Transmission fluid         Propriative           Transmission fluid         Portformance         All 5 Cases           Sensor Circuid         Profromance of the transmission fluid         Not Test Failed This Rey On POT10 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70 POT70	Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
Transmission Fluid P0711 This test detects AI 5 Cases Transmission Fluid P0711 This test detects AI 5 Cases Sensor Circuit Representation fluid Renge / Performance the proprature sensor by comparing dranges in temperature sensor by compari								noquirou	
Temperature Sensor Circuit       performance of the temperature sensor by exprise sensor by temperature sensor by temperature sensor by calibration values.       No Test Failed This Key On P0711 P0721 P0722 P0722         No Fault Pending DTCs for this drive operator from star up and between semples to calibration values.       No Fault Pending DTCs for this drive p0722         No Fault Pending DTCs for this drive operator       P0716 P0722         No Fault Pending DTCs for this drive operator       P0716 P0722         No Pass DTCs for this drive operator       P0717 P0722         No Pass DTCs for this drive operator       P0711         No Fault Active DTC       P0711         Battery Voltage between       P0 And 18 V         Engine Speed between       200 RPM and 7500 RPM				All 5 Cases				I	В
Range / Performance       Important sensor by company changes in tamperature from start up and betwoen sensor by contained the sensor by contained the sensor by contained the sensor by contained the sensor between sensor						Not Test Failed This Key On			
Performance       comparing changes in provide and between samples to calibration values.       P0721 P0722 P0742         No Fault Pending DTCs for this drive orde P0727 P0722 P0742       P0721 P0727 P0727 P0727 P0727 P0727 P0727 P0727         No Fault Pending DTCs for this drive orde P0711       P0711         No Fault Active DTC       P0711         No Fault Active DTC       P0711         Battery Votage between       9V and 18 V         Engine Speed between       20 RPM and 7500 RPM         for 5 seconds       for 5 seconds			transmission fluid				P0716		
Imperative from start up calibration values.       P0722         No Fault Pending DTCs for this drive p0746         calibration values.       P0722         No Fault Pending DTCs for this drive p071         P0722         No Pass DTCs for this drive oper         P0723         P0724         P0724         P0725         P0726         P0727         P0727         P0728         P0729         P0729         P0729         P0720         P0721         P0722         No Pass DTCs for this drive oper         Components powered         AND         Battery Voltage between         V and 18 V         Engine Speed between         200 RPM and 7500 RPM							P0717		
and between samples of calibration values.       P0742         calibration values.       No Fault Pending DTCs for this drive P0717 P0722 P0722         No Pass DTCs for this drive orde       P0711         No Pault Active DTC       P0711         No Fault Active DTC       P0711         Components powered       Components powered         Low	Performance						P0721		
calibration values.     No Fault Pending DTCs for this drive   P0716   cycle   P0717   P0722   No Fault Active orde P071 P0722 No Fault Active orde P071 P0722 No Fault Active orde P071 P072 P0722 No Fault Active orde P071 P072 P072 P072 P072 P072 P072 P072 P072									
No Fault Pending DTCs for this drive PO716 PO721 PO722 No Pass DTCs for this drive cycle PO711 No Fault Active DTC PO711 No Fault Active DTC PO711 No Fault Active DTC Components powered Battery Voltage between PV and 18 V Engine Speed between Voltage between PV and 18 V Engine Speed between Voltage between PV and 18 V							P0742		
Image: Seconds       Image: Seconds       Image: Seconds       Image: Seconds       Image: Seconds         Image: Seconds       Image: Seconds       Image: Seconds       Image: Seconds       Image: Seconds         Image: Seconds       Image: Seconds       Image: Seconds       Image: Seconds       Image: Seconds			calibration values.			No Foult Ponding DTCs for this drive	D0716		
PO721   PO722   No Pass DTCs for this drive cycle   PO711   No Fault Active DTC   PO711   Components powered   Battery Voltage between   9 V and 18 V   Engine Speed between   20 RPM and 7500 RPM.   for   5 seconds						No Fault Fending DTCs for this drive	P0716		
Image: Constraint of the second s						Cycle	P0721		
No Pass DTCs for this drive cycle P0711 No Fault Active DTC P0711 Components powered Battery Voltage between 9 V and 18 V Engine Speed between 200 RPM and 7500 RPM for 5 seconds									
No Fault Active DTC P0711 Components powered Battery Voltage between Voltage Voltage between Voltage between Voltage Voltage between Voltage between Voltage Voltage Voltage between Voltage Voltage V									
Components powered Components powered Battery Voltage between Voltage between Components powered Voltage between Voltage betwe						No Pass DTCs for this drive cycle	P0711		
Components powered Components powered Battery Voltage between Voltage between Components powered Voltage between Voltage betwe									
Components powered Components powered Battery Voltage between Voltage between Components powered Voltage between Voltage betwe									
AND Battery Voltage between 9 V and 18 V Engine Speed between 200 RPM and 7500 RPM for 5 seconds						No Fault Active DTC	P0711		
AND Battery Voltage between 9 V and 18 V Engine Speed between 200 RPM and 7500 RPM for 5 seconds									
AND Battery Voltage between 9 V and 18 V Engine Speed between 200 RPM and 7500 RPM for 5 seconds									
AND Battery Voltage between 9 V and 18 V Engine Speed between 200 RPM and 7500 RPM for 5 seconds									
AND Battery Voltage between 9 V and 18 V Engine Speed between 200 RPM and 7500 RPM for 5 seconds						Componente powered			
Battery Voltage between       9 V and 18 V         Engine Speed between       200 RPM and 7500 RPM         for       5 seconds						Components powered			
Battery Voltage between       9 V and 18 V         Engine Speed between       200 RPM and 7500 RPM         for       5 seconds									
Battery Voltage between       9 V and 18 V         Engine Speed between       200 RPM and 7500 RPM         for       5 seconds									
Battery Voltage between       9 V and 18 V         Engine Speed between       200 RPM and 7500 RPM         for       5 seconds									
Engine Speed between 200 RPM and 7500 RPM for 5 seconds						AND			
for 5 seconds						Battery Voltage between	9 V and 18 V		
for 5 seconds									
for 5 seconds									
for 5 seconds									
for 5 seconds									
						Engine Speed between	200 RPM and 7500 RPM		
						for	5 seconds		
Start-up transmission fluid temperature is									
available						available			
Transmission fluid temperature -39 deg. C and 149 deg. C							-39 deg. C and 149 deg. C		
ECT is not defaulted									
						ECT IS NOT defaulted			
Case 1 (Stuck sensor after cold start-up) 300 seconds				Case 1 (Stuck sensor after cold start-up)				300 seconds	
				(					
			1						

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			Start-up temperature change	<= 2 deg. C	Start-up transmission fluid temperature between	-40 deg. C and 21 deg. C		
					between			
			for a time	>= 100 seconds				
			ior a ume	>= 100 seconds				
			AND			>= 120 RPM		
					for a time	>= 300 seconds		
			Vehicle speed	>= 8 KPH				
			for a time	>= 300 seconds.	engine coolant temperature	>= 70 deg. C		
					AND engine coolant temperature change from			
						>= 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	115 deg. C and 150 deg. C.		
					between			
			for a time	>= 100 seconds				
			AND		TCC Slip	>= 120 RPM		
					for a time	>= 300 seconds		
					engine coolant temperature	>= 70 deg. C		
					engine coolant temporatare	g		
					AND			
			Vehicle speed	>= 8 KPH >= 300 seconds.	engine coolant temperature change from	s = EE dog C		
			for a time	>= 500 Seconds.	start-up	>= 55 deg. C		
			Case 3 (Noisy sensor)				7 seconds	

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			Change from previous temperature	>= 20 deg. C				
			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	
			Time Enabled Criteria met AND		and	<= 1492 Nm		
			AND		vehicle speed			
			Transmission Fluid Temperature	< 20 deg. C.	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 start-up temperature is <= -40 deg. C.	and	<= 6500 RPM		
					engine coolant temperature	>= -39 deg. C		
					and	<= 149 deg. C		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			Case 5 (Reasonableness at start-up):				2 seconds	
			Engine Speed	> 500 RPM	Intake Air Temperature is not defaulted			
			AND Engine Coolant Temperature					
			AND	< 50 deg. C				
			for	>= 2 seconds				
			AND ((ABS(IAT-ECT)					
			AND					
			OR (ABS(IAT-ECT)	> 6 deg. C				
			AND (TFT-ECT)))	> 60 deg. C.				
Transmission Fluid Temperature Sensor Circuit Low Input	P0712	Out of range low.	transmission fluid temperature	>=150 deg. C	Not Test Failed This Key On	P0711 P0712	2.5 seconds	В
			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		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					for	5 seconds		
Transmission Fluid Temperature		Out of range high.			Not Test Failed This Key On	P0711	2.5 seconds	В
Sensor Circuit High Input			transmission fluid temperature	<= -45 deg. C		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			
					AND not defaulted for a time	>= 20 seconds.		
Speed Sensors								
Speed Sensor Circuit Range /	P0716	This test detects large changes in Input Speed and noisy Input Speed by	All cases		Not Test Failed This Key On	P0716 P0717 P0721		A
Performance		comparing to calibration values.				P0721 P0722		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					No Fault Pending DTCs for this drive cycle.	P0721 P0722		
					Shifting complete			
			Case 1: (Unrealistically large changes in input speed)		Input Speed	> 200 RPM	0.15 seconds	
			Change of Input Speed between samples	>= 800 RPM	for	>= 0.5 seconds		
			for	>= 0.15 seconds				
			Case 2: (Noisy Input Speed)		Input Speed	> 200 RPM	2 seconds	
			For sample size	80	for	>= 0.5 seconds		
			IF the change in Input Speed	<= -800 RPM				
			THEN the Low Counter is incremented					
			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 OR	>= 5				
			Low Counter OR High Counter					
			For Case 3: (Wires to speed sensors swapped)		Input speed	> 100 RPM	4 seconds	
			Increment counter when range attained and range commanded are neutral for a		AND Engine speed	> 100 RPM		
			time		for a time	>= 0.2 seconds		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			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	> 100 RPM				
			AND engine speed	< 100 RPM				
Input/Turbine Speed Sensor Circuit No Signal	P0717	This test detects unrealistically low value of input/turbine speed or unrealistically large changes	Failure pending if transmission input speed	< 61 RPM	Not Test Failed This Key On	P0717 P0729	1 second	A
		in input/turbine speed.	This test fails if input speed	< 61 RPM		P0731 P0732		
			AND output speed	> 500 RPM		P0733 P0734		
			for a time	> 1 second.		P0735		
						P0736 P0721 P0722		
					No Fault Pending DTCs	P0721		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
						P0722		
					Reverse-to-Neutral shift not in process			
					Shifting complete			
					Range attained is not neutral			
					Transmission fluid temperature	> -25 deg. C		
					Engine speed	>= 400 RPM		
					Transmission output speed	>= 150 RPM		
	P0721	This test detects a noisy	Case 1: (Unrealistically large change in		All Cases		Case 1:	A
Sensor Circuit Range /		output speed sensor or circuit by detecting large	output speed)		Not Test Failed This Key On	P0716	0.65 seconds	
Performance		changes in output speed.						
			Change in output speed	>= 500 RPM		P0717		
			for a time	>= 0.15 seconds		P0721		
			Case 2: (Noisy output speed)			P0722	Case 2:	
			For sample size	80	No Fault Pending DTCs for this drive	P0716 P0717	2 seconds	
					cycle		2 00001100	
			IF the change in output speed	<= -500 RPM				
			THEN the Low Counter is incremented.		Output Speed	> 200 RPM		
			IF the change in output speed	>= 500 RPM		>= 0.5 seconds		
			in the change in output speed			- 0.0 0000100		
			THEN the High Counter is incremented.					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			Test fails if both the Low Counter and the High Counter		Shift complete AND range attained NOT neutral			
			OR the Low Counter	>= 5				
			OR the High Counter	>= 5				
Output Speed Sensor Circuit No Signal	P0722	This test detects unrealistically low value of output speed or unrealistically large change in output speed.	All Cases		All Cases Not Test Failed This Key On	P0721		A
			Case 1: (Unrealistically large change in output speed)		Test enabled when output speed	>= 600 RPM	1 second	
			Failure pending if		for a time	>= 1 seconds		
			change in output speed	>= 600 RPM				
			Failure sets if range attained is Neutral		Test disabled when output speed	<= 600 RPM		
					for a time	> 1 seconds		
			Case 2: (Unrealistically low value of output speed)				4 seconds	
			Failure pending if output speed	< 61 RPM	Not Test Failed This Key On	P0731		
			Failure sets if not monitoring for low speed neutral and output speed	< 61 RPM		P0732 P0733 P0734		
			AND range is 3rd, 4th, 5th, or 6th			P0735 P0736		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			for a time Failure sets if not monitoring for low speed neutral and output speed	> 1 second	No Fault Pending DTCs for this drive cycle			
			AND ((net engine torque	< 61 RPM < -100 Nm	Engine is running	P0717		
			OR		Shift not in process			
			net engine torque)	> 100 Nm	Range attained is not Neutral			
			OR (turbine speed	> 1500 RPM	Reverse to Neutral shift not in process			
			AND		Transmission fluid temperature	> -25 deg. C		
			range is 2nd))		Transmission input speed	>= 1050 RPM		
			for a time	>= 4 seconds.	Not waiting for Manual Selector Valve to attain forward range			
Range Verification					PRNDL State is NOT D4, NOT Transitional D4			
	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	>= 2 second	Not Test Failed This Key On	P0878 P0721 P0722	2.25 seconds	A
			AND	>= 100 RPM > 100 RPM		P0716 P0717 P0717		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			In response to pending failure, a diagnostic response range is commanded.		cycle. No range switch response active			
			During this command, this test fails if Abs(Converter Slip)		Hydraulic System Pressurized			
			for	>= 230 RPM > 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 2 Incorrect Ratio	P0732	This test verifies transmission operating ratio while 2nd 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 output speed	>= 2 second >= 100 RPM		P0877 P0878 P0721 P0722 P0716 P0717	2.25 seconds	A
			AND gear slip	> 100 RPM	No Fault Pending DTC for this drive	P0717		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip)		cycle. No range switch response active Hydraulic System Pressurized			
			for	>= 230 RPM > 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 3 Incorrect Ratio	P0733	This test verifies transmission operating ratio while 3rd 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 output speed AND gear slip In response to pending failure, a diagnostic response range is commanded. During this command, this test fails if Abs(Converter Slip)	>= 100 RPM > 100 RPM	Not Test Failed This Key On	P0878 P0721 P0722 P0716 P0717 P0717	2.25 seconds	A
			for	>= 230 RPM > 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
I	I	I	I	I	Normal powertrain shutdown not in	l	I	I I

