Component/	Fault Code	Monitor Strategy	Malfunction		Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System Transmission Control Module (TCM)	P0601	Description Transmission Electro- Hydraulic Control Module Read Only Memory	Criteria Incorrect program/calibrati ons checksum	=	TRUE Boolean	Walluffelion	Conditions	>= 5 Fail Counts	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:			
Transmission Control Module (TCM)	P0603	Transmission Electro- Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	=	TRUE Boolean			Runs Continousl y	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:			
Transmission Control Module (TCM)	P0604	Transmission Electro- Hydraulic Control Module Random Access Memory	RAM Read/Write Failure (Single Word)	=	TRUE Boolean			>= 5 Fail Counts	One Trip
								= 16 Sample Counts	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0604 ECM: None		
Transmission Control Module (TCM)	P002F	Transmission Electro- Hydraulic Control Module Long Term Memory Performance	TCM Non- Volatile Memory bit Incorrect flag at Powerdown	=	TRUE Boolean			Runs Continousl y	One Trip

COMMON SECTION Page 1 of 276

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions		Time Require	ed	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P062F ECM: None				
High Side Driver 1	P0658	Actuator Supply Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	=	TRUE Boolean			>=	3	Fail Counts	One Trip
								out of	5	Sample Counts	
						P0658 Status is not	= Test Failed This Key On or Fault Active				
						High Side Driver 1 On	= True Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:					
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position Circuit Low	TCM Run crank active (based on voltage thresholds below)	=	FALSE Boolean						One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Ignition Voltage High Hyst (run crank goes true when above this value)	5 Volts			>= 280 Fail Counts (25ms loop)	
			Ignition Voltage Low Hyst (run crank goes false when below this value)	2 Volts			Out 280 Counts (25ms loop)	
					ECM run/crank active status available			
					ECM run/crank active status	TELLE BOOLEAN		
				Disable Conditions:				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			reshold Value	Secondary Malfunction		Enable Condition				me uired	Mil Illum
Transmission- Control Module- (TCM)	P0604	Transmission Electro- Hydraulic Control- Module Random- Access Memory	RAM Read/Write Failure (Single Word)	=	TRUE	Beelean					<u>عد</u>	5	Fail Counts	One Trip
											=	16	Sample- Counts	
							Ignition Voltage Lo Ignition Voltage Hi	Y 1	9 18	Volts Volts				
						Disable Conditions:	MIL not Illuminated for DTC's:		P0604 None					
Transmission Control Module (TCM)	P0634	Transmission Electro- Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature		144	°C					>=	5	Fail Time (Sec)	On Tri
			Fail Substrate Case Temperature		50	°C					>=	2	Fail Time (Sec)	
			Ignition Voltage		18	Volts								
			Note: either fail case can set the DTC											
							Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	<= 3 >= <= >=	9 31.99023 0 240 0.25	Volts Volts °C °C				
							P0634 Status is		Test Failed This Key On or Fault Active					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tiı Requ	me uired	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:					
High Side Driver 1	P0658	Actuator Supply- Voltage Circuit Low	The HWIO reports a low voltage (open or ground short) error flag	= TRUE Boolean			out of	3	Fail Counts Sample Counts	One Trip
					P0658 Status is not High Side Driver 1 On	On or Fault Active	31		Sourie	
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None				
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table 19 in > supporti °C ng docume nts						Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystem	code	Безсприон	If TCM substrate temp to power up temp Δ	Refer to Table		Conditions	roquilou	
			Both conditions above required to increment fail counter				Fail Counts >= 3000 (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Out Sample Counts (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	<= 31.99023 Volts >= 400 RPM <= 7500 RPM		
					within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Cinteria	Value	Brake torque active	= FALSE	Required	
		-			Below describes the	- TALOL		
					brake torque entry			
					criteria			
					Engine Torque			
						>= 30.00031 Pct		
					Transmission Input Speed	~- 200 KFWI		
					Vehicle Speed	<= 8 Kph		
					Transmission Range	≠ Park		
					Transmission Range	≠ Neutral		
					РТО	= Not Active		
					Set Brake Torque			
					Active TRUE if above conditions are met	>= 7 sec		
					for:			
					Below describes the			
					brake torque exit			
					criteria			
					Brake torque entry criteria	= Not Met		
						Clutch		
					Clutch hydraulic	→ Hydraulic		
					pressure	Air Purge		
						Event		
					Clutch used to exit	CeTFTD_ = e_C3_Rat		
					brake torque active	lEnbl		
					The above clutch			
					pressure is greater	>= 600 kpa		
					than this value for			
					one loop			
					Set Brake Torque			
					Active FALSE if above conditions are	>= 20 Sec		
					met for:			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
9,555					P0667 Status is	Test Failed This Key ≠ On or Fault Active	·	
				Disable Conditions:	for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Transmission Control Module (TCM)		TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	CeTFTI = _e_Volt ageInve rseProp				Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary	Enable			Time	Mil
System	Code	Description	Criteria	Val	ue	Malfunction	Condition	ns	Re	equired	Illum
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= 254 °							
			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	<= 31.99023 >= 400 <= 7500 >= 5	Volts Volts RPM RPM			
						P0668 Status is	Test Failed This Key On or Fault Active				
					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								Two Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= -254 °	С						

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	wanunction	Conditions	Required	ıııum.
			If TCM Substrate					l .
			Temperature	. 054 00				ı
				<= -254 °C				
			Proportional and Temp					ı
			тепір		_			-
			Either condition				Fail Timer	l
			above will satisfy				>= 60 Fall filler (Sec)	
			the fail conditions				(360)	l
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi			
					Engine Speed is			
					within the allowable	>= 5 Sec		
					limits for			
						Test		
						Failed		
					P0669 Status is	_≠ This Key		
					1 0000 014143 13	On or		
						Fault		
						Active		
					For Hybrids, below			
					conditions must also			
					be met			
					Estimated Motor	>= 0 kW		
					Power Loss			
					Estimated Motor			
					Power Loss greater			
					than limit for time			
					Lost Communication			
					with Hybrid Processor			
					Control Module			
					Estimated Motor	- 541.05		
					Power Loss Fault	= FALSE		
					Estimated Motor	= FALSE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
2,000				Disable Conditions:		TCM: P0716, P0717, P0722, P0723	·	
						ECM: None		
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power-up temp to substrate temp Δ	> supporti °C				Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table 18 in > supporti °C ng docume nts				
			Both conditions above required to increment fail counter				Fail Counts >= 3000 (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
			332.1.3				Out 875 Sample Counts (100ms loop)	

MH8/T76 SECTION Page 11 of 276

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Griteria	value	mananonon	Oonalions	Required	
					Engine Torque Signal Valid	= TRUE Boolean		
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable	<= 31.99023 Volts >= 400 RPM <= 7500 RPM		
					limits for	54L05		
					Brake torque active Below describes the brake torque entry			
						>= 90 N*m >= 30.00031 Pct		
					Transmission Input Speed	<= 200 RPM		
					Vehicle Speed			
					Transmission Range	≠ Park		
					Transmission Range			
					PTO	= Not Active		
					Set Brake Torque Active TRUE if above conditions are met for:			
					Below describes the brake torque exit criteria Brake torque entry			
					criteria	= Not Met		
					Clutch hydraulic pressure	Clutch ≠ Hydraulic ≠ Air Purge Event		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P06AC Status is	Test Failed This Key ≠ On or Fault Active		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0104, 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	<= +254 °C			>= 60 Fail Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P06AD Status is	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test Failed This Koy		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·				For Hybrids, below conditions must also be met Estimated Motor Power Loss Estimated Motor Power Loss greater than limit for time	>= 0 kW >= 0 Sec		
						Lost Communication with Hybrid Processor Control Module	= FALSE		
						Estimated Motor Power Loss Fault	= FALSE		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723		
							ECM: None		
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= -254	°C			>= 60 Fail Time (Sec)	Two Trips
		5 5				Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
						P06AE Status is	Test Failed		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Cystoni	0000	Doscription	Ontona	Disable Conditions:				
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	> supporti °C				Two Trips
			If transmission oil temp to power up temp Δ	> supporti °C				
			Both conditions above required to increment fail counter				Fail Counts >= 3000 (100ms loop)	-
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out 3750 Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	-

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	illumumenen.	Conditions	Out 875 Counts (100ms loop)	
					Engine Torque Signal Valid			
					Accelerator Position Signal Valid	= TRUE Boolean		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	<= 31.99023 Volts >= 400 RPM <= 7500 RPM		
					within the allowable limits for Brake torque active	>= 5 Sec = FALSE		
					Below describes the brake torque entry criteria Engine Torque			
					Throttle Transmission Input Speed	>= 30.00031 Pct <= 200 RPM		
					Vehicle Speed Transmission Range			
					Transmission Range			
					PTO Set Brake Torque	Active		
					Active TRUE if above conditions are met for:	>= 7 sec		
					Below describes the brake torque exit criteria Brake torque entry			
					criteria	= Not Met		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Clutch hydraulic pressure	Clutch		
					Clutch used to exit brake torque active			
					The above clutch pressure is greater than this value for one loop	>= 600 kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>= 20 Sec		
					P0711 Status is	Test Failed This Key ≠ On or Fault Active		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions:	for DTC's:	TCM: P0658, P0668, P0669, P06AD, P06AE, P0716, P0712, P0713, P0717, P0722, P0723, P0962, P0963, P0966, P0967, P0970, P0971, P215C, P2720, P2721, P2729, P2730 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		-
Transmission Fluid Temperature Sensor (TFT)	P0712	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	CeTFTI = _e_Volt ageInve rseProp <= 254 °C				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystem	Code	Description	If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp			Conditions	rtoquilou	
			Either condition above will satisfy the fail conditions				>= 60 Fail Time (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0712 Status is	Test Failed This Key ≠ On or Fault Active		
					For Hybrids, below conditions must also be met Estimated Motor Power Loss	>- 0 NM		
					Estimated Motor Power Loss greater than limit for time			
					Lost Communication with Hybrid Processor Control Module	= FALSE		
					Estimated Motor Power Loss Fault	= FALSE		

	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Onteria	Disable Conditions:	MIL not Illuminated	TCM: P0716, P0717, P0722, P0723 ECM: None	rtoquilou	
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp Either condition above will satisfy the fail conditions	- ageInve rseProp >= -254 °C <= -254 °C	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within the allowable limits for	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec Test Failed This Koy	>= 60 Fail Time (Sec)	Two

