Component/System		Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Transmission Fluid T								
Transmission Fluid Temperature Sensor Circuit Range/Performance	P0711	This test detects performance of the transmission fluid temperature sensor by comparing changes in temperature from start up and between samples to calibration values.				P0711 P0716 P0717 P0721 P0722 P0742		В
					No Fault Pending DTCs for this drive cycle	P0716 P0717 P0721 P0722		
					No Pass DTCs for this drive cycle No Fault Active DTC	P0711		
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
						RPM		
					for	5 seconds		
					Start-up transmission fluid temperature is available			
					Transmission fluid temperature between	-39 deg. C and 149 deg. C		
					ECT is not defaulted			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Case 1 (Stuck sensor after cold start-up)				300 seconds	
			Start-up temperature change		Start-up transmission fluid temperature between	-40 deg. C and 21 deg. C		
			for a time	>= 100 seconds				
			AND		· ·	>= 120 RPM		
					for a time	>= 300 seconds		
			Vehicle speed					
			for a time	>= 300 seconds.	engine coolant temperature AND			
					engine coolant temperature change from start-up	>= 15 deg. C		
			Case 2 (Stuck sensor after warm start-up)				300 seconds	
			Start-up temperature change	<= 3 deg. C	Start-up transmission fluid temperature between			
			for a time	>= 100 seconds				
			AND		· ·	>= 120 RPM		
						>= 300 seconds		
					engine coolant temperature AND			
			Vehicle speed		engine coolant temperature change from start-up			
				>= 300 seconds.	onango nom start up	>= 55 deg. C		
			Case 3 (Noisy sensor)				7 seconds	
			Change from previous temperature					
			for	14 events				
			in a time	< 7 seconds.				
			Case 4 (Doesn't warm up to at least 20 deg. C)		net engine torque	>= 150 Nm	2200 seconds	

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Time Enabled Criteria		and	<= 1492 Nm		
			met AND					
			AND		vehicle speed	>= 22 KPH		
			Transmission Fluid Temperature		and	<= 512 KPH		
					%throttle	>= 10.5%		
			Time Enabled Criteria is determined by a lookup table ranging from		and	<= 100%		
					engine speed	>= 500 RPM		
			to	2200 seconds when	and	<= 6500 RPM		
				start-up temperature is <= -40 deg. C.	engine coolant temperature	>= -39 deg. C		
				4- 40 deg. O.	and	<= 149 deg. C		
			Case 5 (Reasonableness at start-up):		Intake Air Temperature is not		2 seconds	
			Engine Speed	> 500 RPM	defaulted			
			AND					
			Engine Coolant Temperature	> -39 deg. C				
			AND	< 50 deg. C				
			for	>= 2 seconds				
			AND					
			((ABS(IAT-ECT)					
			AND					
			(TFT-ECT))	> 40 deg. C				
			OR					
			(ABS(IAT-ECT)					
			AND					
			(TFT-ECT)))	> 60 deg. C.				
Fransmission Fluid Femperature Sensor Circuit Low Input	P0712	Out of range low.	transmission fluid temperature		Not Test Failed This Key On	P0711 P0712	2.5 seconds	В
			for a time	> 2.5 seconds.		P0713		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
Transmission Fluid	P0713	Out of range high.			Not Test Failed This Key On	P0711	2.5 seconds	В
Temperature Sensor Circuit High Input			transmission fluid temperature			P0712		
			for a time	> 2.5 seconds		P0713		
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
					IF Engine run time	<= 600 seconds		
					THEN			
					Engine Coolant Temperature	must be > 20 deg. C		
					AND			
					not defaulted for a time	>= 20 seconds.		
Speed Sensors								
Input/Turbine Speed Sensor Circuit Range/Performance	P0716	This test detects large changes in Input Speed and noisy Input Speed by comparing			Not Test Failed This Key On	P0716 P0717 P0721		А
		to calibration values.				P0722		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					No Fault Pending DTCs for this drive cycle.			
					Shifting complete			
			Case 1: (Unrealistically large changes in input speed) Change of Input Speed between samples	>= 800 RPM >= 0.15 seconds	Input Speed	> 200 RPM >= 0.5 seconds	0.15 seconds	
			Case 2: (Noisy Input Speed)		Innut Speed	> 200 RPM	2 seconds	-
			For sample size			>= 0.5 seconds	2 seconds	
			IF the change in Input Speed THEN the Low Counter is incremented	<= -800 RPM		C.O GOGGING		
			IF the change in Input Speed	>= 800 RPM				
			THEN the High Counter is incremented					
			This test fails if both the Low Counter and the High Counter	>= 5				
			Low Counter					
			OR High Counter					
			For Case 3: (Wires to		Input speed	> 100 RPM	4 seconds	1
			speed sensors swapped)		AND			
			Increment counter when range attained and range		Engine speed	> 100 RPM		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			commanded are neutral for a time		for a time	>= 0.2 seconds		
			AND	<= 3.5 seconds	Hydraulic system pressurized			
			when ratio of engine speed and input speed					
			Arm test when counter					
			OR when time	> 3.5 seconds				
			Malfunction is reported when, for a time	> 0.5 seconds				
			the range commanded is NOT neutral					
			AND the on-coming clutch control is complete					
			AND					
			input speed AND					
			engine speed	< 100 RPM				
nput/Turbine Speed Sensor Circuit No Signal	P0717	This test detects unrealistically low value of input/turbine speed or unrealistically	Failure pending if transmission input speed	< 61 RPM	Not Test Failed This Key On	P0717 P0729 P0731	1 second	A
		large changes in input/turbine speed.	This test fails if input speed	< 61 RPM		P0732		
			AND output speed			P0733 P0734		
				> 1 second.		P0735		
						P0736 P0721		
						P0722		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					No Fault Pending DTCs	P0721 P0722		
					Reverse-to-Neutral shift not in process			
					Shifting complete			
					Range attained is not neutral			
					Transmission fluid temperature			
					Engine speed	>= 400 RPM		
					Transmission output speed	>= 150 RPM		
Output Speed Sensor Circuit Range/Performance	P0721	This test detects a noisy output speed sensor or circuit by detecting large changes in output speed.	Case 1: (Unrealistically large change in output speed) Change in output speed for a time	>= 500 RPM >= 0.15 seconds	All Cases Not Test Failed This Key On	P0716 P0717 P0721	Case 1: 0.65 seconds	A
			Case 2: (Noisy output speed)			P0722	Case 2:	
			For sample size IF the change in output speed THEN the Low Counter is	<= -500 RPM	No Fault Pending DTCs for this drive cycle		2 seconds	
			incremented.		Output Speed	> 200 RPM		
			IF the change in output speed THEN the High Counter is incremented.			>= 0.5 seconds		
			Test fails if both the Low Counter and the High Counter	>= 5	AND range attained NOT neutral			
			OR the Low Counter					

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		1	OR					
			the High Counter	>= 5				
Output Speed Sensor Circuit No Signal	P0722	This test detects unrealistically low	All Cases		All Cases			Α
		value of output speed or unrealistically large			Not Test Failed This Key On	P0721		
		change in output speed.	Case 1: (Unrealistically		Test enabled when output		1 second	
		speed.	large change in output		speed			
		speed)			>= 600 RPM		l	
			Failure pending if		for a time	>= 1 seconds		l
			change in output speed	>= 600 RPM				l
			Failure sets if range attained		Test disabled when output			l
			is Neutral			<= 600 RPM		l
						> 1 seconds		l
			Case 2: (Unrealistically low				4 seconds	
			value of output speed)					
			Failure pending if output speed	< 61 RPM	Not Test Failed This Key On	P0731		
			Failure sets if not monitoring			P0732		l
			for low speed neutral and			P0733		
			output speed	< 61 RPM		P0734		
			AND			P0735		
			range is 3rd, 4th, 5th, or 6th			P0736		
				> 1 second		P0716		l
			10. 0	. 0000		P0717		l
			Failure sets if not			0717		l
			monitoring for low speed neutral and output speed		No Fault Pending DTCs for this drive cycle			
					•	P0717		
			ΔΝΠ	< 61 RPM		FU/ 1/		
			((net engine torque		Engine is running			
			((flet engine torque OR	- 100 INIII	Shift not in process			
				> 400 Nina				
			net engine torque)	> IUU INM	Range attained is not Neutral			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			OR (turbine speed AND	> 1500 RPM	Reverse to Neutral shift not in process Transmission fluid temperature			
			range is 2nd)) for a time	>= 4 seconds.	Transmission input speed Not waiting for Manual	>= 1050 RPM		
					Selector Valve to attain forward range PRNDL State is NOT D4, NOT Transitional D4			
Range Verification								
Gear 1 Incorrect Ratio	P0731	This test verifies transmission operating ratio while 1st range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range AND	>= 2 second	Not Test Failed This Key On	P0877 P0878 P0721 P0722 P0716	2.25 seconds	A
			output speed AND	>= 100 RPM		P0717		
			gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)	>= 230 RPM	Hydraulic System Pressurized			
				> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 2 Incorrect Ratio	P0732	This test verifies transmission operating ratio while 2nd range is commanded by comparing computed ratio to the commanded ratio.	Timer accumulates when transmission is in forward or reverse range AND output speed	>= 2 second >= 100 RPM	Not Test Failed This Key On No Fault Pending DTC for this drive cycle.	P0878 P0721 P0722 P0716 P0717	2.25 seconds	A
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip)	>= 230 RPM	No range switch response active Hydraulic System Pressurized			
			for	> 10 samples.	Shift complete Output speed			
					No hydraulic default condition present Normal powertrain shutdown not in process Normal powertrain initialization is complete			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Gear 3 Incorrect Ratio	P0733	This test verifies transmission operating ratio while 3rd range is commanded by comparing computed ratio to the commanded ratio.	Timer accumulates when transmission is in forward or reverse range AND output speed	>= 2 second >= 100 RPM		P0877 P0878 P0721 P0722 P0716 P0717	2.25 seconds	А
			AND gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter	>= 230 RPM	No range switch response active Hydraulic System Pressurized			
			Slip) for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 4 Incorrect Ratio	P0734	This test verifies transmission operating ratio while 4th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range AND	>= 2 second	Not Test Failed This Key On	P0877 P0878 P0721 P0722 P0716	2.25 seconds	A

Component/System		Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			output speed AND	>= 100 RPM		P0717		
				> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip)		No range switch response active Hydraulic System Pressurized			
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 5 Incorrect Ratio	P0735	This test verifies transmission operating ratio while 5th range is commanded by comparing computed ratio to the commanded ratio.	Pending failure occurs when accumulated event timer Timer accumulates when transmission is in forward or reverse range AND	>= 2 second	Not Test Failed This Key On	P0877 P0878 P0721 P0722 P0716	2.25 seconds	А
				>= 100 RPM		P0717		
			AND gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
			In response to pending failure, a diagnostic					

Component/System		Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			response range is commanded.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)	>= 230 RPM	Hydraulic System Pressurized			
			1	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Reverse Incorrect Ratio	P0736	This test verifies transmission range while reverse range is commanded by comparing computed ratio to the commanded ratio.	Accumulated event timer Timer accumulates when transmission is in forward or reverse range AND output speed AND gear slip	>= 100 RPM	Not Test Failed This Key On No Fault Pending DTC for this drive cycle. No range switch response active	P0878 P0721 P0722 P0716 P0717	2 seconds	A
					Hydraulic System Pressurized			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Gear 6 Incorrect Ratio	P0729	This test verifies transmission operating ratio while 6th range is commanded by comparing computed ratio to the commanded ratio.	AND	>= 2 second >= 100 RPM > 100 RPM	Not Test Failed This Key On No Fault Pending DTC for this drive cycle. No range switch response active	P0878 P0721 P0722 P0716 P0717	2.25 seconds	A
			During this command, this test fails if Abs(Converter Slip)	>= 230 RPM	Hydraulic System Pressurized Shift complete			
			101	- 10 Samples.	Output speed			
					No hydraulic default condition present			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Normal powertrain shutdown not in process			
					Normal powertrain initialization is complete			
Torque Converter				•				
Torque Converter Clutch Circuit Performance or Stuck Off	P0741	This test detects the torque converter being stuck off (unlocked).	100 011	>= 80 RPM >= 15 seconds.	Not Test Failed This Key On No Fault Pending DTCs for this drive cycle.	P2761 P2763 P2764 P0721 P0722 P0716 P0717 P2761 P2763 P2764 P0721 P0722 P0716 P0717	15 seconds	В
					Components powered AND			
					Battery Voltage between Engine Speed between			
					for Must be in forward range	5 seconds		

Component/System		Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					% Throttle	> 10 % and <= 90 %		
					Transmission fluid temperature			
					Time Since Range Change AND			
					TCC apply is complete AND			
					TCC pressure			
orque Converter Clutch Circuit Stuck On	P0742	This test detects the torque converter being stuck on (locked).	Case 1: (High Torque condition)		Not Test Failed This Key On	P2761	Case 1:	В
			Set fault pending when throttle			P2763	2 Seconds	
			AND			P2764		
			net engine torque	>= 275 Nm.		P0721 P0722		
			Report malfunction when fault pending exists			P0716 P0717		
			continuously for a time	>= 2 seconds.		U0100		
			Case 2: (High Acceleration condition)		No Fault Pending DTCs for this drive cycle.	P2761	Case 2:	
			Set fault pending when			P2763 P2764	5 Seconds	
			output shaft acceleration	>= 100 RPM/second		P0721 P0722		
			Report malfunction when fault pending exists			P0716 P0717		
			continuously for a time	>= 5 seconds.		U0100		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		i e			Components powered			
			Case 3: (Accel/Decel/Accel		AND		Case 3:	
			condition)		Battery Voltage between	9 V and 18 V	4 Seconds	
			Report malfunction when					
			output acceleration event is		Engine Speed between	200 RPM and 7500		
			followed by output deceleration event and			RPM		
			followed by another output		for	5 seconds		
			acceleration event. An					
			output acceleration event occurs when output shaft		Must be in forward range			
			acceleration		made be in forward range			
				>= 40 RPM/second >= 4 seconds	TCC is commanded off			
			ioi a time	>= 4 Seconds	roc is commanded on			
					TCC Slip	>=-20 RPM and <=		
			An autout deceleration		TCC Slip	20 RPM		
			An output deceleration event occurs when output					
			shaft acceleration is					
				<=-40 RPM/second	0/ - 1	050/		
			for a time	>= 2.5 seconds.	% Throttle			
					Net Engine Torque			
						<= 3500 RPM		
						<= 3500 RPM		
					Output speed	>= 100 RPM		
Pressure Switches								
Pressure Switch	P0842	This test compares the	Pending failure occurs when				100 ms	Α
Solenoid 1 Circuit Low		commanded valve position to the PS1	PS1 pressure switch indicates stroked for a time		S1 valve is destroked			
Low		pressure switch	indicated directed for a time	> 0.08 seconds				
		feedback. (part of S1			NOT Cold initialization unless			
		valve integrity test)			transmission fluid temperature	> -25 deg. C		
					Shutdown is NOT in process			
			In response to the pending					
			failure, S1 valve is retried by					
		I	triggering S1 valve command		I		I	

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			to stroked and back to destroked. If PS1 pressure switch continues to indicate stroked, then one of three malfunction cases exists:					
			For Case 1 (electrical malfunction), SS1 Circuit Low reports failure, also.	P0793				
			For Case 2 (mechanical malfunction), Shift Solenoid 1 (SS1) Valve Performance – Stuck On reports failure, also.	P0752				
			For Case 3 (intermittent malfunction), SS1 valve retry attempted	15 times				
			AND PS1 pressure switch continues to indicate stroked.					
Shift Solenoid 1 (SS1) Valve Performance – Stuck Off	P0751	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test)	S1 valve is commanded from destroked to stroked and the PS1 pressure switch indication remains destroked	>= 5 seconds >= 0 deg. C	S1 valve commanded from destroked to stroked.		5 seconds	A