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					process Normal powertrain initialization is complete			
Gear 4 Incorrect Ratio	P0734	This test verifies transmission operating ratio while 4th range is	Pending failure occurs when accumulated event timer			00077	2.25 seconds	A
		commanded by comparing computed ratio to the commanded ratio.	Timer accumulates when transmission is in forward or reverse range AND	>= 2 second	Not Test Failed This Key On	P0877 P0878 P0721 P0722 P0716		
			output speed	>= 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.		No range switch response active			
			During this command, this test fails if Abs(Converter Slip)		Hydraulic System Pressurized			
				>= 230 RPM				
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in process Normal powertrain initialization is			
Gear 5 Incorrect Ratio	P0735	This test verifies transmission operating ratio	Pending failure occurs when accumulated event timer		complete		2.25 seconds	A
		while 5th range is commanded by comparing computed ratio to the commanded ratio.	Timer accumulates when transmission is in forward or reverse range	>= 2 second	Not Test Failed This Key On	P0877 P0878 P0721 P0722		
			AND output speed	>= 100 RPM		P0716 P0717		
			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.		No range switch response active			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			During this command, this test fails if Abs(Converter Slip)		Hydraulic System Pressurized			
				>= 230 RPM				
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in			
					process Normal powertrain initialization is			
	P0736	This test verifies			complete		2 seconds	A
Ratio		transmission range while reverse range is commanded						
		by comparing computed ratio to the commanded ratio.	Accumulated event timer	>= 2 seconds	Not Test Failed This Key On	P0877		
						P0878		
			Timer accumulates when transmission is in forward or reverse range			P0721 P0722		
			AND			P0716 P0717		
			output speed	>= 100 RPM				
			AND gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.	P0717		
					No range switch response active			
					Hydraulic System Pressurized			
					Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present			
					Normal powertrain shutdown not in			
1	l	l		l	process		l	I 1

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					Normal powertrain initialization is complete			
Gear 6 Incorrect Ratio	P0729	This test verifies transmission operating ratio while 6th range is	Pending failure occurs when accumulated event timer				2.25 seconds	A
		commanded by comparing computed ratio to the commanded ratio.	Timer accumulates when transmission is in forward or reverse range	>= 2 second	Not Test Failed This Key On	P0878 P0721 P0722		
			AND output speed	>= 100 RPM		P0716 P0717		
			AND gear slip	> 100 RPM	No Fault Pending DTC for this drive cycle.			
			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)		Hydraulic System Pressurized			
				>= 230 RPM				
			for	> 10 samples.	Shift complete			
					Output speed	>= 200 RPM		
					No hydraulic default condition present	t		
					Normal powertrain shutdown not in process Normal powertrain initialization is			
Torque Converter	Clutch				complete			
Torque Converter Clutch Circuit Performance or	P0741	This test detects the torque converter being stuck off (unlocked).					15 seconds	В
Stuck Off		(uniocked).	TCC Slip	>= 80 RPM	Not Test Failed This Key On	P2761		
			for a time	>= 15 seconds.		P2763		
						P2764 P0721 P0722 P0716 P0717		

No Fault Pending DTCs for this drive       P2761         P2763       P2763         P0721       P0722         P0721       P0722         P071       P0724         P072       P071         P072       P071         P072       P071         P072       P072         P071       P072         P072       P072         P071       P072         P072       P072         P071       P072         P072       P071         P072       P072         P071       P072         P072       P072         P071       P072         P072       P072         P073       P074         P074       P072         P074       P074         P074       P074 <th></th> <th></th>		
P0721 P0722 P0716 P0717 Components powered Battery Voltage between 9 V and 18 V		
Components powered AND Battery Voltage between 9 V and 18 V		
Battery Voltage between 9 V and 18 V		
Engine Speed between 200 RPM and 7500 RPM		
for 5 seconds		
Must be in forward range		
% Throttle > 10 % and <= 90 %		
Transmission fluid temperature > 5 deg. C and < 130 deg. C		
Time Since Range Change >= 6 seconds		
AND TCC apply is complete		
AND TCC pressure >= 1000 kPa		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
Clutch Circuit Stuck On		converter being stuck on (locked).	Case 1: (High Torque condition)		Not Test Failed This Key On	P2761	Case 1:	
			Set fault pending when throttle	>= 70%		P2763	2 Seconds	
			AND net engine torque			P2764 P0721		
			Report malfunction when fault pending exists continuously for a time			P0722 P0716 P0717 U0100		
			Case 2: (High Acceleration condition)		No Fault Pending DTCs for this drive cycle.	P2761 P2763	Case 2: 5 Seconds	
			Set fault pending when output shaft acceleration	>= 100 RPM/second		P2764 P0721		
			Report malfunction when fault pending exists continuously for a time			P0722 P0716 P0717 U0100		
					Components powered			
			Case 3: (Accel/Decel/Accel condition)		AND Battery Voltage between	9 V and 18 V	Case 3: 4 Seconds	
			Report malfunction when output acceleration event is followed by output deceleration event and followed by another output acceleration event. An output acceleration event occurs when		Engine Speed between	200 RPM and 7500 RPM		
			output shaft acceleration		for	5 seconds		
					Must be in forward range			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			for a time	>= 40 RPM/second >= 4 seconds	TCC is commanded off			
			An output deceleration event occurs when output shaft acceleration is		TCC Slip	>=-20 RPM and <= 20 RPM		
			for a time	<=-40 RPM/second >= 2.5 seconds.	% Throttle	>= 25%		
					Net Engine Torque	>= 175 Nm		
					Engine speed	<= 3500 RPM		
					Input speed	<= 3500 RPM		
					Output speed	>= 100 RPM		
Pressure Switches	<u> </u>							
Pressure Switch Solenoid 1 Circuit Low	P0842	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 stroked for a time	> 0.08 seconds	S1 valve is destroked		100 ms	A
				> 0.06 Seconds				
					NOT Cold initialization unless transmission fluid temperature			
					Shutdown is NOT in process			
			In response to the pending failure, S1 valve is retried by triggering S1 valve command 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),					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			SS1 Circuit Low reports failure, also.	P0973				
			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 for a time		S1 valve commanded from destroked to stroked.		5 seconds	A
			WITH transmission fluid temperature					
			(Time increases as temperature decreases with maximum time					
			at transmission fluid temperature)	<= -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		S1 valve commanded from stroked to destroked		6.6 seconds	A
			WITH					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			transmission fluid temperature	>= 0 deg. C.				
			(Time increases as temperature decreases with maximum time					
			transmission fluid temperature)	<= -40 deg. C				
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	> 0.07 seconds	S1 valve is stroked		70 ms	A
			IF a main pressure dropout is suspected then time limit increases to		NOT Cold initialization unless transmission fluid temperature			
			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	P0973				
			failure, also. For Case 2 (mechanical malfunction),					
			Shift Solenoid 1 (SS1) Valve Performance – Stuck Off reports failure, also. For Case 3 (intermittent malfunction),	P0751				

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			S1 valve retry attempted	15 times				
			AND					
			PS1 pressure switch continues to indicate destroked.					
Pressure Switch Solenoid 2 Circuit	P0847	This test compares the commanded valve position to	Pending failure occurs when PS2 pressure switch indicates stroked for a		S2 valve is destroked		40 ms	A
Low		the PS2 pressure switch	time					
		feedback (part of the S2 valve integrity test).						
				> 0.04004 seconds				
			IF a main pressure dropout is		NOT Cold initialization unless transmission fluid temperature			
			suspected then time limit increases to					
				0.2998 Seconds				
			In response to the pending failure, S2 valve is retried by triggering S2 valve		Shutdown is NOT in process			
			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	P0976				
			failure, also.					
			For Case 2 (mechanical malfunction),					
			Shift Solenoid 2 Valve Performance –	P0757				
			Stuck On reports failure, also.					
			For Case 3 (intermittent malfunction),					
			S2 valve retry attempted	2 times				
			AND					
			PS2 pressure switch continues to indicate stroked.					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
Shift Solenoid 2 Valve Performance – Stuck Off	P0756	This test compares the change of state of the valve command to the change of state of the PS2 pressure switch feedback (part of the C2 unker the end of the C2 unker the	If the S2 valve is commanded from destroked to stroked and the PS2 pressure switch indication remains destroked for a time	>= 5 seconds	S2 valve commanded from destroked to stroked.		5 seconds	A
		S2 valve timeout test).	WITH transmission fluid temperature					
			(Time increases as temperature decreases with maximum time	12 seconds				
			at transmission fluid temperature)	<= -40 deg. C.				
Shift Solenoid 2	P0757	This test compares the	S2 valve commanded from stroked to				6.5 sec	A
Valve Performance – Stuck On		commanded valve position to the PS2 pressure switch feedback (part of the S2 valve timeout test).		>= 6.5 seconds	S2 valve commanded from stroked to destroked			
			WITH transmission fluid temperature	>= 0 deg. C.				
			(Time increases as temperature decreases with maximum time	22 seconds				
			at transmission fluid temperature)	<= -40 deg. C.				
Pressure Switch Solenoid 2 Circuit High	P0848	the PS2 pressure switch feedback (part of the S2	Pending failure occurs when PS2 pressure switch indicates destroked for a time	> 0.30 seconds	S2 valve is stroked		300 ms	A
		valve integrity test).		- 0.30 secunds				

	Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
				IF a main pressure dropout is suspected, THEN time limit increases to	5 seconds	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		
				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	2 times				
				AND PS2 pressure switch continues to indicate destroked.					
S	Pressure Switch Solenoid 3 Circuit .ow		This test compares the commanded valve position to the PS3 pressure switch feedback. (part of S3 valve integrity test)	Pending failure occurs when PS3 pressure switch indicates stroked for a time	> 0.0195 seconds	S3 valve is destroked		20 ms	A
					> 0.0133 SECONDS	NOT Cold initialization unless transmission fluid temperature	> -25 deg. C		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			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. For Case 2 (mechanical malfunction),	P0979				
				P0762				
			S3 valve retry attempted					
			AND 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 S3 valve timeout test)	If the S3 valve is 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
		55 valve timeout test)		>= 5 seconds				
			WITH transmission fluid temperature					
			(Time increases as temperature decreases with maximum time					
			at transmission fluid temperature)	<= -40 deg. C.				