Component/	Fault	Monitor Strategy	Malfunction			eshold /alue	Secondary Malfunction		Enable Condition			Tir Requ		Mil Illum.
System	Code	Description	Criteria		v	Disable		TCM				Requ	uireu	mum.
						Conditions:	for DTC's:							
								ECN	1: None					
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>=	1350	RPM					>=	0.8	Fail Time (Sec)	One Trip
							Engine Torque is Engine Torque is Engine Speed Engine Speed	<= >= <=	0 8191.875 400 7500	N*m N*m RPM RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							Vehicle Speed is Throttle Position is		10 0	Kph Pct				
							Transmission Input Speed is	/-	0	RPM				
							The previous requirement has been satisfied for		0	Sec				
							The change (loop to loop) in transmission input speed is	<	8191.75	RPM/Loo p				
							The previous requirement has been satisfied for	>=	0	Sec				
							Throttle Position Signal Valid Engine Torque Signal	_	TRUE	Boolean				
							Valid Ignition Voltage Ignition Voltage	>=	TRUE 9 31 99023	Boolean Volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Ontena	value	P0716 Status is not	Test Failed	roquilou	
				Disable Conditions:		TCM: P0717, P0752, P0973, P0974 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case Transmission Input Speed is	< 50 -67 RPM			>= 4.5 Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is		Controller uses a single power supply for the speed sensors	= 1 Boolean		
					Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is	<pre><= 8191.875 N*m >= 16 Kph = TRUE Boolean >= 9 Volts <= 31.99023 Volts >= 400 RPM <= 7500 RPM</pre>		
					within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	Enable Conditions	s		Tin Requ		Mil Illum.
dystein	Code	Description	Ontena			P0717 Status is not	Test Failed	<u> </u>		rtoqu		
					Disable Conditions:	MIL not Illuminated for DTC's:						
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<= 35	RPM				>=	4.5	Fail Time (Sec)	One Trip
						P0722 Status is not	Test Failed This Key On or Fault Active					
						Transmission Input Speed Check	= TRUE B	Boolean				
						Engine Torque Check		Boolean				
						Throttle Position Transmission Fluid Temperature	>= 40	Pct °C				
						Disable this DTC if the PTO is active		Boolean				
						Engine Torque Signal Valid		Boolean				
						Throttle Position Signal Valid Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is	>= 9 <= 31.99023 >= 400	Soolean Volts Volts RPM RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Enable_Flags Defined Below			
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE			
					Engine Torque Condition 1	Range		
					Range Shift Status	a la i fit		
					OR Transmission Range is	_ Neutral		
					Engine Torque is Engine Torque is	<= 8191.75 N*m		
					Engine Torque Condition 2 Engine Torque is Engine Torque is	>= 30 N*m		
					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE			
					TIS Check Condition			
					Transmission Input Speed is	>= 1000 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Input Speed is			
					TIS Check Condition			
					Engine Speed without the brake applied is	>= 3200 RPM		
					Engine Speed with the brake applied is	>= 3200 RPM		
					Engine Speed is	<= 8191.75 RPM		
					Controller uses a single power supply for the speed sensors	= 1 Boolean		
					Powertrain Brake Pedal is Valid	= TRUE Boolean		
				Disab Condition		TCM: P0716, P0717, P0723 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed				>= 0 Enable Time (Sec)	One Trip
			Output Speed Delta	<= 8191.8 RPM			>= 0 Enable Time (Sec)	
			Output Speed Drop AND				Output Speed Drop >= 3 Recovery Fail Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Transmission	Driven = range (R,D)	Manufecton	Conditions	Required	
					Range_Disable OR	= FALSE See Below		
					Neutral_Range_Enab le And	= TRUE See Below		
					Neutral_Speed_Enab le are TRUE concurrently	= TRUE See Below		
					Transmission_Range _Enable Transmission_Input_ Speed_Enable	Below See		
					No Change in Transfer Case Range (High <-> Low) for	>= 5 Seconds		
					P0723 Status is not	Test Failed This Key On or Fault Active		
					Disable this DTC if the PTO is active Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is Engine Speed is within the allowable limits for	>= 9 Volts <= 31.99023 Volts >= 400 RPM <= 7500 RPM		
					Enable_Flags Defined Below			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
					Transmission_Input_ Speed_Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:			
					TIS Condition 1 is TRUE when both of the following conditions are satsified for	= 0 Time (Sec)		
					Input Speed Delta Raw Input Speed			
					TIS Condition 2 is TRUE when ALL of the next two conditions are satisfied Input Speed			
					A Single Power Supply is used for all speed sensors	= TRUE Boolea	n	
					Powertrain Brake Pedal Applied is	= FALSE Boolea	n	
					Neutral_Range_Enab le is TRUE when any of the next 3 conditions are TRUE Transmission Range is	= Neutral FNUM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Transmission Range is	Reverse/ = Neutral Transiton al		
					Transmission Range is	Neutral/D		
					And when a drop occurs Loop to Loop Drop of Transmission Output Speed is	> 650 RPM		
					Range_Disable is TRUE when any of the next three conditions are TRUE			-
					Transmission Range is	- Paik ENUIVI		
					Transmission Range is	Park/Rev = erse Transiton ENUM al		
					Input Clutch is not	= ON (Fully Applied) ENUM		
					Neutral_Speed_Enab le is TRUE when All of the next three conditions are satsified for	> <u>4</u> 1.5 Seconds		-
					Transmission Output Speed	> 100 130 RPM		
					The loop to loop change of the Transmission Output Speed is	< 500 125 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum
System	Joue	Description	Ontena	14.40	The loop to loop change of the Transmission Output Speed is	0.40		
					Transmission_Range _Enable is TRUE when one of the next six conditions is TRUE			
					Transmission Range is	- Neutral LINOW		
					Transmission Range is	Transition		
					Transmission Range is	Neutral/D = rive ENUM Transition al		
					Range Change Delay Timer	>= 5 Sec		
					Time since a driven range (R,D) has been selected			
					Transmission Output Speed Sensor Raw Speed	>= 500 RPM		
					Output Speed when a fault was detected	>= 500 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Oysteni	Jour	Description	Ontona	Disable Conditions:	MIL not Illuminated	TCM: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met				>= 2 Enable Time (Sec	Two Trips
			(A) TCC Slip Error @ TCC On Mode	Refer to Table 1 in >= Support RPM ing Docum ents			>= 5 Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode If Above	- 130 KFIVI			>= 5 Fail Time (Sec)	
			Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				TCC Stuck >= 62 Off Fail Counter	(
					TCC Mode Ignition Voltage Lo Ignition Voltage Hi Engine Speed Engine Speed is within the allowable limits for Engine Torque Lo Engine Torque Hi	>= 9 Volts <= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec >= 50 N*m		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Cyotom	Couc	2000 I ption	- Cintona		Throttle Position Lo Throttle Position Hi 2nd Gear Ratio Lo	>= 8.000183 Pct <= 99.99847 Pct	,	
					2nd Gear Ratio High	<= 3.167236 Ratio		
					3rd Gear Ratio Lo	>= 1.776245 Ratio		
					3rd Gear Ratio High	<= 2.043701 Ratio		
					4th Gear Ratio Lo	>= 1.348511 Ratio		
					4th Gear Ratio High	<= 1.551514 Ratio		
					5th Gear Ratio Lo			
					5th Gear Ratio Hi 6th Gear Ratio Lo			
					6th Gear Ratio High			
					Transmission Fluid Temperature Lo	>= -6.65625 °C		
					Transmission Fluid Temperature Hi	<= 130 °C		
					TCC Command Lock ON or ON	= TRUE Boolean		
					PTO Not Active	= TRUE Boolean		
					Engine Torque Signal Valid			
					Throttle Position Signal Valid	= TRUE Boolean		
					Dynamic Mode	= FALSE Boolean		
					P0741 Status is	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.
oyo.com	9040	2000.ip.ii0.i		Disable Conditions:	MIL not Illuminated	TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed TCC Slip Speed	<= <mark>30-</mark> 13 RPM			>= 1 Fail Time (Sec)	One Trip
			Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				>= 8 Fail Counter	
					TCC Mode Enable test if Cmnd Gear = 1stFW and value true	= 1 Boolean		
					Enable test if Cmnd Gear = 2nd and value true			
					Run TCC Stuck On Test Enable Criteria: Gear Ratio Gear Ratio	<= 3.171509 Ratio >= 2.75647 Ratio		

Engine Speed LI Engine Speed LO Engine Speed LO Vehice Speed LI Vehice Speed L	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enabl Conditi		Time Required	Mil Illum.
Engine Speed Lo Vehicle Speed I Lo Vehicle Speed I Lo Vehicle Speed I Lo Vehicle Speed I Lo II Stude On During Upshilt to enabled (See Above)	System	Code	Description	Onteria	Value		6500 -		Required	
Vehicle Speed to Section Secti							6000			
Vehicle Speed to >= 48 1 KPH										
# Stack On puring Upshift-is enabled (See Above), Engine Torque Muelt Engine Torque Muelt Desmine Torque Horit Engine Torque Lo Current Gare Engine Torque Lo Current Range Current Range Current Range Current Range Transmission Sump Temperature Transmission Sump Temperature Transmission Sump Temperature Throttle Position Hyst High Throttle Position Hyst High Throttle Position Hyst What Vehicle Speed to Max Vehicle Speed to Max Vehicle Speed to Meet Throttle Position Disable for Throttle Disable for Throttle Disable for Throttle Disable if PTO active Disable of PTO active Disable of PTO active To Nm September 1										
Upshift-is-enabled Uses Above). Engine Torque Must be Down Shift-in Progreses Current Range Current Range Current Range Current Range Transmission Sump Temperature Throttle Position Hyst Low AND Max Vehicle Speed to Max Vehicle Speed to Max Vehicle Speed to Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Doision Hyst Throttle Position Disable for Throttle Disable for										
Engine Torque Must Down Shift In Progress Current Gear Engine Torque II <= 8191.875 Nm Engine Torque Lo >= 60 Nm Current Range Current Range # Reverse Range Transmission Sump Temperature Transmission Sump Temperature Transmission Hyst High Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to <= 8 KPH Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable for Throttle Position Disable for Throttle Position Disable if PTO active To A Beatene						Upshift is enabled				
be Down-Shift-In Progress Current Cear Engine Torque Lo							<u>>=</u> 50	Nm		
Down-Shift-In Progress Current Cear # #st Gear Locked Engine Torque Hi <= 819.875 Nm Engine Torque Lo >= 60 Nm Engine Torque Lo >= 60 Nm **Neutral Range Current Range # Reverse Range Transmission Sump Temperature Transmission Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will emain while Throttle Position Disable for Throttle Disable for Throttle Position Disable for Throttle Position Disable for Throttle Position Disable for Throttle Position Disable for Throttle Position Disable for Throttle Position Disable for Throttle Position Disable for Throttle Position Position PALSE Position Posi										
Current Gear Engine Torque Lo Current Range Current Range Current Range Transmission Sump Temperature Throttle Position Throttle Position Throttle Position Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable if PTO active Disable if PTO active Low Disable if PTO active D										
Current Gear Engine Torque Hi Engine Torque Lo Current Range Current Range Current Range Transmission Sump Temperature Transmission Sump Temperature Transmission Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable Will remain while Throttle Position Disable for Throttle Disable if PTO active ## Seclean Boolean Lecked 8191 875 Nm							= FALSE	Boolean		
Engine Torque Hi Engine Torque Lo Current Range							1et Gear			
Engine Torque Hi Engine Torque Hi Engine Torque Lo >= 60 Nm Current Range						Current Gear		Boolean		
Engine Torque Lo Current Range Current Range Current Range Transmission Sump Temperature Transmission Sump Temperature Transmission Sump Temperature Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Disable of PTO active The New York of the Position Disable of PTO active Throttle Position Disable of PTO active Disable of PTO acti						Engine Torque Hi		Nm		
Current Range Current Range Current Range # Reverse Range Transmission Sump Temperature Transmission Sump Temperature Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable will remain while Throttle Position Disable for Throttle Disable if PTO active Position Disable if PTO active PReverse Range Range Range Reverse Range Reverse Range Reverse Range Reverse Range Reverse Range PC C C Disable if PTO active Position Page Range Reverse Range Range Range Range Reverse Range Range Range Range Range Reverse Range Range Range Range Range Reverse Range Range Range Reverse Range Range Range Range Range Reverse Range Range Range Range Reverse Range Range Range Reverse Range Range Range Reverse Range Range Range Range Range Reverse Range Range Range Reverse Range Ra										
Transmission Sump Temperature Transmission Sump Temperature Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Disable if PTO active Transmission Sump Temperature >= .7 15 °C 10.00061 Pct 2.000878 Pct 2.000427 Pct Pct Pct Pct Pct Pct Pct Pct Pct Pct								Range		
Temperature Transmission Sump Temperature Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Transmission Sump Temperature 10.00061 Pct 2.000878 Pet AND AND Max Vehicle Speed to Meet Throttle Position Throttle Position Disable if PTO active Throttle Position						Current Range	≠ Reverse	Range		
Temperature Transmission Sump Temperature Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Transmission Sump Temperature 10.00061 Pct 2.000878 Pet AND AND Max Vehicle Speed to Meet Throttle Position Throttle Position Disable if PTO active Throttle Position						Transmission Sump				
Transmission Sump Temperature Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active On 1 Position PC 10.00061 Pct 2.990878 Pct AND KPH >= 2.000427 Pct Pct Pct Pct Pct Pct Pct Pct							<= 130	°C		
Temperature Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Disable if PTO active Throttle Position Disable if PTO active Throttle Position Pct 2.000427 Pct Pct Pct Pct Pct Pct Pct Pct						,				
Throttle Position Hyst High Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Throttle Position Hyst High Hyst High Has been met, the enable will remain while Throttle Position Disable if PTO active Throttle Position Hyst High Hyst High Has been met, the enable will remain while Throttle Position Disable if PTO active Throttle Position Hyst High Hyst High Hyst High Has her High Has High Hyst High Has her High Has Has High Has						Transmission Sump	>= 7 15	°C		
Throttle Position Hyst Lew AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active						Temperature		C		
Throttle Position Hyst Lew AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active						Throttle Position Hyst				
Throttle Position Hyst Low AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Disable of PTO active						High	>= 10.00061	Pct		
AND Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Disable if PTO active Once Hyst High has ken met, the enable seen met, the enable							- 0.000070	Det		
Max Vehicle Speed to Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active Disable if PTO active Once Hyst High has been met, the enable will remain while Throttle Position Throttle Position Disable if PTO active Once Hyst High has been met, the enable will remain while Throttle Position Throttle Position Disable if PTO active Once Hyst High has been met, the enable will remain while Throttle Position Disable if PTO active						Low	2.888070	FUL		
Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active						AND				
Meet Throttle Enable Once Hyst High has been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active						Max Vehicle Speed to	. 0	KDII		
been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active							<= 8	KPH		
been met, the enable will remain while Throttle Position Disable for Throttle Position Disable if PTO active										
will remain while Throttle Position Disable for Throttle Position Disable if PTO active						Once Hyst High has				
Disable for Throttle Position Disable if PTO active						been met, the enable	>= 2.000427	Pct		
Disable for Throttle Position >= 75 Pct Disable if PTO active = 0.1 Region										
Position Position Disable if PTO active Position Disable if PTO active Position										
Disable if PTO active _ 0_1 Region							>= 75	Pct		
						Position	. – 10	1 01		
						Disable if PTO active		Desta		
						and value true	= U -1	Boolean		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enabl		Time	Mil Illum.
System	Code	Description	Criteria	Value	Disable if in D1 and	Conditi		Required	mum.
					value true	= 0-1	Boolean		
					Disable if in D2 and	= 0 -1	Boolean		
					value true		Doolcan		
					Disable if in D3 and value true	= 0-1	Boolean		
					Disable if in D4 and	= 0 1	Dooloop		
					value true	= +-1	Boolean		
					Disable if in D5 and	= 0 1	Boolean		
					value true Disable if in MUMD				
					and value true	= 0-1	Boolean		
					Disable if in TUTD	= 0 -1	Boolean		
					and value true		Booloan		
					4 Wheel Drive Low Active	= FALSE	Boolean		
					Hydraulic Clutch Air	= FALSE	Boolean		
					Purge Active	- FALSE	DUUIBAH		
					Ignore Air Purge if value = true	= 0	Boolean		
					Disable if Air Purge active and value false	= 0	Boolean		
					TCC Mode Common Enables:	= OFF			
					RVT Diagnostic	541.05			
					Active		Boolean		
					Ignition Voltage	>= 9	V		
					Ignition Voltage Vehicle Speed	<= 31.99023 <= 511	V KPH		
					Engine Speed		RPM		
					Engine Speed		RPM		
					Engine Speed is		1 (1 141		
					within the allowable		Sec		
					limits for				
					Engine Torque Signal Valid	= TRUE	Boolean		
					Throttle Position	= TRUE	Boolean		
I					Signal Valid			1	

Component/	Fault	Monitor Strategy	Malfunction		eshold	Secondary Malfunction	Enable Conditions			me	Mil
System	Code	Description	Criteria	V	/alue	P0742 Status is	Conditions Test Failed This Key On or Fault Active		Keq	uired	Illum.
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P0741, P2763, P2764 ECM: P0101, P0102, P0103, P0106, P0107,				
							P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400	RPM						Two Trips
			Commanded Gear	= 1st Lock	rpm						
			Gear Ratio					>=	0.3	Fail Tmr	
			Gear Ratio If the above parameters are true	>= 1.3737				=	5	Fail Counts	
								≠	0	Neutral Timer (Sec)	
								>=	0.3	Fail Timer (Sec)	
						Ignition Voltage Lo Ignition Voltage Hi		>=	8	Counts	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Ena		Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Condi		Required	Illum.
					Engine Speed Lo Engine Speed Hi		RPM RPM		
					Engine Speed is within the allowable limits for	>= 5	Sec		
					Transmission Fluid Temperature		5 °C		
					Range Shift State	Range Shift Complet d	ENILINA		
					OR				
					Output Speed Throttle Position Signal Valid from		RPM Boolean		
					ECM		Boolean		
					Engine Torque Signal Valid from ECM, High side driver is enabled	= TRUE	Boolean		
					High-Side Driver is Enabled		Boolean		
					Input Speed Sensor fault	= FALSE	Boolean		
					Output Speed Sensor fault		Boolean		
					Default Gear Option is not present				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystein	- Odde	Безеприон	Official		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		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400	RPM				One Trip
			Commanded Gear Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded		Gear Boolean				
			C456/CBR1 Pressure Switch C456/CBR1 Pressure Switch Fault If the above parameters are true	= Pressu ized = FALSE	^H Beelean ≣ Beelean				

