Lo	>=	500	RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for	/-	5	Sec				
					Throttle Position Signal valid	=	TRUE I	Boolean				
					HSD Enabled	=	TRUE I	Boolean				
					Transmission Fluid Temperature	>=	0	°C				
					Input Speed Sensor fault	=	FALSE I					
					Output Speed Sensor fault	=	FALSE I	Boolean				
					Default Gear Option is not present	=	TRUE					
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106,	P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307,					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0107, P0308, P0108, P0401, P0171, P042E P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206,		
Variable Bleed Solenoid (VBS)	P0777	Stuck On [C35R] (Steady State)	Intrusive test: (CBR1 clutch exhausted) Gear Ratio	Table Based Time Please >= Refer to Table 4 in supporting documents <= 1.608642578 >= 1.455444336			Fail >= 0.5688 Timer (Sec) Fail >= 2 Count in 1st Gear or Total >= 3 Fail Counts	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
			If the Above is True for Time					
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 1.608642578				
				>= 1.455444336				
			If the above parameters are true					
			are nue				Fail >= 0.5688 Timer (Sec) Fail	
							>= 1 Count in 2nd Gear or	
			Egil Our Ol of Old 4				Total >= 3 Fail Counts	
			<u>Fail</u> Case: Steady State 4th <u>Case 3</u> gear					
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				

COMPONENT/ SYSTEM FAU COD	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
	Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
	If the Above is True for Time					
	Intrusive test: (C1234 clutch exhausted) Gear Ratio	<= 0.89465332				
	Gear Ratio If the above parameters are true	>= 0.809448242			Fail	
					>= 0.5688 Timer (Sec) Fail >= 1 Count in 4th	
					Gear or Total >= 3 Fail Counts	
	Fail Case: Steady State 6th Case 4 gear					
	Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
	Min Delta Output Speed Hysteresis					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITIONS	TIME REQ	UIRED	MIL ILLUM.
			If the Above is True for Time							
			Intrusive test: (CB26 clutch exhausted)							
			Gear Ratio	<= 0.89465332				>= 0.5688	Fail Timer (Sec)	
			Gear Ratio If the above parameters are true	>= 0.809448242				>= 1	counts	
								>= 0.5688	Fail Timer (Sec)	
								>= 1	Fail Count in 6th Gear	
								>= 3	or Total Fail	
					PRNDL State defaulted	=	FALSE Boolean		Counts	
					inhibit RVT		FALSE Boolean			
					IMS fault pending indication	=	FALSE Boolean			
					output speed		0 RPM			
					TPS validity flag		TRUE Boolean			
					HSD Enabled		TRUE Boolean TRUE Boolean			
					Hydraulic_System_Pressurized Minimum output speed for RVT		0 Nm			
					A OR B		O INIII			
					(A) Output speed enable		16 Nm			
					(B) Accelerator Pedal enable		0.5005 Nm			
					Ignition Voltage Lo		8.5996 Volts			
					Ignition Voltage Hi		31.99 Volts			
					Engine Speed Lo	>=	500 RPM			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE	E CONDIT	TIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable		5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable		5	Nm		
					if Attained Gear=1st FW Engine Torque Enable		1492	Nm		
					Transmission Fluid Temperature		0	°C		
					Input Speed Sensor fault		FALSE			
					Output Speed Sensor fault	=	FALSE	Boolean		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E				
						P0172, P0174, P0175, P0201, P0202, P0203,	P0302, P0303, P0304, P0305, P0306, P0307, P0308,			
						P0204, P0205, P0206, P0207, P0208, P0300,				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)		TRUE	Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip	= = ≠	Maximum pressurized Clutch exhaust command Initial Clutch Control 40	RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:							
			fail timer 1 (3-1 shifting with Closed Throttle) fail timer 1	>=	0.299804688	Fail Time (Sec)				
			(3-2 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)		0.299804688	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (5-3 shifting with Closed Throttle)	>= 0.299804688 Fail Time (Sec)				
			Throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)	>= 0.299804688 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.299804688 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer sec 1, and Referen ce Support ing Table 15 for	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Fail Timer 2	
			3rd gear fail counter				3rd >= 3 gear fail counts OR	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			5th gear fail counter				>= 3 fail counts	
			Total fail counter				>= 5 total fail counts	
				Disable Conditions:		= FALSE Boolean = FALSE Boolean = 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM >= 0 °C = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE TCM: P0716, P0717, P0722, P0723, P182E ECM: P0300, P0101, P0301, P0102, P0301, P0102, P0302,		
						P0103, P0303, P0106, P0304, P0107, P0305, P0171, P0307, P0172, P0308, P0174, P0175, P0201, P042E		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0202, P0203, P0204, P0205, P0206, P0207, P0208,		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	<u>Fail</u> <u>Case 1</u> Case: Steady State 4th Gear				Please See	One Trip
			Gear slip Intrusive test:				Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			commanded 5th gear lf attained Gear ≠5th for time	Table Based Time Please Pefer to Table 3 Enable Time				
			if the above conditions have been met Increment 4th Gear Fail Counter				4th >= 3 Gear Fail OR	
			and C456 Fail Counters Eail Case: Steady State 5th				C456 >= 14 Fail Counts	
			<u>Case 2</u> Gear Gear slip				Please See Table 5 Neutral >= For Timer Neutral (Sec) Time	
			Intrusive test: commanded 6th gear				Cal	