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
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 temperature	> 6.5 seconds >= 0 deg. C.	S3 valve commanded from stroked to destroked		6.6 seconds	A
			(Time increases as temperature decreases with maximum time at transmission fluid temperature)					
Pressure Switch	P0873	This test compares the	Pending failure occurs when PS3				300 ms	A
Solenoid 3 Circuit High	F0073	commanded valve position to the pressure switch PS3 feedback. (part of S3 valve integrity test)		> 0.30 seconds	S3 valve is stroked		300 ms	A
			IF a main pressure dropout is suspected THEN time limit increases to	5 seconds	NOT Cold initialization unless transmission fluid temperature Shutdown NOT in process	> -25 deg. C		
			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				

/ Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
		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	2 times				
		AND PS3 pressure switch continues to indicate destroked.					
	This test detects Reverse Pressure Switch closed indication by comparing the Reverse Pressure Switch state to the PRNDL switch state.	Case 1: (Forward range)			P0877	5 seconds	A
		For a sample size	100 samples		P0878		
					P0708		
		PRNDL is P, D1, D2, D3, D4, D5, D6, T8, or T4 AND		No Fault Pending DTCs for this drive cycle Engine is Running			
		RPS indicates Reverse		Components powered AND			
		for a time	>= 1 seconds	Battery Voltage between	9 V and 18 V		
		(if dropout suspected, NLT					
		or N02 cmded, use time)	30 seconds	Engine Speed between	200 RPM and 7500 RPM		
	h P0877	Pressure Switch closed indication by comparing the Reverse Pressure Switch state to the PRNDL switch	Shift Solenoid 3 Valve Performance – Stuck Off reports failure, also. For Case 3 (intermittent malfunction), S3 valve retry attempted AND PS3 pressure switch continues to indicate destroked. Reverse Pressure Switch state to the PRNDL switch state. For a sample size (if dropout suspected, NLT or NO2 cmded, use sample size) PRNDL is P, D1, D2, D3, D4, D5, D6, T8, or T4 AND RPS indicates Reverse for a time (if dropout suspected, NLT	h       P0877       This test detects Reverse Pressure Switch closed indication by comparing the Reverse Pressure Switch state.       Case 1: (Forward range)       Case 1: (Forward range)         IC       For a sample size       100 samples         (if dropout suspected, NLT or NO2 crmded, use sample size)       255 samples	n     P0877     This test detects Reverse Pressure Switch closed indicate to the PRNDL switch state.     P03 pressure switch confinues to indicate destroked.     AND       n     P0877     This test detects Reverse Pressure Switch closed indicate to the PRNDL switch state.     This test detects Reverse Pressure Switch closed indicate of the PRNDL switch state.     All Cases       n     P0877     This test detects Reverse Pressure Switch closed indicate of the PRNDL switch state.     Case 1: (Forward range) close 1: (Forward range)     All Cases       i     Case 1: (Forward range)     Case 1: (Forward range)     100 samples     Not Test Failed This Key On state.       i     Case 1: (Forward range)     Case 1: (Forward range)     255 samples     No Fault Pending DTCs for this drive cycle       i     PRNDL is P, D1, D2, D3, D4, D5, D6, T8, or T4, AND     Components powered AND     Components powered AND       for a time >= 1 seconds     Battery Voltage between     Components powered AND	k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k     k <td>n     POR77     Processes 3 (intermittent maillunction), S3 value retry attempted     2 times.       n     POR77     Prosesure 3 witch Confineds to Indicate debutted indication by comparing the retrieve Pressure Switch datase to the PINDL switch state to the PINDL switch state.     Case 1: (Forward range)     All Casese       n     POR77     Pressure 3 witch Confineds to Indicate debutted indication by comparing the retrieve Pressure Switch datase to the PINDL switch state to the PINDL switch st</td>	n     POR77     Processes 3 (intermittent maillunction), S3 value retry attempted     2 times.       n     POR77     Prosesure 3 witch Confineds to Indicate debutted indication by comparing the retrieve Pressure Switch datase to the PINDL switch state to the PINDL switch state.     Case 1: (Forward range)     All Casese       n     POR77     Pressure 3 witch Confineds to Indicate debutted indication by comparing the retrieve Pressure Switch datase to the PINDL switch state to the PINDL switch st