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Command 4th Gear once Output Shaft Speed	Value <= 1000 RPM	Malfunction	Conditions	Required Please Refer to Table >= 16 in Suppor ting Docum ents	Illum.
			If Gear Ratio And Gear Ratio		Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<= 31.99023 Volts	>= 1.5 Fail Timer >= 5 (Sec) >= 5 Counts	
					Engine Speed Hi Engine Speed is within the allowable limits for High-Side Driver is Enabled	<= 7500 RPM >= 5 Sec = TRUE Boolean		
					Throttle Position Signal Valid from ECM Output Speed OR TPS	= TRUE Boolean >= 0 100 RPM >= 0.500488 %		
					Range Shift State Transmission Fluid Temperature	d complete		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Conditions	Time Required	Mil Illum.
							Input Speed Sensor fault Output Speed Sensor fault	=	FALSE Boolean		
							Default Gear Option is not present		TRUE		
					(Disable Conditions:			Л: Р0716, Р0717, 22, Р0723, Р182E		
								P010 P010 P010 P020 P020 P030 P030	M: P0101, P0102, 03, P0106, P0107, 08, P0171, P0172, 74, P0175, P0201, 02, P0203, P0204, 05, P0206, P0207, 08, P0300, P0301, 02, P0303, P0304, 05, P0306, P0307, 08, P0401, P042E		
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail_ Case_ Case: Steady State 13rd Gear								One Trip
			Commanded Gear	= 3	Brd G	ear					
			Gearbox Slip	>= 4	00 R	PM					

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Waltuffction	Conditions	Required	mum.
							Please	
							Refer	
							to	
							Table- 5 Neutral	
							Suppor Timer (Sec)	
							ting	
							Docum ents	
							Citto	
			Command 4th					
			Gear once Output	<= 1000 RPM				
			Shaft Speed					
			If Gear Ratio	>= 1 3737				
			ii oda rado	1.0707				
			And Gear Ratio	<= 1.5183				
							>= 3 Fail Timer	
							(Sec)	
			It the above					
			condiations are true, Increment 3rd				>= 2 3rd Gear Fail Counts	
			gear fail counter				T dil Godinis	
							or	
			and C35R Fail				3-5R Clutch	
			counter				>= 14 S-5R Clutch Fail Counts	
			Fail					
			Case: Steady State 5th Gear					
			2 Sin Gear					
			Commanded Gear	= 5th Gear				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
9,00			Gearbox Slip				Please Refer to Table 5 Neutral Suppor ting Docum ents	
			Intrusive Test: Command 6th Gear					
			If attained Gear=6th gear Time	Please refer to Table 3 >= in Shift Time supporti (Sec) ng docume nts				
			It the above condiations are true, Increment 5th gear fail counter				>= 3 5th Gear Fail Counts	
			and C35R Fail counter				or >= 14 3-5R Clutch Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT	= TRUE Boolean		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		ible	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Cond	itions	Required	Illum.
					A OR B				
					(A) Output speed enable		0 RPM		
					(B) Accelerator Pedal enable	>= 0.5004	88 Pct		
					Common Enable Criteria				
					Ignition Voltage Lo		Volts		
					Ignition Voltage Hi				
					Engine Speed Lo		RPM		
					Engine Speed Hi		RPM		
					Engine Speed is				
					within the allowable limits for		Sec		
					Throttle Position Signal valid		Boolean		
					HSD Enabled		Boolean		
					Transmission Fluid Temperature		25 °C		
					Input Speed Sensor fault		Boolean		
					Output Speed Sensor fault		Boolean		
					Default Gear Option is not present				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Value		TCM: P0716, P0717,	Required	mum.
				Conditions:		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		
			<u>Fail</u>					One
Variable Bleed		Pressure Control (PC) Solinoid B Stuck On	Case Case: Steady State					Trip
Solenoid (VBS)		[C35R] (Steady State)	<u>1</u> 1st					
			Attained Gear slip	>= 400 RPM				
				Table				
				Based Time				
				Please				
			If the Above is	Refer to Enable Time >= Table 4 (See)				
			True for Time	in (Sec)				
				supporti				
				ng docume				
				nts				
			Intrusive test:					
			(CBR1 clutch					
			exhausted)					
			Gear Ratio	<= 2.0073				
			Gear Ratio	>= 1.7446				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- ,			If the Above is True for Time	Table Based Time Please Refer to			·	
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio	<= 2.0073				
			Gear Ratio	>= 1.7446				
			If the above parameters are true					
			liuc				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 2nd Gea	
							or >= 3 Total Fail Counts	
			Fail Case: Steady State 4th gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystein	Odde	Безсприон	Max Delta Output Speed Hysteresis	Table Based value Please Refer to			roquiros	
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D rpm/sec Table 2 in supporti ng docume nts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C1234 clutch exhausted)					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Gear Ratio	<= 1.0699				
			Gear Ratio	>= 0.9301				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 4th Gear	
							or >= 3 Total Fail Counts	
			Fail Case: Steady State 4 6th gear					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec Table 1 in supporti ng docume nts				

Component/	Fault Code	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D	indianologi	Conditions	Required	
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (CB26 clutch exhausted) Gear Ratio				>= 1.1 Fail Timer	
			Gear Ratio If the above parameters are true				>= 3 counts	
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 6th Gear	
							or	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition			Tin Requ		Mil Illum.
•									>=	3	Total Fail Counts	
					PRNDL State defaulted		FALSE	Boolean				1
					inhibit RVT		FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled		TRUE	Boolean				
					Hydraulic_System_Pr essurized	-	TRUE	Boolean				
					A OR B							
					(A) Output speed enable		100	Nm				
					(B) Accelerator Pedal enable	/- (0.500488	Nm				
					Ignition Voltage Lo		9	Volts				
					Ignition Voltage Hi			Volts				l .
					Engine Speed Lo		400	RPM				l .
					Engine Speed Hi		7500	RPM				l .
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>= 1	10.00061	Pct				
					if Attained Gear=1st FW Engine Torque Enable	>=	45	Nm				
					if Attained Gear=1st FW Engine Torque Enable	<= 8	8191.875	Nm				
					Transmission Fluid Temperature		-6.65625	°C				
					Input Speed Sensor fault	l <u>-</u>	FALSE	Boolean				
					Output Speed Sensor fault	l <u>-</u>	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressuri zed				
			Primary Offgoing Clutch Pressure Command Status	Clutch = exhaust comma nd				
			Range Shift Status	Initial ≠ Clutch Control				
			Attained Gear Slip	<= 40 RPM				

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria If the above	value	Walturiction	Conditions	Required	mum.
			conditions are true					
			run appropriate					
			Fail 1 Timers					
			Below:					
			fail timer 1 (3-1 shifting with	>= 0.0004 Fail Time				
			Closed Throttle)	/= 0.9004 (Sec)				
			fail timer 1	Fail Time				
			(3-2 shifting with	>= 0.7002 Fail Time (Sec)				
			Throttle)	(000)				
			fail timer 1 (3-2 shifting with	Fail Time				
			Closed Throttle)	>= 0.9004 (Sec)				
			fail timer 1	E di Tino				
			(3-4 shifting with	>= 0.7002 Fail Time (Sec)				
			Throttle)	(000)				
			fail timer 1 (3-4shifting with	>= 0,0004 Fail Time				
			Closed Throttle))= 0.9004 (Sec)				
			fail timer 1					
			(3-5 shifting with	>= 0.7002 Fail Time (Sec)				
			Throttle)	(360)				
			fail timer 1	Fail Time				
			(3-5 shifting with Closed Throttle)	>= 0.9004 (Sec)				
			fail timer 1					
			(5-3 shifting with	>= 0.7002 Fail Time (Sec)				
			Throttle)	(360)				
			fail timer 1	Fail Time				
			(5-3 shifting with Closed Throttle)	>= 0.9004 (Sec)				
			fail timer 1					
			(5-4 shifting with	>= 0.7002 Fail Time (Sec)				
			Throttle)	(350)				
			fail timer 1	>= 0 0004 Fail Time				
			(5-4 shifting with Closed Throttle)	>= 0.9004 (Sec)				
			fail timer 1	E " T				
			(5-6 shifting with	>= 0.7002 Fail Time (Sec)				
			Throttle)	(360)				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 0.9004 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Refere nce Suppor ting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 3rd gear fail counter				>= 3 3rd gear fail	1
			5th gear fail counter				OR >= 3 5th gear fail counts OR	1
			Total fail counter				>= 5 total fail counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					TUT Enable temperature	>= -6.65625 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	≠ 1st Boolean		
					High Side Driver ON	= TRUE Boolean		
					output speed limit for TUT	>= 200 RPM		
					input speed limit for TUT	>= 200 RPM		
					PRNDL state defaulted	= FALSE Boolean		
					IMS Fault Pending Service Fast Learn	= FALSE Boolean		
					Mode			
					HSD Enabled	= TRUE Boolean		
					Default Gear Option is not present	= TRUE		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

Component/	Fault	Monitor Strategy	Malfunction		shold	Secondary	Enable		Time		Mil
System	Code	Description	Criteria		alue	Malfunction	Conditions		Required	<u> </u>	Illum.
Transmission Output Speed Sensor (TOSS)	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage	<= 0.25	Volts				>= 0.05	sec	One Trip
			P077C Status is not	. =							
			If the above conditons have been met, increment the P077C Fail Counter								
			DTC P077C Sets when the Fail Counter		Counts	P077C Enable					
						Calibration Ignition Voltage Lo Ignition Voltage Hi	= 1 B00	olts olts			
					Disable Conditions:	MIL not Illuminated for DTC's:					
Transmission Output Speed Sensor (TOSS)	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage	>= 4.75	Volts				>= 0.05	sec	One Trip
			P077D Status is not								

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable Conditions	Time Poguired	Mil Illum
System	Code	Description	Criteria	Value	ivianunction	Conditions	Required	mum
			If the above					
			conditons have					
			been met, increment the					
			P077D Fail					
			Counter					
			DTC P077D Sets					
			when the Fail					
			Counter	75 Counts				
			Counter		P077D Enable			
					Calibration			
					Ignition Voltage Lo			
					Ignition Voltage Hi			
					igilition voltage i li	4 01.00020 VOII3		
				Disable	MIL not Illuminated	TCM: P077C		
				Conditions				
			E 3					
. Calaba Blassa		Pressure Control (PC)	Fail					Or T-
ariable Bleed		Solenoid C Stuck Off	Case Case: Steady State					Tri
olenoid (VBS)		[C456] (Steady State)	1 4th Gear					
							Please	
							See	
							Table 5 Neutral	
			Gear slip	>= 400 RPM			>= F01 Timor (\$00)	
							ineuliai	
							Time	
							Cal	
			Intrusive test:					
			commanded 5th					
			gear					
			gcar					
				Please				
				refer to				
				Table 3				
			If attained Gear	>= in Shift Time Support (Sec)				
			≠5th for time	Support (Sec)				
				"19				
				Docum ents				

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	waitunction	Conditions	Required	Illum.
			Fail Case: Steady State 6th Gear					
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer (Sec) Time Cal	
			Intrusive test: commanded 5th gear					
			If attained Gear ≠ 5th for time	Please refer to Table 3 >= in Shift Time Support (Sec) ing Docum ents				
			if the above conditions have been met					
			Increment 6th Gear Fail Counter and C456 Fail Counter				>= 2 6th Gear Fail Count	
			and C456 Fail Counter				OR >= 14 C456 Fail Counts	
					PRNDL State defaulted	= FALSE Boolea	an	
					inhibit RVT		an	
					IMS fault pending indication	- TALOL BOOKE	an	
					TPS validity flag			
					Hydraulic System Pressurized	= TRUE Boolea	n	

nitor Strategy Malfunction Description Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		Minimum output speed for RVT	>= 0 RPM	·	
		(A) Output speed	>= 100 RPM		
		(B) Accelerator Pedal enable	>= 0.500488 Pct		
		Criteria	>- 0 \/alta		
		Ignition Voltage Hi	<= 31.99023 Volts		
		Engine Speed Hi Engine Speed is	<= 7500 RPM		
		limits for			
		Signal valid HSD Enabled	= TRUE Boolean		
		Temperature	>= -6.65625 °C		
		fault OutputSpeed Sensor	= FALSE Boolean		
		fault Default Gear Option			
	Disable	is not present	- IRUE		
	Conditions:	for DTC's:	P0722, P0723, P182E		
			ECM: P0101, P0102, P0103, P0106, P0107,		
			P0174, P0175, P0201,		
			P0205, P0206, P0207, P0208, P0300, P0301,		
			P0305, P0306, P0307,		
<u>D</u>	escription Criteria	Disable	Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Common Enable Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed Hi Engine Speed lis within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault OutputSpeed Sensor fault Default Gear Option is not present	Minimum output speed for RVT	Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Criteria Ignition Voltage Hi