COMPONENT/ SYSTEM FA	AULT ODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If attained Gear ≠ 6th for time					
			if the above conditions have been met				5 45	
			Increment 5th Gear Fail Counter				5th Gear >= 3 Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			<u>Fail</u> Case: Steady State 6th <u>Case 3</u> Gear				Please See	
			Gear slip	>= 200 RPM			Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 5th gear				G.L.	
			If attained Gear ≠ 5th for time					
			if the above conditions have been met					
			Increment 6th Gear Fail Counter and C456 Fail Counter				>= 3 Gear Fail Count OR	
			and C456 Fail Counter				C456 >= 14 Fail Counts	
					PRNDL State defaulted inhibit RVT			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	.E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					IMS fault pending indication	=	FALSE	Boolean		
					TPS validity flag	=	TRUE	Boolean		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					Minimum output speed for RVT	>=	0	RPM		
					A OR B					
					(A) Output speed enable	>=	16	RPM		
					(B) Accelerator Pedal enable	>=	0.5005	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	500	RPM		
					Engine Speed Hi		7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid	=	TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature		0	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					OutputSpeed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E	·			
						P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174,	P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208,		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip If the Above is True for Time	>= 200 RPM Table Based				One Trip
				<= 1.209594727 >= 1.094360352			Fail >= 0.5688 Timer (Sec)	
			Fail Case Steady State 2nd				>= 2 Fail Count in 1st Gear or Total >= 3 Fail Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
			If the Above is True for Time					
			Intrusive test: (CB26 clutch exhausted) Gear Ratio					
				>= 1.094360352			Fail	
							Fail	
							>= 1 in 2nd Gear or Total	
			<u>Fail</u> <u>Case 3</u> Case Steady State 3rd				>= 3 fail counts	
			Max Delta Output Speed Hysteresis	Table Based value Please				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME	REQU	JIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table Sec 19 in supporting documents								
			Intrusive test: (C35R clutch exhausted) Gear Ratio	<= 1.209594727								
			Gear Ratio If the above parameters are true									
									>= 0	5688	Fail Timer (Sec) Fail	
									>=	1 OR	Count in 3rd Gear	
					PRNDL State defaulted	=	FALSE	Boolean	>=	3	Total Fail Counts	
I					inhibit RVT		FALSE					
					IMS fault pending indication		FALSE					
					output speed		0	RPM				
					TPS validity flag		TRUE	Boolean				
					HSD Enabled		TRUE					
					Hydraulic_System_Pressurized		TRUE					
					Minimum output speed for RVT		0	Nm				
					A OR B (A) Output speed enable		46	NI				
					(A) Output speed enable (B) Accelerator Pedal enable		16 0.5005	Nm Nm				
					Ignition Voltage Lo		8.5996					
					Ignition Voltage Hi		31.99	Volts				
					Engine Speed Lo		500	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Deimany Officials Chatch	Disable Conditions		>= 5 Nm <= 1492 Nm >= 0 °C = FALSE Boolean = FALSE Boolean = TRUE		One Trip
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				55 mp

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status	=	Maximum pressurized Clutch exhaust command					
			Range Shift Status Attained Gear Slip		Initial Clutch Control 40	RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:							
			fail timer 1 (4-1 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-1 shifting without throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-2 shifting without throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)		0.299804688	Fail Time (Sec)				

COMPONENT/ SYSTEM FA	AULT	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and Referen ce Support ing Table 15 for	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Fail	
			4th gear fail counter				Fail Count >= 3 r From 4th Gear OR Fail	
			5th gear fail counter				Counts >= 3 r From 5th Gear OR	
			6th gear fail counter				Fail Count >= 3 r From 6th Gear OR	
			Total fail counter		Trans oil temperature	> 0 °C	Total >= 5 Fail Counte	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Tap Up Switch Stuck in	Disable Conditions:		= FALSE Boolean # 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM >= 0 °C = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean		Special No
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Tap Up Switch Stuck in Case 1 the Up Position in Range 1 Enabled	= 1 Boolean				Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			2 Enabled Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			3 Enabled						
			Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			4 Enabled Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			5 Enabled	·	Boologii				
			Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			6 Enabled						
			Tap Up Switch Stuck in the Up Position in	= 1	Boolean				
			Neutral Enabled	- '	Doolean				
			Tap Up Switch Stuck in						
			the Up Position in Park	= 1	Boolean				
			Enabled						
			Tap Up Switch Stuck in the Up Position in	= 0	Boolean				
			Reverse Enabled	- 0	boolean				
			Neverse Enabled					Fail	
			Tap Up Switch ON	= TRUE	Boolean			>= 1 Time (Sec)	
			Fail Tap Up Switch Stuck in						
			<u>Fail</u> Tap Up Switch Stuck in <u>Case 2</u> the Up Position in Range	= 1	Boolean				
			1 Enabled	•	20010411				
			Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			2 Enabled						
			Tap Up Switch Stuck in the Up Position in Range	= 1	Boolean				
			The Op Position in Range 3 Enabled	- '	Boolean				
			Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			4 Enabled						
			Tap Up Switch Stuck in	_ 1	Poologn				
			the Up Position in Range 5 Enabled	= 1	Boolean				
			Tap Up Switch Stuck in						
			the Up Position in Range	= 1	Boolean				
			6 Enabled						
			Tap Up Switch Stuck in		Destar				
			the Up Position in	= 0	Boolean				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI) VALUE	SECONDARY PARAMETERS	ENABLE	CONDIT	TIONS	TIME REQU	UIRED	MIL ILLUM.
			Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be	=	0 0 TRUE	Boolean Boolean Boolean					>= 600	Fail Time	
			Met				Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	1 8.5996 31.99	Enable Time (Sec) Volts Volts RPM RPM Sec		(Sec)	
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None					
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Tap Down Switch Stuck Case 1 in the Down Position in Range 1 Enabled	=	1	Boolean							Special No Trip