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			(Time increases as temperature decreases with maximum time at transmission fluid temperature)	12 seconds <= -40 deg. C				
Shift Solenoid 1 (SS1) Valve Performance – Stuck On	P0752	This test compares the change of state of the valve command to the change of state of the PS1 pressure switch feedback. (part of the S1 valve timeout test).	S1 valve commanded from stroked to destroked and the PS1 pressure switch indication remains stroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at	> 6.2 seconds >= 0 deg. C. 10 seconds	S1 valve changes from stroked to destroked		6.6 seconds	A
	D0040		transmission fluid temperature)					
Pressure Switch Solenoid 1 Circuit High	P0843	This test compares the commanded valve position to the PS1 pressure switch feedback. (part of S1 valve integrity test)	Pending failure occurs when PS1 pressure switch indicates destroked for a time IF a main pressure dropout is suspected then time limit increases to	> 0.07 seconds	S1 valve is stroked NOT Cold initialization unless transmission fluid temperature		70 ms	A

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions		MIL Illum
			In response to the pending failure, S1 valve is retried by triggering S1 valve command to destroked and back to stroked. If the PS1 pressure switch continues to indicate destroked, then one of three malfunction cases exists.		Shutdown NOT in process			
			For Case 1 (electrical malfunction), SS1 Control Circuit Low reports failure, also.	P0793				
			For Case 2 (mechanical malfunction), Shift Solenoid 1 (SS1) Valve Performance – Stuck Off reports failure, also.	P0751				
			For Case 3 (intermittent malfunction), S1 valve retry attempted AND PS1 pressure switch continues to indicate	15 times				
Pressure Switch Solenoid 2 Circuit Low	P0847	This test compares the commanded valve position to the PS2 pressure switch	destroked. Pending failure occurs when PS2 pressure switch indicates stroked for a time		S2 valve is destroked		40 ms	A

Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
feedback (part of the S2 valve integrity test).	dropout is suspected then time limit increases to		NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
	failure, S2 valve is retried by triggering S2 valve command to stroked and back to		Shutdown is NOT in process			
	For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also.	P0976				
	Performance – Stuck On	P0757				
	For Case 3 (intermittent malfunction),	2 times				
This test compares the change of state of the	AND PS2 pressure switch continues to indicate stroked.		S2 valve commanded from		5 seconds	A
Code	Code Description feedback (part of the S2 valve integrity test).	feedback (part of the S2 valve integrity test). IF a main pressure dropout is suspected then time limit increases to In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction cases exists. For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also. For Case 2 (mechanical malfunction), Shift Solenoid 2 Valve Performance – Stuck On reports failure, also. For Case 3 (intermittent malfunction), S2 valve retry attempted AND PS2 pressure switch continues to indicate stroked.	feedback (part of the S2 valve integrity test). IF a main pressure dropout is suspected then time limit increases to 0.2998 seconds In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction cases exists. For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also. For Case 2 (mechanical malfunction), Shift Solenoid 2 Valve Performance – Stuck On reports failure, also. For Case 3 (intermittent malfunction), S2 valve retry attempted AND PS2 pressure switch continues to indicate stroked.	feedback (part of the S2 valve integrity test). If a main pressure dropout is suspected then time limit increases to 0.2998 seconds In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction), SS2 Control Circuit Low reports failure, also. For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also. For Case 2 (mechanical malfunction), Shift Solenoid 2 Valve Performance – Stuck On reports failure, also. For Case 3 (intermittent malfunction), S2 valve retry attempted AND PS2 pressure switch continues to indicate stroked.	Teedback (part of the S2 valve integrity test). IF a main pressure dropout is suspected then time limit increases to In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction). SS2 Control Circuit Low reports failure, also. P0976	Gedback (part off the S2 valve integrity test). If a main pressure dropout is suspected then time limit increases to 0.2998 seconds In response to the pending failure, S2 valve is retried by triggering S2 valve command to stroked and back to destroked. If PS2 pressure switch continues to indicate stroked, then one of three malfunction). SS2 Control Circuit Low reports failure, also. For Case 2 (mechanical malfunction). Shift Solenoid 2 Valve Performance – Stuck On reports failure, also. For Case 3 (intermittent malfunction), Shift Solenoid 2 Valve Performance – Stuck On reports failure, also. For Case 3 (intermittent malfunction), SS2 valve retry attempted 2 times AND PS2 pressure switch continues to indicate stroked. PO756 This test compares the If the S2 valve is S2 valve commanded from S seconds

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Stuck Off		valve command to the change of state of the PS2 pressure switch feedback (part of the S2 valve timeout test).	to stroked and the PS2 pressure switch indication remains destroked for a time WITH transmission fluid temperature (Time increases as temperature decreases with maximum time at transmission fluid temperature)	>= 5 seconds >= 0 deg. C. 12 seconds <= -40 deg. C.				
Shift Solenoid 2 Valve Performance – Stuck On	P0757	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve timeout test).	stroked to destroked and the PS2 pressure switch does not indicate destroked for a	>= 6.5 seconds >= 0 deg. C. 22 seconds <= -40 deg. C.	S2 valve changes from stroked to destroked		6.4 seconds	A
Pressure Switch Solenoid 2 Circuit High	P0848	This test compares the commanded valve position to the PS2 pressure switch feedback (part of the S2 valve integrity test).	Pending failure occurs when PS2 pressure switch indicates destroked for a time IF a main pressure dropout is suspected, THEN time	> 0.30 seconds	S2 valve is stroked NOT Cold initialization unless transmission fluid temperature		300 ms	А

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			limit increases to	5 seconds				
			In response to the pending failure, S2 valve is retried by triggering S2 valve command to destroked and back to stroked. If PS2 pressure switch continues to indicate destroked, then one of three malfunction cases exists.		Shutdown NOT in process			
			For Case 1 (electrical malfunction), SS2 Control Circuit Low reports failure, also.	P0976				
			For Case 2 (mechanical malfunction), Shift Solenoid 2 Valve Performance – Stuck Off reports failure, also.	P0756				
			For Case 3 (intermittent malfunction), S2 valve retry attempted					
			PS2 pressure switch continues to indicate destroked.					
Pressure Switch Solenoid 3 Circuit Low	P0872	This test compares the commanded valve position to the PS3 pressure switch	Pending failure occurs when PS3 pressure switch indicates stroked for a time		S3 valve is destroked		20 ms	А
		feedback. (part of S3			NOT Cold initialization unless			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		vaive integrity test)			transmission fluid temperature	> -25 deg. C		
			In response to the pending failure, S3 valve is retried by triggering S3 valve command to stroked and back to destroked. If PS3 pressure switch continues to indicate stroked, then one of three malfunction cases exists.		Shutdown is NOT in process			
			For Case 1 (electrical malfunction), SS3 Control Circuit Low reports failure, also.	P0979				
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 3 Valve Performance – Stuck On reports failure, also.	P0762				
			For Case 3 (intermittent malfunction),					
			S3 valve retry attempted					
			PS3 pressure switch continues to indicate stroked.					
Shift Solenoid 3 Valve Performance – Stuck Off	P0761	This test compares the change of state of the valve command to the change of state of the PS3 pressure switch feedback. (part of the	commanded from destroked to stroked and the PS3 pressure switch indication remains destroked for a time		S3 valve commanded from destroked to stroked.		5 seconds	A

Component/System		Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		S3 valve timeout test)	WITH transmission fluid temperature	>= 5 seconds >= 0 deg. C.				
			(Time increases as temperature decreases with maximum time at transmission fluid temperature)					
Shift Solenoid 3 Valve Performance – Stuck On	P0762	This test compares the commanded valve position to the PS3 pressure switch feedback (part of the S3 valve timeout test).	S3 valve commanded from stroked to destroked and the PS3 pressure switch does not indicate destroked for a time WITH transmission fluid . (Time increases as temperature decreases with maximum time at transmission fluid temperature)	> 6.5 seconds >= 0 deg. C. 22 seconds	S3 valve changes from stroked to destroked		6.6 seconds	A
Pressure Switch Solenoid 3 Circuit High	P0873	This test compares the commanded valve position to the pressure switch PS3 feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates destroked for a time IF a main pressure dropout is suspected THEN time limit increases to		S3 valve is stroked NOT Cold initialization unless transmission fluid temperature Shutdown NOT in process	> -25 deg. C	300 ms	А

Component/System	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions		MIL Illum
		In response to the pending failure, S3 valve is retried by triggering S3 valve command to destroked and back to stroked. If PS3 pressure switch continues to indicate destroked, then one of the three malfunction cases exists.					
		For Case 1 (electrical malfunction), SS3 Control Circuit Low reports failure, also.	P0979				
		For Case 2 (mechanical malfunction), Shift Solenoid 3 Valve Performance – Stuck Off reports failure, also.	P0761				
		For Case 3 (intermittent malfunction), S3 valve retry attempted AND PS3 pressure switch continues to indicate destroked.					
Pressure Switch Reverse Circuit Low	This test detects Reverse Pressure Switch closed indication by comparing the Reverse Pressure Switch state to the PRNDL switch state	Case 1: (Forward range) For a sample size (if dropout suspected, NLT or N02 cmded, use sample	100 samples	All Cases Not Test Failed This Key On	P0877 P0878 P0708	5 seconds	A

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		TRIVEL OWNOR STATE.	PRNDL is P, D1, D2, D3, D4, D5, D6, T8, or T4		No Fault Pending DTCs for this drive cycle			
			AND		Engine is Running			
			RPS indicates Reverse		Components powered AND			
			for a time (if dropout suspected, NLT	>= 1 seconds	Battery Voltage between	9 V and 18 V		
			or N02 cmded, use time)	30 seconds	Engine Speed between	200 RPM and 7500 RPM		
			Case 2: (Range indefinite) For a sample size,	20 samples	for	5 seconds		
			net engine torque	>= 100 Nm	Transmission Fluid Temperature			
			PRNDL is indefinitely D3 or another forward range		Hydraulic System Pressurized			
					Reverse Pressure Switch State indicates REVERSE			
Pressure Switch Reverse Circuit High	P0878	This test detects the Reverse Pressure switch being stuck in	All Cases		Transmission Fluid Temperature			А
		the open position by comparing to the PRNDL switch state and detects the Reverse Pressure switch stuck open at	Case 1: (RPS State and PRNDL State do not agree) For sample size PRNDL is REVERSE	·	Not Test Failed This Key On	P0877 P0878 P0708	3 seconds	
		shutdown.	AND RPS indicates NOT REVERSE after a time		No Fault Pending DTC for this drive cycle.	P0708		
					Battery Voltage between	9 V and 18 V		

						Illum
			No range switch response active			
	For Case 2: (RPS Shutdown Test)		Ignition Key State is NOT RUN		60 seconds	-
			Engine Stopped or Stalled			
	at transmission fluid	0 deg. C.	End of Trip timer	>= 5 seconds		
	during engine shutdown		Engine had been granking			
	transmission fluid temperature, from time at transmission fluid	> 35 deg. C				
	to time	60 seconds				
	temperature		Output speed	< 50 RPM		
This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift.	accumulated event timer (For rough road conditions, use) Timer accumulates when transmission is shifting, output speed AND commanded gear slip	>= 2 seconds 2 seconds >= 60 RPM > 75 RPM 150 RPM.		P0722 P0716 P0717 P0877 P0878 >= 125 RPM	2.25 seconds	A
P2723	the on-coming clutch energized by Pressure Control Solenoid 1 engages during a	P2723 This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift. Test) If RPS indicates for a time at transmission fluid temperature during engine shutdown This time varies with transmission fluid temperature, from time at transmission fluid temperature to time at transmission fluid temperature (For rough road conditions, use) Timer accumulates when transmission is shifting, output speed AND commanded gear slip (For rough road conditions,	P2723 This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift. Pending failure occurs when transmission is shifting, output speed AND commanded gear slip (For rough road conditions, use) If RPS indicates not Reverse > 40 seconds of deg. C. P40 seconds of deg. C. P40 seconds of deg. C. P40 seconds of deg. C. P51 seconds of deg. C. P52 seconds of deg. C. P60 seco	P2723 This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift. Pending failure occurs when accumulated event timer pages during a forward range shift. Pending failure occurs when transmission is shifting, output speed AND commanded gear slip or a time pat transmission is shifting, output speed AND commanded gear slip or a time pat transmission is shifting, output speed Ignition Key State is NOT RUN Engine Stopped or Stalled Engine had been cranking or running this drive cycle transmission fluid temperature to time at transmission fluid temperature of the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift. Pending failure occurs when accumulated event timer transmission is shifting, output speed >= 60 RPM AND commanded gear slip of the product of the page is a company to the page is a company	For Case 2: (RPS Shutdown Test) If RPS indicates for a time at transmission fluid temperature during engine shutdown This time varies with transmission fluid temperature to time at transmission fluid temperature for output speed < 50 RPM This test determines if the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift. P2723 This test determines if for output speed Portion of the program of the on-coming clutch energized by Pressure Control Solenoid 1 engages during a forward range shift. P2724 Time raccumulates when transmission is shifting, output speed Portion of the program of the pro	For Case 2: (RPS Shutdown Test) If RPS indicates for a time

Component/System		Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions		MIL Illum
			In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip)		Hydraulic System Pressurized Normal powertrain shutdown not in process			
			for sample size		Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
					On-coming clutch control enabled			
					Power downshift abort to previous range NOT active			
Pressure Control Solenoid 2 Controlled Clutch Stuck Off	P0776	This test determines if the on-coming clutch energized by Pressure Control Solenoid 2 engages during a forward range shift.	Pending failure occurs when accumulated event timer (For rough road conditions, use) Timer accumulates when transmission is shifting, output speed AND commanded gear slip	>= 2 seconds 2 seconds >= 60 RPM	Not Test Failed This Key On	P0721 P0722 P0716 P0717 P0877 P0878	2.25 seconds	A
				> 75 RPM	Output Speed	>= 125 RPM		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			(For rough road conditions, use)		Turbine Speed	>= 60 RPM		
			In response of pending failure, a diagnostic		Hydraulic System Pressurized			
			response range is commanded. During this command, this test fails if ABS(Converter slip)		Normal powertrain shutdown not in process			
			for sample size		Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
					On-coming clutch control enabled			
					Power downshift abort to previous range NOT active			
Pressure Control Solenoid 1 Controlled Clutch Stuck On	P2724	This test determines if the off-going clutch energized by Pressure	Accumulated fail timer	>= 0.2998 seconds	Not Test Failed This Key On	P0721	3 seconds	А
natori Gtaok Gii		Control solenoid 1	for forward range upshift;			P0722		
		remains engaged during a forward range	OR accumulated fail timer	>= 3.0 seconds		P0716		
		shift.	for direction change shifts;			P0717		
			OR accumulated fail timer	>= 0.500 seconds		P0877		
			for forward range closed throttle downshift;			P0878		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			OR accumulated fail timer for forward downshifts above closed throttle.		No Fault Pending DTC for this drive cycle.	P0717		
			F-11 41		Output Speed			
			Fail timer accumulates during range to range shifts when attained gear slip speed		Turbine Speed Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
Pressure Control Solenoid 2 Controlled Clutch Stuck On	P0777	This test determines if the off-going clutch energized by Pressure Control solenoid 2 remains engaged during a forward range shift.	Accumulated fail timer for forward range upshift; OR accumulated fail timer for direction change shifts; OR accumulated fail timer for forward range closed throttle downshift;	>= 3.0 seconds >= 0.500 seconds		P0722 P0716 P0717 P0877 P0878	3 seconds	A
			OR accumulated fail timer for forward downshifts above closed throttle.		No Fault Pending DTC for this drive cycle.	P0717		
			Fail timer accumulates		Output Speed Turbine Speed			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			during range to range shifts when attained gear slip speed		Normal powertrain shutdown not in process			
					Normal or Cold powertrain initialization is complete			
					No range switch response active			
					No Cold Mode operation			
					No abusive garage shift to 1st range detected			
PRNDL/IMS								-
Transmission Range Sensor High Input	P0708	This test monitors the transmission range switch for invalid input conditions and parity errors occurring over	For Case 1 (No Information): Illegal electrical state for a time	>= 1 second	Components powered AND		Case 1: 1 second	A
		consecutive ignition cycles.	For Case 2 (Long-term Parity):		Battery Voltage between		Case 2:	
			There are 3 counters for long- term parity. These counters are updated at the end of each drive cycle, immediately prior to TCM shutdown.		Engine Speed between for	200 RPM and 7500 RPM 5 seconds	5 th occurrence	
			For Counter 1, increment counter IF Parity Error Detected; decrement counter IF No Parity Error Detected					

Component/System	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		AND No Motion Detected. IF Counter 1 THEN report failure.	>= 15 counts				
		For Counter 2, increment counter IF Parity Error Detected AND (No Valid Drive Detected OR No Valid Park/Neutral Detected) AND Motion Detected; decrement counter IF No Parity Error Detected AND Valid Park/Neutral Detected AND Valid Drive Detected AND Motion Detected.					
		IF Counter 2, THEN report failure.					
		For Counter 3, increment Counter 3 IF Parity Error Detected while in Reverse AND No Valid Reverse Detected AND Motion Detected. Decrement Counter 3 IF No Parity Error Detected AND Valid Reverse Detected AND Motion Detected.					
		IF Counter 3, THEN report failure.					