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Manunction	Conditions	Required	-
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case Case: Steady State 1 1st					One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	Table Based Time Please Refer to Table 4 in supporti ng docume nts				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 1.5291				
			Gear Ratio	>= 1.329				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 2 Fail Count in 1st Gear	
							or Total Fail >= 3 Counts	
			Fail Case Steady State 2 2nd					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Max Delta Output Speed Hysteresis	Table Based value Please Refer to		Sommer	rtoquirou	
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporti ng docume nts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (CB26 clutch exhausted)					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gyotom	3000	Bocompaion		<= 1.5291				
			Gear Ratio	>= 1.329				
			If the above parameters are true					
			แนะ				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 2nd Gear	
							or >= 3 Total fail counts	
			Fail Case Steady State 3					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec Table 1 in supporti ng docume nts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D		Containone	Rogunou	
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 1.5291				
			Gear Ratio					
			If the above parameters are true				San 14 Fail Timer	
							>= 1.1 (Sec)	
							>= 3 Fail Count in 3rd Gear	r
							OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		, , ,					>= 3 Total F	
					PRNDL State defaulted			
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed TPS validity flag HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pr essurized	= TRUE Boolean		
					A OR B (A) Output speed enable	>= 100 Nm		
					(B) Accelerator Pedal enable			
					Ignition Voltage Lo Ignition Voltage Hi	>= 9 Volts		
					Engine Speed Lo Engine Speed Hi	>= 400 RPM		
					Engine Speed is within the allowable limits for	>= 5 Sec		
					if Attained Gear=1st FW Accelerator Pedal enable	>= 10.00061 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 45 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.875 Nm		
					Transmission Fluid Temperature			
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If the above					
			conditions are true					
			increment					
			appropriate Fail 1					
			Timers Below:					
			fail timer 1	Fail Time				
			(4-1 shifting with	>= 0.7002 (Sec)				
			throttle)	()				
			fail timer 1	Fail Time				
			(4-1 shifting	>= 0.9004 (Sec)				
			without throttle)	()				
			fail timer 1	S - 0 7000 Fail Time				
			(4-2 shifting with	>= 0.7002 (Sec)				
			throttle)	, ,				
			fail timer 1	Fail Time				
			(4-2 shifting	>= 0.9004 (Sec)				
			without throttle)	()				
			fail timer 1	Service Fail Time				
			(4-3 shifting with	>= 0.7002 (Sec)				
			throttle)	` ′				
			fail timer 1	Se o ooo4 Fail Time				
			(4-3 shifting	>= 0.9004 (Sec)				
			without throttle)	` ′				
			fail timer 1	Fail Time				
			(5-3 shifting with	>= 0.7002 (Sec)				
			throttle)	, ,				
			fail timer 1	Fail Time				
			(5-3 shifting	>= 0.9004 (Sec)				
			without throttle)	, ,				
			fail timer 1	Fail Time				
			(6-2 shifting with	>= 0.7002 (Sec)				
			throttle)	, ,				
			fail timer 1	Fail Time				
1			(6-2 shifting	>= 0.9004				
I			without throttle)	` ′			I	

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil
System	Code	Description	If Attained Gear Slip is Less than Above Cal Increment Fail Timers	Value	Malfunction	Conditions	Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Refere nce Suppor ting Table 15 for Fail Timer 2	Illum.
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 4th gear fail counter 5th gear fail counter				Fail >= 3 Counter From 4th Gear OR Fail >= 3 Counter From 5th Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enabl Conditi				me uired	Mil Illum.
		·	6th gear fail counter						>=	3	Fail Counter From 6th Gear OR Total Fail	
,			Total fail counter						>=	5	Counter	
					TUT Enable temperature		-6.65625	°C				
					Input Speed Sensor fault	_	FALSE	Boolean				
					Output Speed Sensor fault	_	FALSE	Boolean				
					Command / Attained Gear	±	1st	Boolean				
					High Side Driver ON	=	TRUE	Boolean				
					output speed limit for TUT	>=	200	RPM				
					input speed limit for TUT	>=	200	RPM				
					PRNDL state defaulted	=	FALSE	Boolean				
,					IMS Fault Pending		FALSE	Boolean				
,					Service Fast Learn Mode		FALSE	Boolean				
					HSD Enabled		TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
	9340	2000.ip.ii0.ii		Disab Conditions	e MIL not Illuminated s: 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		
Transmission Input Speed Sensor (TISS)	P07BF	Input/Turbine Speed Sensor A Circuit Low	TISS Analog Signal Voltage P07BF Status is not If the above conditons have been met, increment the P07BF Fail	Test Failed This Key On or Fault Active			>= 0.05 sec	One Trip
			Counter DTC P07BF Sets when the Fail Counter	>= 75 Counts	P07BF Enable Calibration Ignition Voltage Lo Ignition Voltage Hi	= 1 Boolean >= 9 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold 'alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- System		2000p.i.c.i				Disable Conditions:	MIL not Illuminated for DTC's:			
Transmission Input Speed Sensor (TISS)	P07C0	Input/Turbine Speed Sensor A Circuit High	TISS Analog Signal Voltage	>=	4.75	Volts			>= 0.05 sec	One Trip
			P07C0 Status is not	= K o	Test Failed This Key On or Fault Active					
			If the above conditons have been met, increment the P07C0 Fail Counter							
			DTC P07C0 Sets when the Fail Counter	>=	75	Counts	P07C0 Enable	= 1 Boolean		
							Calibration Ignition Voltage Lo Ignition Voltage Hi	>= 9 Volts		
						Disable Conditions:	MIL not Illuminated for DTC's:			
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Tap Up Switch 1 Stuck in the Up Position in Range 1 Enabled		0	Boolean				Special No MIL

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction	Enable Conditions		me uired	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean					
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean					
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean					
			Tap Up Switch ON	= TI	RUE	Boolean			>= 1	Fail Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			eshold alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Oystem	Oode	Description	Fail Case Stuck in the Up Position in Range 1 Enabled	= 1		Boolean			rtoquilou	
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	_ 1	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	_ 4	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	= 1	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	_ 4	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 1	1	Boolean				
			Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch	= ()	Boolean				
			Stuck in the Up Position in Park Enabled	= 0)	Boolean				
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	= ()	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Tap Up Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE Boolean	Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	= 1	>= 600 Fail Time (Sec)	Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	Fault Active TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761 ECM: None		

Component/	Fault	Monitor Strategy	Malfunction			reshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria <u>Fail</u>			/alue	Manunction	Conditions	Required	Illum. Special
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Case Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	0	Boolean				No MIL
			Tap Down Switch Stuck in the Dowr Position in Range 2 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Dowr Position in Range 3 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Dowr Position in Range 4 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Dowr Position in Range 5 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Dowr Position in Range 6 Enabled	=	0	Boolean				
			Tap Down Switch Stuck in the Dowr Position in Range Neutral Enabled	=	1	Boolean				

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Tap Down Switch Stuck in the Down Position in Range Park Enabled	n n = 1 Boolean	mananoson	Conditions	Required	
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	n = 0 Boolean d				
			Tap Down Switch ON				>= 1 sec	
			Fail Case Tap Down Switch Stuck in the Down Position in Range 1 Enabled	1 = 1 Boolean				-
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	n = 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	1 = 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	1 = 1 Boolean				

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1 Boolean	Mananoton	Conditions	Nequileu	
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1 Boolean				
			Tap Down Switch Stuck in the Down Position in Neutral Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Park Enabled	= 0 Boolean				
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0 Boolean				
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	- TRUE BOOIEAN			>= 600 sec	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	V	alue	Manufiction	Conditions	Required	illulii.
						Time Since Last Range Change	Enable >= 1 Time (Sec)		
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= 9 Volts <= 31.99023 Volts >= 400 RPM		
						Engine Speed in Engine Speed is within the allowable limits for	>= 5 Sec		
						P0816 Status is	Test Failed This Key ≠ On or Fault Active		
					Disable Conditions:		TCM: P0815, P0826, P182E, P1876, P1877, P1915, P1761		
							ECM: None		
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean			>= 60 Fail Time (Sec)	Specia No MIL
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	<= 31.99023 Volts >= 400 RPM <= 7500 RPM		
						within the allowable limits for	Test		
						P0826 Status is	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.
				Disable Conditions:				
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS)	The HWIO reports an invalid voltage (out of range) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec)	Two Trips
							out 5 Sample of Time (Sec)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable Iimits for	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:				
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.5 Fail Time (Sec)	One Trip
							out 1.875 Sample of Time (Sec)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Oystem	Jour	Везоприон	Ontena	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None	100,000	-
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec)	Two Trips
							out 5 Sample of Time (Sec)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 31.99023 Volts >= 400 RPM <= 7500 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip
							out 0.375 Sample of Character Sample	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed	<= 31.99023 Volts >= 400 RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
<u> </u>	3000	Возоприон	omona		Engine Speed is within the allowable limits for	>= 5 Sec		
					P0966 Status is not	Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip
							out 0.375 Sample of Time (Sec)	
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable Iimits for	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0967 Status is not	Test Failed This Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P0970	Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip
							out 0.375 Sample of O.375 Time (Sec)	
					P0970 Status is not Ignition Voltage	Fault Active >= 9 Volts		
					Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable Iimits for	>= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:				
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			>= 0.3 Fail Time (Sec)	One Trip
							out 0.375 Sample of Time (Sec)	
					P0971 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage Ignition Voltage	>= 9 Volts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= 7500 RPM >= 5 Sec		
				Disable Conditions				
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.2 Fail Time (Sec)	One Trip
							out 1.5 Sample of Time (Sec)	
					P0973 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	On or Fault Active >= 9 Volts <= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions				
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 1.2 Fail Time (Sec)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions		Tim Requi		Mil Illum.
								out of	1.5	Sample Time (Sec)	
						P0974 Status is not	Test Failed This Key On or Fault Active				
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 9 Volts <= 31.99023 Volts >= 400 RPM <= 7500 RPM				
					Disable Conditions:	MIL not Illuminated for DTC's:					
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	Transiti on 1 (bit state 1110)	Range						One Trip
			Previous range	CeTRG R_e_P ≠ RNDL_ Drive6	Range						
			Previous range	CeTRG R_e_P ≠ RNDL_ Drive5	Range						
			Range Shift State	Range Shift Comple ted	ENUM						

Component/	Fault Code	Monitor Strategy	Malfunction Criteria		eshold alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description			aiue	Wallanction	Conditions	Required	mam.
			Absolute Attained Gear Slip	<= 50	rpm				
			Attained Gear	<= Sixth					
			Attained Gear	>= First					
			Throttle Position Available	= TRUE					
			Throttle Position	>= 8.0002	pct				
			Output Speed	>= 200	rpm				
			Engine Torque	>= 50	Nm				
			Engine Torque	<= 8191.8	Nm				
			If the above conditions are met then Increment Fail Timer					>= 1 Fa Seco	
			If Fail Timer has Expired then Increment Fail Counter					>= 5 Fail C	ounts
			Fail Case Output Speed 2	<= 70	rpm				
			The following PRNDL sequence events occur in this exact order:						
			PRNDL state	Drive 6 (bit state 0110)	Range				
			PRNDL state = Drive 6 for	_ 1	Sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			PRNDL state	Transiti = on 8 (bit state 0111)				
			PRNDL state	Drive 6 = (bit Range on the state of the state on the state of the state on the state of the state of the state on the state of the sta				
			PRNDL state	Transiti on 1 (bit Range state 1110)				
			Above sequencing occurs in	<= 1 Sec				
			Neutral Idle Mode	= Inactive				
			If all conditions above are met Increment delay Timer					
			If the below two conditions are met Increment Fail Timer				>= 3 Fail Seconds	
			delay timer	>= 1 Sec				
			Input Speed	>= 400 Sec				
			If Fail Timer has Expired then Increment Fail Counter				>= 2 Fail Coun	ts

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria	Value	iviallunction	Conditions	Required	ıııum.
			Fail Case Current range	Transiti on 13 = (bit Range state 0010)	Previous range	CeTRGR ≠ _e_PRND L_Drive3		
			Engine Torque	>= -8192 Nm	Previous range	CeTRGR ≠ _e_PRND L_Drive2		
				<= 8191.8 Nm	IMS is 7 position configuration If the "IMS 7 Position	– 0 Boolean		
			If the above conditions are met then, Increment Fail Timer		config" = 1 then the "previous range" criteria above must also be satsified		>= 0.225 Seconds	
			If Fail Timer has Expired then Increment Fail Counter		when the Persont		>= 15 Fail Counts	
			Fail Case 4 Current range	Transiti = on 8 (bit Range state 0111)	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8			
			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	- 9101 9 Nm				
			If the above conditions are met then Increment Fail Timer				>= 0.225 Seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	If the above Condtions have been met, Increment Fail Counter		manancaon	Conditions	>= 15 Fail Counts	illum.
			Fail Case Throttle Position 5 Available The following	- TRUE BOOIEATI				
			PRNDL sequence events occur in this exact order:					
			PRNDL State	Revers e (bit state 1100) Transiti				
			PRNDL State	on 11 = (bit Range state 0100)				
			PRNDL State	Neutral (bit Range state 0101) Transiti				
			PRNDL State	on 11 = (bit Range state 0100)				
			Above sequencing occurs in	<= 1 Sec				
			Then delay timer increments					
			Delay timer					
			Range Shift State	Range Shift Comple te				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
e jetom		200.194011	Absolute Attained Gear Slip	- 50 rpm				
			Attained Gear	r <= Sixth				
			Attained Gear	r >= First				
			Throttle Position	>= 8.0002 pct				
			Output Speed					
			If the above conditions are met Increment Fail Timer	t I			>= 20 Seconds	
			Fail Case 6 Current range	Illegal	A Open Circuit Definition (flag set false if the following conditions are met):			
			and	Ŀ	Current Range	Transition ≠ 11 (bit ≠ state 0100)		
			A Open Circuit (See Definition)		or			
					Last positive state	Neutral ≠ (bit state 0101)		
					or Previous transition state	Transition ≠ 8 (bit state 0111)		
					Fail case 5 delay timer	= 0 sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			Fail Case Current PRNDL State					
			and					
			Previous PRNDL state					
			Input Speed	>= 150 RPM				
			Reverse Trans Ratio	<= 2.7369 ratio				
			Reverse Trans Ratio	>= 3.149 ratio				
			If the above Condtions are met then, Increment Fail timer				>= 6.25 Seconds	
			P182E will report test fail when any of the above 7 fail cases are met					
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable Iimits for	<= 31.99023 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		