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

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABI	LE CONDI	TIONS	TIME REC	QUIRED	MIL ILLUM.
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean							
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean							
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled		1	Boolean							
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	0	Boolean							
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	0	Boolean							
			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	
			МС				Time Since Last Range Change	>=	1	Enable Time (Sec)			
							Ignition Voltage Lo	>=	8.5996	Volts			
							Ignition Voltage Hi	<=	31.99	Volts			
							Engine Speed Lo	>=	500 7500	RPM RPM			
							Engine Speed Hi Engine Speed is within the	<= >=	7500 5	Sec			
							allowable limits for		Test Failed This	350			
							P0816 Status is	≠	Key On or Fault Active				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME	REQU	IRED	MIL ILLUM.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None						
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean					>= (60	Fail Time (Sec)	Special No Trip
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi Engine Speed Lo	<= >=	31.99 500	Volts RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					P0826 Status is	≠	Test Failed This Key On or Fault Active					
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761						
						ECM: None						
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure	10 N a								Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 8 for Delay Timer Cal								

FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHO	OLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIM	E REQI	UIRED	MIL ILLUM.
		Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter							>=	25	Fail Counts	
		Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50	Кра								
					Transmission Fluid Temperature Lo Transmission Fluid Temperature	>=	0	°C				
					Hi	<=	120	°C				
					lgnition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 31.99	Volts Volts				
					Engine Speed Lo	>=	500	RPM				
					Engine Speed Hi		7500	RPM				
					Engine Speed is within the allowable limits for		5	Sec				
					Default Gear Action	=	FALSE					
					High Side Driver ON		TRUE					
					RVT Status Hydraulic Pressure Available		Normal TRUE					
					Engine Speed Min		550	RPM				
				Disable Conditions:		P0711, P0712, P0713, P0716, P0717,	ECM: None					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALU	ΙE	SECONDARY PARAMETERS	ENABLE	E CONDIT	TIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Pressure Switch	P0873	Transmission Fluid Pressure (TFP) Sensor C Circuit High Voltage	CB26 Hydraulic Pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	>= See Table 8 for Delay Timer Cal		Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min	\= \ \= \ \= \ \= \ \= \ \= \ \= \ \=	31.99 500 7500 5 FALSE TRUE Normal TRUE	°C °C Volts Volts RPM RPM Sec	>= 25 Fail Counts	Special No Trip
				Сог	Disable nditions:	MIL not Illuminated for DTC's:	TCM:	P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915,	ECM:		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CO	NDITIONS	TIME REQUIRED	MIL ILLUM.
Transmission Fluid Pressure Switch	P0877	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>= See Table 6 for Delay Timer Cal	Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON	>= (12) >= 8.59 <= 31. >= 50 <= 75 >= 51 = FAL	0 °C 996 Volts 99 Volts 0 RPM 00 RPM - Sec	>= 12 Fail Counts	Special No Trip
				Disable Conditions	Hydraulic Pressure Available Engine Speed Min MIL not Illuminated for DTC's:	= TR >= 55	JE 0 RPM 42, ECM: 56, None 57, 73, 74, 76, 77, 15,		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD) VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME REQU	IRED	MIL ILLUM
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulio pressure	>= 700	KPa							Special No Trip
			Hydraulic Delay Timer (Table Based)	>= See Table 6 fo Delay Timer Ca	r al Sec							
			Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter							>= 12 (Fail Counts	
			Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch		Кра							
			transition			Transmission Fluid Temperature	>=	0	°C			
						Lo Transmission Fluid Temperature ப		120	°C			
						Ignition Voltage Lo	>=	8.5996	Volts			
						Ignition Voltage Hi	<=	31.99	Volts			
						Engine Speed Lo	>=	500	RPM			
						Engine Speed Hi	<=	7500	RPM			
						Engine Speed is within the allowable limits for	>=	5	Sec			
						Default Gear Action	=	FALSE				
						High Side Driver ON		TRUE				
						RVT Status		Normal				
						Hydraulic Pressure Available Engine Speed Min		TRUE 550	RPM			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756,					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
						P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None			
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter Note: Subsequent fail	See Table 9 for Sec Delay Timer Cal				>= 18 Fail Counts	Special No Trip
			counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition						
					Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON	>= 0 <= 120 >= 8.5996 <= 31.99 >= 500 <= 7500 >= 5 = FALSE = TRUE	Volts RPM RPM Sec		