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Where Parity Error Detected is defined as a failure of the 4-bit PRNDL input such that the sum of those bits yields an odd result for a time;					
			Motion Detected is defined as output speed	>= 30 seconds; >= 200 RPM >= 10 seconds				
			Valid Drive Detected is defined as the 4-bit DL indicates Valid Drive for a time;					
			Valid Park Detected is defined as the 4-bit PRNDL indicates Valid Park for a time and output speed;	>= 0.2 seconds				
			Valid Reverse Detected is defined as the 4-bit PRNDL indicates Valid Reverse					
			Valid Neutral Detected is defined as the 4-bit PRNDL indicates Valid Neutral					
			and output speed	>= 0.2 seconds <= 20 RPM >= 3 seconds				

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Transmission Range Sensor Circuit Range/Performance	P0706	This test monitors the transmission range switch inputs at engine start to determine that it is indicating a valid	For sample size, PRNDL C input is closed OR PRNDL P is NOT closed.	· ·	Not Test Failed This Key On	P0706	200 ms	В
		starting position (Park or Neutral).			Battery voltage between	9V and 18V		
					Powertrain State is READY or CRANKING			
					Engine speed	> 100 RPM and < 350 RPM.		
Solenoid Electrical								
Main Modulation/Line Pressure Control Solenoid Control	P0960	This test detects solenoid electrical open circuit	Fault pending is set at single hardware fault occurrence		Not Test Failed This Key On	P0657	1050 ms	А
Circuit Open		malfunctions.	IF hardware fault is present for a sample size	>= 40 samples		P0658 P0659		
			AND					
			Engine speed	>= 15 RPM	Components powered AND			
			THEN initiate intrusive test by opening low side driver		Battery voltage between	9V and 18V		
					If Engine Cranking, then			
			IF intrusive test indicates no short to ground exists for a sample size,		Crank Time AND	< 4 seconds		
				>= 2 samples	Battery Voltage	> 10 V		
			THEN report malfunction		High Side Driver 1 Enabled			
Main Modulation/Line Pressure Control Solenoid Control Circuit Performance	P0961	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1: Desired current AND Actual Duty Cycle		Not Test Failed This Key On		1000 ms	A

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			For a sample size,	>= 40 samples		P0960		
				· '		P0961		
			THEN report malfunction			P0962		
			Case 2:		No Fault Pending DTC for this	P0960		
			Desired current	>= 500 mA	drive cycle	P0962		
			AND					
			Actual Duty Cycle	<= 10%	Components powered			
			For a sample size,	>= 40 samples	AND			
					Battery voltage between	9V and 18V		
			THEN report malfunction					
					If Engine Cranking, then			
						< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High Side Driver 1 Enabled			
					Shift Complete			
					Lockup Apply Complete			
					OR			
					Lockup Release Complete			
Main Modulation/Line Pressure Control	P0962	This test detects solenoid electrical	Fault pending is set at single hardware fault occurrence		Not Test Failed This Key On	P0657	1050 ms	А
Solenoid Control Circuit Low		ground circuit malfunctions.	IF hardware fault is present			P0658		
On dailt Low		mananono.	for a sample size	>= 40 samples		P0659		
			AND					
			Engine speed	>= 15 RPM	Components powered			
					AND			
			THEN initiate intrusive test by opening low side driver.		Battery voltage between	9V and 18V		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					If Engine Cranking, then			
			IF intrusive test indicates		Crank Time	< 4 seconds		
			short to ground exists for a	>= 2 samples	AND			
			sample size THEN report malfunction		Battery Voltage	> 10 V		
					High Side Driver 1 Enabled			
Main Modulation/Line Pressure Control Solenoid Control Circuit High	P0963	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for AND Engine speed		Not Test Failed This Key On	P0657 P0658 P0659	75 ms	A
					Components powered AND			
					Battery voltage between	9V and 18V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage			
					High side driver 1 enabled			
Pressure Control Solenoid 2 Control Circuit Open	P0964	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence IF hardware fault is present for a sample size		Not Test Failed This Key On	P2669 P2670 P2671	225 ms	A
			AND		Components powered			
			Engine speed	>= 15 RPM	AND			
			THEN initiate intrusive test		Battery voltage between	9V and 18V		
			by opening low side driver.		If Engine Cranking, then			
			IF intrusive test indicates no		Crank Time	< 4 seconds		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			short to ground exists for a sample size, THEN report malfunction	>= 3 samples	AND Battery Voltage	> 10 V		
					High Side Driver 2 Enabled			<u> </u>
Pressure Control Solenoid 2 Control Circuit Performance	P0965	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	>= 40% >= 10 samples	Not Test Failed This Key On	P2669 P2670 P2671 P0964 P0965 P0966	250ms	A
			Case 2: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	<= 15% >= 10 samples	No Fault Pending DTC for this drive cycle. Components powered AND Battery voltage between	P0966		
					If Engine Cranking, then			
						< 4 seconds		
					High Side Driver 2 Enabled			
					Shift Complete			
					Lockup Apply Complete			
					Lockup Release Complete			
Pressure Control	P0966	This test detects	Fault pending is set at single		 		200 ms	А

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Solenola 2 Control		solenola electrical	naroware tauit occurrence		Not Test Failed This Key On	P2669		
Circuit Low		ground circuit malfunctions.	IF hardware fault is present			P2670		
		manunctions.	for a sample size	>= 6 samples		P2671		
			AND	o dampied		2071		
			Engine speed	>= 15 RPM	Components powered			
			Liigille speed	7 - 10 TKI WI	AND			
		THEN initiate intrusive test by opening low side driver.		Battery Voltage between	9 V and 18 V			
			IF intrusive test indicates		If Engine Cranking, then			
			short to ground exists for a sample size	>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction.		AND			
					Battery Voltage	> 10 V		
					High Side Driver 2 Enabled			
	P0967	This test detects					75 ms	Α
Solenoid 2 Control		solenoid electrical	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669		
Circuit High		short to power circuit malfunctions.	AND			P2670		
			Engine speed	>= 15 RPM		P2671		
						P0967		
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
						< 4 seconds		
					AND			
					Battery Voltage			
					High Side Driver 2 Enabled			
	P2727				Tilgit Side Driver 2 Enabled		200 ms	

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
Solenold Control Circuit Open		solenoid electrical open circuit malfunctions.	nardware fault occurrence IF hardware fault is present for a sample size AND Engine speed THEN initiate intrusive test by opening low side driver. IF intrusive test indicates no short to ground exists for a sample size, THEN report malfunction	>= 5 samples >= 15 RPM >= 3 samples	Not Test Failed This Key On Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage	P0658 P0659 9 V and 18 V < 4 seconds		
					High side driver 1 enabled			
Pressure Control Solenoid 1 Control Circuit Performance	P2728	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	>= 40% >= 10 samples	Not Test Failed This Key On	P0657 P0658 P0659 P2727 P2728 P2729	250ms	A
			Case 2: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	<= 15% >= 10 samples	No Fault Pending DTC for this drive cycle. Components powered AND Battery voltage between If Engine Cranking, then Crank Time	P2729 9V and 18V < 4 seconds		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Battery Voltage	> 10 V		
					High Side Driver 1 Enabled			
					Shift Complete			
					Lockup Apply Complete			
					OR			
					Lockup Release Complete			
Pressure Control Solenoid 1 Control Circuit Low	P2729	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence IF hardware fault is present for a sample size		Not Test Failed This Key On	P0657 P0658 P0659	175 ms	A
			AND					
			Engine speed	>= 15 RPM	Components powered			
					AND			
			THEN initiate intrusive test by opening low side driver.		Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates		If Engine Cranking, then			
			short to ground exists for a sample size		Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		
					High side driver 1 enabled			
Pressure Control Solenoid 1 Control	P2730	This test detects solenoid electrical	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P0657	75 ms	Α
Circuit High		short to power circuit malfunctions.	AND			P0658		
	ma	androdono.	Engine speed			P0659		
						P2730		
					Components powered			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 1 enabled			
Shift Solenoid 1 Control Circuit Open	P0972	This test detects solenoid electrical	Fault pending is set a single hardware fault occurrence		Not Test Failed This Key On	P2669	325 ms	А
		open circuit	IF hardware fault is present		Not root railed Thie Rey On	P2670		
malfuncti	malfunctions.	for a sample size	>= 10 samples		P2671			
		AND			2011			
			Engine speed		Components powered			
			J v v v		AND			
			THEN initiate intrusive test by opening low side driver.		Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates no		If Engine Cranking, then			
			short to ground exists for a			< 4 seconds		
			sample size,	>= 3 samples	AND			
			THEN report malfunction	· ·	Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 1 Control Circuit Low	P0973	This test detects solenoid electrical	Fault pending is set at single hardware fault occurrence				300 ms	Α
Sortifor Official Low		ground circuit			Not Test Failed This Key On			
		malfunctions.	IF hardware fault is present for a sample size			P2670		
					P2671			
			AND					
			Engine speed	>= 15 RPM	Components powered			
					AND	0.1/		
			THEN initiate intrusive test		Battery Voltage between	9 V and 18 V		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			by opening low side driver.					
								l .
			IF intrusive test indicates		If Engine Cranking, then			
			short to ground exists for a sample size	>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 1	P0974	This test detects					75 ms	Α
Control Circuit High		solenoid electrical	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669		
		short to power circuit	AND	· ·		P2670		
		malfunctions.	Engine speed			P2671		
			Engine speed	>= 13 KFW				
					P0974			
					Components powered			
					AND			
					Battery Voltage between	0 \/ and 19 \/		
					battery voltage between	9 v and 16 v		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					Ballery Vollage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2	P0975	This test detects	Fault pending is set a single				325 ms	Α
Control Circuit Open		solenoid electrical	hardware fault occurrence		Not Test Failed This Key On	P2669		
		open circuit malfunctions.	IF hardware fault is present		·	P2670		
		mailunctions.	for a sample size	>= 10 camples		P2671		
			AND			. 2071		
					0			
			Engine speed	>= 15 KPM	Components powered			
					AND			
			THEN initiate intrusive test		Battery Voltage between	9 V and 18 V		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			by opening low side driver.					
					If Familia - Occupios - House			
			IF intrusive test indicates no short to ground exists for a		If Engine Cranking, then			
			sample size,		Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2	P0976	This test detects	Fault pending is set at single				300 ms	Α
Control Circuit Low		solenoid electrical	hardware fault occurrence		Not Toot Foiled This Key On	D2660		
		ground circuit malfunctions.			Not Test Failed This Key On			
		manunctions.	IF hardware fault is present			P2670		
		for a sample size	>= 10 samples		P2671			
			AND					
		Engine speed	>= 15 RPM	Components powered				
					AND			
			THEN initiate intrusive test by opening low side driver.		Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates		If Engine Cranking, then			
			short to ground exists for a sample size	>= 2 samples		< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2	P0977	This test detects					75 ms	Α
Control Circuit High		solenoid electrical	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669		
		short to power circuit	AND		ĺ	P2670		
		malfunctions.	Engine speed			P2671		
			Engine speed	>= 13 KFW				
						P0977		
					Components powered			
					AND			
					Battery Voltage between			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					If Engine Cranking, then Crank Time AND Battery Voltage	< 4 seconds		
					High side driver 2 enabled			
Shift Solenoid 3 Control Circuit Low	P0979	This test detects solenoid electrical ground circuit malfunctions.	Fault pending is set at single hardware fault occurrence IF hardware fault is present for a sample size AND Engine speed THEN report malfunction	>= 6 samples >= 15 RPM	Components powered AND Battery Voltage between If Engine Cranking, then Crank Time AND Battery Voltage High side driver 2 enabled Commanded gear NOT Reverse Trim, NOT 5th, NOT 6th	P2670 P2671 P0979 9 V and 18 V < 4 seconds > 10 V	150 ms	A
Shift Solenoid 3 Control Circuit High	P0980	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for AND Engine speed		Not Test Failed This Key On	P2669 P2670 P2671 P0980	75 ms	A

Component/System		Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					Components powered			
					AND Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time AND	< 4 seconds		
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
					Commanded gear NOT Reverse Trim, NOT 5th, NOT 6th			
Actuator Supply 1 (HSD1) Voltage Open		This test detects if the voltage measured at the HSD1 detection circuit shows that	Report malfunction when the number of failure events AND	>= 3	Not Test Failed This Key On	P0657	75 ms	А
		multiple low side detection circuits	Engine speed	>= 15 RPM	HSD1 is commanded ON			
		indicate open, but the high side detection circuit indicates high voltage.	A failure event occurs when the number of failed solenoids connected to		Components powered AND			
			HSD1 AND		Battery Voltage between	9 V and 18 V		
			HSD1 voltage	>= 6V	If Engine Cranking, then Crank Time	< 4 seconds		
					AND			
Astrodon Crombia 4	DOCEO	This took data at a law			Battery Voltage	> 10 V	75	_
Actuator Supply 1 (HSD1) Voltage Low	P0658	This test detects low voltage when high voltage is expected indicating a short to	Report malfunction when short to ground is detected		Not Test Failed This Key On	P0658	75 ms	А
		ground at the circuit.	for a number of events	>= 3 times	HSD1 is commanded ON			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			AND					
			Engine speed	>= 15 RPM	Components powered AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
						< 4 seconds		
					AND Battery Voltage			
Actuator Supply 1 (HSD1) Voltage High	P0659	This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events A failure event occurs when HSD1 voltage	>= 3 times	During initialization		18.75 ms	A
Actuator Supply2 (HSD2) Voltage Open	P2669	This test detects if the voltage measured at the HSD2 detection circuit shows that multiple low side	Report malfunction when the number of failure events AND Engine speed	>= 3	Not Test Failed This Key On HSD2 is commanded ON		75 ms	A
		detection circuits indicate open, but the high side detection circuit indicates high voltage.	A failure event occurs when the number of failed solenoids connected to HSD2 AND	>= 2	Components powered AND Battery Voltage between If Engine Cranking, then	9 V and 18 V < 4 seconds		
					Battery Voltage			
Actuator Supply2 (HSD2) Voltage Low	P2670	This test detects low voltage when high voltage is expected	Report malfunction when		Not Test Failed This Key On		50 ms	А

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		indicating a short to ground at the circuit.	snort to ground is detected for a number of events AND	>= 3 times	HSD2 is commanded ON			
			Engine speed		Components powered AND			
					Battery Voltage between			
					If Engine Cranking, then Crank Time AND Battery Voltage	< 4 seconds		
Actuator Supply 2 (HSD2) Voltage High	P2671	This test detects if the voltage measured at the HSD 2 detection circuit indicates high during initialization (when the circuit is off)	During initialization, report malfunction when the number of failure events A failure event occurs when HSD1 voltage	>= 3 times	During initialization		18.75 ms	А
TCC Pressure Control Solenoid Control Circuit Open	P2761	This test detects torque converter solenoid electrical open circuit malfunctions.	Fault pending is set a single hardware fault occurrence IF hardware fault is present for a sample size AND Engine speed	>= 120 samples	Not Test Failed This Key On Components powered AND	P0658 P0659	3075 ms	В
			THEN initiate intrusive test by opening low side driver. IF intrusive test indicates no short to ground exists for a sample size, THEN report malfunction	>= 3 samples	Battery Voltage between If Engine Cranking, then	< 4 seconds		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
					High side driver 1 enabled			
TCC Pressure Control Solenoid Control Circuit Performance	P2762	This test detects the performance of the solenoid by comparing desired current to actual duty cycle	Case 1: Desired current AND Actual Duty Cycle For a sample size, THEN report malfunction	>= 40% >= 40 samples	Not Test Failed This Key On	P0657 P0658 P0659 P2761 P2762 P2763	1000 ms	В
			Case 2: Desired current AND		No Fault Pending DTC for this drive cycle.	P2763		
			Actual Duty Cycle For a sample size, THEN report malfunction	>= 40 samples	Components powered AND Battery voltage between			
			THE RESPONSE THE HEALT OF THE PARTY OF THE P		If Engine Cranking, then Crank Time AND Battery Voltage	< 4 seconds		
					High Side Driver 1 Enabled Shift Complete			
					Lockup Apply Complete OR Lockup Release Complete			
TCC Pressure Control Solenoid Control Circuit High	P2763	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for AND	·	Not Test Failed This Key On	P0657 P0658	75 ms	В