Presure Switch Reverse Circuit Ingh     P0878     This test detects the Reverse Pressure Switch Reverse Pressure Switch Suck open at shutdown.     Name     Name     Name     Reverse Pressure Switch Reverse Pressure Switch Reverse Pressure Switch Reverse Pressure Switch Suck open at shutdown.     Name	/IL IIIum	Time I Required	Enable Conditions	Secondary Parameters	Threshold Value	Malfunction Criteria	Monitor Strategy Description	Fault Code	Component / System
Pressure Switch High     P0878 Not Test Failed This Key On Reverse Pressure Switch stuck open at shutdown.     This test detects the Reverse Pressure Switch Reverse Ofrout     All Cases     Transmission Fluid Temperature Pressure Switch Reverse Pressure Switch State indicates Pressure Switch State and PRNDL State do comparing to the PRNDL Case 1: (RPS State and PRNDL State do nagree)     Transmission Fluid Temperature Pressure Switch State indicates Pressure Switch Reverse Pressure Switch Reverse Pressure Switch State and PRNDL State do nagree     Transmission Fluid Temperature Pressure Switch Reverse Pressure Switch State and PRNDL State do nagree     Pressure Switch Pressure Switch Reverse Pressure Switch State and PRNDL State do nagree     Not Test Failed This Key On P0878     P0878			5 seconds	for		Case 2: (Range indefinite)			
Image: Pressure Switch Reverse Circuit High     P0878     This test detects the Reverse Pressure switch State indetects the Reverse Pressure switch Reverse Circuit High     P0878     This test detects the Reverse Pressure switch State indicates Pressure switch State and PRNDL State do not agree)     Al Cases     Transmission Fluid Temperature Pressure Switch State Indicates Pressure Switch Press Pressure Switch Press Pressure Switch Pressure Pressure Switch Press Pressure Pres									
Image: Pressure Switch Reverse Circuit High     P0878     This test detects the Reverse Pressure switch State indetects the Reverse Pressure switch Reverse Circuit High     P0878     This test detects the Reverse Pressure switch State indicates Pressure switch State and PRNDL State do not agree)     Al Cases     Transmission Fluid Temperature Pressure Switch State Indicates Pressure Switch Press Pressure Switch Press Pressure Switch Pressure Pressure Switch Press Pressure Pres					20 samples	For a sample size.			
Pressure Switch High     P0878 Fressure Switch and detects the Reverse Switch state and detects the Reverse Circuit High     P0878 Fressure switch being stuck on the open position by comparing to the PRNDL State and PRNDL State do not agree)     AL Cases     Heressure Switch State indicates REVERSE     Not Test Failed This Key On P0878     P0877 P0878     P0878 P0878     P0878 P0878     P0877 P0878     P0877 P0878     P0877 P0878     P0878 P078     P0708     3 seconds									
Pressure Switch       P0878       This test detects the Reverse Pressure Switch being stuck in the open position by comparing to the PRNDL is REVERSE       Image: Comparing to the PRNDL state and algoes to the Reverse Pressure switch stuck open at shutdown.       Image: Comparing to the PRNDL is REVERSE       Image: Comparing to the PRNDL state and algoes to the Reverse Pressure switch stuck open at shutdown.       Image: Pressure Switch PRNDL state and PRNDL state and PRNDL state and PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL state and PRNDL state and PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL state and PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL is REVERSE       PO708       PO708       PO708			>= 0 deg. C	Transmission Fluid Temperature	>= 100 Nm	net engine torque			
Pressure Switch       P0878       This test detects the Reverse Pressure Switch being stuck in the open position by comparing to the PRNDL is REVERSE       Image: Comparing to the PRNDL state and algoes to the Reverse Pressure switch stuck open at shutdown.       Image: Comparing to the PRNDL is REVERSE       Image: Comparing to the PRNDL state and algoes to the Reverse Pressure switch stuck open at shutdown.       Image: Pressure Switch PRNDL state and PRNDL state and PRNDL state and PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL state and PRNDL state and PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL state and PRNDL state and PRNDL is REVERSE       Image: Pressure Switch PRNDL is REVERSE       PO708       PO708       PO708									
Image: series witch series exerces circuit High     POS78     This test detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL state and detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL state and detects the Reverse Pressure switch state and detects the Reverse Pressure switch state and detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL state and detects the Reverse Pressure switch stuck open at shutdown.     Image: All Cases if the Reverse Pressure switch state and detects the Reverse Pressure switch state and detects the Reverse Pressure switch stuck open at shutdown.     Image: All Cases if the Reverse Pressure switch state and detects the Reverse Pressure switch state and Reverse Pressure switch state and the Reverse Pressure switch and the Reverse Pressure switch state Reverse Pressure switch state and the Reverse Pressure switch st					-	PRNDL is indefinitely D3 or another			
Image: Not State indicates       Reverse Pressure Switch State indicates       Reverse Pressure Switch State indicates       Reverse Pressure Switch State indicates         Pressure Switch Reverse Circuit High       P0878       This test detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL state and detects the Reverse Pressure switch stuck open at shutdown.       Al Cases       >= 0 deg. C       >=         Ord agree       For sample size       40 samples       Not Test Failed This Key On P0877       P0878       P0708         PRNDL is REVERSE       No Fault Pending DTC for this drive       P0708       P0708       P0708       P0708				Hydraulic System Pressurized		forward range			
Image: Not State indicates       Reverse Pressure Switch State indicates       Reverse Pressure Switch State indicates       Reverse Pressure Switch State indicates         Pressure Switch Reverse Circuit High       P0878       This test detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL state and detects the Reverse Pressure switch stuck open at shutdown.       Al Cases       >= 0 deg. C       >=         Ord agree       For sample size       40 samples       Not Test Failed This Key On P0877       P0878       P0708         PRNDL is REVERSE       No Fault Pending DTC for this drive       P0708       P0708       P0708       P0708									
Image: Not State indicates       Reverse Pressure Switch State indicates       Reverse Pressure Switch State indicates       Reverse Pressure Switch State indicates         Pressure Switch Reverse Circuit High       P0878       This test detects the Reverse Pressure switch being stuck in the open position by comparing to the PRNDL state and detects the Reverse Pressure switch stuck open at shutdown.       Al Cases       >= 0 deg. C       >=         Ord agree       For sample size       40 samples       Not Test Failed This Key On P0877       P0878       P0708         PRNDL is REVERSE       No Fault Pending DTC for this drive       P0708       P0708       P0708       P0708									
Image: Constraint of the service of					> 1 second	for a time			
Reverse Circuit       Pressure switch being stuck in the open position by comparing to the PRNDL switch state and detects the Reverse Pressure switch stuck open at shutdown.       Case 1: (RPS State and PRNDL State do not agree)       >= 0 deg. C       3 seconds         Reverse Pressure switch       switch state and detects the Reverse Pressure switch stuck open at shutdown.       Case 1: (RPS State and PRNDL State do not agree)       Not Test Failed This Key On P0877       P0878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90878       90708       90878       90708       90708       90708       90708       90708       90708       90708       90708       90708       90708       90708       90708       90708       90708       90708       90708									
High       in the open position by comparing to the PRNDL switch state and detects the Reverse Pressure switch stuck open at shutdown.       Case 1: (RPS State and PRNDL State do not agree)       Not Test Failed This Key On P0878       P0877       3 seconds         PRNDL is REVERSE       40 samples       PRNDL is REVERSE       40 samples       P0708       P0708       P0708	A		>= 0 dea. C	Transmission Fluid Temperature		All Cases		P0878	
witch state and detects the Reverse Pressure switch stuck open at shutdown.       not agree)       Not Test Failed This Key On P0878       P0877         PRNDL is REVERSE       PRNDL is REVERSE       P0708       P0708         RPS indicates NOT REVERSE       No Fault Pending DTC for this drive       P0708			-		1	Case 1: (DDC State and DDND). State do	in the open position by		
stuck open at shutdown.     PRNDL is REVERSE     P0708       AND     RPS indicates NOT REVERSE     No Fault Pending DTC for this drive		econus	P0877	Not Test Failed This Key On		not agree)	switch state and detects the		
AND RPS indicates NOT REVERSE No Fault Pending DTC for this drive P0708			P0878		40 samples	For sample size			
RPS indicates NOT REVERSE No Fault Pending DTC for this drive P0708			P0708			PRNDL is REVERSE			
RPS indicates NOT REVERSE No Fault Pending DTC for this drive P0708									
RPS indicates NOT REVERSE No Fault Pending DTC for this drive P0708									
			P0708			RPS indicates NOT REVERSE			
after a time >= 1 second					>= 1 second	after a time			
Battery Voltage between 9 V and 18 V			9 V and 18 V	Battery Voltage between					
No range switch response active				No rango switch response active					
For Case 2: (RPS Shutdown Test) Ignition Key State is NOT RUN 60 seconds		seconds	E	Ignition Key State is NOT RUN		For Case 2: (RPS Shutdown Test)			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			If RPS indicates	not Reverse	Engine Stopped or Stalled			
			for a time	> 40 seconds				
			at transmission fluid temperature	0 deg. C.	End of Trip timer	>= 5 seconds		
			during engine shutdown					
			This time varies with transmission fluid	25 seconds	Engine had been cranking or running this drive cycle			
			temperature, from time					
			at transmission fluid temperature	> 35 deg. C				
			to time	60 seconds	Engine speed	< 50 RPM		
			at transmission fluid temperature	< -20 deg. C.	Turbine speed	< 50 RPM		
					Output speed	< 50 RPM		
On-coming/Off-goi Pressure Control	ing Ratio P2723		Pending failure occurs when accumulated				2.25 seconds	A
Solenoid 1 Controlled Clutch		coming clutch energized by Pressure Control Solenoid 1	event timer	. O accorda		D0704		
Stuck Off		engages during a forward range shift.		>= 2 seconds	Not Test Failed This Key On	190721		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			(For rough road conditions, use)	2 seconds		P0722		
						P0716		
			Timer accumulates when transmission is shifting,			P0717 P0877		
			output speed	>= 60 RPM		P0878		
			AND commanded gear slip speed	> 75 RPM				
			(For rough road conditions, use)	150 RPM.	Output Speed	>= 125 RPM		
					Turbine Speed	>= 60 RPM		
			In response of pending failure, a		Hydraulic System Pressurized			
			diagnostic response range is commanded. During this command, this					
			test fails if ABS(Converter slip)					
					Normal powertrain shutdown not in			
				>= 230 RPM	process			
			for sample size	> 10 samples	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			
					Device device bit about to a service			
					Power downshift abort to previous range NOT active			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
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	>= 2 seconds	Not Test Failed This Key On	P0721	2.25 seconds	A
			(For rough road conditions, use)	2 seconds		P0722		
			Timer accumulates when transmission is shifting, output speed AND commanded gear slip speed	>= 60 RPM		P0716 P0717 P0877 P0878		
			AND commanded gear slip speed	> 75 RPM	Output Speed	>= 125 RPM		
			(For rough road conditions, use)	150 RPM.	Turbine Speed	>= 60 RPM		
			In response of pending failure, a diagnostic response range is commanded. During this command, this test fails if ABS(Converter slip)		Hydraulic System Pressurized			
				>= 230 RPM	Normal powertrain shutdown not in process			
			for sample size	> 10 samples	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			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
Pressure Control Solenoid 1 Controlled Clutch Stuck On	P2724	This test determines if the off- going clutch energized by Pressure Control solenoid 1 remains engaged during a forward range shift.	Accumulated fail timer	>= 0.2998 seconds	Not Test Failed This Key On	P0721	3 seconds	A
			for forward range upshift;			P0722		
			OR accumulated fail timer	>= 3.0 seconds		P0716		
			for direction change shifts;			P0717		
			OR accumulated fail timer	>= 0.500 seconds		P0877		
			for forward range closed throttle downshift; OR accumulated fail timer	>= 1.0 second	No Fault Pending DTC for this drive cycle.	P0878 P0717		
			for forward downshifts above closed throttle.		Output Speed	>= 200 RPM		
			Fail timer accumulates during range to range shifts when attained gear slip		Turbine Speed			
			speed	<= 25 RPM	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			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
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	>= 0.2998 seconds	Not Test Failed This Key On	P0721	3 seconds	A
			for forward range upshift;			P0722		
			OR accumulated fail timer	>= 3.0 seconds		P0716		
			for direction change shifts;			P0717		
			OR accumulated fail timer	>= 0.500 seconds		P0877		
			for forward range closed throttle downshift; OR accumulated fail timer		No Fault Pending DTC for this drive cycle.	P0878 P0717		
			for forward downshifts above closed throttle.		0.000	000 DDM		
			Fail timer accumulates during range to		Output Speed Turbine Speed			
			range shifts when attained gear slip speed	<= 25 RPM	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			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
PRNDL/IMS								
Transmission Range Sensor High Input	P0708	This test monitors the transmission range switch for invalid input conditions and parity errors occurring over consecutive ignition cycles.	For Case 1 (No Information):		Components powered		Case 1:	A
			Illegal electrical state for a time	>= 1 second	AND		1 second	
					Battery Voltage between	9 V and 18 V		
			For Case 2 (Long-term Parity):				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.			200 RPM and 7500 RPM 5 seconds	5 <sup>th</sup> occurrence	
			For Counter 1, increment counter IF Parity Error Detected; decrement counter IF No Parity Error Detected 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,	>= 5 counts				
			THEN report failure.					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			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,	>= 5 counts				
			THEN report failure.					
			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;					
				>= 200 RPM >= 10 seconds				
			Valid Drive Detected is defined as the 4- bit DL indicates Valid Drive for a time;	>= 3 seconds				
			Valid Park Detected is defined as the 4- bit PRNDL indicates Valid Park for a time	>= 0.2 seconds				
			and output speed;	<= 20 RPM				
			Valid Reverse Detected is defined as the 4-bit PRNDL indicates Valid Reverse for a time;					
			Valid Neutral Detected is defined as the					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			4-bit PRNDL indicates Valid Neutral					
			for a time	>= 0.2 seconds				
			and output speed	<= 20 RPM				
			OR for a time.	>= 3 seconds				
Transmission Range Sensor	P0706	This test monitors the transmission range switch	For sample size,	> 7 samples	Not Test Failed This Key On	P0706	200 ms	В
Circuit Range/Performanc		inputs at engine start to	PRNDL C input is closed OR PRNDL P is					
e		or Neutral).	NOT closed.		Battery voltage between	9V and 18V		
					Powertrain State is READY or CRANKING			
						> 100 RPM and < 350 RPM.		
Solenoid Electrical								
Main Modulation/Line Pressure Control	P0960	This test detects solenoid electrical open circuit malfunctions.	Fault pending is set at single hardware fault occurrence		Not Test Failed This Key On	P0657	1050 ms	A
Solenoid Control Circuit Open			IF hardware fault is present for a sample size	>= 40 samples		P0658 P0659		
			AND Engine speed		Components powered			
			THEN initiate intrusive test by opening low side driver		AND 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	< 4 seconds		
1		l			AND			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			THEN report malfunction	>= 2 samples	Battery Voltage 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 For a sample size, THEN report malfunction	>= 40% >= 40 samples		P0657 P0658 P0659 P0960 P0961 P0962	1000 ms	A
			Case 2: Desired current AND		No Fault Pending DTC for this drive cycle. cycle. Components powered	P0962		
			Actual Duty Cycle For a sample size,		AND Battery voltage between			
			THEN report malfunction					
					If Engine Cranking, then Crank Time	< 4 seconds		
					AND Battery Voltage			
					High Side Driver 1 Enabled			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					Shift Complete			
					Lockup Apply Complete			
					OR Lockup Release Complete			
Main Modulation/Line Pressure Control Solenoid Control Circuit Low	P0962	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	1050 ms	A
			AND Engine speed		Components powered			
			THEN initiate intrusive test by opening low side driver.		AND Battery voltage between	9V and 18V		
					If Engine Cranking, then			
			IF intrusive test indicates short to ground exists for a sample size		Crank Time	< 4 seconds		
				>= 2 samples	AND			
			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	3 consecutive samples	Not Test Failed This Key On	P0657	75 ms	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			AND Engine speed	>=15 RPM		P0658 P0659		
					Components powered			
					AND Battery voltage between			
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage			
					High side driver 1 enabled			
Pressure Control Solenoid 2 Control	P0964	This test detects solenoid electrical open circuit	Fault pending is set a single hardware fault occurrence		Not Test Failed This Key On		225 ms	A
Circuit Open		malfunctions.	IF hardware fault is present for a sample size	>= 6 samples		P2670 P2671		
			AND		Components powered			
			Engine speed	>= 15 RPM	AND Battery voltage between			
			THEN initiate intrusive test by opening low side driver.		If Engine Cranking, then			
			IF intrusive test indicates no short to ground exists for a sample size,		Crank Time	< 4 seconds		
				>= 3 samples	AND Battery Voltage			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			THEN report malfunction		High Side Driver 2 Enabled			
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: 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	>= 500 mA	No Fault Pending DTC for this drive cycle. cycle. Components powered	P0964 P0966		
			Actual Duty Cycle For a sample size,	<= 15% >= 10 samples	AND Battery voltage between	9V and 18V		
			THEN report malfunction		If Engine Cranking, then			
						< 4 seconds		
					AND Battery Voltage High Side Driver 2 Enabled			
					Shift Complete			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					Lockup Apply Complete			
					OR Lockup Release Complete			
Pressure Control	P0966	This test detects solenoid	Fault pending is set at single hardware				200 ms	A
Solenoid 2 Control Circuit Low		electrical ground circuit malfunctions.	fault occurrence IF hardware fault is present for a sample		Not Test Failed This Key On	P2670		
			size	>= 6 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 short to ground exists for a sample size		If Engine Cranking, then			
				>= 2 samples	Crank Time	< 4 seconds		
				>= 2 samples	Grank Time			
			THEN report malfunction.		AND			
					Detter Maltere	101/		
					Battery Voltage	> 10 V		
					High Side Driver 2 Enabled			
Pressure Control I Solenoid 2 Control	P0967	This test detects solenoid electrical short to power	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669	75 ms	A
Circuit High		circuit malfunctions.			Not reach alled This Key Off	1 2000		
			AND Engine speed	>= 15 RPM		P2670 P2671		
						P0967		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					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 2 Enabled			
Pressure Control Solenoid 1 Control Circuit Open	P2727	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	>= 5 samples	Not Test Failed This Key On	P0657 P0658 P0659	200 ms	A
			AND Engine speed		Components powered			
			THEN initiate intrusive test by opening low side driver.		AND Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates no short to ground exists for a sample size,		If Engine Cranking, then			
					Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					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: AND Actual Duty Cycle For a sample size, THEN report malfunction	>= 40%	Not Test Failed This Key On	P0657 P0658 P0659 P2727 P2728 P2729	250ms	A
			Case 2: Desired current AND		No Fault Pending DTC for this drive cycle. Components powered	P2729		
			Actual Duty Cycle For a sample size,	<= 15% >= 10 samples	AND Battery voltage between	9V and 18V		
			THEN report malfunction					
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage	> 10 V		
					High Side Driver 1 Enabled			
					Shift Complete			
					Lockup Apply Complete			
					OR			

Pressure Control Becard 1 Correr         P2729 Pressure Control Pressure Control Corron Loo         Paule pending is set at angle haldware buil contrarios proper 5 campling         Not Tel Paled This Key Ch Posta Proper Scale Posta Proper Scale Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta Posta	Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
Sciencial 1 Control Circuit Low       P2300 Engine speed = 15 RPM       No.Test Failed This Key on P0657 P0656 P0059       Image: Control P0657 P0059         AND Engine speed = 15 RPM       Componentis powered       AND Battery Votage between 0 V and 18 V         If is test detects solenoid Sciencial 1 Speed       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       No.Test Failed This Key on P0657 P0059       V and 18 V         Pressure Control Sciencial 1 Speed       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       No.Test Failed This Key on P0657       V and 18 V         Pressure Control Sciencial 1 Speed       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       No.Test Failed This Key on P0657       P0657         Pressure Control Sciencial 1 Speed       P7300       This test detects solenoid exists for a sample size       Sciencial 1 Speed exists for a sample size       No.Test Failed This Key on P0657       P0657						Lockup Release Complete			
Sciencial 1 Control Circuit Low       P2300 Engine speed = 15 RPM       No.Test Failed This Key on P0657 P0656 P0059       Image: Control P0657 P0059         AND Engine speed = 15 RPM       Componentis powered       AND Battery Votage between 0 V and 18 V         If is test detects solenoid Sciencial 1 Speed       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       No.Test Failed This Key on P0657 P0059       V and 18 V         Pressure Control Sciencial 1 Speed       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       No.Test Failed This Key on P0657       V and 18 V         Pressure Control Sciencial 1 Speed       If is test detects solenoid exists for a sample size       If is test detects solenoid exists for a sample size       No.Test Failed This Key on P0657       P0657         Pressure Control Sciencial 1 Speed       P7300       This test detects solenoid exists for a sample size       Sciencial 1 Speed exists for a sample size       No.Test Failed This Key on P0657       P0657									
Pressure Control       2730       This test defects solenoid criot malfunctions.       Short to power is present for 3 consecutive samples       Components powered Battery Volage between Battery Volage between Polage       If Engine Speed > 10 V Figh side driver 1 enabled         Pressure Control Bressure Control Crout Migh       P2730       This test defects solenoid exists for a sample size       Short to power is present for 3 consecutive samples       Not Test Failed This Key On PO657       P0657       75 ms       A	Solenoid 1 Control	P2729	electrical ground circuit	fault occurrence IF hardware fault is present for a sample	>= 5 samples		P0658	175 ms	A
Pressure Control       P2730       This test detects solenoid       Short to power is present for 3 consecutive samples       Not Test Failed This Key On P0657       75 ms       A         Circuit High       P2730       P2730       P16588       P0658       P0658       P0659       P2730       P0558					>= 15 RPM	Components powered			
Pressure Control Solenoid 1 Control Circuit High       P2730       This test detects solenoid a bort to power circuit malfunctions.       Short to power is present for 3 consecutive samples       Not Test Failed This Key On P0657       P0658 P0658 P0659 P2730       75 ms       A									
Pressure Control Solonoid I Control Circuit HighP2730This test detects solenoid electrical short to power er spresent for AND Engine speed electrical short to power is present for Bane detectrical short to power is present for Bane detectrica						If Engine Cranking, then			
Pressure 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       A         Circuit High       A       P0658       P0659						Crank Time	< 4 seconds		
Image: Pressure Control Solenoid 1 Control Sciencid 1 Control Circuit High       Pressure Control Release 1 Control Solenoid				THEN report malfunction	>= 2 samples	AND			
Image: Pressure Control Solenoid 1 Control Circuit High       P2730       This test detects solenoid electrical short to power circuit malfunctions.       Short to power is present for 3 consecutive samples       Not Test Failed This Key On P0657       P0658 P0659 P2730       P0658 P0659 P2730						Battery Voltage	> 10 V		
Solenoid 1 Control       electrical short to power       Short to power is present for 3 consecutive samples       Not Test Failed This Key On       P0657         Circuit High       AND       Engine speed       >= 15 RPM       P0658       P0659         P2730       P2730       P2730       P2730       P2730						High side driver 1 enabled			
Solenoid 1 Control       electrical short to power       Short to power is present for 3 consecutive samples       Not Test Failed This Key On       P0657         Circuit High       AND       Engine speed       >= 15 RPM       P0658       P0659         P2730       P2730       P2730       P2730       P2730									
Engine speed         >= 15 RPM         P0659           P2730         P2730         P2730	Solenoid 1 Control	P2730	electrical short to power	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P0657	75 ms	A
					>= 15 RPM				
AND									