					RVT Status Hydraulic Pressure Available Engine Speed Min	= Normal = TRUE >= 550	RPM		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE		SECONDARY PARAMETERS	ENABLE CONDIT	IONS	TIME REQUIRED	MIL ILLUM.
		Transmission Fluid Pressure		Cond	Disable itions:	MIL not Illuminated for DTC's:	TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None			Special No
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	>= See Table 9 for Delay Timer Cal Sec		Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= 31.99	°C °C Volts Volts RPM	>= 17 Fail Counts	Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON RVT Status Hydraulic Pressure Available Engine Speed Min	>= 5 Sec = FALSE = TRUE = Normal = TRUE		
				Dis Conditi		: TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None		
Mode 2 Multiplex Valve	P1751	Shift valve 1 performance	Attained Gear Slip is If Slip is Greater than the Above Cal Increment Fail Counter & Sample Counter		Once this evaluation is complete the system will allow the valve to get back into position by delaying the next test for	= 1 Seconds	>= 5 Fail Counts Out 5 Sample of Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME REQUIRED	MIL ILLUM.
					M2 Solenoid is Commanded On	=	TRUE Boolea	n	
					Current Gear ≠ 2nd Gear	≠	2nd Gear Gear		
					Calculated line pressure is	>=	1300 kPa		
					The test can begin when the M2 valve is verified to be in place because absolute value of attained gear slip and commanded gear slip is	<=	110 RPM		
					Test is delayed by a calibrated amount of time to allow the M2 valve to get into position	=	0.5 Sec		
					Upshift is In Progress	=	FALSE Boolea	n	
					Input Speed Sensor Signal Hyst High (enabled above this value)	>=	1175 RPM		
					Input Speed Sensor Signal Hyst Low (disabled below this value)	<=	900 RPM		
					The torque converter clutch has transition from Locked to Unlocked.	=	TRUE Boolea	n	
					TCC Stuck On Enable Criteria:				
					Gear Ratio Gear Ratio		1.6393 Ratio 0.6268 Ratio		
					Engine Speed Hi		6500 RPM		
					Engine Speed Lo	>=	500 RPM		
					Vehicle Speed HI	<=	511 KPH		
					Vehicle Speed Lo	>=	16 KPH		
					Stuck On During Upshift Enabled	=	0 Boolea	n	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					If Stuck On During Upshift is enabled (See Above), Engine Torque Must be	>=	8191	Nm		
					Down Shift In Progress	=	FALSE	Boolean		
					Current Gear	≠	1st Gear	Boolean		
					Engine Torque Hi	<=	Locked 1492	Nm		
					Engine Torque Lo		80	Nm		
					Current Range		Neutral			
					Current Range		Reverse			
					Transmission Sump Temperature	<=	130	°C		
					Transmission Sump Temperature	>=	20	°C		
					Throttle Position Hyst High	>=	8.0002	Pct		
					Throttle Position Hyst Low	<=	2.9999	Pct		
					PTO Active	=	FALSE	Boolean		
					Disable if in D1 and value true	=	0	Boolean		
					Disable if in D2 and value true	=	0	Boolean		
					Disable if in D3 and value true	=	0	Boolean		
					Disable if in D4 and value true	=	0	Boolean		
					Disable if in D5 and value true	=	0	Boolean		
					Disable if in MUMD and value true	=	0	Boolean		
					Disable if in TUTD and value true	=	0	Boolean		
					4 Wheel Drive Active	=	FALSE	Boolean		
					Air Purge Active	=	FALSE	Boolean		
					Ignore Air Purge if value = true	=	0	Boolean		
					TCC Mode	=	OFF			
					Common Enables:					
					Ignition Voltage		8.5996	V		
					Ignition Voltage	<=	31.99	V		
					Vehicle Speed	<=	511	KPH		
					Engine Speed	>=	500	RPM		
					Engine Speed	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Engine Torque Signal Valid Throttle Position Signal Valid			
					P1751 Status is	Test Failed ≠ This		
				Disable Conditions:	MIL not Illuminated for DTC's:	Key On TCM: P0716, P0717, P0722, P0723, P0741, P0742, P2763, P2764		
						ECM: P0301, P0101, P0302, P0102, P0303, P0103, P0304, P0106, P0305, P0107, P0306, P0108, P0307, P0171, P0308, P0172, P0401, P0174, P042E		
						P0174, P042E P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300.		
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 > 10 Timer	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	E COND	TIONS	TIME REQUIRED	MIL ILLUM
						Tap Up Tap Down Message Health	=	TRUE	Boolean		
						Engine Speed Lo	>=	500	RPM		
						Engine Speed Hi		7500	RPM		
						Engine Speed is within the					
						allowable limits for	>=	5	Sec		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None				
					conditions.		ECM: None				
			Fail Tap Up Switch Stuck in								Special No
ap Up Tap Down Switch TUTD)	P1765	Upshift Switch Circuit #2	Case 1 the Up Position in Range	= 1	Boolean						Trip
			Tap Up Switch Stuck in								
			the Up Position in Range	= 1	Boolean						
			2 Enabled Tap Up Switch Stuck in								
			the Up Position in Range	= 1	Boolean						
			3 Enabled Tap Up Switch Stuck in								
			the Up Position in Range	= 1	Boolean						
			4 Enabled Tap Up Switch Stuck in								
			the Up Position in Range	= 1	Boolean						
			5 Enabled Tap Up Switch Stuck in								
			the Up Position in Range	= 1	Boolean						
			6 Enabled								
			Tap Up Switch Stuck in the Up Position in	= 1	Boolean						
			Neutral Enabled	· ·	Boolean						
			Tap Up Switch Stuck in	= 1	Dooloon						
			the Up Position in Park Enabled	- 1	Boolean						
			Tap Up Switch Stuck in	_							
			the Up Position in Reverse Enabled		Boolean						
			Tap Up Switch ON	= TRUE	Boolean					>= 1 Fail Time	

FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	O VALUE	SECONDARY PARAMETERS	ENABL	LE COND	TIONS	TIME RE	EQUIRED	MIL ILLUM.
		Fail Tap Up Switch Stuck in Case 2 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	=	1	Boolean							
		the Up Position in Range 3 Enabled Tap Up Switch Stuck in		1	Boolean							
		the Up Position in Range 4 Enabled Tap Up Switch Stuck in		1	Boolean							
		the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range		1	Boolean Boolean							
		6 Enabled Tap Up Switch Stuck in the Up Position in		0	Boolean							
		Neutral Enabled Tap Up Switch Stuck in the Up Position in Park		0	Boolean							
		Enabled Tap Up Switch Stuck in the Up Position in		0	Boolean							
		Reverse Enabled Tap Up Switch ON NOTE: Both Failcase1		TRUE	Boolean						Fail	
		and Failcase 2 Must Be Met				Time Since Last Range Change	>=	1	Enable	>= 600	Time (Sec)	
						Ignition Voltage Lo	>=	8.5996	Time Volts			
						Ignition Voltage Hi	<=	31.99	Volts			
						Engine Speed Lo	>=	500	RPM			
						Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	7500 5	RPM Sec			
						P1765 Status is	≠	Test Failed This Key On or Fault Active				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Disable Conditions:		TCM: P1767, P1761		
							ECM: None		
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Tap Down Switch Stuck Case 1 in the Down Position in Range 1 Enabled	= 1	Boolean				Special No Trip
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled		Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	= 0	Boolean				
			Tap Down Switch ON	= TRUE	Boolean			>= 1 sec	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	D VALUE	SECONDARY PARAMETERS	ENABL	.E CONDI	TIONS	TIME I	REQUIRED	MIL ILLUM.
			Fail Tap Down Switch Stuck Case 2 in the Down Position in Range 1 Enabled	= 1	Boolean							-
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1	Boolean							
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1	Boolean							
			Tap Down Switch Stuck in the Down Position in 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		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		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					>= 6	00 sec	
						Time Since Last Range Change	>=	1	Sec			
İ						lgnition Voltage Lo Ignition Voltage Hi		8.5996 18	Volts Volts			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME	E REQUIF	ED	MIL ILLUM.
					Engine Speed Lo		500	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					P1766 Status is		Test Failed This Key On or Fault Active					
				Disable Conditions:		TCM: P1767, P1761						
						ECM: None						
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE Boolean					>=	60 T	ail ime Sec)	Special No Trip
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi		31.99	Volts				
					Engine Speed Lo		500	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					P1767 Status is	≠	Test Failed This Key On or Fault Active					
				Disable Conditions:		TCM: P1761 ECM: None						