Component/	Fault	Monitor Strategy	Malfunction			eshold alue	Secondary Malfunction		Ena Condi			ime	Mil Illum.
System	Code	Description	Criteria	_	V	alue	Engine Torque Signal	_				quired	mum.
							Valid	=	TRUE	Boolear	1		
						Disable							
						Conditions:	for DTC s:			C, P077D			
								ECM	: P0101	, P0102,			
								P010	3, P010	6, P0107,			
										1, P0172, 5, P0201,			
								P020	2, P020	3, P0204, 6, P0207,			
								P020	8, P030	0, P0301,			
										3, P0304, 6, P0307,			
										1, P042E			
		Internal Mode Switch											One
nternal Mode Switch (IMS)	P1915	Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumeration							Trip
			The following										
			events must occur										
			Sequentially										
			Initial Engine speed	<=	50	RPM					>= 0.1	Enable Time (Sec)	
			Then										
			Engine Speed Between Following										
			Cals Engine Speed Lo										
			Engine Speed Lo Hist	>=	50	RPM							
			Engine Speed Hi Hist	<=	480	RPM					>= 0.068	8 Enable Time (Sec)	
			Then Final Engine Speed	>=	500	RPM							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			reshold /alue	Secondary Malfunction		Enable Conditio			Tim Requ		Mil Illum.
			Final Transmission Input Speed	>=	100	RPM					>=	1.25	Fail Time (Sec)	
							DTC has Ran this Key Cycle? Ignition Voltage Lo Ignition Voltage Hi	>=	6	Boolean V V				
							Ignition Voltage Hyst High (enables above this value)	>=	5	V				
							Ignition Voltage Hyst Low (disabled below this value) Transmission Output	<=	2 90	V				
							Speed P1915 Status is		Test Failed This Key On or Fault Active	тртт				
						Disable Conditions:	MIL not Illuminated for DTC's:		И: Р0722, Р0 И: None	723				
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case Case: Steady State 1 2nd Gear											One Trip
			Gear slip	>=	400	RPM					T >= N	Please See Table 5 For Veutral Time Cal	Neutral Timer (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time	Mil Illum.
System	Code	Description	Criteria	value	Manufiction	Conditions	Required	mum.
			Intrusive test: commanded 3rd gear					
			W. W. i. a. I. O. a. a.	Table Based Time Please see See Table 2 in Support ing Docum ents				
			If Above Conditions have been met Increment 2nd				2nd Gear	
			gear fail count and CB26 Fail				>= 3	
			Count				>= 14 CD201 all Count	
			Fail Case: Steady State 2 6th Gear					
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer (Sec) Neutral Time Cal	
			Intrusive test: commanded 5th gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum
			If attained Gear = 5th For Time	Table Based Time Please see >= Table 2 in Support				
				ing Docum ents				
			If Above Conditions have been met, Increment 5th gear fail counter				>= 3 5th Gear Fail Count	
			and CB26 Fail Count				or >= 14 CB26 Fail Count	
					PRNDL State defaulted	= FALSE Boolear	1	
					inhibit RVT	= FALSE Boolear	1	
					IMS fault pending indication	= FALSE Boolear	1	
					TPS validity flag	= TRUE Boolear	1	
					Hydraulic System Pressurized		1	
					Minimum output speed for RVT A OR B			
					(A) Output speed enable	>= 100 RPM		
					(B) Accelerator Pedal enable	>= 0.500488 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	>= 9 Volts <= 31.99023 Volts		
					Engine Speed Hi Engine Speed is	<= 7500 RPM		
					within the allowable limits for	>= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present MIL not Illuminated for DTC's:	= TRUE Boolean		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers)	- TRUE BUUIEAII				One Trip
Solenoia (VBS)		[CB26] (Dynamic)	Documents for Exhaust Delay					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystem	Couc	Bescription	Primary Offgoing Clutch Pressure Command Status	Clutch				
			Range Shift Status	Initial ≠ Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If above coditons are true, increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-1 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>= 0.9004 Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 0.7002 Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			fail timer 1 (6-5 shifting with throttle) fail timer 1 (6-5 shifting without throttle)	(Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer 1, and Refere nce Suppor ting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				Fail	
			2nd gear fail counter				>= 3 Counter From 2nd Gear OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			ime Juired	Mil Illum.
			6th gear fail counter				>=	3	Fail Counter From 6th Gear OR	
			total fail counter				>=	5	Total Fail Counter	
					TUT Enable temperature	>= -6.65625 °C				
					Input Speed Sensor fault	= FALSE Boolean				
					Output Speed Sensor fault	= FALSE Boolean				
					Command / Attained Gear	≠ 1st Boolean				
					High Side Driver ON	= TRUE Boolean				
					output speed limit for TUT	>= 200 RPM				
					input speed limit for TUT	>= 200 RPM				
					PRNDL state defaulted	= FALSE Boolean				
					IMS Fault Pending	= FALSE Boolean				
					Service Fast Learn Mode	= FALSE Boolean				
					HSD Enabled	= 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				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Criteria	Value	Manunction	Conditions	Required	
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case Case: Steady State 1 1st					One Trip
			Attained Gear slip	>= 400 RPM				
			If the Above is True for Time	Table Based Time Please Refer to Table 4 in supporti ng docume nts				
			Intrusive test: (CBR1 clutch exhausted)					
			Gear Ratio	<= 3.1127				
				>= 2.7053				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 8 Fail Count in 1st Gear	
							or Total Fail >= 8 Counts	
			Fail Case: Steady State Case 3rd Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystein	Odde	Безсприон	Max Delta Output Speed Hysteresis	Table Based value Please Refer to			roquiros	
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D rpm/sec Table 2 in supporti ng docume nts				
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C35R clutch exhausted)					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·		<= 3.1127				
			Gear Ratio	>= 2.7053				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 3rd Gear	
							or >= 8 Total Fail Counts	
			Fail Case: Steady State 3					
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec Table 1 in supporti ng docume nts				

Component/	Fault Code	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D		Conditions	Required	
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C1234 clutch exhausted)	<= 0.7982				
			Gear Ratio If the above parameters are					
			parameters are true				>= 1.1 Fail Timer (Sec) >= 3 Fail Count in 4th Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tin Requ		Mil Illum.
							>=	8	Total Fail Counts	
			Fail Case: Steady State 5th Gear							
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D rpm/sec Table 1 in supporti ng docume nts						
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D rpm/sec Table 2 in supporti ng docume nts						

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	Walluffction	Conditions	Required	Tillulii.
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C35R clutch exhausted)					
			Gear Ratio	<= 0.7982				
			Gear Ratio	>= 0.6937				
			If the above parameters are					
			true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 5th Gear	
							or Total Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed TPS validity flag			
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pr essurized A OR B	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Oystelli	Oode	Безсприон	Ontena	7 4.40	(A) Output speed enable	>= 100 Nm	roquilou	
					(B) Accelerator Pedal enable	>= 0.500499 Nm		
					Ignition Voltage Lo	>= 9 Volts		
					Ignition Voltage Hi			
					Engine Speed Lo			
					Engine Speed Hi Engine Speed is			
					within the allowable			
					limits for			
					if Attained Gear=1st			
					FW Accelerator			
					Pedal enable			
					if Attained Gear=1st			
					FW Engine Torque			
					Enable			
					if Attained Gear=1st			
					FW Engine Torque			
					Enable			
					Transmission Fluid			
					Temperature			
					Input Speed Sensor fault			
					Output Speed Sensor			1
					fault	- FALSE BOOIEAN		
					Default Gear Option			
					is not present	- INOL		
				I		I		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Gyotom	0000	Возоприон	Ontona	Disable Conditions:	MIL not Illuminated	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out 0.375 Sample	One Trip
					P2770 Status is not Ignition Voltage Ignition Voltage Engine Speed	>= 9 Volts <= 31.99023 Volts	of U.S7S Time (Sec)	
				Disable Conditions:	Engine Speed Engine Speed is within the allowable limits for	<= 7500 RPM >= 5 Sec TCM: None		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec)	One Trip
							out 0.375 Sample of Character Sample	
					P2721 Status is not Ignition Voltage	Fault Active >= 9 Volts		
					Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 400 RPM <= 7500 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:			
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case Case: Steady State 1 1st Gear					One Trip
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer (Sec) Time Cal	
			Intrusive test: commanded 2nd gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If attained Gear ≠ 2nd for Time	Please refer to Table 3 >= in Shift Time Support (Sec) ing Docum ents				
			If Above Conditions have been met, Increment 1st gear fail counter				>= 2 1st Gear Fail Count	
			and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
			Fail Case: Steady State 2 2 2 2					
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer (Sec) Time Cal	
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	Please refer to Table 3 >= in Shift Time Support (Sec) ing Docum ents				

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	If Above		Manufiction	Conditions		mum.
			Conditions have been met, Increment 2nd				>= 2 2nd Gear Fail Count	
			gear fail counter and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
			Fail Case: Steady State 3rd Gear					
			Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer (Sec) Time Cal	
			Intrusive test: commanded 4th gear					
			If attained Gear ≠ 4th for time					
			If Above Conditions have been met, Increment 3rd gear fail counter				>= 2 3rd Gear Fail Count	
			and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	

Component/	Fault Code	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Fail Case Case: Steady State	v aluc	mananotion	Conditions	Nequileu	
			Case Case: Steady State 4th Gear					
			– Gear slip	>= 400 RPM			Please See Table 5 Neutral >= For Timer (Sec) Time Cal	
			Intrusive test: commanded 5th gear					
			If attained Gear = 5th For Time	Please refer to Table 3 >= in Shift Time Support (Sec) ing Docum ents				
			If Above Conditions have been met, Increment 4th gear fail counter				>= 3 4th Gear Fail Count	
			and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	- FALSE BOOIEAN		
					TPS validity flag Hydraulic System			
					Pressurized	= TRUE Boolean		
					Minimum output speed for RVT	>= 0 RPM		
					A OR B		I	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					(A) Output speed enable			
					(B) Accelerator Pedal enable	>= 0.500488 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo Ignition Voltage Hi			
					Engine Speed Lo Engine Speed Hi			
					Engine Speed is within the allowable limits for	>= 5 Sec		
					Throttle Position Signal valid	- TRUE Roolean		
					HSD Enabled Transmission Fluid Temperature	>= 6 65625 °C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault			
					Default Gear Option is not present			
				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		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	wanunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximu = m pressuri zed				
			Primary Offgoing Clutch Pressure Command Status					
			Range Shift Status	Initial ≠ Clutch Control				
			Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below:	<= 40 RPM				
			fail timer 1 (2-6 shifting with throttle)	>= 0.7002 sec				
			fail timer 1 (2-6 shifting without throttle) fail timer 1	>= 0.9004 sec				
			(3-5 shifting with throttle) fail timer 1					
			(3-5 shifting without throttle)	>= 0.9004 sec				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
		·	fail timer 1 (4-5 shifting with throttle) fail timer 1 (4-5 shifting without throttle) fail timer 1 (4-6 shifting with throttle) fail timer 1	>= 0.9004 sec				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail Timer >= 1, and Refere nce Suppor ting Table 15 for Fail Timer	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter				2	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
.,			2nd gear fail counter				>=	Fail Counter From 2nd Gear	
			3rd gear fail counter				>=	Fail Counter From 3rd Gear	
			4th gear fail counter				>=	Fail Counter From 4th Gear	
			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	 # 1st Boolean = TRUE Boolean >= 200 RPM >= 200 RPM = FALSE Boolean 			

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

Component/	Fault Code	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D	intantanton	Conditions	Required	
			If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts				
			Intrusive test: (C35R clutch exhausted)	<= 1.5291				
			Gear Ratio					
			If the above parameters are true				>= 1.1 Fail Timer	
							>= 3 Fail Count in 5th Gear	
							OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		me uired	Mil Illum.
			<u>Fail</u>				>= 3	Total Fail Counts	
			Case Case: 6th Gear 2						
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to >= 3D rpm/sec Table 1 in supporti ng docume nts					
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 2 in supporti ng docume nts					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	If the Above is True for Time	Table Based Time Please Refer to >= Table Sec 17 in supporti ng docume nts		Contractions	rtoquillou	
			Intrusive test: (CB26 clutch exhausted)					
			Gear Ratio Gear Ratio If the above parameters are					
			true				>= 1.1 Fail Timer (Sec)	
							>= 3 Fail Count in 6th Gear	
							OR >= 3 Total Fail Counts	
					PRNDL State defaulted inhibit RVT	= FALSE Boolean = FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed TPS validity flag HSD Enabled Hydraulic_System_Pr	= TRUE Boolean = TRUE Boolean		
					essurized A OR B	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
,,,,,,		,			(A) Output speed enable			
					(B) Accelerator Pedal enable			
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	<= 31.99023 Volts >= 400 RPM <= 7500 RPM		
					within the allowable limits for			
					if Attained Gear=1st FW Accelerator Pedal enable	>= 10.00061 Pct		
					if Attained Gear=1st FW Engine Torque Enable	>= 45 Nm		
					if Attained Gear=1st FW Engine Torque Enable	<= 8191.875 Nm		
					Transmission Fluid Temperature			
					Input Speed Sensor fault			
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not present			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Disable Conditions:	MIL not Illuminated	TCM: P0716, P0717, P0722, P0723, P182E	Required	man.
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 Fail Time (Sec) out 0.375 Sample Time (Sec)	One Trip
					P2729 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	On or Fault Active >= 9 Volt <= 31.99023 Volt >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:			

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag		manufication	Conditions	>= 0.3 Fail Time (Sec)	One Trip
							out 0.375 Sample of Csec)	
					Ignition Voltage Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= 9 Volt <= 31.99023 Volt >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:				
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE Boolean			>= 4.4 Fail Time (Sec)	Two Trips
							out 5 Sample of 5 Time (Sec)	
					P2763 Status is not	Test Failed This Key On or Fault Active		
					Ignition Voltage	>= 9 Volt		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Citteria	variac	Ignition Voltage Engine Speed Engine Speed is Engine Speed is within the allowable limits for High Side Driver Enabled	<= 31.99023 Volt >= 400 RPM <= 7500 RPM >= 5 Sec	Required	
				Disable Conditions:		TCM: P0658, P0659 ECM: None		
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= TRUE Boolean			>= 4.4 MPH out of 5 MPH	One Trip
					P2764 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled	>= 9 Volt <= 31.99023 Volt >= 400 RPM <= 7500 RPM >= 5 Sec	OI	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Dis Conditi		TCM: P0658, P0659 : ECM: None		
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error				Fail counts >= 62 (≈ 10 seconds)	One Trip
			Delay timer	>= 0.1125 sec			Out 70 Counts (≈ 11 seconds)	
					Stabilization delay Ignition Voltage Ignition Voltage Power Mode	e >= 9 Volt e <= 31.99023 Volt		
				Dis Conditi	able MIL not Illuminated ons: for DTC's			
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	= TRUE Boolean			>= 12 sec	One Trip
					Stabilization delay Ignition Voltage Ignition Voltage Power Mode	e >= 9 Volt e <= 31.99023 Volt		
				Dis Conditi	able MIL not Illuminated ons: for DTC's			