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			
					0.17			
					Crank Time	< 4 seconds		
					AND Battery Voltage			
					High side driver 1 enabled			
					Ŭ			
Shift Solenoid 1	P0972	This test detects solenoid	Fault pending is set a single hardware				325 ms	A
Control Circuit Open		electrical open circuit malfunctions.	fault occurrence IF hardware fault is present for a sample		Not Test Failed This Key On	P2670		
			size	>= 10 samples		P2671		
			AND Engine speed		Components powered			
			THEN initiate intrusive test by opening		AND Battery Voltage between			
			low side driver.					
			IF intrusive test indicates no short to		If Engine Cranking, then			
			ground exists for a sample size,					
					Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		
					High side driver 2 enabled			

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
Shift Solenoid 1 Control Circuit Low	P0973	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	>= 10 samples	Not Test Failed This Key On	P2669 P2670 P2671	300 ms	A
			AND Engine speed		Components powered			
			THEN initiate intrusive test by opening low side driver.		AND Battery Voltage between			
			IF intrusive test indicates short to ground exists for a sample size		If Engine Cranking, then			
				>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 1 Control Circuit High	P0974	This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669	75 ms	A
			AND Engine speed			P2670 P2671 P0974		
					Components powered			
					AND 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 IIIum
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2	P0975	This test detects solenoid	Fault pending is set a single hardware				325 ms	A
Control Circuit Open		electrical open circuit malfunctions.	fault occurrence IF hardware fault is present for a sample		Not Test Failed This Key On	P2669 P2670		
				>= 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 no short to		If Engine Cranking, then			
			ground exists for a sample size,					
					Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		
					High side driver 2 enabled			
	D0070						000	
Shift Solenoid 2 Control Circuit Low	P0976	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		Not Test Failed This Key On	P2669 P2670	300 ms	A

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			size	>= 10 samples		P2671		
			AND Engine speed	>= 15 RPM	Components powered			
			THEN initiate intrusive test by opening low side driver.		AND Battery Voltage between			
			IF intrusive test indicates short to ground exists for a sample size		If Engine Cranking, then			
				>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		
					High side driver 2 enabled			
Shift Solenoid 2 Control Circuit High		This test detects solenoid electrical short to power circuit malfunctions.	Short to power is present for	3 consecutive samples	Not Test Failed This Key On	P2669	75 ms	A
			AND Engine speed	>= 15 RPM		P2670 P2671		
					Components powered	P0977		
					AND Battery Voltage between	9 V and 18 V		
					If Engine Cranking, then			

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

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			Engine speed	>= 15 RPM		P2671		
						P0980		
					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 2 enabled			
					Commanded gear NOT Reverse Trim, NOT 5th, NOT 6th			
Actuator Supply 1	P0657	This test detects if the	Report malfunction when the number of				75 ms	A
(HSD1) Voltage Open		voltage measured at the HSD1 detection circuit shows	failure events	>= 3	Not Test Failed This Key On	P0657	10 110	
Open		that multiple low side	Engine speed		HSD1 is commanded ON			
		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 HSD1		Components powered			
			lated soleholds connected to HSD1					
					AND			
				>= 2	Battery Voltage between	9 V and 18 V		
			AND HSD1 voltage		If Engine Cranking, then			
I	I		I	l	l	l		I

Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
				Crank Time	< 4 seconds		
P0658	This test detects low voltage	Poport malfunction when short to around		Not Toot Failed This Key On	DOGES	75 ms	A
	expected indicating a short to						
	ground at the circuit.		>= 5 unes	HSDT is commanded ON			
		AND					
		Engine speed	>= 15 RPM	Components powered			
				If Engine Cranking, then			
				Crank Time	< 4 seconds		
P0659	This test detects if the					18.75 ms	A
	HSD 1 detection circuit	During initialization, report malfunction		During initialization			
	indicates high during initialization (when the circuit	when the number of failure events					
	is off)		>= 3 times				
		A failure event occurs when HSD1					
		voltage	>= 6V				
P2669	This test detects if the	Report malfunction when the number of				75 ms	A
	voltage measured at the	failure events		Not Test Failed This Key On	P2669		
	that multiple low side		>= 15 RPM	HSD2 is commanded ON			
open, but the h	open, but the high side						
	detection circuit indicates high voltage.						
	Code P0658	Code         Description           P0658         This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.           P0659         This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)           P2669         This test detects if the voltage measured at the HSD2 detection circuit shows that multiple low side detection circuit indicates indicate sign during initialization (when the circuit is off)	Code         Description           P0658         This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.         Report malfunction when short to ground is detected for a number of events detected for a number of events           P0659         This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)         Puring initialization, report malfunction when the number of failure events AND Engine speed           P2669         This test detects if the voltage measured at the HSD 1 detection circuit is off)         During initialization, report malfunction when the number of failure events AND Engine speed           P2669         This test detects if the voltage measured at the HSD 2 detection circuit shows that multiple low side detection circuit indicates high side detection circuit indicates         Report malfunction when the number of failure events AND Engine speed	Code         Description           P0658         This test detects low voltage when high voltage is expected indicating a short to ground is detected for a number of events ground at the circuit.         Report malfunction when short to ground is detected for a number of events = 3 times           P0659         This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)         Puring initialization, report malfunction when the number of failure events voltage measured at the HSD 1 detection circuit indicates high during initialization (when the circuit is off)         Puring initialization, report malfunction when the number of failure events voltage = 6V           P2669         This test detects if the HSD2 detection circuit indicates detection circuit indicates detects if the HSD2 detection circuit indicates detection circuit i	Code         Description         Crank Time           P0653         This test detects low voltage when high voltage is expected incicating a short to ground at the circuit.         Report mailunction when short to ground is detected for a number of events >= 3 times         Not Test Failed This Key On events of the circuit.           P0653         This test detects if the voltage is event service and the circuit.         Report mailunction when short to ground is detected for a number of events is detected for a number of events is detected for a number of events is detected for a number of events.         >= 3 times         Not Test Failed This Key On event service and the HSD 1 is commanded ON Engine speed >= 15 RPM         Components powered           P0659         This test detects if the voltage measured at the HSD 1 detection circuit indicates high during initialization, report mailunction when the number of failure event voltage high work is off)         Service and the number of failure event fa	Code         Description         Index         Index <thindex< th="">         Index         Index</thindex<>	Code         Description         Image: Crank Time of Asconds         Asconds         Required           P0050         This test detects tow values expected indicating a information set detects for values expected indicating a information of the circuit.         Report malfunction when short to ground is detected for a number of events expected indicating a information is detected for a number of events expected indicating a information is detected for a number of events expected indicating a information is detected for a number of events expected indicating a information is detected for a number of events expected indicating a information is detected for a number of events expected indicating a information is detected for a number of events explore an event of the circuit.         Not Test Failed This Key On P0658         P0658         75 ms.           P0050         This test detects if the events of the circuit.         Report malfunction when short to ground is detected for a number of events explore an event of the circuit.         States explore an event of the circuit.         P0658         P0 and 18 V           P0659         This test detects if the rotation of the transformation when the number of failors events when the number of failors event when the number of failors event explore measured at the rotation of the failors event event explore measured at the rotation of the failors even

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			A failure event occurs when the number of failed solenoids connected to HSD2		Components powered			
				>= 2	AND Battery Voltage between			
			AND HSD2 voltage		If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage			
Actuator Supply2 (HSD2) Voltage Low	P2670	This test detects low voltage when high voltage is expected indicating a short to ground at the circuit.	Report malfunction when short to ground is detected for a number of events		Not Test Failed This Key On HSD2 is commanded ON		75 ms	A
			AND Engine speed		Components powered			
					AND Battery Voltage between			
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage			
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		During initialization		18.75 ms	A
		15 UII)		>= 3 times				
		l	A failure event occurs when HSD1		l	l		1

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			voltage	>= 6V				
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	>= 120 samples	Not Test Failed This Key On	P0657 P0658 P0659	3075 ms	В
			AND Engine speed	>= 15 RPM	Components powered			
			THEN initiate intrusive test by opening low side driver.		AND Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates no short to ground exists for a sample size,		If Engine Cranking, then			
					Crank Time	< 4 seconds		
				>= 3 samples	AND			
			THEN report malfunction		Battery Voltage	> 10 V		
					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%	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.	P2761 P2763		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			Actual Duty Cycle	<= 10%	Components powered			
			For a sample size,	>= 40 samples	AND Battery voltage between			
			THEN report malfunction					
					If Engine Cranking, then			
					Crank Time	< 4 seconds		
					AND Battery Voltage	> 10 V		
					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	3 consecutive samples	Not Test Failed This Key On	P0657	75 ms	В
			AND			P0658		
			Engine speed	>= 15 RPM	Components powered	P0659 P2763		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					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 Control Circuit Low	P2764	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		Not Test Failed This Key On	P0657 P0658	3050 ms	В
				>= 120 samples		P0659		
			AND Engine speed		Components powered			
			THEN initiate intrusive test by opening low side driver		AND Battery Voltage between	9 V and 18 V		
			IF intrusive test indicates short to ground exists for a sample size		If Engine Cranking, then			
				>= 2 samples	Crank Time	< 4 seconds		
			THEN report malfunction		AND			
					Battery Voltage	> 10 V		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					High side driver 1 enabled			
Miscellaneous								
4 Wheel Drive Low Switch Circuit Malfunction	P2771	This test detects abnormal conditions for the four-wheel drive indication switch input by comparing switch state range to calculated range.		>= 200	All Cases Not Test Failed This Key On	P0721	5 seconds	В
			the transfer case 4WD 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	P0722 P2771 P0721		
						P0722		
			Case 2 (Stuck On)		No Fault Pending DTCs for this drive cycle			
			This test fails when, for number of occurrences, the transfer case 4WD switch indicates Low range and the calculated transfer	>= 200	Output Speed	P0722 > 60 RPM		
			case range is High range for a time		Transfer Case is NOT Neutral			
				>= 5 seconds.	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	P0894	This test detects the number of turbine slip events during	For this ignition cycle, when the number of Neutral Locked Turbine (NLT) Slip				8075 ms	В

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
Slipping		the Neutral Locked Turbine (NLT) request from engine controller.	events,		Components powered			
			then report fail	>= 3	AND Battery Voltage between			
			Where number of NLT Slip events for this ignition cycle = Number of accumulated NLT Slip events – Number of NLT Slip events from previous ignition cycles.		Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
			And, where number of accumulated NLT Slip events is incremented when commanded gear or attained gear is NLT					
			AND turbine speed	> 50 RPM				
			for a time	> 3 seconds.				
lasitisa Quitab	D0504	Out-former-law					05	
Ignition Switch Run/Start Circuit	P2534	Out of range low.	Ignition voltage for a time	< 5 volts >= 30 seconds	Not Test Failed This Key On	P2534	35 seconds	A
					Components powered			
					AND Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
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		8 seconds	В
					AND Battery Voltage between	9 V and 18 V		
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
GMLAN ECM	U0100	This test detects CAN			All Cases		8 seconds	В
Controller State of Health Failure		(GMLAN) bus failures by detecting State of Health failures in GMLAN message \$191 from ECM.	Case 1 (x out of y):		Components powered AND		o seconas	
			The failure counter increments when a State of Health (SOH) failure is detected. A SOH failure occurs when message is		Battery Voltage between	9 V and 18 V		
			missing. When the failure counter is a number of samples		Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
				>= 5 samples				
			out of a number of samples,	7 samples	Ignition Key State is RUN			
			report fail.		GMLAN message \$191 is received from			
			Case 2 ( intermittent):		ECM			
			Report fail, when the failure counter	> 0 counts				