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch-Invalid Range	<u>Fail</u> <u>Case 1</u> Current range	=	"Transitional 1"	Range State				One Trip
			Previous range		NDL_DIIVEO					
			Previous range	!=	CeTRGR_e_PR NDL_Drive5	Range State				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean				
			Engine Torque	>=	-50	Nm				
			Engine Torque	<=	8191.75	Nm				
			If the above conditions are present Increment Fail Timer						Fai >= 0.225 Seco s	
			lf Fail Timer has Expired then Increment Fail Counter						>= 15 Fai Cour	
			<u>Fail</u> <u>Case 2</u> Current range	=	"Transitional 1"	Range State				
			S3 Pressure Switch indicates "Exhausted"		TRUE	Boolean				
			Commanded Gear	=	1st Locked	Gear				
			If the above conditions are present Increment Fail Timer						Fai >= 0.225 Seco s	
			lf Fail Timer has Expired then Increment Fail Counter						>= 15 Fai Cour	
			Fail Case 3 Current range	=	"Transitional 13	•	Previous range	CeTR GR_e_ != PRND L_Driv e5		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLL) VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQ	UIRED	MIL ILLUM.
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"		TRUE	Boolean	Previous range	<u>=</u>	CeTR GR_e_ PRND L_Driv e5				
			Engine Torque	>=	-8191.75	Nm	IMS is 7 position configuration	=	0	Boolea n			
			Engine Torque	<=	8191.75	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satisfied when the "current range" = "Transitional 13"						
			If the above conditions are present Increment Fail Timer								>= 0.225	Second s	
			If Fail Timer has Expired then Increment Fail Counter								>= 15	Fail Counts	
			Fail Case 4 Current range	=	"Transitional 2 or "Transitiona 8"		Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8						
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	=	TRUE	Boolean							
			Steady State Engine Torque Steady State Engine Torque	/-	70 8191.75	Nm Nm							
			If the above conditions are present Increment Fail Timer								>= 0.225	Second s	
			If the above Conditions have been met, Increment Fail Counter								>= 15	Fail Counts	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHO	LD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Current range	= "Transition 11"	al				
			Engine Torque		Nm				
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"		Boolean				
			If the above conditions are present Increment Fail Timer					>= 0.225 Second	
			If the above Conditions have been met, Increment Fail Counter					>= 15 Fail Counts	
			Fail Case 6 Current range	= "Illegal"		A Open Circuit Definition (flag set false if the following conditions are met):			
			or			Current Range	"Transi ≠ tional 11"		
			ECM Park/Neutral Message	= "Park/Neutr	al"	or			
			and			Last positive state	≠ Neutral		
			Current Range	Park, Neutra Reverse, ≠ Transitional or Transition 11	8,	or			
			and			Previous transitional state	Transiti ≠ onal 8 ≠ and Illegal		
			A Open Circuit (See Definition)	= FALSE	Boolean	and			
			Delililion)			PRNDL Circuit A	= Open Circuit		
						PRNDL Circuit B	= Closed Circuit		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABL	E CONDITIONS	TIME REQUIRED	MIL ILLUM.
							PRNDL Circuit C	=	Open Circuit		
							PRNDL Circuit P	=	Open Circuit		
			If the above Conditions are present, Increment Fail timer							>= 6.25 Seconds	
			Fail Current PRNDL State Case 7 and		PRNDL circuit ABCP = 1101						
			Previous valid state		PRNDL encoded value of ABCP =1111						
			Input Speed Reverse Trans Ratio Reverse Trans Ratio	<=	150 2.85 3.4	RPM ratio ratio					
			If the above Conditions are present, Increment Fail timer							>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met								
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 Volts 31.99 Volts		
							Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the	<=	511 KPH500 RPM7500 RPM		
							allowable limits for Engine Torque Signal Valid	/-	5 Sec TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723 ECM: P0101, P0207, P0102, P0300, P0106, P0301, P0107, P0302, P0108, P0303, P0171, P0304, P0172, P0306, P0174, P0306, P0175, P0201, P0308, P0201, P0201, P0203, P042E P0204, P0206,		
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range TUTD Enable Switch is Active	≠ CeTRGR_e_PR Range State NDL_Drive6 = TRUE Boolean	Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 8.5996 Volts <= 31.99 Volts <= 511 KPH >= 500 RPM <= 7500 RPM >= 5 Sec	Fail >= 2 Time (Sec) >= 3 Fail Counts	Special No Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOL	LD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P1876 Status is	Test Failed This ≠ Key On or Fault Active		
					Disable Conditions:		P0815, P0816, P0826, P1761, P1825, P1877, P1915,		
							U0100 ECM: None		
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	The following events	≠ Park or Neut	ral Enumeration				One Trip
			must occur Sequentially Initial Engine speed		RPM			Enable >= 0.25 Time (Sec)	
			Then Engine Speed Between Following Cals						
			Engine Speed Lo Hist Engine Speed Hi Hist		RPM RPM			Enable >= 0.0688 Time	
			Then		IN W			(Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLI	D VALUE	SECONDARY PARAMETERS	ENABL	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
			Final Engine Speed	>=	525	RPM						
			Final Transmission Input Speed		200	RPM					Fail >= 1.25 Time (Sec)	
							DTC has Ran this Key Cycle?	=	FALSE	Boolean		
							Ignition Voltage Lo		6	V		
							Ignition Voltage Hi		31.99	V		
							Ignition Voltage Hyst High (enables above this value)	>=	6	V		
							Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speed	_	2 90	V rpm		
							P1915 Status is		Test Failed This Key On or Fault Active			
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723 ECM: None				
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case: Steady State 2nd Case 1 Gear								Please	One Trip
			Gear slip	>=	200	RPM					See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 3rd gear								СаІ	