Supporting Documents - MH8/T76 2D Tables

Table 1

Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00	N*m
Curve	100.00	120.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	RPM

Table 2

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

Table 3

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	3.50	3.50	Sec

Table 4

Axis	-6.67	-6.66	40.00	°С
Curve	409.59	2.99	2.00	Sec

Table 5

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

Table 6

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

Table 7

Axis	-6.67	-6.66	40.00	80.00	120.00	٥С
Curve	409.00	3.40	1.40	1.30	1.20	Sec

Supporting Documents - MH8/T76 2D Tables

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	°С
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	8.85	3.75	1.31	0.28	0.28	Sec

Table 11

Axis	-40.00	-20.00	0.00	30.00	110.00 °C	2
Curve	5.00	1.70	0.40	0.25	0.25 S	ес

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	8.00	2.20	0.70	0.25	0.25	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	5.20	1.60	0.50	0.27	0.16	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00 °C
Curve	5.00	1.50	0.70	0.25	0.25 Sec

Supporting Documents - MH8/T76 2D Tables

Table 15

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

Table 16

Axis	-6.67	-6.66	40.00	٥С
Curve	409.59	2.50	2.50	Sec

Table 17

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

Table 18

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

<u>Table 19</u>

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

Table 20

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

Table 21

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

Supporting Documents - MH8/T76 3D Tables

3D_Table 1

X-Axis Cali	bration	%
Y-Axis Cali	bration	°C
Table Calib	ration	RPM/Sec

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

3D_Table 2

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

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresi Valu		Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
Transmission Control Module (TCM)		Transmission Electro- Hydraulic Control Module Internal Temperature Too High	<u>Fail</u> <u>Case</u> 1 Substrate Temperature	>=	146.29688	°C					>=	5	Fail Time (Sec)	One Trip
			Fail Substrate Case Temperature		50	°C					>=	2	Fail Time (Sec)	-
			Ignition Voltage Note: either fail case can set the DTC		18	Volts								-
							Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time	>= <= >= <= >=	8.5996 31.99 0 170	Volts Volts °C °C Sec				
							P0634 Status is	≠	Test Failed This Key On or Fault Active					
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM:						
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	>	Refer to Table 21 in supporting documents	-		None						Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Gjetom	994	Zooonpaon	If TCM substrate temp to power up temp Δ	Refer to Table 22 in oC supporting			·	
			Both conditions above required to increment fail counter				>= 3000 3	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Sample Out 3750 Counts of (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				Pass Counts (100ms loop)	
							Sample Out 875 Counts of (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions	6	Time Required	Mil Illum.
					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage Lo		8.5996	Volts		
					Ignition Voltage Hi		31.99	Volts		
					Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM		
					Engine Speed Hi		7500	RPIVI		
					within the allowable	>=	5	Sec		
					limits for					
					Brake torque active		FALSE]
					Below describes the					
					brake torque entry criteria					
					Engine Torque	>=	90	N*m		
					Throttle		30	Pct		
					Transmission Input					
					Speed	<=	200	RPM		
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					РТО	=	Not Active			
					Set Brake Torque Active TRUE if above conditions are met for:		7	sec		
					Below describes the brake torque exit					
					criteria Brake torque entry					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure	≠	Clutch Hydraul ic Air Purge Event			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Condition	s	Time Required	Mil Illum.
					Clutch used to exit brake torque active	CeTFT _ D_e_C			
					The above clutch pressure is greater than this value for one loop	>= 600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	>- 20	Sec		
					P0667 Status is	Test Failed This ≠ Key On or Fault Active			
				Disable Conditions:					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Спена			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, P0307, P0308, P0307, P0308, P0401, P042E	roquirou	
Transmission Control Module (TCM)	P0668	TCM internal temperature (substrate) thermistor failed at a low voltge	Type of Sensor Used	CeTFTI_e_ = VoltageDir ectProp				Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	If TCM Substrate Temperature Sensor = Direct Proportional and Temp	<= -249 °C		Conditions	required	
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	e e e e e e e e e e e e e e e e e e e				
			Either condition above will satisfy the fail conditions				Fail >= 60 Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	<= 31.99 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
					P0668 Status is	Test Failed This ≠ Key On or Fault Active		
				Disabl Conditions		TCM: None ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Inditions			Time Requir		Mil Illum.
System	Code	TCM internal	Criteria	value	Mananonon		mannons	•		Requii	- Cu	Two
Transmission Control Module (TCM)	P0669	temperature (substrate) thermistor failed at a high voltage	Type of Sensor Used									Trips
			If TCM Substrate Temperature Sensor = Direct Proportional and Temp	>= 249 °C								
			If TCM Substrate Temperature Sensor = Indirect Proportional and Temp	<= 249 °C								
			Either condition above will satisfy the fail conditions						>=	60	Fail Timer (Sec)	
					TOSS Speed	>=	0	RPM				
					Toss Speed greater than above cal for	>=	0	Sec				
					TCC Slip TCC Slip greater than	>=	0	RPM				
					above cal for	>=	0	Sec				
					Ignition Voltage Lo		8.5996	Volts				
					Ignition Voltage Hi Engine Speed Lo	<= >=	31.99 400	Volts RPM				
					Engine Speed Lo Engine Speed Hi Engine Speed is	<=	7500	RPM				
					within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0669 Status is	Test Failed This ≠ Key On or Fault Active		
				Disable Conditions:	MIL not Illuminated for DTC's:			
						ECM: None		
Transmission Control Module (TCM)	P06AC	TCM Power-up Temp Sensor Circuit Range/Performance	If TCM power- up temp to substrate temp Δ	Refer to Table 22 in oC supporting documents				Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table 20 in °C supporting documents				
			Both conditions above required to increment fail counter				>= 3000 Fail Counts (100ms loop)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s		Time Requi		Mil Illum.
			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	=		Boolean Boolean				
					Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	>= <= >= <=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
					within the allowable limits for Brake torque active Below describes the brake torque entry criteria	=	5 FALSE	Sec				
					Engine Torque Throttle Transmission Input Speed	>= >= <=	90 30 200	N*m Pct RPM				

MH2/T43 SECTION Page 135 of 276

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					Vehicle Speed	<=	8	Kph		
					Transmission Range	≠	Park			
					Transmission Range	≠	Neutral			
					РТО	=	Not Active			
					Set Brake Torque Active TRUE if above conditions are met for:		7	sec		
					Below describes the brake torque exit criteria					
					Brake torque entry criteria	=	Not Met			
					Clutch hydraulic pressure		Clutch Hydraul ic Air Purge Event			
					Clutch used to exit brake torque active		CeTFT D_e_C 3_RatIE nbl			
					The above clutch pressure is greater than this value for one loop	>=	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	_	20	Sec		
					P06AC Status is	≠	Test Failed This Key On or Fault Active			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum
Cystem	Oode	Bescription	Ontona	1 0.10.0			110 4 4 4 4 4	+
				Disable	MIL not Illuminated	TCM:		
				Conditions:	for DTC's:	P0658,		
						P0668,		
						P0669,		
						P06AD,		
						P06AE,		
						P0716,		
						P0712,		
						P0713,		1
						P0717,		1
						P0722,		1
						P0723,		
						P0962,		
						P0963,		1
						P0966,		
						P0967,		1
						P0970,		1
						P0971,		1
						P215C,		
						P2720,		1
						P2721,		
						P2729,		1
						P2730		
						ECM:		
						P0101,		1
						P0101, P0102,		1
						P0102, P0103,		1
						P0103, P0106,		
						P0100, P0107,		1
						P0107, P0108,		
						P0171,		1
						P0172,		
						P0174,		
						D0.175		1
						P0175,		
						P0201,		
						P0202,		
						P0203,		
						P0204,		
						P0205,		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(Enable Conditions	;		Time Requir		Mil Illum.
- Cyclonia		2000				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	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Toss Speed Toss Fail Timer TCC slip TCC Fail Timer	<= >= <= >= >= >= >= >=	8.5996 31.99 400 7500 5 0 0 0 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec RPM Sec RPM Sec	>=	60	Fail Time (Sec)	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Valu		Secondary Malfunction		Enable Conditions	·		Time Requir		Mil Illum.
	-				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723 ECM: None				·		
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164	°C	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>=	8.5996 31.99 400 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec	>=	60	Fail Time (Sec)	Two Trips
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Fluid Temperature Sensor (TFT)	P0711	Trans Fluid Temp Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Table 21 in supporting documents	¹ °C								Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If transmission oil temp to power up temp Δ	Refer to Table 20 in oC supporting documents			·	
			Both conditions above required to increment fail counter				Fail Counts (100ms loop)	
			Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				Out 3750 Counts of (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until				>= 700 Pass Counts (100ms loop)	
							Sample Out 875 Counts of (100ms loop)	
					Engine Torque Signal Valid	= TRUE Boolean		1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions	S	Time Required	Mil Illum.
-					Accelerator Position Signal Valid	=	TRUE	Boolean		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<=	8.5996 31.99 400	Volts Volts RPM		
					Engine Speed Hi Engine Speed is within the allowable	<=	7500 5	RPM Sec		
					limits for Brake torque active Below describes the	=	FALSE			_
					brake torque entry criteria Engine Torque	>=	90	N*m		
					Throttle Transmission Input Speed		30 200	Pct RPM		
					Vehicle Speed Transmission Range	<= ≠	8 Park	Kph		
					Transmission Range	≠ =	Neutral Not			
					Set Brake Torque Active TRUE if above conditions are met for:		Active 7	sec		
					Below describes the brake torque exit criteria Brake torque entry	=	Not Met			
					criteria Clutch hydraulic pressure		Clutch Hydraul ic Air Purge Event			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illun
,					Clutch used to exit brake torque active	_	CeTFT D_e_C 3_RatIE nbl		·	
					The above clutch pressure is greater than this value for one loop	\ <u>-</u>	600	kpa		
					Set Brake Torque Active FALSE if above conditions are met for:	\ <u>-</u>	20	Sec		
					P0711 Status is	≠	Test Failed This Key On or Fault Active			
				Disable Conditions:	MIL not Illuminated for DTC's:					

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Value	Manufiction	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, P0307, P0308, P0401, P042E	Required	inium.
Transmission Fluid Temperature Sensor (TFT)	F0/12	Transmission fluid temperature thermistor failed at a low voltage	Type of Sensor Used	CeTFTI_e_ = VoltageDir ectProp				Two Trips

System Code Description Criteria Value Malfunction Conditions Required	Fail
Fluid Temperature Sensor = Sensor = Notice of Proportional and Temp Either condition above will satisfy the fail conditions TOSS >= 0 RPM TOSS above thresh for TCC slip >= 0 RPM TCC slip >=	———Fail
above will satisfy the fail conditions TOSS >= 0 RPM TOSS above thresh for TCC slip >= 0 RPM TCC slip above >= 0 RPM TCC slip above >= 0 RPM	Fail
TOSS above thresh for TCC slip >= 0 Sec TCC slip >= 0 RPM TCC slip above >= 0 Sec	Time (Sec)
thresh for Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Hi	

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary Malfunction	l	Enable			Time		Mil Illum.
System	Code	Description	Criteria		Val	ue Disable Conditions	MIL not Illuminated	TCM: P0716, P0717, P0722, P0723 ECM: None	Conditions	i		Requir	red	illum.
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature thermistor failed at a high voltage	Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp	= Vc	eTFTI_e_bltageDirectProp	°C								Two Trips
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<=	174	°C								
			Either condition above will satisfy the fail conditions								>=	60	Fail Time (Sec)	
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996 31.99 400 7500	Volts Volts RPM RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable ondition	s		Time Requir		Mil Illum.
Gystein	9040	Beschption	onnon a		P0713 Status is		Test Failed This Key On or Fault Active					
				Disabl Conditions		TCM: P0713, P0716, P0717, P0722, P0723						
						ECM: None						
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Sensor Drops	>= 1350 RPM					>=	0.8	Fail Time (Sec)	One Trip
					Engine Torque is Engine Torque is Engine Speed Engine Speed is Within the allowable limits for Vehicle Speed is Throttle Position is	<= >= <= >= >= >=	0 1492 400 7500 5 0	N*m N*m RPM RPM Sec Kph Pct				
					Transmission Input Speed is The previous requirement has been satisfied for The change (loop to loop) in transmission	>=	0 0 8191	RPM Sec RPM/Loo				

MH2/T43 SECTION Page 146 of 276

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		nreshold Value	Secondary Malfunction		Enable Condition			Time Requir		Mil Illum.
- Cystom		Boompaon	51.00112			The previous requirement has been satisfied for	>=	0	Sec		•		
						Throttle Position Signal Valid		TRUE	Boolean				
						Engine Torque Signal Valid	=	TRUE	Boolean				
						Ignition Voltage Ignition Voltage	>= <=	8.5996 31.99	Volts Volts				
						P0716 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions		TCM: P0717, P0752, P0973, P0974						
							ECM: P0101, P0102, P0103, P0121, P0122, P0123						
ransmission nput Speed ensor (TISS)		Input Speed Sensor Circuit Low Voltage	Fail Transmission 1 Input Speed is	< 50	RPM					>=	4.5	Fail Time (Sec)	One Trip
			Fail When P0722 Case DTC Status equal to Test Failed and Transmission Input Speed is	< 100	0 RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
						Engine Torque is Engine Torque is		50 1492	N*m N*m				