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			for a number of sample windows	< 5 samples	Enable criteria met for a time	> 3 seconds		
Brake Switch Circuit	P0571	This test counts how many vehicle acceleration events occur while the brake switch indicates "ON" or the number of vehicle deceleration events while the brake switch indicates "OFF"	Case 1: The number of vehicle accelerations with the brake switch "on"	>= 10		P0721 P0722	10 Acceleration Events	С
			Case 2: The number of vehicle decelerations with the brake switch "off"	>= 10	Not Fault Active Components powered AND Battery Voltage between		10 Deceleration Events	
					Engine Speed between	200 RPM and 7500 RPM 5 seconds		
Brake Pedal Possition Switch Signal Rolling Count	P0703	This test detects rolling count failures for the Brake Switch GMLAN Message	The failure count increments when the GMLAN message is not received or the rolling counter does not agree with the expected value		Components powered AND Battery Voltage between	9 V and 18 V	15 seconds	C

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					Engine Speed between	200 RPM and 7500 RPM		
			When the failure counter is	~ 5				
			When the failure counter is	20				
			for a time of	> 10 seconds	TOP	5 seconds		
			Report Failure					
Upshift Switch Circuit	P0815	This test detects the upshift switch ON					603 seconds	С
			When PRNDL state is N, P or R		Not Test Failed This Key On	P0826		
			and has been unchanged			P0708		
			for a time	>= 2.5 seconds				
			AND		Components powered			
			upshift switch state is ON		AND			
			for a time	>= 3 seconds.	Battery Voltage between	9 V and 18 V		
			AND		Facine Sheed between	200 DDM and 7500 DDM		
					Engine Speed between	200 RPM and 7500 RPM		
			When PRNDL state is a forward range					
			and has been unchanged for a time		tor	5 seconds		
				>= 2.5 seconds				
			AND					

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
			upshift switch state is ON					
			for a time	>= 600 seconds.				
Downshift Switch Circuit	P0816	This test detects the downshift switch ON.					603 Seconds	С
			When PRNDL state is N, P or R and has been unchanged for a time		Not Test Failed This Key On	P0826 P0708		
			AND		Components powered			
			downshift switch state is ON		AND			
			for a time.	>= 3 seconds.	Battery Voltage between	9 V and 18 V		
			AND		Engine Speed between	200 RPM and 7500 RPM		
			When PRNDL state is a forward range and has been unchanged for a time		for	5 seconds		
			AND downshift switch state is ON					
			for a time	>= 600 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	P0826	10 seconds	С

Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum
					Components powered			
					AND Battery Voltage between			
					Engine Speed between	200 RPM and 7500 RPM		
					for	5 seconds		
Upshift and Downshift Switch	P1761	This test detects rolling count failures for the Upshift and	The failure count increments when the GMLAN message is not received or the				15 seconds	С
Signal Rolling Count		Downshift GMLAN Message	rolling counter does not agree with the expected value		Components powered			
					AND			
					Battery Voltage between	9 V and 18 V		
			When the failure counter is	> 5	Engine Speed between	200 RPM and 7500 RPM		
			for a time of	> 10 seconds				
			ior a time of					
			Report Failure		for	5 seconds		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enable Conditions		Tim Requ		Mil Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRI	JE Boolean					>= 5	Fail Counts	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0601 ECM: None					
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRI	JE Boolean					Runs Continously		One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None					
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	= TRI	JE Boolean					>= 5 = 16	Fail Counts Sample Counts	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0604 ECM: None					
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	= TRI	JE Boolean					Runs Continously		One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P062F ECM: None					
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>= 142.1	016 °C					>= 5	Fail Time (Sec)	One Trip
			Fail Case 2 Substrate Temperature Ignition Voltage Note: either fail case can set the DTC	>= 50						>= 2	Fail Time (Sec)	
			Dic			Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	>= <=	8.59961 31.99902 0 170 0.25	Volts Volts °C °C Sec			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0634 Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp $\Delta$	supporting documents Refer to Table				Two Trips
			If TCM substrate temp to power up temp Δ Both conditions above required to	> 20 in °C supporting documents			Fail Cour	
			increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up				>= 3000 (100ms lo Out 3750 Sample Co of (100ms lo	op) unts
			temp. Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Cou (100ms lo	op)
					Facine Territo Cirnel Valid	= TRUE Boolean	Out 875 Sample Co of (100ms lo	
					Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo	= TRUE Boolean = TRUE Boolean >= 8.59961 Volts		
					Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the	<= 31.99902 Volts >= 400 RPM <= 7500 RPM		
					allowable limits for Brake torque active Below describes the brake	>= 5 Sec = FALSE		
					torque entry criteria Engine Torque Throttle Transmission Input Speed Vehicle Speed	>= 90 N*m >= 30.0003 Pct <= 200 RPM <= 8 Kph		
					Transmission Range Transmission Range PTO	≠ Park ≠ Neutral		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Tim Requi		Mil Illum.
					Set Brake Torque Active				
					TRUE if above conditions are	>= 7 sec			
					met for:				
					Below describes the brake				
					torque exit criteria Brake torque entry criteria	= Not Met			
					Brake torque entry criteria	= Not Met Clutch			
						Hydraulic			
					Clutch hydraulic pressure	≠ Air Purge			
						Event			
					Clutch used to exit brake	CeTFTD_e			
					torque active	= _C3_RatIE			
						nbl			
					The above clutch pressure is				
					greater than this value for one	>= 600 kpa			
					loop				
					Set Brake Torque Active	20 5-2			
					FALSE if above conditions are met for:	>= 20 Sec			
					metror.				
						Test Failed			
						This Key			
					P0667 Status is				
						Fault			
						Active			
				Dis		TCM: P0658, P0668, P0669, P06AD,			
				Conditio	ons: DTC's:	P06AE, P0716, P0712, P0713, P0717,			
						P0722, P0723, P0962, P0963, P0966,			
						P0967, P0970, P0971, P215C, P2720,			
						P2721, P2729, P2730			
						FOM 00101 00102 00102 0010/			
						ECM: P0101, P0102, P0103, P0106,			
						P0107, P0108, P0171, P0172, P0174,			
						P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300,			
						P0205, P0208, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,			
						P0306, P0307, P0308, P0401, P042E			
ansmission Control Module		TCM internal temperature (substrate)		CeTFTI_e_Vo					Two
CM)	P0668	thermistor failed at a low voltge	Type of Sensor Used	-					Trips
,		5	If TCM Substrate Temperature	р					
			If TCM Substrate Temperature Sensor = Direct Proportional and	<= -249 °C					
	1		Sensor = Direct Proportional and Temp	247 0		1			
	1		If TCM Substrate Temperature			1			
			Sensor = Indirect Proportional and	>= -249 °C					
			Temp	•					
			Either condition above will satisfy						
			the fail conditions				>= 60	Fail Timer (Sec)	
	1				Ignition Voltage Lo	>= 8.59961 Volts			
					Ignition Voltage Hi	<= 31.99902 Volts			
	1				Engine Speed Lo	>= 400 RPM			
	1				Engine Speed Hi	<= 7500 RPM	1		1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Tir Requ		Mil Illum.
Jystem	Code	Description	Gineria	Value	Engine Speed is within the allowable limits for	<b>N</b> = 5	Sec		Nequ	ineu .	inum.
					P0668 Status is	Test Failed This Key					
				Disable Conditions		TCM: None ECM: None					
Transmission Control Module (TCM)	P0669	TCM internal temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	р >= 249 °С							Two Trips
			Either condition above will satisfy the fail conditions					>=	60	Fail Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 7500	Volts Volts RPM RPM Sec				
					P0669 Status is	Test Failed This Key ≠ On or Fault Active					
					For Hybrids, below conditions must also be met						
					Estimated Motor Power Loss	>= 0	kW				
					Estimated Motor Power Loss greater than limit for time		Sec				
					Lost Communication with Hybrid Processor Control						
					Module Estimated Motor Power Loss Fault	= FALSE					
				Disable Conditions		TCM: P0716, P0717, P0722 ECM: None	2, P0723				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Ena Condi				ime uired	Mil Illum
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	Refer to Table							Two Trips
			If transmission oil temp to power up temp $\Delta$								
			Both conditions above required to increment fail counter					>=	3000	Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.					Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until					>=	700	Pass Counts (100ms loop)	
								Out of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valid Accelerator Position Signal	= TR = TR					
					Valid Ignition Voltage Lo Ignition Voltage Hi	>= 8.59 <= 31.9	961 Volts 9902 Volts				
					Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 4( <= 75 >= !	00 RPM				
					Brake torque active Below describes the brake	= FAI	SE				
					torque entry criteria Engine Torque Throttle Transmission Input Speed	>= 9 >= 30.0 <= 20	003 Pct 00 RPM				
					Vehicle Speed Transmission Range Transmission Range	<= 8 ≠ Pa ≠ Net	rk itral				
					PTO Set Brake Torque Active TRUE if above conditions are met for:	= Not A					
					Below describes the brake torque exit criteria Brake torque entry criteria	= Not	Met				
					Clutch hydraulic pressure	Clu ≠ Hydr Air F	aulic urge				
					Clutch used to exit brake torque active	Ev CeTF =C3 n	TD_e RatlE				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
oystem	ooue	Description	Onterna		The above clutch pressure is greater than this value for one	>= 600 kpa	rioquirou	
					loop Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P06AC Status is	Test Failed This Key ≠ On or Fault Active		
				Disable Conditions:		TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit voltage low	Power Up Temp	<= -59 °C			>= 60 Fail Time (Sec	c) Two Trips
,					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P06AD Status is	Test Failed This Key ≠ On or Fault Active		
					For Hybrids, below conditions must also be met			
					Estimated Motor Power Loss	>= 0 kW		
					Estimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with Hybrid Processor Control	= FALSE		
					Module Estimated Motor Power Loss	= FALSE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			shold Ilue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716 ECM: None	P0717, P072	2, P0723				
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>=	164	°C Disable Conditions:	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P06AE Status is MIL not Illuminated for DTC's:	>= <= >= ≠ TCM: None ECM: None	8.59961 31.99902 400 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec	>=	60	Fail Time (Sec)	Two Trips
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed Output Speed Delta Output Speed Drop AND Transmission Range is	<=	105 8192 650 Driven range (R,D)	RPM RPM RPM					>= >= >=	0 0 1.5	Enable Time (Sec) Enable Time (Sec) Output Speed Drop Recovery Fail Time (Sec)	One Trip
							Range_Disable OR Neutral_Range_Enable And Neutral_Speed_Enable are TRUE concurrently Transmission_Range_Enable Transmission_Input_Speed_E nable No Change in Transfer Case Range (High <-> Low) for	= = = = >=	FALSE TRUE TRUE TRUE TRUE 5	See Below See Below See Below See Below See Below Seconds				
							P0723 Status is not	=	Test Failed This Key On or Fault Active					