COMPONENT/ SYSTEM FAUL	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
	If attained Gear = 3rd for Time	Table Based Time Please see Table 2 in Supporting Documents Table Based Enable Time (Sec)				
	If Above Conditions have					
	Increment 2nd gear fail count				>= 3 Gear Fail Count	
	and CB26 Fail Count				or CB26 >= 14 Fail Count	
	Fail Case: Steady State 6th Case 2 Gear					
					Please See Table 5 Neutral	
	Gear slip	>= 200 RPM			>= For Timer Neutral (Sec) Time Cal	
	Intrusive test: commanded 5th gear					
	If attained Gear = 5th For Time					
	If Above Conditions have been met, Increment 5th gear fail counter				>= 3 Sth Gear Fail Count or	
	and CB26 Fail Count				CB26 >= 14 Fail Count	
			PRNDL State defaulted inhibit RVT	= FALSE Boolean = FALSE Boolean		
			IMS fault pending indication			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLI	E CONDI	TIONS	TIME REQUIRED	MIL ILLUM.
					TPS validity flag	=	TRUE	Boolean		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					Minimum output speed for RVT	>=	0	RPM		
					A OR B					
					(A) Output speed enable	>=	16	RPM		
					(B) Accelerator Pedal enable	>=	0.5005	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99			
					Engine Speed Lo	>=	500	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid		TRUE			
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature	>=	0	°C		
					Input Speed Sensor fault	=	FALSE			
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
				Disable Conditions:		P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107.	P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
								P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208,		
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	=	TRUE Maximum	Boolean				One Trip
			Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip	= ≠	pressurized Clutch exhaust command Initial Clutch Control 40	RPM				
			If above conditions are true, increment appropriate Fail 1 Timers Below: fail timer 1			Fail Time				
			(2-1 shifting with throttle) fail timer 1 (2-1 shifting without throttle)		0.299804688 0.299804688	(Sec) Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle) fail timer 1 (2-3 shifting without throttle)		0.299804688 0.299804688	Fail Time (Sec) Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD	VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			fail timer 1 (2-4 shifting without throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>=	0.299804688	Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>=	0.299804688	Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers						Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer sec 1, and Referen ce Support ing Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter							
			2nd gear fail counter						Fail Counter >= 3 From 2nd Gear	

FAULT	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
		6th gear fail counter				OR Fail Counter >= 3 From 6th Gear OR	
		total fail counter				Total >= 5 Fail Counter	
			Disable Conditions:	Trans oil 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 TUT Enable temperature PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled MIL not Illuminated for DTC's:	= FALSE Boolean = FALSE Boolean = 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM >= 0 °C = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean		

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
						P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300,		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Attained Gear slip If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio	>= 200 RPM Table Based Time Please >= Refer to Table 4 in supporting documents <= 2.482177734 >= 2.245849609 Table Based value Please >= Refer to Table rpm/sec			>= 0.5688 Timer (Sec) Fail >= 2 Count in 1st Gear or Total >= 3 Fail Counts	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
			If the Above is True for Time					
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio	<= 2.482177734				
			If the above parameters are true				Fail >= 0.5688 Timer (Sec)	
							>= 1 Fail Count in 3rd Gear or	
			Fail Case: Steady State 4rd Case 3 Gear				Total >= 3 Fail Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
			Min Delta Output Speed Hysteresis					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the Above is True for Time	Table Based Time Please >= Refer to Table Sec 19 in supporting documents				
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio					
			If the above parameters are true				Fail >= 0.5688 Timer (Sec)	
							>= 1 Fail Count in 4th Gear or	
			<u>Fail</u> Case: Steady State 5th <u>Case 4</u> Gear				Total >= 3 Fail Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 17 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
			If the Above is True for Time					

Introduce least	COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
Accelerator Pedal enable				(C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters		inhibit RVT IMS fault pending indication output speed TPS validity flag HSD Enabled Hydraulic_System_Pressurized Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for if Attained Gear=1st FW	= FALSE Boolean = FALSE Boolean >= 0 RPM = TRUE Boolean = TRUE Boolean = TRUE Boolean >= 0 Nm >= 0 Nm >= 16 Nm >= 0.5005 Nm >= 8.5996 Volts <= 31.99 Volts >= 500 RPM <= 7500 RPM >= 5 Sec	>= 0.5688 Timer (Sec)	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					if Attained Gear=1st FW Engine Torque Enable	<= 1492 Nm		
					Transmission Fluid Temperature	>= 0 °C		
					Input Speed Sensor fault			
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0300, P0101, P0301, P0102, P0302, P0103, P0303, P0106, P0304, P0107, P0305, P0171, P0307, P0172, P0308, P0174, P0401, P0175, P042E P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208,		On Ti
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	<u>Fail</u> Case: Steady State 1st <u>Case 1</u> Gear Gear slip	>= 200 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Intrusive test: commanded 2nd gear	Table based				
			If attained Gear ≠ 2nd for Time	Timor Dioggo				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 3 Sear Fail Count or	
			and C1234 fail counter				>= 14 Clutch Fail Count	
			<u>Fail</u> Case: Steady State 2nd <u>Case 2</u> Gear				Please	
			Gear slip	>= 200 RPM			See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	T: DI				
			If Above Conditions have been met, Increment 2nd gear fail counter				>= 3	
			and C1234 fail counter				>= 14 Clutch Fail Count	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Fail Case: Steady State 3rd Case 3 Gear Gear Slip	>= 200 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 4th gear If attained Gear ≠ 4th for time	Table based Timer, Please Enable Time				
			If Above Conditions have been met, Increment 3rd gear fail counter				3rd Gear Fail Count or C1234 >= 14	
			<u>Fail</u> <u>Case 4</u> Case: Steady State 4th Gear				Please See	
			Gear slip Intrusive test: commanded 5th gear				Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			If attained Gear = 5th For Time					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABI	LE CONDITION:	S TIM	ME REG	QUIRED	MIL ILLUM.
			If Above Conditions have been met, Increment 4th gear fail counter					>=	3	4th Gear Fail Count or	
			and C1234 fail counter					>=	14	C1234 Clutch Fail Count	
					PRNDL State defaulted		FALSE Boole				
					inhibit RVT		FALSE Boole				
					IMS fault pending indication		FALSE Boole				
					TPS validity flag	=	TRUE Boole	an			
					Hydraulic System Pressurized	=	TRUE Boole	an			
					Minimum output speed for RVT	>=	0 RPM	1			
					A OR B						
					(A) Output speed enable	>=	16 RPM	1			
					(B) Accelerator Pedal enable	>=	0.5005 Pct				
					Common Enable Criteria						
					Ignition Voltage Lo		8.5996 Volt	3			
					Ignition Voltage Hi		31.99 Volt				
					Engine Speed Lo		500 RPM				
					Engine Speed Hi		7500 RPM	1			
					Engine Speed is within the allowable limits for	>=	5 Sec				
					Throttle Position Signal valid	=	TRUE Boole	an			
					HSD Enabled	=	TRUE Boole	an			
					Transmission Fluid Temperature	>=	0 °C				
					Input Speed Sensor fault	=	FALSE Boole	an			
					Output Speed Sensor fault	=	FALSE Boole	an			
					Default Gear Option is not present	=	TRUE				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD	/ALUE	SECONDARY PARAMETERS ENABLE CONDITIONS		TIME REQUIRED	MIL ILLUM.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0301, P0302, P0103, P0303, P0106, P0304, P0107, P0305, P0108, P0306, P0171, P0307, P0172, P0308, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300,		
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	= TRUE = Maximum pressurized = Clutch exhaust command ≠ Initial Clutch Control	Boolean				One Trip