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			Engine speed	>= 15 RPM		P0659		
						P2763		
					Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 1 enabled			
TCC Pressure Control Solenoid	P2764	This test detects solenoid electrical	Fault pending is set at single hardware fault occurrence		Not Test Failed This Key On	P0657	3050 ms	В
Control Circuit Low		ground circuit malfunctions.	IF hardware fault is present		1	P0658		
		manunctions.	for a sample size	>= 120 samples		P0659		
			AND					
			Engine speed	>= 15 RPM	Components powered			
					AND			
			THEN initiate intrusive test by opening low side driver		Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates		If Engine Cranking, then			
			short to ground exists for a sample size	>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		
					High side driver 1 enabled			
Miscellaneous					•			
4 Wheel Drive Low	P2771	This test detects	Case 1 (Stuck Off)		All Cases		5 seconds	В
Switch Circuit Malfunction		abnormal conditions for the four-wheel drive	This test fails when, for		Not Test Failed This Key On	P2771		
		indication switch input	number of occurrences,	>= 200		P0721		
		by comparing switch	the transfer case 4WD			P0722		

Component/System	Fault Code	Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		calculated range.	switch indicates High range and the calculated transfer case range is Low range for a time	>= 5 seconds	No Fault Active DTCs for this drive cycle	P2771 P0721 P0722		
			Case 2 (Stuck On) This test fails when, for number of occurrences,	>= 200	No Fault Pending DTCs for this drive cycle			
			the transfer case 4WD switch indicates Low range		Output Speed	> 60 RPM		
			and the calculated transfer case range is High range for a time	>= 5 seconds.	Transfer Case is NOT Neutral			
					Transmission fluid temperature	> 20 deg. C and < 130 deg. C		
					Engine Speed between	200 RPM and 7500 RPM		
					Shift complete AND			
					range attained NOT Neutral			
Transmission Component Slipping	P0894	This test detects the number of turbine slip events during the Neutral Locked Turbine (NLT) request from engine controller.	For this ignition cycle, when the number of Neutral Locked Turbine (NLT) Slip events, then report fail Where number of NLT Slip events for this ignition cycle = Number of accumulated NLT Slip events from previous ignition cycles.	>= 3		9 V and 18 V	8075 ms	В
			And, where number of					

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			accumulated INL1 Slip events is incremented when commanded gear or attained gear is NLT					
			AND					
			turbine speed for a time	> 50 RPM > 3 seconds.				
gnition Switch Run/Start Circuit	P2534	Out of range low.					35 seconds	А
Null/Start Gircuit			lgnition voltage for a time	< 5 volts >= 30 seconds	Not Test Failed This Key On	P2534		
					Components powered AND			
					Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
GMLAN Bus Reset Counter Overrun	U0073	This test detects if the GMLAN bus is off for a calibration duration.	CANB_bus is off for a time	>= 3 seconds	Components powered AND		8 seconds	В
					Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
GMLAN ECM Controller State of Health Failure	U0100	This test detects CAN (GMLAN) bus failures by detecting State of Health failures in	Case 1 (x out of y): The failure counter		All Cases Components powered AND Battery Voltage between		8 seconds	В
		GMLAN message \$191 from ECM.	increments when a State of Health (SOH) failure is detected. A SOH failure		Engine Speed between			

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			occurs when message is missing. When the failure counter is a number of samples		for	RPIVI 5 seconds		
			out of a number of samples, report fail.	7 samples	Ignition Key State is RUN			
			Case 2 (intermittent): Report fail, when the failure	> 0 counts	GMLAN message \$191 is received from ECM			
			counter for a number of sample windows		Enable criteria met for a time	> 3 seconds		
Brake Switch Circuit	P0571	This test counts how			All Cases			С
		many vehicle acceleration events occur while the brake switch indicates "ON"	Case 1: The number of vehicle accelerations with the brake		Not Test Failed This Key On	P0571 P0721 P0722	10 Acceleration Events	
		or the number of vehicle deceleration events while the brake switch indicates "OFF"	switch "on" Case 2:	>= 10	No Fault Pending DTCs	P0721 P0722		
			The number of vehicle decelerations with the brake		Not Fault Active	P0703	10 Deceleration Events	
			switch "off"	>= 10	Components powered AND			
					Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
Brake Pedal Possition Switch Sianal Rollina Count	P0703	This test detects rolling count failures for the Brake Switch GMLAN	The failure count increments		Components powered		15 seconds	С

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
5 5		Message	when the GMLAN message is not received or the rolling counter does not agree with the expected value		AND Battery Voltage between	9 V and 18 V		
			When the failure counter is	, E	Engine Speed between	200 RPM and 7500 RPM		
			for a time of	> 10 seconds	for	5 seconds		
			Report Failure					
Trans Mode Switch A	P071A	This test detects the trans mode switch A ON	The switch is active continuously for a time	>= 20 seconds	Not test failed this key on	P1762 P071A	25 seconds	С
					Components powered AND			
					Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
Upshift Switch Circuit	P0815	This test detects the upshift switch ON	When PRNDL state is N, P or R		Not Test Failed This Key On	P0826	603 seconds	С
			and has been unchanged for a time	>= 2.5 seconds		P0708		
			AND		Components powered			
			upshift switch state is ON		AND			
			for a time	>= 3 seconds.	Battery Voltage between	9 V and 18 V		
			AND					
			When PRNDL state is a		Engine Speed between	200 RPM and 7500 RPM		
			forward range and has been unchanged for a time		for	5 seconds		

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			AND					
			upshift switch state is ON					
			for a time	>= 600 seconds.				
Downshift Switch Circuit	P0816	This test detects the downshift switch ON.	When PRNDL state is N, P or R and has been unchanged for a time AND downshift switch state is ON for a time.	>= 2.5 seconds	Not Test Failed This Key On Components powered AND Battery Voltage between	P0708	603 Seconds	С
			AND When PRNDL state is a forward range and has been unchanged for a time AND downshift switch state is ON for a time	>= 2.5 seconds	Engine Speed between for	200 RPM and 7500 RPM 5 seconds		
Up and Down Shift Switch Circuit	P0826	This test detects upshift/downshift switch circuit at an illegal state.	Switch state is ILLEGAL for a time	>= 10 seconds.	Not Test Failed This Key On Components powered AND Battery Voltage between Engine Speed between	9 V and 18 V	10 seconds	С
Upshift and Downshift Switch Signal Rolling Count	P1761	This test detects rolling count failures for the Upshift and Downshift	when the GMLAN message		Components powered		15 seconds	С

Component/System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
		GMLAN Message	counter does not agree with the expected value When the failure counter is for a time of		AND Battery Voltage between Engine Speed between	9 V and 18 V		
			Report Failure		for	5 seconds		
Trans Mode Switch A Signal Rolling Count		This test detects rolling count failures for the Trans Mode Switch A GMLAN Message	The failure count increments when the GMLAN message is not received or the rolling counter does not agree with the expected value When the failure counter is		Components powered AND Battery Voltage between Engine Speed between	9 V and 18 V	15 seconds	С
				> 10 seconds		RPM 5 seconds		

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary	Enable		Tim		Mil
System	Code	Description	Criteria		Val	ue	Malfunction	Conditions		Requi	red	Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro- Hydraulic Control Module Read Only Memory	Incorrect program/calibratio ns checksum	=	TRUE	Boolean			>=	5	Fail Counts	One Trip
						Disable Conditions:	DTC's:	TCM: P0601 ECM: None				
Transmission Control Module (TCM)	P0603	Transmission Electro- Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	=	TRUE	Boolean					uns nously	One Trip
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None				
Transmission Control Module (TCM)	P0604	Transmission Electro- Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	Ш	TRUE	Boolean			>=	5	Fail Counts Sample	One Trip
									=	16	Counts	
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0604 ECM: None				
Transmission Control Module (TCM)	P062F	Transmission Electro- Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	II	TRUE	Boolean					uns inously	One Trip

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary		Enab			Tim		Mil
System	Code	Description	Criteria		Val		Malfunction		Condit	ions		Requi	red	Illum.
						Disable Conditions:			1: P062F 1: None					
Transmission Control Module (TCM)	P0634	Transmission Electro- Hydraulic Control Module Internal Temperature Too High	Fail Case Substrate 1 Temperature		142.10156	s °C					>=	5	Fail Time (Sec)	One Trip
			Fail Case Substrate Temperature	>=	50	°C					>=	2	Fail Time (Sec)	
			Ignition Voltage		18	Volts								-
			Note: either fail case can set the DTC											
							Ignition Voltage Lo	>=	8.6	Volts				
							Ignition Voltage Hi	<=	32	Volts				
							Substrate Temp Lo		0	°C				
							Substrate Temp Hi Substrate Temp		170	°C				
							Between Temp Range for Time	>=	0.25	Sec				
							P0634 Status is	≠	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu			Secondary Malfunction		nable nditions		Tim Requi		Mil Illum.
						Disable Conditions:	MIL	not Illuminated for DTC's:						
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	=	TRUE	Boolean					>= out	4	Fail Counts Sample	One Trip
						Disable Conditions:		P0658 Status is not igh Side Driver 1 On not Illuminated for DTC's:	On Fau Acti = Tru TCM: No	ed s y or or or lt ve Boolean	of		Counts	
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> Ta	Refer to able 19 in apporting ocuments	°C								Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria If TCM substrate temp to power up temp Δ	Refer to Table 20 in > supporting	Walluffelion	Conditions	Required	
			Both conditions above required to increment fail counter Note: table				>= 3000 Fail Counts (100ms loop)	
			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 875 Counts of (100ms	;
					Engine Torque Signal Valid Accelerator Position Signal Valid	= TRUE Boolear		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= 32 Volts		
					Engine Speed Hi Engine Speed is within the allowable limits for Brake torque active	<= 7500 RPM >= 5 Sec		

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Below describes the		Kequirea	mum.
					brake torque entry			
					criteria			
					Engine Torque			
					Throttle	>= 30 Pct		
					Transmission Input	<= 200 RPM		
					Speed Vehicle Speed			
					Transmission Range			
						Maritan		
					Transmission Range	≠ Neutra 		
					PTO	= Not		
						Active		
					Set Brake Torque			
					Active TRUE if above	>= 7 sec		
					conditions are met for: Below describes the			-
					brake torque exit criteria			
					Brake torque entry	Not		
					criteria			
						Clutch		
					Clutch hydraulic	Hydra		
					pressure	≠ ulic Ali		
					procedio	Purge		
						Event		
					Clutch used to exit brake	CeTFT D_e_C		
					torque active			
					torque active	Enbl		
					The above clutch			1
					pressure is greater than			
					this value for one loop			
					Set Brake Torque			1
					Active FALSE if above			1
					conditions are met for:			
						Test		1
						Failed		1
						This		
					P0667 Status is			1
						On or		1
						Fault		
L						Active		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
System	Code	Description	Спієгіа	Disable Conditions:	MIL not Illuminated for DTC's:			required	
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	CeTFTI_e_ = VoltageDir ectProp					Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<= -249 °C					
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp						
			Either condition above will satisfy the fail conditions				>=	Fai 60 Time (Sec	er
					Ignition Voltage Lo	>= 8.6 Volts			

Component/	Fault	Monitor Strategy	Malfunction		Thresi Valu			Secondary Malfunction		Enab Conditi			Time		Mil Illum.
System	Code	Description	Criteria		Vaic			Ignition Voltage Hi	/ -	32	Volts		Requii	Cu	main.
								Engine Speed Lo		400	RPM				
								Engine Speed Hi		7500	RPM				
								Engine Speed is within		5	Sec				
								the allowable limits for	>=		360				
										Test Failed					
										This					
								P0668 Status is	≠	Key On or					
										Fault					
										Active					
							isable	MIL not Illuminated for		1: None					
						Condit	tions:	DTC's:	ECN	/l: None					
Trononicaion		TCM internal			Catetia										Two Trips
Transmission Control Module	P0669	temperature	Type of Sensor	=	CeTFTI_e_ VoltageDir										THPS
(TCM)		(substrate) thermistor failed at a high voltage	Used		ectProp										
			If TCM Substrate												
			Temperature												
			Sensor = Direct	>=	249	°C									
			Proportional and Temp												
			If TCM Substrate												
			Temperature		0.40	00									
			Sensor = Indirect Proportional and	<=	249	°C									
			Temp												
			Either condition										00	Fail	
			above will satisfy the fail conditions									>=	60	Timer (Sec)	
								Ignition Voltage Lo	>=	8.6	Volts			()	
								Ignition Voltage Hi			Volts				
								Engine Speed Lo	>=	400	RPM				
								Engine Speed Hi	<=	7500	RPM				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Value	Engine Speed is within the allowable limits for	>= 5 Sec	Kequired	mum.
					P0669 Status is	Test Failed This ≠ Key On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss Estimated Motor Power	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None		
						LOIVI. NOTIC		Two Trips
Transmission Control Module (TCM)		TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ					Theo

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enak			Time		Mil Illum.
System	Code	Description	Criteria	Value	Waltunction	Condit	ions		Requir	rea	mum.
			If transmission oil temp to power up temp Δ	Refer to Table 18 in oC supporting documents							
			Both conditions above required to increment fail counter Note: table					>=	3000	Fail Counts (100ms loop)	
			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	Boolean				
					Accelerator Position Signal Valid	= TRUE	Boolean				
					Ignition Voltage Lo	>= 8.6	Volts				
					Ignition Voltage Hi		Volts				
					Engine Speed Lo		RPM				
					Engine Speed Hi		RPM				
					Engine Speed is within the allowable limits for	>= 5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
3,535					Brake torque active	= FALSE		$\overline{}$
					Below describes the brake torque entry criteria			
					Engine Torque			
					Throttle	>= 30 Pct		
					Transmission Input Speed			
					Vehicle Speed Transmission Range	<= 8 Kph		
					Transmission Range	Moutro		
					PTO	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			
					Clutch hydraulic pressure			
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:			

Component/	Fault	Monitor Strategy	Malfunction	Thresh		Secondary Malfunction	Enable			Time	d	Mil
System	Code	Description	Criteria	Value		P06AC Status is MIL not Illuminated for DTC's:	On or Fault Active	P0668, P06AE, P0713, P0723, P0966, P0971, P2721, P0107, P0172, P0201, P0204, P0207, P0301, P0304, P0307,		Require	d	Illum.
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59	°C				>=	60	Fail Time (Sec)	Two Trips
						Ignition Voltage Lo		Volts				
						Ignition Voltage Hi		Volts				
						Engine Speed Lo		RPM				
						Engine Speed Hi Engine Speed is within		RPM				
						the allowable limits for	>= 5	Sec				

Component/	Fault	Monitor Strategy	Malfunction		shold	Secondary Malfunction	Enab			Time		Mil
System	Code	Description	Criteria	V	alue	Mairunction	Condit	ions		Requi	red	Illum.
						P06AD Status is	Test Failed This ≠ Key On or Fault Active					
						For Hybrids, below conditions must also be met Estimated Motor Power Loss		kW				
						Estimated Motor Power Loss greater than limit for time Lost Communication	>= 0	Sec				
						with Hybrid Processor Control Module Estimated Motor Power Loss Fault	= FALSE					
					Disable Conditions:	MIL not Illuminated for						
							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	>= 8.6	Volts				
						Ignition Voltage Hi	<= 32	Volts				
						Engine Speed Lo		RPM				
						Engine Speed Hi		RPM				
						Engine Speed is within the allowable limits for		Sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					P06AE Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:				
								Two
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ					Trips
			If transmission oil temp to power up temp Δ					
			Both conditions above required to increment fail counter				Fail Count (100m loop)	s
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Samp Out 3750 Count of (100m loop)	s s

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Ena			Tim		Mil
System	Code	Description	Criteria	Value	Malfunction	Cond	itions		Requi	red	Illum.
			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		Volts				
					Ignition Voltage Hi		Volts				
					Engine Speed Lo		RPM	l			
					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		Kph				
					Transmission Range	Moutro		l			
					Transmission Range	≠ I		l			
					РТО	= Not Active					
					Set Brake Torque						
					Active TRUE if above	>= 7	sec				
					conditions are met for: Below describes the						
					brake torque exit criteria						
					Brake torque entry	Not					
					criteria	= Met					