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		nreshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
						Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified	>	1.5	Seconds		-
						for Transmission Output Speed	>	130	RPM		
						The loop to loop change of the Transmission Output Speed is	<	20	RPM		
						The loop to loop change of the Transmission Output Speed is	>	-10	RPM		
						Transmission_Range_Enable is TRUE when one of the next six conditions is TRUE Transmission Range is	=	Neutral Reverse/N	ENUM		_
						Transmission Range is	=	eutral Transitiona	ENUM		
						Transmission Range is	=	l Neutral/Dri ve Transitiona I	ENUM		
						Time since a driven range (R,D) has been selected	>=	Table Based Time Please Refer to Table 21 in supporting documents	Sec		
						Transmission Output Speed Sensor Raw Speed Output Speed when a fault was detected	>= >=	500 500	RPM RPM		
					Disable Conditions:	MIL not Illuminated for DTC's:		, P0102, P0103			
Variable Bleed Solenoid (VBS	6) P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear								One Trip
			Gear slip	>= 400	RPM					Please See Table 5 For Neutral Timer Neutral Time (Sec)	
			Intrusive test: commanded 5th gear							Cal	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(	Enable Conditions		Tir Requ		Mil Illum.
			If attained Gear ≠5th for time	Supporting							
			if the above conditions have been met	Documents							
			Increment 4th Gear Fail Counter						>= 3	4th Gear Fail Count OR	
			and C456 Fail Counters						>= 14	C456 Fail Counts	
			Fail Case 2 Case: Steady State 5th Gear						Please See	Neutral Timer	
			Gear slip	>= 400 RPM					>= Table 5 For Neutral Time Cal		
			Intrusive test: commanded 6th gear	Please Refer							
			If attained Gear ≠ 6th for time	>= to Table 3 in Supporting Documents							
			if the above conditions have been met							5th Gear Fail	
			Increment 5th Gear Fail Counter						>= 3	Count OR	
			and C456 Fail Counters Fail Case 3 Case: Steady State 6th Gear						>= 14	C456 Fail Counts	
			Gear slip	>= 400 RPM					>= Please See Table 5 For Neutral Time Cal		
			Intrusive test: commanded 5th gear	Please refer					Cai		
			If attained Gear ≠ 5th for time	to Table 3 in							
			if the above conditions have been met	Documents							
			Increment 6th Gear Fail Counter and C456 Fail Counter						>= 3	6th Gear Fail Count OR	
			and C456 Fail Counter		DDNDL Clote defended		FALOF	Dealara	>= 14	C456 Fail Counts	-
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag	= = =	FALSE FALSE FALSE TRUE	Boolean Boolean Boolean Boolean			
					Hydraulic System Pressurized	=	TRUE	Boolean			
					Minimum output speed for RVT A OR B	>=	67	RPM			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions				ne uired	Mil Illum.
		· · ·			(A) Output speed enable	>=	67	RPM				
					(B) Accelerator Pedal enable	>=	0.5005	Pct				
					Common Enable Criteria							
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.99902	Volts 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	>=	-6.6563	°C				
					Input Speed Sensor fault	=	FALSE	Boolean				
					OutputSpeed Sensor fault Default Gear Option is not	=	FALSE	Boolean				
					present	=	TRUE					
					F							
				Disable	MIL not Illuminated for	TCM: P071	6 P0717 P072	P0723				
				Conditions:	DTC's:		0,10717,1072	-,10720,				
						FCM· P010	1, P0102, P010	3 P0106				
							08, P0171, P01					
							01, P0202, P02					
							06, P0207, P02 02, P0303, P03					
							07, P0308, P04					
Veriable Direct Calensid (VDC)	P0797	Pressure Control (PC) Solenoid C	Fail Case 1 Case: Steady State 1st									One Trip
Variable Bleed Solenoid (VBS)	P0/9/	Stuck On [C456] (Steady State)	· · · · · · · · · · · · · · · · · · ·									
			Attained Gear slip	>= 400 RPM Table Based								
				Time Please								
			If the Above is True for Time	>= Refer to Table Enable Time 4 in (Sec)								
				supporting								
				documents								
			Intrusive test: (CBR1 clutch exhausted)									
			Gear Ratio									
			Gear Ratio	>= 1.09436								
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec)	
									>=	2	Fail Count in 1st Gear	
											or Total Fail	
									>=	3	Counts	
			Fail Case 2 Case Steady State 2nd			l			I			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum
0,500		2000. ipilon	C. 10114	Table Based			. coquirou	
			1	uslus Disess				1
			Max Delta Output Speed	>= Refer to Table 22 in rpm/sec				1
			Hysteresis					
				supporting documents				
				Table Based				
				uslus Disess				
			Min Delta Output Speed	>= Refer to Table 23 in rpm/sec				
			Hysteresis					
				supporting documents				
				Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table 17 in Sec				
				supporting documents				
			Intrusive test:	uocuments				
			(CB26 clutch exhausted)					
			Gear Ratio					
			Gear Ratio	>= 1.09436				
			If the above parameters are true					
							>= 1.1 Fail Timer (Se	
							>= 3 Fail Count i	
							2nd Gear	
							Or	
							>= 3 Total fail cour	nts
			Fail Case 3 Case Steady State 3rd	Table Based				
				ualua Disess				
			Max Delta Output Speed	>= Refer to Table 22 in rpm/sec				
			Hysteresis	>= 22 in rpm/sec				
				supporting				
				documents Table Based				
				value Bleace				
			Min Delta Output Speed	>= Refer to Table 23 in rpm/sec				
			Hysteresis	>= 23 in rpm/sec				
				supporting				
				documents Table Based				
				Time Please				
			lf the Above is True for The	Refer to Table				
			If the Above is True for Time	>= 17 in Sec				
				supporting				
			Intrusive test:	documents				
			(C35R clutch exhausted)					
			Gear Ratio	<= 1.20959				
			Gear Ratio	>= 1.09436				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	(	Enable Conditions			ime quired	Mil Illum.
						Secondary Malfunction PRNDL State defaulted inhibit RVT IMS fault pending indication output speed TPS validity flag HSD Enabled Hydraulic_System_Pressurize d A OR B (A) Output speed enable (B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Lo Engine Speed I allowable limits for if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable fransmission Fluid Temperature Input Speed Sensor fault Default Gear Option is not present			Boolean Boolean Boolean Boolean Boolean Boolean Nm Nm Volts Volts RPM RPM Sec Pct Nm Nm Sec Pct Nm Nm Sec Pct Nm Sec Pct Soolean Boolean Boolean	>= >= >=		Illum.
					Disable Conditions:	present MIL not Illuminated for DTC's:			e, P0723,			
							ECM: P0101, P P0107, P0108, P0175, P0201, P0205, P0206, P0301, P0302, P0306, P0307,	P0171, P017 P0202, P020 P0207, P020 P0303, P030	72, P0174, 03, P0204, 08, P0300, 04, P0305,			
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	= TRUE	Boolean							One Tri

System	Code	Description	Criteria		Va	alue	Secondary Malfunction	Enable Conditions	Requi	e red	M Illu
			Primary Oncoming Clutch Pressure Command Status	=	Maximum						
					Clutch						
			Primary Offgoing Clutch Pressure	=	exhaust						
			Command Status		command						
			Range Shift Status	¥	Initial Clutch						
			Attained Gear Slip	<=	Control 40	RPM					
			If the above conditions are true								
			increment appropriate Fail 1								1
			Timers Below:								1
			fail timer 1	>=	0.2998	Fail Time (Sec)					1
			(4-1 shifting with throttle)	<u> </u>	0.2770						
			fail timer 1 (4-1 shifting without throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1								
			(4-2 shifting with throttle)	>=	0.2998	Fail Time (Sec)					
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(4-2 shifting without throttle)	_	0.5						
			fail timer 1	>=	0.2998	Fail Time (Sec)					1
			(4-3 shifting with throttle) fail timer 1								1
			(4-3 shifting without throttle)	>=	0.5	Fail Time (Sec)					1
			fail timer 1		0.2000	Fail Time (Cae)					
			(5-3 shifting with throttle)	>=	0.2998	Fail Time (Sec)					
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(5-3 shifting without throttle)								
			fail timer 1 (6-2 shifting with throttle)	>=	0.2998	Fail Time (Sec)					
			fail timer 1		0.5						
			(6-2 shifting without throttle)	>=	0.5	Fail Time (Sec)					1
									Total Fail		1
									Time = (Fail 1		1
									+ Fail 2) See		
									Enable Timers		1
			If Attained Gear Slip is Less than						>= for Fail Timer	sec	
			Above Cal Increment Fail Timers						1, and Reference		
									Supporting		1
									Table 15 for		1
									Fail Timer 2		1
			If fail timer is greater than								1
			threshold increment corresponding								1
			gear fail counter and total fail								1
			counter							-	1
			4th gear fail counter						>= 3	Fail Counter	1
			-							From 4th Gear OR	1
										Fail Counter	1
			5th gear fail counter						>= 3	From 5th Gear	1
										OR	1
			6th gear fail counter						>= 3	Fail Counter	
	1 1		our goar fair counter	1					l i	From 6th Gear	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold Ilue	Secondary Malfunction		Enable onditions			Tir Requ		Mil Illum.
ž.			Total fail counter							>=	5	Total Fail Counter	
						TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	>= = ≠ = >= = = =	-6.6563 FALSE FALSE 1st TRUE 100 150 FALSE FALSE FALSE TRUE	°C Boolean Boolean Boolean RPM RPM Boolean Boolean Boolean Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:		0717, P0722,	, P0723,				
							ECM: P0101, P0 P0107, P0108, F P0175, P0201, F P0205, P0206, F P0301, P0302, F P0306, P0307, F	20171, P017 20202, P020 20207, P020 20303, P030	2, P0174, 3, P0204, 8, P0300, 4, P0305,				
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean					>=	60	Fail Time (Sec)	Specia No MIL
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0826 Status is	<= >= <= >=	8.59961 31.99902 400 7500 5 Fest Failed This Key On or	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:		Fault Active					
		Drossuro Control (DC) Solonoid C					ECM: None						One Tr
ariable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One T
										out of	0.375	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
					P0970 Status is not	=	Test Failed This Key On or Fault Active					
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				
				Disable Conditions		TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean					>= out of	0.3 0.375	Fail Time (Sec) Sample Time	One Trip
					P0971 Status is not	=	Test Failed This Key On or Fault Active		OI		(Sec)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= >= <=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				
				Disable Conditions		TCM: None ECM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	Transition 1 = (bit state Range 1110)								One Trip
			Previous range	<pre></pre>								
			Previous range	KINDL_DIIVe4								
			Range Shift State Absolute Attained Gear Slip Attained Gear Attained Gear Throttle Position Available	<= Sixth >= First								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Valu		Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum.
			Throttle Position Output Speed Engine Torque Engine Torque If the above conditions are met then Increment Fail Timer If Fail Timer has Expired then	>= >=	200 50	pct rpm Nm Nm					>= >=	1	Fail Seconds Fail Counts	
			Increment Fail Counter Fail Case 2 Output Speed	<=	70	rpm								
			The following PRNDL sequence events occur in this exact order:											
			PRNDL state		ive 6 (bit ate 0110)	Range								
			PRNDL state = Drive 6 for	>= Tra	1 ansition 8	Sec								
			PRNDL state	Dri	0111)	Range								
			PRNDL state	= sta	ate 0110) ansition 1	Range								
			PRNDL state	,	1110)	Range								
			Above sequencing occurs in Neutral Idle Mode If all conditions above are met		1 nactive	Sec								
			Increment delay Timer If the below two conditions are met								>=	3	Fail Seconds	
			Increment Fail Timer delay timer Input Speed			Sec Sec						5		
			If Fail Timer has Expired then Increment Fail Counter								>=	2	Fail Counts	
			Fail Case 3 Current range	= (t	nsition 13 bit state 0010)	Range	Previous range	¥	CeTRGR_ e_PRNDL _Drive1 CeTRGR_					
			Engine Torque	>=	-8192	Nm	Previous range	≠	e_PRNDL _Drive2					
			Engine Torque	<= 8	191.75	Nm	IMS is 7 position configuration	=	1	Boolean				
			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	= (t	ansition 8 bit state 0111)	Range	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Value		Secondary Malfunction	Enable Conditions			Tim Requi		Mil Illum.
			Inhibit bit (see definition)	= FALSE		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 Steady State Engine Torque If the above conditions are met then Increment Fail Timer	>= 100 N <= 8191.75 N	lm Im				>=	0.225	Seconds	
			If the above Condtions have been met, Increment Fail Counter						>=	15	Fail Counts	
			Fail Case 5 Throttle Position Available The following PRNDL sequence events occur in this exact order:	= TRUE B	oolean							
			PRNDL State	= Reverse (bit state 1100) R Transition 11	Range							
			PRNDL State PRNDL State	0100)	Range Range							
			PRNDL State	Transition 11 = (bit state R 0100)	Range							
			Above sequencing occurs in Then delay timer increments Delay timer		ec							
			Range Shift State Absolute Attained Gear Slip Attained Gear	Complete <= 50 rp <= Sixth	pm							
			Attained Gear Throttle Position Output Speed If the above conditions are met	>= 8.0002 p	ct om				>=	20	Seconds	
			Increment Fail Timer 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	Transition ≠ 11 (bit state 0100)					
			A Open Circuit (See Definition)	= FALSE B	oolean	or Last positive state	Neutral (bit ≠ state					
						or Previous transition state	0101) Transition ≠ 8 (bit state					
						Fail case 5 delay timer	= 0111)	sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			shold Ilue	Secondary Malfunction		Enable Conditions			Tin Requ		Mil Illum
			If the above Condtions are met then, Increment Fail timer								>=	6.25	Seconds	
			Fail Case 7	F	PRNDL circu	it p								-
			Current PRNDL State		PRNDL circu ABCP = 110	Range								
			and											
			Previous PRNDL state	= -	PRNDL circu ABCP =1111	<sup>It</sup> Range								
			Input Speed		150	RPM								
			Reverse Trans Ratio Reverse Trans Ratio		2.84583 3.27417	ratio ratio								
			If the above Condtions are met								>=	6.25	Seconds	
			then, Increment Fail timer											-
			P182E will report test fail when											-
			any of the above 7 fail cases are met											
							Ignition Voltage La		0 50041	Volto				
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.59961 31.99902	Volts Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi Engine Speed is within the	<=	7500	RPM				
							allowable limits for	>=	5	Sec				
							Engine Torque Signal Valid	=	TRUE	Boolean				
						Disable	MIL not Illuminated for	TCM: D0716	D0717 D0722	D0722				
						Conditions:			F, P077C, P07					
								FCM: P0101	, P0102, P010	3 P0106				
									, P0102, P010. 8, P0171, P017					
									1, P0202, P020					
									5, P0207, P020 2, P0303, P030					
								P0306, P030	7, P0308, P040	1, P042E				
nternal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During	PRNDL State is	≠	Park or	Enumeration								One Ti
	1.1710	Start		Ĺ	Neutral	Enditionation								
			The following events must occur Sequentially											
			Initial Engine speed	<=	50	RPM					>=	0.25	Enable Time (Sec)	
	1		Then								1		(386)	
			Engine Speed Between Following Cals											
	1		Engine Speed Lo Hist		50	RPM							Enable Time	
	1		Engine Speed Hi Hist	<=	480	RPM					>=	0.06875	(Sec)	
			Then Final Engine Speed	\	525	RPM								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ		Mil Illum.
			Final Transmission Input Speed	>=	100	RPM					>=	1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle?	=	FALSE	Boolean				
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	6 31.99902	V V				
							Ignition Voltage Hyst High	<=	5 1.99902	V				
							(enables above this value) Ignition Voltage Hyst Low							
							(disabled below this value)	<=	2 90	V				
							Transmission Output Speed	<=	70 Test Failed	rpm				
							D1015 Chabra la		This Key					
							P1915 Status is	¥	On or Fault					
									Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722,	P0723					
						Conditions.	DICS.	ECM: None						
Transmission Control Module	P2535	Ignition Switch Run/Start Position	TCM Run crank active (based on	_	TRUE	Boolean					-			One T
(TCM)	1 2000	Circuit High	voltage thresholds below) Ignition Voltage High Hyst (run	-	INUL	Doolean								
			crank goes true when above this		5	Volts					>=	280	Fail Counts (25ms loop)	
			value) Ignition Voltage Low Hyst (run								Out		Sample Counts	
			crank goes false when below this value)		2	Volts					of	280	(25ms loop)	
							ECM run/crank active status available	=	TRUE	Boolean				
							ECM run/crank active status	=	FALSE	Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
						Conditions.	DTC 3.	ECM: None						
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D	Fail Case 1 Case: Steady State 2nd Gear											One Tr
	PZ/14	Stuck Off [CB26]	Case. Steady State 2110 Gear									Please See		
			Gear slip	>=	400	RPM						Table 5 For	Neutral Timer	
											P	leutral Time Cal	e (Sec)	
			Intrusive test: commanded 3rd gear											
			commanded ord goar		Table Based									
			If attained Gear = 3rd for Time	>= S	ee Table 2 i Supporting	Enable Time								
					Supporting Documents									
			If Above Conditions have been met											