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-6 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (2-6 shifting without throttle)	>= 0.299804688 sec				
			fail timer 1 (3-5 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 0.299804688 sec				
			fail timer 1 (4-5 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (4-5 shifting without throttle)	>= 0.299804688 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 0.299804688 sec				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer sec 1, and Referen ce Support ing Table 15 for Fail Timer 2	

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS EN		SECONDARY PARAMETERS ENABLE COND		LE CONDITIONS		TERS ENABLE CONDITIONS		TIME REQUIRED		MIL ILLUM.
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter												
			2nd gear fail counter					>=	3	Fail Counte r From 2nd Gear					
			3rd gear fail counter					>=	3	Fail Counte r From 3rd Gear					
			4th gear fail counter					>=	3	Fail Counte r From 4th Gear					
			total fail counter					>=	5	Total Fail Counte r					
					Trans oil 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 TUT Enable temperature PRNDL state defaulted IMS Fault Pending	= = = = >= >= >=	0 °C FALSE Bool FALSE Bool 1st Bool TRUE Bool 100 RP 150 RP 0 °C FALSE Bool FALSE Bool	ean ean ean W W							

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					Service Fast Learn Mode HSD Enabled			
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0301, P0103, P0302, P0106, P0304, P0107, P0108, P0306, P0171, P0172, P0174, P0308,		
						P0175, P0401, P0201, P042E P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300,		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear	Table Based				One Trip
			Max Delta Output Speed Hysteresis	value Please				

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table rpm/sec 18 in supporting documents				
			If the Above is True for Time					
			Intrusive test: (C35R clutch exhausted) Gear Ratio					
				>= 1.094360352				
							Fail >= 0.5688 Timer (Sec) Fail	
							>= 1 Count in 5th Gear OR	
							Total >= 3 Fail Counts	
			Fail Case: 6th Gear					
			Max Delta Output Speed Hysteresis					

COMPONENT/ SYSTEM	FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA		THRESHOLD VALUE	SECONDARY PARAMETERS	ENABL	ENABLE CONDITIONS		TIME	E REQI	JIRED	MIL ILLUM
			Min Delta Output Speed Hysteresis	/-	Table Based value Please Refer to Table rpm/sec 18 in supporting documents								
			If the Above is True for Time	>=	Table Based Time Please Refer to Table Sec 19 in supporting documents								
			Intrusive test: (CB26 clutch exhausted)										
			Gear Ratio	<=	1.209594727								
			Gear Ratio		1.094360352								
			If the above parameters										
			are true										
										>= 0).5688	Fail Timer (Sec)	
												Fail	
										>=	1	Count in 6th	
												Gear	
												OR	
										>=	3	Total Fail	
												Counts	
						PRNDL State defaulted	=	FALSE					
						inhibit RVT IMS fault pending indication	= =	FALSE FALSE					
						output speed	>=	PALSE 0	RPM				
						TPS validity flag	=	TRUE					
						HSD Enabled	=	TRUE					
						Hydraulic_System_Pressurized	=	TRUE	Boolean				
						Minimum output speed for RVT	>=	0	Nm				
						A OR B							
						(A) Output speed enable	>=	16	Nm				

FAULT CODE	MONITOR STRATEGY DESCRIPTION	MALFUNCTION CRITERIA	THRESHOLD VALUE	SECONDARY PARAMETERS	ENABLE CONDITIONS	TIME REQUIRED	MIL ILLUM.
					P0205, P0206, P0207, P0208, P0300,		