MH2/T43 SECTION Page 147 of 276

3 OF 3 SECTIONS

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			shold lue	Secondary Malfunction		Enable Condition	s		Time Requir		Mil Illum.
							Vehicle Speed Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>=	16 TRUE 8.5996 31.99 400 7500 5 Test Failed This Key On or Fault Active	Kph Boolean Volts Volts RPM RPM				
						Disable Conditions:								
Transmission Output Speed Sensor (TOSS)		Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<=	70	RPM					>=	4.5	Fail Time (Sec)	One Trip
							P0722 Status is not	=	Test Failed This Key On or Fault Active					
							Transmission Input Speed Check	=	TRUE	Boolean				
							Engine Torque Check	=	TRUE	Boolean				
							Throttle Position Transmission Fluid Temperature Disable this DTC if	>=	5.0003 -40	Pct °C				

Component/	Fault	Monitor Strategy	Malfunction Critoria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
System	Code	Description	Criteria	value	Engine Torque Signal Valid Throttle Position Signal Valid Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is	= = >= <= >= <=	TRUE	Boolean Boolean Volts Volts RPM RPM	Required	mum.
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					The Engine Torque Check is TRUE, if either of the two following conditions are TRUE					
					Engine Torque Condition 1 Shift Status is not	=	complet e			
					OR Transmission Range is	=	Park or Neutral			
					Engine Torque is Engine Torque is	>= <=	8191.8 8191.8	N*m N*m		
					Engine Torque Condition 2 Engine Torque is Engine Torque is	>= <=	35 1492	N*m N*m		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable ondition	s	Time Required	Mil Illum.
					The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE					
					TIS Check Condition 1 Transmission Input Speed is Transmission Input	>=	1000	RPM		
					Speed is TIS Check Condition 2 Engine Speed without	<=	8191	RPM		
					the brake applied is Engine Speed with the brake applied is	>=	3200	RPM RPM		
					Engine Speed is Controller uses a single power supply for the speed sensors	<= =	8191	RPM Boolean		
					Powertrain Brake Pedal is Valid	=	TRUE	Boolean		-

Component/	Fault	Monitor Strategy	Malfunction Criteria			shold lue	Secondary Malfunction		Enable Condition	e		Tim Requi		Mil Illum.
System	Code	Description	Criteria		Va	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0723 ECM: P0101, P0102, P0103, P0121, P0122, P0123	Somunion	5		Kequi	reu	
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Raw Output Speed	>=	210	RPM					>=	0.2	Enable Time (Sec)	One Trip
			Output Speed Delta	<=	8191	RPM					>=	0	Enable Time (Sec) Output	
			Output Speed Drop	>	650	RPM					>=	1.5	Speed Drop Recover Fail Time (Sec)	
							Range_Disable OR	=	FALSE	Boolean				
							 Neutral_Range_Enabl e And	=	TRUE	Boolean				
							Neutral_Speed_Enabl e are TRUE concurrently	=	TRUE	Boolean				
							Transmission_Range _Enable Transmission_Input_ Speed_Enable	=		Boolean Boolean		- O-T-I		

MH2/T43 SECTION Page 151 of 276

3 OF 3 SECTIONS

Component/ System	Fault Code	~~	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illum
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active	=	1	Boolean		
					Ignition Voltage is	>=	8.5996	Volts		1
					Ignition Voltage is	<=	31.99	Volts		1
					Engine Speed is	>=	400	RPM		1
					Engine Speed is	<=	7500	RPM		1
					Engine Speed is					1
					within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission_Input_ Speed_Enable is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE:					
					TIS Condition 1 is TRUE when both of the following conditions are satsified for Input Speed Delta	>= <=	0 4095	Enable Time (Sec) RPM		
					Raw Input Speed	>=	500	RPM		

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Спієтіа	value	TIS Condition 2 is TRUE when ALL of the next three conditions are satisfied Input Speed A Single Power Supply is used for all speed sensors Powertrain Brake	= 0 RPM = TRUE Boolean	кечиней	indii.
					Pedal Applied is Neutral_Range_Enabl e is TRUE when any of the next 3 conditions are TRUE Transmission Range			-
					Transmission Range	Revers		
					Transmission Range is	Neutral/ = Drive ENUM Transiti onal		
					Range_Disable is TRUE when any of the next three conditions are TRUE			
					Transmission Range is Transmission Range is	= Park ENUM Park/Re verse Transito nal		

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Ena Condi		Time Required	Mil Illun
System	Code	Description	Cinteria	value	Input Clutch is not	= (Fi	N Illy ENLIM	кечинеи	and i
					Neutral_Speed_Enabl e is TRUE when All of the next three conditions are satsified for Transmission Output Speed	> 7			
					And the acceleration of the Transmission Output Speed is	< 50	00 RPM/Loo p Rate		
					And the acceleration of the Transmission Output Speed is	> (RPM/Loo p Rate		
					Transmission_Range _Enable is TRUE when one of the next four conditions is TRUE				
					Transmission Range is	= Net	itral ENUM		
					Transmission Range is	Rev e/N = a Tra or	eutr II ENUM nsiti		
					Transmission Range is	Neu Dr Tra or	ive nsiti ENUM		
					Range Change Delay Timer	>= !	5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	ı,	Time Required	Mil Illum.
System	Code	Description	Ontena	Disable Conditions	MIL not Illuminated	TCM:			
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met				>=	Enable 2 Time (Sec)	Two Trips
			(A) TCC Slip Error @ TCC On Mode	Refer to Table 1 in RPM Supporting Documents			>=	Fail 4 Time (Sec)	
			(B) TCC Slip @ Lock On Mode				>=	Fail 4 Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter				>=	3 Stuck Off Fail Counter	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Engine Speed	<= 31.99 Volts >= 400 RPM			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illum.
- Gyoto		2000 pas.			Engine Speed is within the allowable limits for Engine Torque Lo Engine Torque Hi Throttle Position Lo Throttle Position Hi 2nd Gear Ratio Lo	>= >= <= >= <=	5 50 1492 8.0002 99.998 2.671	Sec N*m N*m Pct Pct Pct Ratio	·	
					2nd Gear Ratio High	<=	3.073	Ratio		
					3rd Gear Ratio Lo	>=	1.713	Ratio		
					3rd Gear Ratio High	<=	1.9709	Ratio		
					4th Gear Ratio Lo	>=	1.3151	Ratio		
					4th Gear Ratio High	<=	1.5129	Ratio		
					5th Gear Ratio Lo 5th Gear Ratio Hi 6th Gear Ratio Lo	>= <= >=	0.9301 1.0699 0.6901	Ratio Ratio Ratio		
					6th Gear Ratio High	<=	0.7939	Ratio		
					Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi		20 130	°C		
					TCC Command Lock ON or ON mode	=	TRUE	Boolean		
					PTO Not Active	=	TRUE	Boolean		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		
					Dynamic Mode	=	FALSE	Boolean		
					P0741 Status is	≠	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	Ontena	Disable	MIL not Illuminated	TCM:	rtoquirou	
				Conditions:	for DTC's:	P0716,		
				Conditions.	101 016 8.	P0717,		
						P0717,		
						P0722,		
						P0723, P0742,		
						P2763,		
						P2763, P2764		
						P2704		
						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		
Torque		TCC System Stuck						One
Converter Clutch		ON	TCC Slip Speed	>= -20 RPM				Trip
(TCC)							_	l l

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria			shold Ilue	Secondary Malfunction		Enable Conditions	s		Tim Requ		Mil Illum.
			TCC Slip Speed If Above Conditions Have been Met, and Fail Timer Expired,	<=	30	RPM					>=	2.5	Fail Time (Sec) Fail Counter	
			Increment Fail Counter											
							Run TCC Stuck On Test Enable Criteria:							
							Gear Ratio Gear Ratio Engine Speed Hi Engine Speed Lo Vehicle Speed Lo Stuck On During Upshift Enabled If Stuck On During Upshift is enabled (See Above), Engine Torque Must be Down Shift In Progress	>=	3.073 0.6901 6500 500 511 16 0 55 FALSE 1st Gear Locked	Ratio Ratio RPM RPM KPH KPH Boolean Nm Boolean				
							Engine Torque Hi Engine Torque Lo		1492 80	Nm Nm				
							Current Range	≠	Neutral	Range				
							Current Range	≠	Revers e	Range				
							Transmission Sump Temperature		130	°C				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illun
-,	2000	200.1600			Transmission Sump Temperature	>=	20	°C		
					Throttle Position Hyst High	>=	8.0002	Pct		
					Throttle Position Hyst Low	<=	2.9999	Pct		
					PTO Active	=	FALSE	Boolean		
					Disable if in D1 and value true	=	0	Boolean		
					Disable if in D2 and value true	=	0	Boolean		
					Disable if in D3 and value true	=	0	Boolean		
					Disable if in D4 and value true	=	0	Boolean		
					Disable if in D5 and value true	=	0	Boolean		
					Disable if in MUMD and value true	=	0	Boolean		
					Disable if in TUTD and value true	=	0	Boolean		
					4 Wheel Drive Active	=	FALSE	Boolean		
					Hydraulic Clutch Air Purge Active	=	FALSE	Boolean		
					Ignore Air Purge if value = true	=	0	Boolean		
					TCC Mode Common Enables:	=	OFF			
					Ignition Voltage	>=	8.5996	V		
					Ignition Voltage	<=	31.99	V		1
					Vehicle Speed	<=	511	KPH		
					Engine Speed Engine Speed	>= <=	400 7500	RPM RPM		1
					Engine Speed is	\-	7500	L/L IAI		1
					within the allowable limits for	>=	5	Sec		
					Engine Torque Signal Valid	=	TRUE	Boolean		
					Throttle Position Signal Valid	=	TRUE	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illun
- Cycus		2000			P0742 Status is	Test Failed	·	
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P0741, P2763, P2764		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108,		
						P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204,		
						P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303,		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Condition	s		Tim Requi		Mil Illum.
System	Odde	Description	omenu			P0305, P0306, P0307, P0308, P0401, P042E+W 597					
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip Commanded Gear Gear Ratio	>= 200 RPM = 1st Lock rpm <= 1.4849854				>=	0.3	Fail Tmr	Two Trips
				>= 1.3430176				=	8	Fail Counts	
								≠ >=	0	Neutral Timer (Sec) Fail Timer	
								>=	8	(Sec) Counts	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable	<= 31.99 >= 400 <= 7500 >= 5	Volts Volts RPM RPM		•	554.1.0	
					Transmission Fluid Temperature Shift is Complete	>= 0	°C				
					TPS OR Output Speed	>= 0	% RPM				
					Throttle Position Signal Valid from ECM	= TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illun
•		·			Engine Torque Signal Valid from ECM, High side driver is enabled	=	TRUE	Boolean		
					High-Side Driver is Enabled	=	TRUE	Boolean		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E				
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174,				
						P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Valu		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·					P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 200	Rpm				One Trip
			Commanded Gear	= 3rd	Gear				
			Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On	= TRUE	Boolean				
			C456/CBR1 Pressure Switch	= Pressurize	Boolean				
			C456/CBR1 Pressure Switch Fault	= FALSE	Boolean				
			If the above parameters are true						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	C	Enable Condition	s		Time Require		Mil Illum.
									F T >= S	Please Refer to able 16 in Supporti ng Oocume nts	Neutral Timer (Sec)	
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable	>= <= >= <= >=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
					limits for High-Side Driver is Enabled	=	TRUE	Boolean				
					Throttle Position Signal Valid from ECM	=	TRUE	Boolean				
					Output Speed OR TPS	>=	0.3998	RPM %				
					Shift is Complete Transmission Fluid Temperature Input Speed Sensor	>=	0	°C Boolean				
					fault Output Speed Sensor fault	=		Boolean				
					Default Gear Option is not present	=	TRUE					
				Disable Conditions:	MIL not Illuminated for DTC's:							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Cintella	Value		ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0401, P042E	required	
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	<u>Fail</u> Commanded <u>Case</u> Gear 1	= 1st Locked				One Trip
			Gear Box Slip	>= 200 RPM			Please Refer to Table 5 in Neutral Supporti ng Docume nts	

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s		Tim Requi		Mil Illum.
System	Code	Description	Intrusive Shift to 2nd Commanded Gear Previous Gear Ratio	= 1st Locked Gear <= 3.0159912 >= 2.7280273	Mananetton		Somulion	3	>= >=	1 5	sec counts	muni.
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Output Speed OR TPS Shift is Complete Transmission Fluid Temperature High-Side Driver is Enabled Throttle Position Signal Valid from ECM Input Speed Sensor fault Output Speed Sensor	<= >= <= >= >= >= == ==	FALSE	Volts Volts RPM RPM Sec RPM % °C Boolean Boolean Boolean				
				Disable Conditions:		= TCM: P0716, P0717, P0722, P0723, P182E	TRUE					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	<u>Fail</u> <u>Case</u> Case: Steady <u>1</u> State 3rd Gear						One Trip
			Commanded Gear	= 3rd	Gear				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Gystom	-	Bosonpasin	Gearbox Slip				Please Refer to Table 5 in Supporti ng Docume nts	
			Intrusive Test: Command 4th Gear					
			If attained Gear=4th gear for Time	Table Based Time Please Enable Refer to Time (Sec) Table 3 in supporting documents				
			It the above condiations are true, Increment 3rd gear fail counter				3rd >= 2 Gear Fail Counts	
			and C35R Fail counter				or 3-5R >= 14 Clutch Fail Counts	
			Fail Case: Steady Case State 5th Gear Commanded Gear	= 5th Gear				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	Gearbox Slip	>= 200 Rpm			Please Refer to Table 5 in Neutral Supporti ng Docume nts	
			Intrusive Test: Command 6th Gear					
			If attained Gear=6th gear Time	>= Please Enable				
			It the above condiations are true, Increment 5th gear fail counter				5th >= 3 Gear Fail Counts	
			and C35R Fail counter				or 3-5R >= 14 Clutch Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					TPS validity flag	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illun
- J		200.160011			Hydraulic System Pressurized	_	TRUE	Boolean		
					Minimum output speed for RVT	>=	0	RPM		
					A OR B (A) Output speed enable	>=	16	RPM		
					(B) Accelerator Pedal enable		0.3998	Pct		
					Common Enable Criteria Ignition Voltage Lo		8.5996	Volts		
					Ignition Voltage Li		31.99	Volts		1
					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	>=	0	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	_	FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:	P0716,				
						P0717, P0722, P0723, P182E				
						ECM: P0101,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold /alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
oystem.	Odde	Description					P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear		DD:				One Trip
			slip	>= 200	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the Above is True for Time	Table Based Time Please Enable Refer to Time (Sec) Table 4 in supporting documents				
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 1.93396 >= 1.75				
							Fail >= 0.75 Timer (Sec) Fail	
							>= 2 Count in 1st Gear or	
			Fail Case: Steady				Total >= 3 Fail Counts	
			2 State 2nd gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Безсприоп	Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to rpm/sec			rtoquiiou	
			Min Delta Output Speed Hysteresis	>= Please rpm/sec				
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 19 in supporting documents				
			Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 1.93396 >= 1.75				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
							>=	Fail 0.75 Timer (Sec) Fail Count ir 2nd	1
			<u>Fail</u>				>=	Gear or Total 3 Fail Counts	_
			Case Case: Steady State 4th gear						
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to Table 17 in supporting documents					
			Min Delta Output Speed Hysteresis	>= Please rpm/sec					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 19 in supporting documents				
				<= 1.0500488 >= 0.9499512				
							Fail >= 0.75 Timer (Sec) Fail	
							>= 1 Count in 4th Gear or	
			Fail Committee				Total >= 3 Fail Counts	
			Case: Steady State 6th gear					