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	R	Required	Illum.
				Disable Conditions	: DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used If Transmission Fluid Temperature	ectProp					Two Trips
			Sensor = Direct Proportional and Temp If Transmission	<= -74 °C					
			Fluid Temperature Sensor = Indirect Proportional and Temp	>= -74 °C					
			Either condition above will satisfy the fail conditions				>=	Fail Time (Sec)	
					Ignition Voltage Lo				
					Ignition Voltage Hi	<= 32 Volts			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Valu		Secondary Malfunction		Enable onditions	Time Required	Mil Illum.
		·				Engine Speed Lo	>= 40	00 RPM		
						Engine Speed Hi	<= 75	000 RPM		
						Engine Speed is within the allowable limits for	>=	5 Sec		
						P0712 Status is	Fai Th ≠ Ko Or Fa	est iled nis ey o or uult tive		
						For Hybrids, below conditions must also be				
						met Estimated Motor Power Loss		O kW		
						Estimated Motor Power Loss greater than limit for time	>= () Sec		
						Lost Communication with Hybrid Processor Control Module	= FAI	LSE		
						Estimated Motor Power Loss Fault	= FAI	LSE		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0 P0722, F ECM: No	P0723		
Transmission Fluid Temperature Sensor (TFT)		Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used	CeTFTI_e_ = VoltageDir ectProp						Two Trips
			If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	>= 174	°C					

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value		Secondary		Enab			Time		Mil	
System	Code	Description	Criteria		Val	lue	Malfunction		Conditi	ions		Requir	red	Illum.
			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	>=	8.6	Volts				
							Ignition Voltage Hi	<=	32	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							P0713 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	P07′	l: P0713, 17, P0722 I: None	P0716, 2, P0723				
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>=	900	RPM					>=	0.8	Fail Time (Sec)	One Trip
							Engine Torque is	>=	0	N*m				
							Engine Torque is		8192	N*m				
							Engine Speed		400	RPM				
							Engine Speed			RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							the allowable limits for Vehicle Speed is	>=	5 10	Sec Kph				

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Thres Val		Secondary Malfunction		Ena Cond			Time Requir		Mil Illum.
System	Code	Description	Criteria	Vai	ue	Throttle Position is	>=	0	Pct		Requii	eu	main.
						Transmission Input Speed is The previous requirement has been satisfied for	>=	0	RPM Sec				
						The change (loop to loop) in transmission input speed is The previous	<		RPM/Loop				
						requirement has been satisfied for Throttle Position Signal Valid		0 TRUE	Sec Boolean				
						Engine Torque Signal Valid		TRUE	Boolean				
						Ignition Voltage		8.6	Volts				
						Ignition Voltage	<=	32	Volts				
						P0716 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions:		TCN P09	/I: P0717 73, P09	7, P0752, 74				
								03, P01	1, P0102, 21, P0122,				
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case Transmission 1 Input Speed is	33	RPM					>=	4.5	Fail Time (Sec)	One Trip

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value		Secondary Malfunction		Enal			Time		Mil	
System	Code	Description	Criteria		vai	ue	Mairunction		Condi	tions		Requi	rea	Illum.
			Fail Output Speed is	<	653.125	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
							Engine Torque is	>=	120	N*m				
							Engine Torque is	<=	8192	N*m				
							Vehicle Speed	>=	12	Kph				
							Engine Torque Signal Valid	=	TRUE	Boolean				
							Ignition Voltage	>=	8.6	Volts				
							Ignition Voltage	<=	32	Volts				
							Engine Speed	>=	400	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					
						Disable Conditions:	MIL not Illuminated for DTC's:		Л: Р0101	, P0723 , P0102,				
Mode Switch	P071A	Transmission Mode Switch A Circuit	Tow Haul Mode Switch state	=	TRUE	Boolean					>=	600	Fail Time (Sec)	Special No MIL
							Ignition Voltage Lo	>=	8.6	Volts				
							Ignition Voltage Hi	<=	32	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enak Condit			Time		Mil Illum.	
		·				Disable Conditions:	DTC's:		1: P1762 1: None					
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<=	35	RPM					>=	4.5	Fail Time (Sec)	One Trip
							P0722 Status is not Transmission Input	=	Test Failed This Key On or Fault Active					
							Speed Check Engine Torque Check Throttle Position Transmission Fluid	=	TRUE TRUE 8	Boolean Boolean Pct				
							Temperature Disable this DTC if the		-40 1	°C Boolean				
							PTO is active Engine Torque Signal Valid	=	TRUE	Boolean				
							Throttle Position Signal Valid		TRUE	Boolean				
							Ignition Voltage is Ignition Voltage is		8.6 32	Volts Volts				
							Engine Speed is		400	RPM				
							Engine Speed is		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							Enable_Flags Defined Below							

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE			
					Engine Torque Condition 1			
					Range Shift Status	Range ≠ shift ENUM compl eted		
					OR	Park		
					Transmission Range is	= or Neutra		
					Engine Torque is	>= 8192 N*m		
					Engine Torque is	<= 8192 N*m		
					Engine Torque Condition 2			
					Engine Torque is	>= 54 N*m		
					Engine Torque is	<= 8192 N*m		
					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE			
					TIS Check Condition 1 Transmission Input Speed is	>= 653.1 RPM		
					Transmission Input Speed is	<= 5350 RPM		
					TIS Check Condition 2 Engine Speed without	>= 3200 RPM		
					the brake applied is Engine Speed with the brake applied is	2200 RTM		

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable onditions		Time		Mil Illum.	
System	Code	Description	Citteria		¥an	ue	Engine Speed is Controller uses a single power supply for the speed sensors Powertrain Brake Pedal is Valid	<= 81 =	192 RPM 1 Boolean RUE Boolean		Kequii	ieu –	
						Disable Conditions:	DTC's:	P0723 ECM: P	0716, P0717, 0101, P0102, P0121, P0122,				
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed	>=	105	RPM				>=	0	Enable Time (Sec)	One Trip
			Output Speed Delta	<=	8192	RPM				>=	0	Enable Time (Sec)	
			Output Speed Drop	>	650	RPM				>=	1.5	Output Speed Drop Recover y Fail Time (Sec)	
			AND Transmission Range is	=	Driven range (R,D)								
							Range_Disable OR Neutral_Range_Enable		LSE See Below				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Ena		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Cond	itions	Required	Illum.
					And					
					Neutral_Speed_Enable	=	TRUE	See Below		
					are TRUE concurrently					
										-
					Transmission_Range_E nable	=	TRUE	See Below		
					Transmission_Input_Spe ed_Enable	=	TRUE	See Below		
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active		1	Boolean		
					Ignition Voltage is	>=	8.6	Volts		
					Ignition Voltage is	<=	32	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission_Input_Spe ed_Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					TIS Condition 1 is TRUE when both of the following conditions are satsified for	>= 0 Time (Sec)		
					Input Speed Delta Raw Input Speed	<= 4096 RPM		
					TIS Condition 2 is TRUE when ALL of the next two conditions are satisfied			
					Input Speed	= 0 RPM		
					A Single Power Supply is used for all speed sensors	= TRUE Boolean		
					Neutral_Range_Enable is TRUE when any of the next 3 conditions are TRUE			
					Transmission Range is	= Neutra ENUM		
					Transmission Range is	Revers e/Neut = ral ENUM Transit onal		
					Transmission Range is	Neutra = I/Drive Transit ENUM ional		
					And when a drop occurs			
					Loop to Loop Drop of Transmission Output Speed is	> 650 RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is	= Park ENUM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Range is	Park/R everse Transit onal		
					Input Clutch is not	ON = (Fully Applie ENUM d)		
					Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified for	> 1.5 Seconds		
					Transmission Output Speed	> 130 RPM		
					The loop to loop change of the Transmission Output Speed is			
					The loop to loop change of the Transmission Output Speed is	> -10 RPM		
					Transmission_Range_E nable is TRUE when one of the next six conditions is TRUE			
					Transmission Range is	= Neutra ENUM I Revers		
					Transmission Range is	e/Neut = ral ENUM Transit ional		
					Transmission Range is	Neutra I/Drivo		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Tim Requ		Mil Illum.
					Time since a driven range (R,D) has been selected	>= Toble Sec			
					Transmission Output Speed Sensor Raw Speed Output Speed when a	>= 500 RPM			
				Disable Conditions:	fault was detected MIL not Illuminated for DTC's:				
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition	>= 750 Kpa		. 0120	>= 2	Enable Time (Sec)	Two Trips
			(A) or (B) Must be Met (A) TCC Slip Error @ TCC On Mode	Refer to Table 1 in RPM Supporting Documents			>= 5	Fail Time (Sec)	

Component/	Fault	Monitor Strategy	Malfunction			shold	Secondary Malfunction		Enab Condit			Tin Requ		Mil Illum.
System	Code	Description	Criteria		Va	liue	Walluffction	┝	Condit	10115		Kequ		mum.
			(B) TCC Slip @ Lock On Mode	>=	130	RPM					>=	5	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter								>=	2	TCC Stuck Off Fail Counter	
							TCC Mode	=	On or Lock					
							Ignition Voltage Lo	>=	8.6	Volts				
							Ignition Voltage Hi	<=	32	Volts				
							Engine Speed	>=	400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for		5	Sec				
							Engine Torque Lo	>=	50	N*m				
							Engine Torque Hi	<=	8192	N*m				
							Throttle Position Lo	>=	8	Pct				
							Throttle Position Hi	<=	100	Pct				
							2nd Gear Ratio Lo	>=	2.195	Ratio				
							2nd Gear Ratio High	<=	2.525	Ratio				
							3rd Gear Ratio Lo	>=	1.423	Ratio				
							3rd Gear Ratio High	<=	1.637	Ratio				
							4th Gear Ratio Lo	>=	1.069	Ratio				
							4th Gear Ratio High	<=	1.23	Ratio				
							5th Gear Ratio Lo	>=	0.791	Ratio				
							5th Gear Ratio Hi	<=	0.91	Ratio				
							6th Gear Ratio Lo	>=	0.623	Ratio				
							6th Gear Ratio High	<=	0.717	Ratio				
							Transmission Fluid Temperature Lo	>=	-6.656	°C				
							Transmission Fluid Temperature Hi	<=	130	°C				

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary Malfunction	Enable Conditions		Time		Mil
Component/ System	Fault	Monitor Strategy Description	Malfunction Criteria	Thres Val	ue	Malfunction PTO Not Active Engine Torque Signal Valid Throttle Position Signal Valid Dynamic Mode P0741 Status is	Conditions = TRUE Boolean = TRUE Boolean = TRUE Boolean = FALSE Boolean Test Failed This ≠ Key On or Fault Active TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764 ECM: P0101, P0102,		Time Requir		Mil Illum.
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed TCC Slip Speed	-50 13	RPM RPM		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			Fail	One Trip
								>=	1.5	Time (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enab			Tim		Mil
System	Code	Description	Criteria	Value	Malfunction		Condit	ions		Requi	red	Illum.
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter						>=	6	Fail Counter	
					TCC Mode	=	Off					
					Enable test if Cmnd Gear = 1stFW and value true	=	1	Boolean				
					Enable test if Cmnd Gear = 2nd and value true	=	0	Boolean				
					Engine Speed Hi	<=	6000	RPM				
					Engine Speed Lo	>=	500	RPM				
					Vehicle Speed HI	<=	511	KPH				
					Vehicle Speed Lo	>=	1	KPH				
					Engine Torque Hi	<=	8192	Nm				
					Engine Torque Lo	>=	80	Nm				
					Current Range	≠	Neutra I	Range				
					Current Range	≠	Revers e	Range				
					Transmission Sump Temperature Transmission Sump	<=	130	°C				
					Temperature	>=	18	°C				
					Throttle Position Hyst High	>=	5	Pct				
					AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has	<=	8	KPH				
					been met, the enable will remain while Throttle Position		2	Pct				
					Disable for Throttle Position	>=	75	Pct				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		able	Time	Mil
System	Code	Description	Criteria	Value	Malfunction		ditions	Required	Illum.
					Disable if PTO active and value true	= 1	Boolean		
					Disable if in D1 and value true	= 1	Boolean		
					Disable if in D2 and value true	= 1	Boolean		
					Disable if in D3 and value true	_ 1	Boolean		
					Disable if in D4 and value true	_ 1	Boolean		
					Disable if in D5 and value true	_ 1	Boolean		
					Disable if in MUMD and value true	_ 1	Boolean		
					Disable if in TUTD and value true	_ 1	Boolean		
					4 Wheel Drive Low	- FΔIS	E Boolean		
					Active Disable if Air Purge	_ 0	Boolean		
					active and value false RVT Diagnostic Active		E Boolean		
					Ignition Voltage		V		
					Ignition Voltage		V		
					Vehicle Speed	<= 511	KPH		
					Engine Speed	>= 400	RPM		
					Engine Speed	<= 7500	RPM		
					Engine Speed is within the allowable limits for	>= 5	Sec		
					Engine Torque Signal Valid	= TRU	E Boolean		
					Throttle Position Signal Valid	= TRU	E Boolean		
					P0742 Status is	Test Faile This	d r		

Component/	Fault	Monitor Strategy	Malfunction		Thresl		Secondary		Enab			Tim		Mil
System	Code	Description	Criteria		Valu		Malfunction		Conditi			Requ	ired	Illum.
System	Code	Description	Спена		Van		MIL not Illuminated for	P07: P27(ECM P01(P01) P02(P02(P02(P03)	M: P0716, 22, P0723 63, P2764 M: P0101, 03, P0106 08, P0175 02, P0203 05, P0303 05, P0306 05, P0	P0717, 3, P0741, 4 P0102, 5, P0107, 1, P0172, 5, P0201, 8, P0204, 6, P0207, 0, P0301, 8, P0304,		Requ	ii cu	
									08, P0401					
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>=	400	RPM								Two Trips
			Commanded Gear	=	1st Lock	rpm								
			Gear Ratio	<=	1.2095947						>=	0.2	Fail Tmr	
			Gear Ratio	>=	1.0943604						=	5	Fail Counts	
			If the above parameters are true											
											≠	0	Neutral Timer (Sec)	
											>=	0.3	Fail Timer (Sec)	
											>=	8	Counts	
							Ignition Voltage Lo		8.6	Volts				
							Ignition Voltage Hi		32	Volts				
							Engine Speed Lo		400	RPM RPM				
							Engine Speed Hi Engine Speed is within the allowable limits for	<= >=	7500 5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		nable nditions	Time Required	Mil Illum.
						Transmission Fluid Temperature Range Shift State	>= -6.65 Rang Shi Com	ge ft ENUM		
						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		IE Boolean IE Boolean		
						Enabled Input Speed Sensor fault Output Speed Sensor		SE Boolean		
						fault Default Gear Option is not present	= FALS	SE Boolean JE		
					Disable Conditions:	MIL not Illuminated for DTC's:		716, P0717, 0723, P182E		
							P0103, P0 P0108, P0 P0174, P0 P0202, P0 P0205, P0 P0208, P0 P0302, P0 P0305, P0	01, P0102, 0106, P0107, 0171, P0172, 0175, P0201, 0203, P0204, 0206, P0207, 0300, P0301, 0303, P0304, 0306, P0307, 0401, P042E		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400	RPM					One Trip

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary Malfunction		Enab			Time		Mil
System	Code	Description	Criteria		Val	ue	Waitunction		Condit	ions		Requi	ed	Illum.
			Commanded Gear		3rd	Gear								
			Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	=	TRUE	Boolean								
			If the above parameters are true											
											>=	Please Refer to Table 16 in Support ing Docum ents	Neutral	
			Command 4th Gear once Output Shaft Speed	<=	400	RPM								
			If Gear Ratio								l			
			And Gear Ratio	<=	4.2283936						>=	1.5	Fail Timer (Sec)	
							Ignition Voltage Lo	>-	8.6	Volts	>=	5	Counts	
							Ignition Voltage Hi		32	Volts				
							Engine Speed Lo		400	RPM				
							Engine Speed Hi		7500	RPM				
							Engine Speed is within the allowable limits for		5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·			High-Side Driver is Enabled	= TRUE Boolean		
					Throttle Position Signal Valid from ECM	= TRUE Boolean		
					Output Speed OR			
					TPS			
					Range Shift State	Shift		
					Transmission Fluid Temperature			
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207,		
						P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	<u>Fail</u> <u>Case</u> Commanded 1 Gear	= 1st Locked				One Trip