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		able litions		Tim Requi	red	Mil Illum.
			Increment 2nd gear fail count					>=	3	2nd Gear Fail Count or	
			and CB26 Fail Count					>=	14	CB26 Fail Count	
			Fail Case 2 Case: Steady State 6th Gear Gear slip Intrusive test: commanded 5th gear					1	Please See Table 5 For Ieutral Time Cal	Neutral Timer (Sec)	
			If attained Gear = 5th For Time If Above Conditions have been met, Increment 5th gear fail counter	Table Based Time Please >= see Table 2 in Supporting Documents				>=	3	5th Gear Fail Count	
			and CB26 Fail Count					>=	14	or CB26 Fail Count	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag	= F/ = F/	ALSE Boolean ALSE Boolean ALSE Boolean RUE Boolean				
					Hydraulic System Pressurized	= T	RUE Boolean				
					Minimum output speed for RVT A OR B	>=	0 RPM				
					(A) Output speed enable	>=	67 RPM				
					(B) Accelerator Pedal enable	>= 0.	5005 Pct				
					Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault	<= 31. >= 7 >= 7 = 7 = 7 >= 6 = 7	99961 Volts 99902 Volts 100 RPM 500 RPM 5 Sec RUE Boolean 6563 °C LLSE Boolean				
					Output Speed Sensor fault Default Gear Option is not present		ALSE Boolean RUE				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Disable		TCM: P0716, P0717, P0722, P0723,		
					Conditions:	DTC's:	P182E		
							ECM: P0101, P0102, P0103, P0106,		
							P0107, P0108, P0171, P0172, P0174,		
							P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300,		
							P0301, P0302, P0303, P0304, P0305,		
							P0306, P0307, P0308, P0401, P042E		
			Primary Offgoing Clutch is						One Trip
ariable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid D	exhausted (See Table 13 in	= TRUE	Boolean				
		Stuck On [CB26] (Dynamic)	Supporting Documents for Exhaust Delay Timers)						
			Primary Oncoming Clutch	Maximur	n				
			Pressure Command Status	pressurize					
			Primary Offgoing Clutch Pressure	= exhaust					
			Command Status	comman	d				
			Range Shift Status	≠ Initial Clut Control					
			Attained Gear Slip		RPM				
			If above coditons are true,						
			increment appropriate Fail 1						
			Timers Below:						
			fail timer 1 (2-1 shifting with throttle)	>= 0.2998	Fail Time (Sec)				
			fail timer 1	>= 0.5	Fail Time (Sec)				
			(2-1 shifting without throttle) fail timer 1						
			(2-3 shifting with throttle)	>= 0.2998	Fail Time (Sec)				
			fail timer 1	>= 0.5	Fail Time (Sec)				
			(2-3 shifting without throttle) fail timer 1						
			(2-4 shifting with throttle)	>= 0.2998	Fail Time (Sec)				
			fail timer 1	>= 0.5	Fail Time (Sec)				
			(2-4 shifting without throttle) fail timer 1						
			(6-4 shifting with throttle)	>= 0.2998	Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>= 0.5	Fail Time (Sec)				
			(6-4 shining without throtte) fail timer 1	. 0.2000					
			(6-5 shifting with throttle)	>= 0.2998	Fail Time (Sec)				
			fail timer 1 (6-5 shifting without throttle)	>= 0.5	Fail Time (Sec)				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mi Illur
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio	>= 2.24585				
			If the above parameters are true				>= 1.1 Fail Time	r (Soc)
							Fail Co	unt in
							ISI G Or Total	
			Fail Case 2 Case: Steady State 3rd Gear				>= 5 Cour	
				Table Based value Please				
			Max Delta Output Speed Hysteresis	Refer to Table				
			,	supporting documents				
				Table Based				
			Min Delta Output Speed	>= Refer to Table 23 in rpm/sec				
			Hysteresis	23 in supporting				
				documents Table Based				
				Time Please				
			If the Above is True for Time	>= Refer to Table Sec				
				supporting documents				
			Intrusive test:					
			(C35R clutch exhausted) Gear Ratio	<= 2.48218				
			Gear Ratio					
			If the above parameters are true					
							>= 1.1 Fail Time	
							>= 3 Fail Col 3rd G	ear
							>= 5 or	Fail
			Fail Case 3 Case: Steady State 4rd Gear				>= 5 Cour	ts
				Table Based				
			Max Delta Output Speed	Refer to Table				
			Hysteresis	>= 22 in supporting				
				documents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystem			Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (C1234 clutch exhausted)	Table Based value Please Refer to Table 23 in rpm/sec 23 in supporting documents Table Based Time Please Refer to Table Sec 17 in supporting documents				
			Gear Ratio Gear Ratio If the above parameters are true					
							>= 1.1 Fail Timer (	(Sec)
							>= 3 Fail Coun 4th Gea	
							>= 5 Counts	ail
			Fail Case 4       Case: Steady State 5th Gear         Max Delta Output Speed       Hysteresis         Min Delta Output Speed       Hysteresis         If the Above is True for Time       Intervine technical contents	Table Based value Please 22 in rpm/sec 22 in supporting documents Table Based value Please Refer to Table 23 in supporting documents Table Based Table Based Table Based 17 in supporting documents				
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true					
							>= 1.1 Fail Timer ( >= 3 5th Gea or	nt in

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold Ilue	Secondary Malfunction		Enable Conditions				me uired	Mil Illum.
· · · ·										>=	5	Total Fail	
										>=	5	Counts	
						PRNDL State defaulted	=	FALSE	Boolean				
						inhibit RVT	=	FALSE	Boolean				
						IMS fault pending indication	=	FALSE	Boolean				
						output speed	>=	0	RPM				
						TPS validity flag	=	TRUE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
						Hydraulic_System_Pressurize	=	TRUE	Boolean				
						d							
						A OR B							
						(A) Output speed enable	>=	67	Nm				
						(B) Accelerator Pedal enable	>=	0.5005	Nm				
						Ignition Voltage Lo	>=	8.59961	Volts				
	1					Ignition Voltage Hi	<=	31.99902	Volts				
	1					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	>=	5.0003	Pct				
						if Attained Gear=1st FW							
						Engine Torque Enable	>=	5	Nm				
						if Attained Gear=1st FW							
						Engine Torque Enable	<=	8191.88	Nm				
						Transmission Fluid							
						Temperature	>=	-6.6563	°C				
						Input Speed Sensor fault	=	FALSE	Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not	=	FALSE	DUUIEdII				
							=	TRUE					
						present							
					Disable	MIL not Illuminated for	TCM- D0716	D0717 D070	D0773				
					Conditions:	DTC's:		, FU/1/, FU/2	2, FU723,				
					conditions.	D10 3.	FIOZE						
							ECM: P0101	, P0102, P0103	3, P0106,				
							P0107, P010	8, P0171, P01	72, P0174,				
							P0175, P020	1, P0202, P02	03, P0204,				
							P0205, P020	6, P0207, P02	08, P0300,				
							P0301, P030	2, P0303, P03	04, P0305,				
								07, P0308, P04					
		Pressure Control (PC) Solenoid D											One Tr
Variable Bleed Solenoid (VBS	) P2720	Control Circuit Low	The HWIO reports a low voltage	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	
, ,	1	(CB26 VBS)	(ground short) error flag										
										out	0.375	Sample Time	
	1	1								of	5.070	(Sec)	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions				ime uired	Mil Illum.
						P2770 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	<=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>= out	0.3	Fail Time (Sec) Sample Time	One Trip
						P2721 Status is not	=	Test Failed This Key On or Fault Active		of	0.375	(Sec)	-
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	<= >= <=	8.59961 31.99902 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag		Boolean					>= out	4.4	Fail Time (Sec) Sample Time	Two Trips
						P2763 Status is not	=	Test Failed This Key On or Fault Active		of	5	(Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	<= >=	8.59961 31.99902 400 7500	Volt Volt RPM RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresho Value		Secondary Malfunction		Enable Conditions			Tiı Requ	me uired	Mil Illum.
						Engine Speed is within the allowable limits for High Side Driver Enabled		5 TRUE	Sec Boolean		•	·	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, ECM: None	P0659					
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE B	oolean					>= out of	4.4 5	Fail Time (Sec) Sample Time (Sec)	One Trip
						P2764 Status is not	Ξ	Test Failed This Key On or Fault Active		0		(000)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	<= >= <=	8.59961 31.99902 400 7500 5 TRUE	Volt Volt RPM RPM Sec Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, ECM: None	P0659					

Table 1										
	Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
	Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00 RPM
		•	· · · ·	<b>-</b>		•	•		•••••	
<b>T</b>										
Table 2	Axis	-6.67	-6.66	40.00 °C						
	Curve	409.59	2.00	2.00 Sec						
	Cuive	409.39	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										
<u></u>	Axis	-6.67	-6.66	40.00 °C						
	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						
	Guive	403.00	0.00	0.00						
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	<b>)</b>			

### 15 OBDG09 TCM Diagnostic 2D Tables (MYD)

Table 8						
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C
	Curve	409.00	3.60	1.60	1.50	1.40 Sec
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 °C
	Curve	3.03	1.86	1.00	0.75	0.58 Sec
	Curve	3.03	1.00	1.00	0.75	0.56 Sec
<u>Table 11</u>	Axis Curve	-40.00 1.72	-20.00 1.11	0.00	<b>30.00</b> 0.36	110.00 ºC 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 °C
	Curve	2.97	0.82	0.47	0.20	0.13 Sec
		2.01	0.02	0.77	0.20	0.10 000

Table 15										
	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00	40.00 °C
	Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 Sec
<u>Table 16</u>										
	Axis	-6.67	-6.66	40.00 °C						
	Curve	409.59	2.50	2.50 Sec						
<u>Table 17</u>	_									
	Axis	-6.67	-6.66	40.00 °C						
	Curve	0.40	0.35	0.30 Sec						
Table 18	🗖	10.10	10.00					100.00	1 10 00	
	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
Table 19										
Table 19	Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10 °C
	Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C
	Curve	250.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	250.00 °C
Table 20										
14510 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
		200.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	200.00
Table 21										
	Axis	-40.00	-20.00	40.00 °C						
	Curve	5.00	3.00	1.00 Sec						

### <u> Table 22</u>

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

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

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