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Ena Condi		Tin Requ		Mil Illum.
System	Code	Description	Criteria Gear Box Slip		Manufection	Conta	uons	Please Refer to Table to in Support ing Documents	Neutral Timer (Sec)	
				= 1st Locked Gear <= 2.4821777 >= 2.2458496					SOC	
								>= 1 >= 3	sec counts	
					Ignition Voltage Lo Ignition Voltage Hi		Volts Volts			
					Engine Speed Lo		RPM			
					Engine Speed Hi		RPM			
					Engine Speed is within the allowable limits for		Sec			
					Output Speed OR	>= 67	RPM			
					TPS	>= 0.5	%			
					Range Shift State	Range Shift Compl eted	ENUM			
					Transmission Fluid Temperature	>= -6.656	°C			
					High-Side Driver is Enabled	= TRUE	Boolean			
					Throttle Position Signal Valid from ECM	= TRUE	Boolean			
					Input Speed Sensor fault	= FALSE	Boolean			

Component/	Fault	Monitor Strategy	Malfunction	Thresh		Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Valu	ie	Output Speed Sensor	Conditions	Required	IIIum.
						fault	= FALSE Boolean		
						Default Gear Option is	= TRUE		
						not present			
							TOM DOTAG BOTAT		
					Disable Conditions:		P0722, P0723, P182E		
					oonaniono.]			
							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		
			Fail_						One
Variable Bleed		Pressure Control (PC) Solenoid B Stuck Off	Case Case: Steady						Trip
Solenoid (VBS)	1 0770	[C35R]	1 State 3rd Gear						
			Commanded						
			Gear	= 3rd	Gear				
			Gearbox Slip	>= 400	RPM				
								Please Refer to	
								Toblo	
								16 in Neutral	
								Support (Sec)	
								Docum	
								ents	
			Command 4th						
			Gear once Output	<= 400	RPM				
			Shaft Speed						
			If Gear Ratio	>= 1.0943604					

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria		Walturiction	Conditions	Required	mum.
			It the above condiations are				>= 3 Timer (Sec) 3rd Gear	
			true, Increment 3rd gear fail counter				>= 3 Fail Counts	
			and C35R Fail counter				3-5R Clutch Fail Counts	
			Fail Case Case: Steady State 5th Gear					
			Commanded Gear	= 5th Gear				
			Gearbox Slip	>= 400 Rpm			Please Refer to Table 5 in Neutral Support ing Docum ents	
			Intrusive Test: Command 6th Gear					
			If attained Gear=6th gear Time	>= Table 3 in Snift Time				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		nable nditions		Tim Requi		Mil Illum.
System	Code	Description	It the above condiations are true, Increment 5th gear fail counter	Value		- 00	idinone	>=	3	5th Gear Fail Counts	
			and C35R Fail counter					>=	14	or 3-5R Clutch Fail Counts	
					PRNDL State defaulted	= FAL					
					inhibit RVT IMS fault pending		SE Boolean				
					indication		SE Boolean				
					TPS validity flag Hydraulic System	= TRI					
					Pressurized	= TRI	JE Boolean				
					Minimum output speed for RVT A OR B	>= 67	RPM				
					(A) Output speed enable	>= 67	RPM				
					(B) Accelerator Pedal enable	>- O	5 Pct				
					Common Enable Criteria						
					Ignition Voltage Lo	>= 8.	S Volts				
					Ignition Voltage Hi						
					Engine Speed Lo						
					Engine Speed Hi Engine Speed is within						
					the allowable limits for	>= 5	Sec				
					Throttle Position Signal valid	= TRI	JE Boolean				
					HSD Enabled	= TRI	JE Boolean				
					Transmission Fluid Temperature	>= -6.6	56 °C				
					Input Speed Sensor fault	= FAL	SE Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions:	Output Speed Sensor fault Default Gear Option is not present MIL not Illuminated for DTC's:	P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case Case: Steady State 1st					One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	Table Based Time Please Enable Time Refer to (Sec) Table 4 in supporting documents				
				1				

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

Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
9945	Бозоприон	If the Above is	Table Based Time Please				
			<= 1.6086426 >= 1.4554443				
						>= 1.1 Fail >= 1.1 Timer (Sec) Fail >= 3 Count in 2nd	
		<u>Fail</u> <u>Case</u> Case: Steady				or Total >= 3 Fail Counts	
	Code	Code Description	If the Above is True for Time Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true Fail Case Case: Steady	If the Above is True for Time If the Above is True for Time Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true Fail. Case. Case: Steady	Table Based Time Please Please Refer to Table 17 in supporting documents Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true Fail Case Case: Steady	Table Based Time If the Above is True for Time Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true Table Based Time Please Refer to Table 17 in supporting documents	Table Based Time If the Above is True for Time Please Refer to Table 17 in supporting documents Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio Find Time Parameters are true Fail Case. Case: Steady

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis					
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 17 in supporting documents				
			Intrusive test: (C1234 clutch exhausted) Gear Ratio	<= 0.8946533				
			Gear Ratio	>= 0.8094482				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Maitunction	Conditions	Required	illum.
			If the above parameters are true				Fail >= 1.1 Timer (Sec) Fail	
							>= 3 Count in 4th Gear or Total	
							>= 3 Fail Counts	
			Fail Case Case: Steady 4 State 6th gear					
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 2 in supporting documents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enak Condit			Time Requir		Mil Illum.
- Gyolom		2000	If the Above is True for Time	Table Based Time					•		
			Intrusive test: (CB26 clutch exhausted)							F 7	
			Gear Ratio	<= 0.8946533				>=	1.1	Fail Timer	
			Gear Ratio If the above parameters are true	>= 0.8094482				>=	3	(Sec) counts	
								>=	1.1	Fail Timer (Sec)	
								>=	3	Fail Count in 6th Gear	
								>=	3	or Total Fail Counts	
					PRNDL State defaulted inhibit RVT						
					IMS fault pending indication						
					output speed		RPM				
					TPS validity flag						
					HSD Enabled Hydraulic_System_Pres surized	_ TDITE					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		able litions	Time Required	Mil Illum.
- Cyclem	0000	2 cccp.i.c	01100110		A OR B				
					(A) Output speed enable		Nm		
					(B) Accelerator Pedal enable		Nm		
					Ignition Voltage Lo		Volts		
					Ignition Voltage Hi	<= 32	Volts		
					Engine Speed Lo	>= 400	RPM		
					Engine Speed Hi	<= 7500	RPM		
					Engine Speed is within the allowable limits for	>= 5	Sec		
					if Attained Gear=1st FW Accelerator Pedal enable		Pct		
					if Attained Gear=1st FW Engine Torque Enable		Nm		
					if Attained Gear=1st FW Engine Torque Enable Transmission Fluid	<= 8192	Nm		
					Temperature	>= -6.656	°C		
					Input Speed Sensor fault	= FALSE	Boolean		
					Output Speed Sensor fault	= FALSE	Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P071 P0722, P07			
						ECM: P010 P0103, P01 P0108, P01 P0174, P01 P0202, P02 P0205, P02 P0208, P03 P0302, P03 P0305, P03 P0308, P04	06, P0107, 71, P0172, 75, P0201, 03, P0204, 06, P0207, 00, P0301, 03, P0304, 06, P0307,		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria	Value	wanunction	Conditions	Required	One
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	e B = TRUE Boolean				Trip
			Primary Oncoming Clutch Pressure Command Status	Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	e = exhaust				
			Range Shift Status Attained Gear	Control				
			Slip If the above conditions are true run appropriate Fail 1 Timers Below:					
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 0.5 Fall Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	>= 0.2998047 Fall Time				
			fail timer 1 (3-2 shifting with Closed Throttle)) >= 0.5 Fall Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>= 0.2998047 (Sec)				

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Val	ue	Malfunction	Conditions	Required	Illum.
			fail timer 1 (3-4shifting with Closed Throttle)		Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>= 0.2998047	, Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)		Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Throttle)	>= 0.2998047	, Fail Time (Sec)				
			fail timer 1 (5-3 shifting with Closed Throttle)		Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Throttle)	>= 0.2998047	, Fail Time (Sec)				
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Throttle)		, Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	value	Walluffction	Conditions	Required	mum.
							Total Fail	
							Time =	
					1		(Fail 1 +	
							Fail 2)	
							See	
							Enable	
			If Attained Gear				Timers	
			Slip is Less than				for Fail	
			Above Cal				>= Timer 1, sec	
			Increment Fail				and	
			Timers				Referen	
							Ce	
							Support ing	
							Table	
							15 for	
							Fail	
							Timer 2	
			If fail timer is					
			greater than					
			threshold					
			increment					
			corresponding		1			
			gear fail counter		1			
			and total fail					
			counter					
ı			0				3rd gea	ar
			3rd gear fail		1		>= 3 fail	
			counter		1		counts	;
					1		OR	1
			5th gear fail				5th gea	ır
			counter		1		>= 3 fail	
			oodinoi		1		counts	• [
					1		OR	1
			Total fail counter				>= 5 total fai	
					_		counts	
					TUT Enable temperature	>= -6.656 °C		1
					1			1
					Input Speed Sensor fault	= FALSE Boolean		1
					Output Speed Sensor			1
					fault	= FALSE Boolean		1

Component/	Fault	Monitor Strategy	Malfunction	Thres Va	shold	Secondary Malfunction	Ena Cond		Time Require		Mil Illum.
System	Code	Description	Criteria	Va	ue			itions	Require	eu	mum.
						Command / Attained Gear	≠ 1st	Boolean			
						High Side Driver ON	= TRUE	Boolean			
						output speed limit for TUT	>= 100	RPM			
						input speed limit for TUT	>= 150	RPM			
						PRNDL state defaulted	= FALSE	Boolean			
						IMS Fault Pending	= FALSE	Boolean			
						Service Fast Learn Mode	= FALSE	Boolean			
						HSD Enabled		Boolean			
						Default Gear Option is not present	= TRUE				
					Disable Conditions:		TCM: P0716 P0722, P07				
							ECM: P010				
							P0103, P01 P0108, P01 P0174, P01	71, P0172,			
							P0202, P02 P0205, P02	03, P0204, 06, P0207,			
							P0208, P03 P0302, P03	03, P0304,			
							P0305, P03 P0308, P04				
Variable Bleed		Pressure Control (PC)	<u>Fail</u> <u>Case</u> Case: Steady								One Trip
Solenoid (VBS)		Solenoid C Stuck Off [C456] (Steady State)	1 State 4th Gear								,
									Please See		
			Gear slip	>= 400	RPM				Table 5 >= For	Timer	
									Neutral Time Cal	(Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Intrusive test: commanded 5th gear			Conditions	Кочиной	
			If attained Gear ≠5th for time	Please refer to Shift Time >= Table 3 in (Sec) Documents				
			if the above conditions have been met					
			Increment 4th Gear Fail Counter				>= 3 4th Gear Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			Fail Case Case: Steady 2 State 5th Gear					
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 6th gear					

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

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction		nable nditions		Tin Requ		Mil Illum.
System	Code	Description	if the above	value	Manufiction		iuitions	\vdash	nequ	ıı c u	mam.
			conditions have								
			been met								
			Increment 6th							6th	
			Gear Fail Counter and C456 Fail					>=	3	Gear Fail	
			Counter							Count	
										OR	
			and C456 Fail					١.	4.4	C456	
			Counter					>=	14	Fail Counts	
					PRNDL State defaulted	= FALS	SE Boolean				
					inhibit RVT	= FALS	SE Boolean				
					IMS fault pending indication	= FALS	SE Boolean				
					TPS validity flag	= TRU	E Boolean				
					Hydraulic System Pressurized	= TRU	E Boolean				
					Minimum output speed	>= 67	RPM				
					for RVT A OR B						
					(A) Output speed enable	>= 67	RPM				
					(B) Accelerator Pedal enable	>= 0.5	Pct				
					Common Enable Criteria						
					Ignition Voltage Lo	>= 8.6	Volts				
					Ignition Voltage Hi	<= 32	Volts				
					Engine Speed Lo	>= 400) RPM				
					Engine Speed Hi	<= 750	0 RPM				
					Engine Speed is within the allowable limits for	>= 5	Sec				
					Throttle Position Signal valid	= TRU	E Boolean				
					HSD Enabled	= TRU	E Boolean				
					Transmission Fluid Temperature	>= -6.6	56 °C				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Безсприон	Cinteria		Input Speed Sensor fault OutputSpeed Sensor fault Default Gear Option is not present MIL not Illuminated for	= FALSE Boolean = FALSE Boolean = TRUE	required	
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case Case: Steady State 1st Attained Gear slip If the Above is True for Time	>= 400 RPM Table Based Time Please Enable Time				One Trip

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria		Walluffction	Conditions	Requirea	mum.
			Intrusive test: (CBR1 clutch					
			exhausted)					
			Gear Ratio	<= 1.2095947				
			Gear Ratio	>= 1.0943604				
			If the above					
			parameters are true					
							Fail	
							>= 1.1 Timer (Sec)	
							Fail	
							>= 2 Count in	
							1st Gear	
							or	
							Total >= 3 Fail	
							Counts	
			Fail Cook					
			Case Case Steady 2 State 2nd					
			- State Zhu					
				Table				
				Table Based				
				value				
			Max Delta Output Speed Hysteresis	>= Please Refer to 3D rpm/sec				
			Speed Hydiologis	l able 1 in				
				supporting documents				
				aocaments				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time		VIII
System	Code	Description	Criteria	Value	Malfunction	Conditions	Requi	red IIII	um.
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 2 in supporting documents					
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 17 in supporting documents					
			Gear Ratio	<= 1.2095947 >= 1.0943604					
			If the above parameters are						
			true						
							>= 1.1	Fail Timer (Sec)	
							>= 3	Fail Count in 2nd Gear	
							>= 3	or Total fail counts	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Fail Case Case Steady 3 State 3rd					_
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 17 in supporting documents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
2,350	2343	233	Intrusive test: (C35R clutch exhausted) Gear Ratio				·	
			If the above parameters are true					
							>= 1.1 Fail >= (Sec)	
							Fail Count ir >= 3 3rd Gear	1
							OR Total >= 3 Fail Counts	
					PRNDL State defaulted			
					inhibit RVT		1	
					IMS fault pending indication	= FALSE Boolear	1	
					output speed	>= 0 RPM		
					TPS validity flag	= TRUE Boolear	1	
					HSD Enabled		ı	
					Hydraulic_System_Pres surized A OR B	= TRUE Boolear	r	
					(A) Output speed enable			
					(B) Accelerator Pedal enable	- 0.5 Nm		
					Ignition Voltage Lo			
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi	<= 7500 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresho Value		Secondary Malfunction	Ena Cond		Time Required	Mil Illum.
						if Attained Gear=1st FW Accelerator Pedal enable	>= 5	Pct		
						if Attained Gear=1st FW Engine Torque Enable		Nm		
						if Attained Gear=1st FW Engine Torque Enable	<= 8192	Nm		
						Transmission Fluid Temperature		°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 P0722, P072	5, P0717, 23, P182E		
							ECM: P0101 P0103, P010 P0108, P011 P0174, P011 P0202, P020 P0205, P020 P0208, P030 P0302, P030 P0305, P030 P0308, P040	06, P0107, 71, P0172, 75, P0201, 03, P0204, 06, P0207, 00, P0301, 03, P0304, 06, P0307,		
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)		Boolean					One Trip

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Primary Oncoming Clutch Pressure Command Status	/ n = Maximum e pressurized		Conditions	required	
			Primary Offgoing Clutch Pressure Command Status	e = exhaust				
			Range Shift Status Attained Gear Slip	Control				
			If the above conditions are true increment appropriate Fail 1 Timers Below:	; ; t				
			throttle)	>= 0.2998047 (Sec)				
			fail timer 1 (4-1 shifting without throttle)) >= 0.5 Fall Time (Sec)				
			throttle)	>= 0.2998047 (Sec)				
			fail timer 1 (4-2 shifting without throttle)) >= 0.5 Fall Time (Sec)				
			throttle)	>= 0.2998047 (Sec)				
			fail timer 1 (4-3 shifting without throttle)) >= 0.5 Fall Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>= 0.2998047 Fall Time				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			fail timer 1 (5-3 shifting without throttle) fail timer 1 (6-2 shifting with	(Set)				
			throttle) fail timer 1 (6-2 shifting without throttle)	Fail Time			Total	
							Fail Time = (Fail 1 + Fail 2) See Enable	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Timers for Fail >= Timer 1, sec 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	
			4th gear fail counter				Fail Counter >= 3 From 4th Gear OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	F	Time Required	Mil Illum.
2,			5th gear fail counter				>=	Fail Counter 3 From 5th Gear	
			6th gear fail counter				>=	OR Fail Counter 3 From 6th Gear OR	
			Total fail counter				>=	Total 5 Fail Counter	
					TUT Enable temperature	>= -6.656 °C			
					Input Speed Sensor fault	= FALSE Boolean			
					Output Speed Sensor fault				
					Command / Attained Gear	≠ 1st Boolean			
					High Side Driver ON	= TRUE Boolean			
					output speed limit for TUT	>= 100 RPM			
					input speed limit for TUT	>= 150 RPM			
					PRNDL state defaulted	= FALSE Boolean			
					IMS Fault Pending	= FALSE Boolean			
					Service Fast Learn Mode				
					HSD Enabled	= TRUE Boolean			

Component/	Fault	Monitor Strategy	Malfunction		Thre	shold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria		Va	lue	Malfunction	Conditions	Required	Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		П
								ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Tap Up Switch Case Stuck in the Up Position in Range 1 Enabled	=	0	Boolean				Special No MIL
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	0	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary	Enable	Time	Mil
System	Code	Description	Criteria		Val	ue	Malfunction	Conditions	Required	Illum.
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean				
			Tap Up Switch ON	=	TRUE	Boolean			>= 1 Fail Time	
			Fail Tap Up Switch Case Stuck in the Up Position in Range 1 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	0	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary Malfunction			able		Time		Mil Illum.
System	Code	Description	Criteria		Val	ue	Manunction	-	Cond	litions		Requir	ea	mum.
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	0	Boolean								
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean								
			Tap Up Switch ON	=	TRUE	Boolean								
			NOTE: Both Failcase1 and Failcase 2 Must Be Met								>=	600	Fail Time (Sec)	
							Time Since Last Range Change	>=	1	Enable Time (Sec)				
							Ignition Voltage Lo	>=	8.6	Volts				
							Ignition Voltage Hi	<=	32	Volts				
							Engine Speed Lo	>=	400	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					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystem	Gode	Beschphon	ontona				MIL not Illuminated for			
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case Stuck in the Down Position in Range 1 Enabled	=	0	Boolean				Special No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled		0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled		0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled		0	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Cyclom.		2000p	Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1	Boolean			·	
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	0	Boolean				
			Tap Down Switch ON	=	TRUE	Boolean			>= 1 sec	
			Fail Case Stuck in the Down Position in Range 1 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled		1	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary		able		Time	Mil
System	Code	Description	Criteria		Val	ue	Malfunction	Cond	ditions		Required	Illum
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Park Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean						
			NOTE: Both Failcase1 and Failcase 2 Must Be Met							>=	600	sec
							Time Since Last Range Change	>= 1	Enable Time (Sec)			
							Ignition Voltage Lo Ignition Voltage Hi		Volts Volts			

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Value	Engine Speed Lo		Required	iliulii.
					Engine Speed Hi			
					Engine Speed is within the allowable limits for			
					P0816 Status is	Test Failed This ≠ Key On or Fault Active		
				Disabl 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				>= 60 Time (Sec)	Special No MIL
					Ignition Voltage Lo	>= 8.6 Volts		
					Ignition Voltage Hi	<= 32 Volts		
					Engine Speed Lo	>= 400 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		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction		Enal Condi			Time Requi		Mil Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:		l: P1761 1: None					
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	=	TRUE	Boolean					>=	4.4	Fail Time (Sec) Sample	Two Trips
											out of	5	Time (Sec)	
							Ignition Voltage	>=	8.6	Volts				
							Ignition Voltage	<=	32	Volts	l			
							Engine Speed	>=	400	RPM	l			
							Engine Speed	<=	7500	RPM	l			
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM	l: None					
						Conditions.	5.00.	ECM	1: None					
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	=	TRUE	Boolean					>=	1.5	Fail Time (Sec)	One Trip
		(onony onor mag								out of	1.875	Sample Time (Sec)	
							Ignition Voltage	>=	8.6	Volts				
							Ignition Voltage	<=	32	Volts				
							Engine Speed		400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				

Component/	Fault	Monitor Strategy	Malfunction		Thres Val		Secondary Malfunction		Ena Condi			Tim Requi		Mil Illum.
System	Code	Description	Criteria		Vali	Disable	MIL not Illuminated for	TCM		uons		Requi	reu	mum.
						Conditions:	DTC's:		l: None					
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	=	TRUE	Boolean					>=	4.4	Fail Time (Sec)	Two Trips
											out of	5	Sample Time (Sec)	
							Ignition Voltage	>=	8.6	Volts			()	
							Ignition Voltage	<=	32	Volts				
							Engine Speed	>=	400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:		l: None l: None					
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	=	TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
											out of	0.375	Sample Time (Sec)	
							Ignition Voltage		8.6	Volts				
							Ignition Voltage	<=	32	Volts				
							Engine Speed	>=	400	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Valu		Secondary Malfunction		Enabl Condition			Time Requir		Mil Illum.
		·				Engine Speed Engine Speed is within the allowable limits for	<= >=	7500 5 Test Failed	RPM Sec				
						P0966 Status is not	=	This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:		: None : None					
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.375	Sample Time (Sec)	
						Ignition Voltage		8.6	Volts				
						Ignition Voltage		32	Volts				
						Engine Speed		400	RPM RPM				
						Engine Speed Engine Speed is within the allowable limits for		7500 5	Sec				
						P0967 Status is not	=	Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Т	hreshold Value	Secondary Malfunction	Enable Conditions		Tim Requi		Mil Illum.
		·			Disable Conditions:	MIL not Illuminated for DTC's:					
Variable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRI	JE Boolean			>=	0.3	Fail Time (Sec)	One Trip
								out of		Sample Time (Sec)	
						P0970 Status is not	Test Failed This = Key On or Fault Active				
						Ignition Voltage	>= 8.6 Volts				
						Ignition Voltage	<= 32 Volts				
						Engine Speed	>= 400 RPM				
						Engine Speed	<= 7500 RPM				
						Engine Speed is within the allowable limits for	>= 5 Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:					
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRI	JE Boolean			>=	0.3	Fail Time (Sec)	One Trip
			9					out of		Sample Time (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enab			Tim		Mil
System	Code	Description	Criteria	Value	Malfunction	Conditi	ions		Requi	red	Illum.
					P0971 Status is not	Test Failed This = Key On or Fault Active					
					Ignition Voltage	>= 8.6	Volts				
					Ignition Voltage		Volts				
					Engine Speed	>= 400	RPM				
					Engine Speed	<= 7500	RPM				
					Engine Speed is within the allowable limits for	>= 5	Sec				
				Disa Conditio							
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean				>=	1.2	Fail Time (Sec)	One Trip
								out of	1.5	Sample Time (Sec)	
					P0973 Status is not	Test Failed This = Key On or Fault Active					
					Ignition Voltage	>= 8.6	Volts				
					Ignition Voltage	<= 32	Volts				
					Engine Speed	>= 400	RPM				
					Engine Speed		RPM				
					Engine Speed is within the allowable limits for	>= 5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction		Enab Conditi			Tim Requi		Mil Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:		Л: None Л: None					
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	=	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	>=	8.6	Volts				
							Ignition Voltage	<=	32	Volts				
							Engine Speed	>=	400	RPM				
							Engine Speed		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:		/I: None /I: None					
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	=	TRUE	Boolean					>=	1.2	Sec	One Trip

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresho Value		Secondary Malfunction		Enal Condi			Tim Requi		Mil Illum.
System	Code	Description	Criteria		Value		mananonon	Н	Contai		out	1.5	Sec	
							P0977 Status is not	=	Test Failed This Key On or Fault Active		of			
							Ignition Voltage	>=	8.6	Volts				
							Ignition Voltage	<=	32	Volts				
							Engine Speed	>=	400	RPM				
							Engine Speed		7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
					(Disable Conditions:	MIL not Illuminated for DTC's:		Л: None Л: None					
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	= T	RUE E	Boolean					>=	3	Fail Counter	Special No MIL
											>	10	Sample Timer (Sec)	
							Tap Up Tap Down Message Health	=	TRUE	Boolean				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction	(Enal Condi			Tim Requ		Mil Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:							
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value	=	TRUE	Boolean					>=	3	Fail Counter	Special No MIL
											>	10	Sample Timer (Sec)	
							Pattern Switch Message Health	= '	RUE	Boolean				
							Engine Speed Lo Engine Speed Hi		400 7500	RPM RPM				
							Engine Speed is within the allowable limits for		5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:							
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	=	Transition 1 (bit state 1110)									One Trip
			Previous range		CeTRGR_6 _PRNDL_ Drive6									

Component/	Fault	Monitor Strategy	Malfunction		Thres Valu		Secondary Malfunction	Enable Conditions	Tin Requ		Mil Illum.
System	Code	Description	Criteria		vail	ie ai	Wallunction	Conditions	Requ	irea	mum.
			Previous range	≠	CeTRGR_e _PRNDL_ Drive4						
			Range Shift State	=	Range Shift Completed	ENUM					
			Absolute Attained Gear Slip		50	rpm					
			Attained Gear		Sixth						
			Attained Gear		First						
			Throttle Position Available	=	TRUE						
			Throttle Position		8.0001831	pct					
			Output Speed		200	rpm					
			Engine Torque		50	Nm					
			Engine Torque		8191.75	Nm					
			If the above conditions are met then Increment Fail Timer						>= 1	Fail Seconds	
			If Fail Timer has Expired then Increment Fail Counter						>= 5	Fail Counts	
			Fail Case 2 Output Speed	<=	70	rpm					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Value		Secondary Malfunction	Enable Condition	_	Time Requir		Mil Illum.
System	Code	Description	The following PRNDL sequence events occur in this exact order:		Value		a.id.id.id	Condition	3	rtoquii	cu	
			PRNDL state	= {	Drive 6 (bit state 0110)	Range						
			PRNDL state = Drive 6 for	>=	1	Sec						
			PRNDL state		Transition 8 (bit state 0111)	Range						
			PRNDL state	= {	Drive 6 (bit state 0110)	Range						
			PRNDL state		Transition 1 (bit state 1110)	Range						
			Above sequencing occurs in		1	Sec						
			Neutral Idle Mode If all conditions above are met Increment delay Timer	=	Inactive							
			If the below two conditions are met Increment Fail Timer							>= 3	Fail Seconds	
			delay timer Input Speed			Sec Sec						

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required Illum
			If Fail Timer has Expired then Increment Fail Counter				>= 2 Fail Counts
			Fail Case 3 Current range	Transition = 13 (bit Range state 0010)	Previous range	CeTR GR_e_ ≠ PRND L_Driv e1	
			Engine Torque	>= -8192 Nm	Previous range	CeTR GR_e_ ≠ PRND L_Driv e2	
			Engine Torque	<= 8191.75 Nm	IMS is 7 position configuration		
			If the above conditions are met then, Increment Fail Timer		If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13"		>= 0.225 Seconds
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts
			Fail Case 4 Current range	Transition = 8 (bit state Range 0111)	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8		
			Inhibit bit (see definition)		Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)		
			Steady State Engine Torque	>= 100 Nm	. /		

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Steady State Engine Torque	9101.75 Nm	a.a.a.a.a.	Oonarions	rioquirou	
			If the above conditions are met then Increment Fail Timer	e : : 			>= 0.225 Seconds	
			Condtions have been met, Increment Fail Counter	e , 			>= 15 Fail Counts	
			Fail Case Throttle Position 5 Available					
			The following PRNDL sequence events occur in this exact order:					
			PRNDL State	Reverse = (bit state Range 1100)				
			PRNDL State	Transition e = 11 (bit Range state 0100)				
			PRNDL State	e = Neutral (bit state 0101) Range				
			PRNDL State	Transition e = 11 (bit Range state 0100)				

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria		Valu	ie e	Walluffction	Conditions	Required	mum.
			Above sequencing occurs in	<=	1	Sec				
			Then delay timer increments							
			Delay timer	>=	5	sec				
			Range Shift State	=	Range Shift Complete					
			Absolute Attained Gear Slip	<=	50	rpm				
			Attained Gear	<=	Sixth					
			Attained Gear	>=	First					
			Throttle Position	>=	8.0001831	pct				
			Output Speed	>=	200	rpm				
			If the above conditions are met Increment Fail Timer						>= 20 Second	s
			Fail Case 6 Current range	=	Illegal (bit state 0000 or 1000 or 0001)		A Open Circuit Definition (flag set false if the following conditions are met):			
			and				Current Range	Transit ion 11 ≠ (bit state 0100)		
			A Open Circuit (See Definition)		FALSE	Boolean	or			
							Last positive state	Neutra I (bit ≠ state 0101)		
							or			

Component/	Fault	Monitor Strategy	Malfunction		Thresi Valu		Secondary Malfunction		Enable Conditions		Time Requir		Mil Illum.
System	Code	Description	Criteria		Vait	ie	Walluffction		Conditions		Requir	ea	mum.
							Previous transition state	≠	Transit ion 8 (bit state 0111)				
							Fail case 5 delay timer	=	0 sec				
			If the above Condtions are met then, Increment Fail timer							>=	6.25	Seconds	
			Fail Case Current PRNDL State	=	PRNDL circuit ABCP = 1101	Range							
			and										
			Previous PRNDL state	=	PRNDL circuit ABCP =1111	Range							
			Input Speed	>=	150	RPM							
			Reverse Trans Ratio	<=	2.8458252	ratio							
			Reverse Trans Ratio	>=	3.2741699	ratio							
			If the above Condtions are met then, Increment Fail timer							>=	6.25	Seconds	
			P182E will report test fail when any of the above 7 fail cases are met										

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary		Ena			Tim		Mil
System	Code	Description	Criteria		Val	ue	Malfunction		Condi	itions	<u> </u>	Requi	rea	Illum.
		Sossiphon				Disable Conditions:		<= >= <= >= TCM P073 P073	8.6 32 400 7500 5 TRUE 1: P0716 22, P072 BF, P07	Volts Volts RPM RPM Sec				
								P01 P01 P02 P02 P02 P03 P03	03, P010 08, P017 74, P017 02, P020 05, P020 08, P030 02, P030 05, P030	1, P0102, 106, P0107, 171, P0172, 175, P0201, 103, P0204, 106, P0207, 100, P0301, 103, P0304, 106, P0307, 101, P042E				
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumeratio n								One Trip
			The following events must occur Sequentially Initial Engine speed Then Engine Speed Between Following Cals	<=	50	RPM					>=	0.25	Enable Time	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre	shold lue	Secondary Malfunction		Enable Conditions		Time Requir		Mil Illum.
System	Code	Description	Engine Speed Lo		50	RPM			· · · · · · · · · · · · · · · · · · ·		- roquii	-	
			Hist Engine Speed Hi	>=	480	RPM				>=	0.0688	Enable	
			Hist Then		100					 	0.0000	Time	
			Final Engine Speed	>=	525	RPM							
			Final Transmission Input Speed	>=	100	RPM				>=	1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle?		ALSE Boolean				
							Ignition Voltage Lo		6 V	1			
							Ignition Voltage Hi	<= 3	32 V				
							Ignition Voltage Hyst High (enables above this value)	>=	5 V				
							Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speed		2 V 90 rpm				
							P1915 Status is	Fa T ≠ k O Fa	Fest ailed This Key an or ault ctive				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P ECM: N					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	ria Value			Secondary Malfunction	Enal Condi			Tim Requi	-	Mil Illum.
Transmission Control Module (TCM)		Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below)	=	FALSE	Boolean							One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)		5	Volts				>=	280	Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)		2	Volts				Out of	280	Sample Counts (25ms loop)	
							ECM run/crank active status available ECM run/crank active status	= TRUE = TRUE	Boolean Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None					
Transmission Control Module (TCM)	P2535	Ignition Switch Run/Start Position Circuit High	TCM Run crank active (based on voltage thresholds below)	=	TRUE	Boolean							One Trip
			Ignition Voltage High Hyst (run crank goes true when above this value)		5	Volts				>=	280	Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)		2	Volts				Out of	280	Sample Counts (25ms loop)	
							ECM run/crank active status available	= TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Oystem	Gode	Beschphon	Ontona		ECM run/crank active status MIL not Illuminated for DTC's:	= FALSE Boolean TCM: None	,	
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case Case: Steady 1 State 2nd Gear Gear slip				Please See Table 5 Neutral >= For Timer	One Trip
			Intrusive test: commanded 3rd gear				Neutral (Sec) Time Cal	
			If attained Gear = 3rd for Time	Table Based Time = Please see Table 2 in Supporting Documents				
			If Above Conditions have been met Increment 2nd gear fail count				2nd Sear Fail Count or	

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description			Mananotton	Conditions	CB26	mann.
			and CB26 Fail Count				>= 14 Fail Count	
			Fail Case Case: Steady 2 State 6th Gear				Sount	
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 5th gear				J.S.	
			If attained Gear = 5th For Time	Table Based Time Enable Time >= Please see Table 2 in Supporting Documents				
			If Above Conditions have been met, Increment 5th gear fail counter				5th Sear Fail Count	
			and CB26 Fail Count				or CB26 >= 14 Fail Count	
					PRNDL State defaulted inhibit RVT IMS fault pending indication	= FALSE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enal Condi		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	>=	67	RPM		
					(B) Accelerator Pedal enable	>=	0.5	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo	>=	8.6	Volts		
					Ignition Voltage Hi	<=	32	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid	=	TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature	>=	-6.656	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
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)					One Trip
			Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized				
			Primary Offgoing Clutch Pressure Command Status	= exhaust command				
			Range Shift Status Attained Gear Slip					

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Val	ue	Malfunction	Conditions	Required	Illum.
			If above coditons						
			are true, increment						
			appropriate Fail 1						
			Timers Below:						
			fail timer 1		Fail Time				
			(2-1 shifting with throttle)		(Sec)				
			fail timer 1		Fail Time				
			(2-1 shifting without throttle)	>= 0.5	(Sec)				
			fail timer 1 (2-3 shifting with throttle)		Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 0.2998047	Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)		Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 0.2998047	Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)	>= 0.2998047	Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>= 0.5	Fail Time (Sec)				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Walluffction	Conditions		mum.
							Total Fail	
							Time =	
							(Fail 1 +	
							Fail 2)	
							See	
							Enable	
			If Attained Gear				Timers	
			Slip is Less than				for Fail	
			Above Cal Increment Fail				>= Timer 1, sec and	
			Timers				Referen	
			. 1111010				ce	
							Support	
							ing	
							Table	
							15 for	
							Fail Timer 2	
							Tilliel 2	
			If fail timer is					
			greater than threshold					
			increment					
			corresponding					
			gear fail counter					
			and total fail					
			counter					
							Fail	
			2nd gear fail				Counter >= 3 From	r
			counter				>= 3 From 2nd	
							Gear	
							OR	
							Fail	
			6th gear fail				Counter	r
			counter				>= 3 From	
			Southor				6th	
							Gear	
							OR Total	
			total fail counter				>= 5 Fail	
			total fall country				Counter	r

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		,			TUT Enable temperature	>= -6.656 °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	>= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					PRNDL state defaulted			
					IMS Fault Pending Service Fast Learn			
					Mode HSD Enabled			
					HSD Ellabled	= TRUE Boolean		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172,		
						P0174, P0175, P0201, P0202, P0203, P0204,		
						P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307,		
						P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case Case: Steady 1 State 1st					One Trip
			Attained Gear slip	>= 400 RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystem	oode	Безаприон	If the Above is True for Time	Table Based Time Please Enable Time				
			Gear Ratio If the above parameters are	<= 2.4821777 >= 2.2458496				
			true				Fail >= 1.1 Timer (Sec) Fail Count in 1st Gear	ı
			<u>Fail</u> <u>Case</u> Case: Steady <u>2</u> State 3rd Gear				or Total >= 5 Fail Counts	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Waitunction	Conditions	Required	IIIum.
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 2.4821777				
			Gear Ratio	>= 2.2458496				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If the above parameters are true				Fail >= 1.1 Timer (Sec) Fail Count in 3rd Gear or	
							Total >= 5 Fail Counts	
			Fail Case Case: Steady 3 State 4rd Gear					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Gyolom	9646	Bosomption	If the Above is True for Time	Table Based Time Please				
				<= 0.7003174 >= 0.633667				
							>= 1.1 Fail Timer (Sec) Fail Count in 4th Gear	
			<u>Fail</u> <u>Case</u> Case: Steady				or Total >= 5 Fail Counts	
			4 State 5th Gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	waitunction	Conditions	Required	mum.
			Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 0.7003174				
			Gear Ratio	>= 0.633667				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Ena			Tin		Mil Illum.
System	Code	Description	Criteria	Value	Walluffction	Condi	tions		Requ	irea	mum.
			If the above parameters are								
			true								
										Fail	
								>=	1.1	Timer (Sec)	
										Fail	
								>=	3	Count in	
									J	5th	
										Gear or	
										Total	
								>=	5	Fail	
					PRNDL State defaulted	= FALSE	Roolean			Counts	1
					inhibit RVT	= FALSE					
					IMS fault pending						
					indication	= FALSE	Boolean				
					output speed	>= 0	RPM				
					TPS validity flag	= TRUE	Boolean				
					HSD Enabled	= TRUE	Boolean				
					Hydraulic_System_Pres	= TRUE	Boolean				
					surized	- 11102	Booloan				
					A OR B						
					(A) Output speed enable	>= 67	Nm				
					(B) Accelerator Pedal	>= 0.5	Nm				
					enable						
					Ignition Voltage Lo		Volts				
					Ignition Voltage Hi		Volts				
					Engine Speed Lo	>= 400	RPM				
					Engine Speed Hi		RPM				
					Engine Speed is within	>= 5	Sec				
					the allowable limits for if Attained Gear=1st FW						
					Accelerator Pedal	>= 5	Pct				
					enable						
					if Attained Gear=1st FW Engine Torque Enable	>= 5	Nm				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystein	Coue	Безсприон	Ontena		if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature	<= 8192 Nm >= -6.656 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:		TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Time (Sec)	One Trip
							out Sample out 0.375 Time of (Sec)	
					P2770 Status is not	Test Failed This = Key On or Fault Active		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					Ignition Voltage			
					Ignition Voltage			
					Engine Speed			
					Engine Speed			
					Engine Speed is within the allowable limits for	>= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			Fail >= 0.3 Time (Sec)	One Trip
							out Sample of 0.375 Time (Sec)	
					P2721 Status is not	Test Failed This = Key On or Fault Active		
					Ignition Voltage			
					Ignition Voltage			
					Engine Speed			
					Engine Speed			
					Engine Speed is within the allowable limits for	5 Soo		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case Case: Steady State 1st Gear		indirationer:	Conditions	Required	One Trip
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer Neutral (Sec) Time Cal	
			Intrusive test: commanded 2nd gear					
			If attained Gear ≠ 2nd for Time	Please refer to Shift Time Supporting Documents				
			If Above Conditions have been met, Increment 1st gear fail counter				1st >= 3 Gear Fail Count or	
			and C1234 fail counter				>= 14 C1234 Clutch Fail Count	
			Fail Case Case: Steady 2 State 2nd Gear					

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

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tim Requ		Mil Illum.
System	Code	Description	If attained Gear = 5th For Time	Please refer to Shift Time		Containe		. Koqu		
			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					
					inhibit RVT IMS fault pending	= FALSE Book				
					indication	= FALSE BOOK				
					TPS validity flag Hydraulic System Pressurized	- TRUE Pools				
					Minimum output speed for RVT A OR B	>= 0 RP	Л			
					(A) Output speed enable		Л			
					(B) Accelerator Pedal enable					
					Common Enable Criteria					
					Ignition Voltage Lo	>= 8.6 Vol	s			
					Ignition Voltage Hi	<= 32 Vol	s			
					Engine Speed Lo	>= 400 RP	Л			
					Engine Speed Hi		Л			
					Engine Speed is within the allowable limits for	>= 5 Se	;			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Value Disab Condition	Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= TRUE Boolean = TRUE Boolean >= -6.656 °C = FALSE Boolean = FALSE Boolean = TRUE 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,	Required	Illum.
Variable Bleed Solenoid (VBS)		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		P0308, P0401, P042E		One Trip

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Walluffelion	Conditions	Required	mum.
			Primary Oncoming Clutch Pressure Command Status	Maximum e pressurized				
			Primary Offgoing Clutch Pressure Command Status	e = exhaust				
			Range Shift Status					
			Attained Gear Slip If the above	P <= 40 RPM				
			conditions are true increment appropriate Fail 1 Timers Below:	e It 1				
			fail timer 1	1 h >= 0.2998047 sec e)				
			(2-6 shifting without throttle)	g >= 0.5 sec				
			throttle)	h >= 0.2998047 sec				
			fail timer 1 (3-5 shifting without throttle)	g >= 0.5 sec				
			throttle)	h >= 0.2998047 sec				
			fail timer 1 (4-5 shifting without throttle)	g >= 0.5 sec				
			fail timer 1 (4-6 shifting with throttle)	h >= 0.2998047 sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			fail timer 1 (4-6 shifting without throttle)	>= 0.5 sec			Total Fail Time =	
			If Attained Gear Slip is Less than Above Cal				(Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, sec	
			Increment Fail Timers				and Referen ce Support ing Table 15 for Fail	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Timer 2	
			2nd gear fail counter				Fail Counter >= 3 From 2nd Gear	
			3rd gear fail counter				Fail Counter >= 3 From 3rd Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.
		·	4th gear fail counter				>=	3	Fail Counter From 4th Gear	
			total fail counter				>=	5	Total Fail Counter	
					TUT Enable temperature	>= -6.656 °C				
					Input Speed Sensor fault	= FALSE Boolea	n			
					Output Speed Sensor fault	= FALSE Boolea	n			
					Command / Attained Gear	≠ 1st Boolea	1			
					High Side Driver ON	= TRUE Boolea	n			
					output speed limit for TUT	>= 100 RPM				
					input speed limit for TUT	>= 150 RPM				
					PRNDL state defaulted	= FALSE Boolea	n			
					IMS Fault Pending	= FALSE Boolea	ì			
					Service Fast Learn Mode	= FALSE Boolea	n			
					HSD Enabled	= TRUE Boolea	n			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions:	DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear					One Trip
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis					

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Walluffction	Conditions	Required	mum.
			If the Above is True for Time					
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 1.2095947				
			Gear Ratio	>= 1.0943604				
			If the above parameters are true					
							Fail >= 1.1 Timer (Sec)	
							Fail Count in Sth Gear	
							OR Total >= 3 Fail Counts	
			Fail Case 2 Case: 6th Gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents				
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporting documents				
			If the Above is True for Time	Table Based Time Please Refer to Table 17 in supporting documents				
			Intrusive test: (CB26 clutch exhausted)					
				<= 1.2095947				
			Gear Ratio	>= 1.0943604				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enak			Tim		Mil
System	Code	Description	Criteria	Value	Malfunction		Condit	ions		Requ	ired	Illum.
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 6th Gear	
									>=	3	OR Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pres surized A OR B	=	TRUE	Boolean				
					(A) Output speed enable	>=	67	Nm				
					(B) Accelerator Pedal enable	_	0.5	Nm				
					Ignition Voltage Lo		8.6	Volts				
					Ignition Voltage Hi		32	Volts				
					Engine Speed Lo		400	RPM				
					Engine Speed Hi			RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable		5	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	5	Nm				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction if Attained Gear=1st FW	Conditions	Required	Illum.
					Engine Torque Enable Transmission Fluid Temperature	<= 8192 NM		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor	= FALSE Boolean		
					fault Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			Fail >= 0.3 Time (Sec)	One Trip
		(3.231.22)	anany and mag				out Sample of 0.375 Time of (Sec)	•
					P2729 Status is not Ignition Voltage	On or Fault Active		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	eshold /alue	Secondary Malfunction		Enab Condit			Time Requi		Mil Illum.
Oystem	Code	Description	Ontena		Ignition Voltage	<=	32	Volt				
					Engine Speed		400	RPM				
					Engine Speed	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
				Disable Conditions:	MIL not Illuminated for DTC's:		: None : None					
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	E Boolean					>=	0.3	Fail Time (Sec)	One Trip
									out of	0.375	Sample Time (Sec)	
					P2730 Status is not	=	Test Failed This Key On or Fault Active					
					Ignition Voltage	>=	8.6	Volt				
					Ignition Voltage	<=	32	Volt				
					Engine Speed	>=	400	RPM				
					Engine Speed		7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
				Disable Conditions:	MIL not Illuminated for DTC's:		: None : None					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction		Enal Condi			Tim Requi		Mil Illum.
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	=	TRUE	Boolean					>=	4.4	Fail Time (Sec)	Two Trips
											out of	5	Sample Time (Sec)	
							P2763 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >=	Test Failed This Key On or Fault Active 8.6 32 400 7500	Volt Volt RPM RPM				
							Engine Speed is within the allowable limits for High Side Driver	>=	5 TRUE	Sec Boolean				
						Disable Conditions:	Enabled MIL not Illuminated for DTC's:	ТСМ						
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag		TRUE	Boolean					>=	4.4	MPH	One Trip
			, , , , , , , , , , , , , , , , , , , ,								out of	5	MPH	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Valu		Secondary Malfunction		Enal Condi			Tim Requ		Mil Illum.
		•					P2764 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage		8.6	Volt				
							Ignition Voltage	<=	32	Volt				
							Engine Speed		400	RPM				
							Engine Speed	<=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							High Side Driver Enabled	=	TRUE	Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:		/I: P0658 /I: None	, P0659				
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	=	TRUE	Boolean					>=	62	Fail counts (≈ 10 seconds)	One Trip
			Delay timer	>=	0.1125	sec					Out of	70	Sample Counts (≈ 11 seconds)	
							Stabilization delay Ignition Voltage Ignition Voltage Power Mode	>= <=	3 8.6 32 Run	sec Volt Volt				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enal Condi			Time Requir		Mil Illum.
					Disable Conditions:	DTC's:		l: None l: None					
Communication		Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	TRUE	Boolean					>=	12	sec	One Trip
					Disable	Stabilization delay Ignition Voltage Ignition Voltage Power Mode MIL not Illuminated for	>= <= =	3 8.6 32 Run I: U0073	sec Volt Volt				
					Conditions:	DTC's:		1: None					

2013 Trans Diagnostic Summary Table--Look-up Tables--2D

|--|

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

Table 2

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

Table 3

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	4.00	4.00	Sec

Table 4

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

Table 5

Axis	-6.67	-6.66	40.00	°C
Curve	409.59	3.00	3.00	Sec

Table 6

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

Table 7

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

2013 Trans Diagnostic Summary Table--Look-up Tables--2D

Table 8					
	Axis	-6.67	-6.66	40.00	80.00

Axis	-6.67	-6.66	40.00	80.00	120.00	°С
Curve	409.00	3.60	1.60	1.50	1.40	Sec

Table 9

Axis	-6.67	-6.66	40.00	80.00	120.00	°C
Curve	409.00	3.30	1.30	1.20	1.10	Sec

Table 10

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	3.03	1.86	1.00	0.75	0.58	Sec

Table 11

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	1.72	1.11	0.60	0.36	0.22	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	2.12	1.39	0.84	0.64	0.33	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	2.51	0.95	0.50	0.29	0.13	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	٥С
Curve	2.97	0.82	0.47	0.20	0.13	Sec

2013 Trans Diagnostic Summary Table--Look-up Tables--2D

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Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00 °C
Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Se

Table 16

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

Table 17

Axis	-6.67	-6.66	40.00	٥С
Curve	0.40	0.35	0.30	Sec

Table 18

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	٥С
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00	٥С

Table 19

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

Table 20

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	°C
Curve	256.00	10.00	8.00	8.00	8.00	8.00	8.00	8.00	256.00	°C

Table 21

Axis	-40.00	-20.00	40.00	٥С
Curve	5.00	3.00	1.00	Sec

2013 Trans Diagnostic Summary Table--Look-up Tables--3D

3D_Table 1

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

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

3D_Table 2

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

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