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Max Delta Output Speed Hysteresis	Table Based value Please >= Pefecto rpm/sec	mununcion	Conditions	Required	um.
			Min Delta Output Speed Hysteresis	>= Please rpm/sec				
			If the Above is True for Time	Table Based Time Please Refer to Table 19 in supporting documents				
			Intrusive test: (CB26 clutch exhausted) Gear Ratio				Fail >= 0.75 Timer	
			Gear Ratio	>= 0.9499512			>= 1 counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s		Time		Mil Illum.
System	Code	Description	If the above parameters are true	Taluc			20.14111011			Noquii		
									>=	0.75	Fail Timer (Sec)	
									>=	1	Fail Count in 6th Gear	
									>=	3	or Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean			Counts	
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pr essurized		TRUE	Boolean				
					Minimum output speed for RVT	>=	0	Nm				
					A OR B (A) Output speed enable	>=	16	Nm				
					(B) Accelerator Pedal enable	>=	0.3998	Nm				
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is	<= >= <=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
					within the allowable limits for	>=	5	Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(Enable Condition	s	Time Required	Mi Illur
•		·			if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	1492	Nm		
					Transmission Fluid Temperature	_	0	°C		
					Input Speed Sensor fault	_	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
				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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Systom	9949	Boompaion				P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers)	TDUE DOLLAR				One Trip
			Primary Oncoming Clutch Pressure Command Status					
			Primary Offgoing Clutch Pressure Command Status	exhaust command				
			Range Shift Status Attained Gear Slip	Control				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
•			If the above conditions are true run appropriate Fail 1 Timers Below:				·	
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-2 shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-4 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-4shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (3-5 shifting with Closed Throttle)					
			fail timer 1 (5-3 shifting with Throttle)					
			fail timer 1 (5-3 shifting with Closed Throttle)					
			fail timer 1 (5-4 shifting with Throttle)	>= 1.2001953 Fall Time				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Oyotom		2000117011	fail timer 1 (5-4 shifting with Closed Throttle)	Fall Time				
			fail timer 1 (5-6 shifting with Throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (5-6 shifting with Closed Throttle)	>= 1.2001953 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, sec and Referenc e Supporti ng Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s		Tim Requi		Mil Illum.
			3rd gear fail counter						>=	3	3rd gear fail counts OR	
			5th gear fail counter						>=	3	5th gear fail counts	
			Total fail counter						>=	5	OR total fail counts	
					Trans oil temperature	>	0	°C				
					Input Speed Sensor fault		FALSE	Boolean				
					Output Speed Sensor fault	_	FALSE	Boolean				
					Command / Attained Gear	→	1st	Boolean				
					High Side Driver ON		TRUE	Boolean				
					output speed limit for TUT	>=	350	RPM				
					input speed limit for TUT	>=	200	RPM				
					TUT Enable temperature	>=	0	°C				
					PRNDL state defaulted		FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				
					Service Fast Learn Mode	=	FALSE	Boolean				
					HSD Enabled		TRUE	Boolean				
					Default Gear Option is not present	=	TRUE					

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Disable		TCM:	Required	mann.
				Conditions:	for DTC's:	P0716,		
				Conditions.	101 10 3.	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		
			Foil			PU42E		022
Variable Blood		Pressure Control (PC)	<u>Fail</u> <u>Case</u> Case: Steady					One Trip
Variable Bleed Solenoid (VBS)	P0796	Solenoid C Stuck Off	1 Chata 4th Caar					THP
ooleriola (VBO)		[C456] (Steady State)	1 State 4th Geal					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
•		·	Gear slip	>= 200 RPM			Please See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 5th gear					
			If attained Gear ≠5th for time					
			if the above conditions have been met					
			Increment 4th Gear Fail Counter				4th >= 2 Gear Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			Fail Case: Steady Case State 5th Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
•		·	Gear slip	>= 200 RPM			Please See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 6th gear					
			If attained Gear ≠ 6th for time					
			if the above conditions have been met					
			Increment 5th Gear Fail Counter				5th Sear Fail Count OR	
			and C456 Fail Counters				C456 >= 14 Fail Counts	
			Fail Case: Steady Case State 6th Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Gyacom		2000 pas.	Gear slip				Please See Table 5 For Neutral Neutral Time Cal	
			Intrusive test: commanded 5th gear					
			If attained Gear ≠ 5th for time	Table Based Time Please Enable Refer to Time (See Table 3 in supporting documents	c)			
			if the above conditions have been met					
			Increment 6th Gear Fail Counter and C456 Fail Counter				>= 2 Gear Fail Count	
			and C456 Fail Counter				OR C456 >= 14 Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT IMS fault pending			
					indication	- PALSE Boolean		
					TPS validity flag	= TRUE Boolear	1	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(Enable Condition	s	Time Required	Mi Illur
					Hydraulic System Pressurized	=	TRUE	Boolean		
					Minimum output speed for RVT	/=	0	RPM		
					A OR B (A) Output speed enable	>=	16	RPM		
					(B) Accelerator Pedal enable	>=	0.3998	Pct		
					Common Enable Criteria					
					Ignition Voltage Lo		8.5996	Volts		
					Ignition Voltage Hi Engine Speed Lo		31.99 400	Volts RPM		
					Engine Speed Lo Engine Speed Hi		7500	RPM RPM		
					Engine Speed is		7000	TXI IVI		
					within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid	_	TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Transmission Fluid Temperature		0	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					OutputSpeed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				5	NAI 4 111	TONA				
				Disable Conditions:		TCM: P0716, P0717,				
						P0722, P0723,				
						P182E				
						ECM: P0101,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case Case: Steady State 1st Attained Gear	>= 200	RPM				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
5,5.0		2000.194011	If the Above is True for Time	Table Based Time				
				<= 1.4849854 >= 1.3430176			Fail	
							>= 0.75 Timer (Sec) Fail Count in 1st Gear	
			<u>Fail</u>				or Total >= 3 Fail Counts	
			Case 2 Case Steady State 2nd					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			Max Delta Output Speed Hysteresis	>= Please rpm/sec				
			Min Delta Output Speed Hysteresis	>= Please rpm/sec				
			If the Above is True for Time	Table Based Time Please Refer to Table 19 in supporting documents				
				<= 1.4849854 >= 1.3430176				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Require		Mil Illum.
							>=	0.75	Fail Timer (Sec) Fail	
							>=	1	Count in 2nd Gear or	
							>=	3	Total fail counts	
			Fail Case Steady Case State 3rd							
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to Table 17 in supporting documents						
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to Table 18 in supporting documents						

Component/	Fault	Monitor Strategy	Malfunction Critoria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Component/ System	Fault Code	Monitor Strategy Description	If the Above is True for Time Intrusive test: (C35R clutch exhausted) Gear Ratio	Table Based Time Please Refer to Table 19 in supporting documents <= 1.4849854 >= 1.3430176	Secondary Malfunction	Enable Conditions	Time Required Fail >= 0.75 Timer (Sec) Fail Count in 3rd Gear OR	Illum.
					PRNDL State	= FALSE Boolean	Total >= 3 Fail Counts	
					defaulted inhibit RVT	= FALSE Boolean		
					IMS fault pending indication output speed	= FALSE Boolean >= 0 RPM		
					TPS validity flag	= TRUE Boolean		
					HSD Enabled Hydraulic_System_Pr essurized	= TRUE Boolean = TRUE Boolean		

MH2/T43 SECTION Page 192 of 276

omponent/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(Enable Condition	s	Time Required	Mil Illum
<u> </u>	Joue	Description	Onteria	- 5100	Minimum output speed for RVT	>=	0	Nm		
					A OR B (A) Output speed enable	\ <u>-</u>	16	Nm		
					(B) Accelerator Pedal enable	>=	0.3998	Nm	I	
					Ignition Voltage Lo Ignition Voltage Hi	>=	8.5996 31.99	Volts Volts	I	
	1				Engine Speed Lo		400	RPM	l	
	1 1				Engine Speed Lo		7500	RPM	İ	
	1 1				Engine Speed in		7300	IXI IVI	İ	
					within the allowable limits for	>=	5	Sec		
	1 1				if Attained Gear=1st				l	
					FW Accelerator Pedal enable	>=	5.0003	Pct		
					if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine Torque	<=	1492	Nm		
					Enable Transmission Fluid Temperature	\ <u>-</u>	0	°C		
					Input Speed Sensor fault		FALSE	Boolean		
					Output Speed Sensor fault	_	FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716,				
				Conditions.	101 110 3.	P0717, P0722,				
						P0723, P182E				
						P0723,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers)	= TRUE Boolean				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
бузіені	Code	Description	Primary Oncoming Clutch Pressure Command Status	Maximum = pressurize d		- Commons	. toquilou	
			Primary Offgoing Clutch Pressure Command Status	= exhaust command				
			Range Shift Status Attained Gear Slip	Control				
			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (4-1 shifting with throttle)	>= 1.2001953 Fail Time				
			fail timer 1 (4-1 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)					
			fail timer 1 (4-2 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (4-3 shifting with throttle)	>= 1.2001953 Fail Time				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail timer 1 (4-3 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (5-3 shifting with throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (5-3 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (6-2 shifting with throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, sec and Referenc e Supporti ng Table 15 for Fail Timer 2	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Requir		Mil Illum.
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					-		
			4th gear fail counter				>=	3	Fail Counter From 4th Gear OR	
			5th gear fail counter				>=	3	Fail Counter From 5th Gear OR	
			6th gear fail counter				>=	3	Fail Counter From 6th Gear OR	
			Total fail counter				>=	5	Total Fail Counter	
					Trans oil temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON	= FALSE Boolean = FALSE Boolean ≠ 1st Boolean				

System C	Code	Description	Criteria	Value	Malfunction	(Condition	s	Required	Illun
					output speed limit for TUT input speed limit for TUT TUT Enable temperature PRNDL state defaulted	_	350 200 0 FALSE	RPM RPM °C Boolean		
					IMS Fault Pending	=	FALSE	Boolean		
					Service Fast Learn Mode	=	FALSE	Boolean		
					HSD Enabled	=	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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold llue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		•					P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case Stuck in the Up Position in Range 1	0	Boolean				Special No Trip
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 4 Enabled	0	Boolean				
			Tap Up Switch Stuck in the Up Position in Range 5 Enabled	0	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction	Enable Conditions	R	Time lequired	Mil Illum.
			Tap Up Switch Stuck in the Up Position in Range 6 Enabled	=	0	Boolean					
			Tap Up Switch Stuck in the Up Position in Neutral Enabled	=	1	Boolean					
			Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean					
			Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean					
			Tap Up Switch ON	= T	RUE	Boolean			>=	Fail 1 Time (Sec)	
			Fail Tap Up Switch Case Stuck in the Up Position in Range 1 Enabled	=	1	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	1	Boolean					
			Tap Up Switch Stuck in the Up Position in Range 3 Enabled		1	Boolean					

Fault	Monitor Strategy	Malfunction Critoria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Code	Description	Tap Up Switch Stuck in the Up	= 1 Boolean		Conditions	rtoquileu	
		Tap Up Switch Stuck in the Up Position in Range 5 Enabled	= 1 Boolean				
		Tap Up Switch Stuck in the Up Position in Range 6 Enabled	= 1 Boolean				
		Tap Up Switch Stuck in the Up Position in Neutral Enabled	= 0 Boolean				
		Tap Up Switch Stuck in the Up Position in Park Enabled	= 0 Boolean				
		Stuck in the Up Position in Reverse Enabled	= 0 Boolean				
		Tap Up Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	- IRUE BOOIEAII			Fail >= 600 Time (Sec)	
	Code		Code Description Criteria Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled	Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck	Code Description Criteria Value Malfunction Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch Stuck in the Up Position in	Code Description Criteria Value Malfunction Conditions Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 7 Enabled Tap Up Switch Stuck in the Up Position in Range 7 Enabled Tap Up Switch Stuck in the Up Position in Range 7 Enabled Tap Up Switch Stuck in the Up Position in Range 7 Enabled Tap Up Switch Stuck in the Up Position in Range 7 Enabled Tap Up Switch Stuck in the Up Position in Range 7 Enabled Tap Up Switch Stuck in the Up Position in Range 8 Enabled Tap Up Switch Switc	Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 4 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Switch Stuck in the Up Position in Park Enabled Tap Up Switch Switch Switch Switch Switch Switch Switch Switch Switch Switch Switch Switc

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val	shold lue	Secondary Malfunction	(Enable Conditions		Time Required	Mil Illum.
						Time Since Last Range Change Ignition Voltage Lo	>=	1 8.5996	Enable Time (Sec) Volts		
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= >=	31.99 400 7500	Volts RPM RPM		
						Engine Speed is within the allowable limits for		5	Sec		
						P0815 Status is	≠	Test Failed This Key On or Fault Active			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816, P0826, P182E, P1876, P1877, P1915, P1761				
							ECM: None				
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Tap Down Case Switch Stuck in 1 the Down Position in Range 1 Enabled	= 0	Boolean						Special No Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold /alue	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled		Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled		Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	- 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled		Boolean				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled		Boolean			·	
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean				
			Tap Down Switch Stuck in the Down Position in Neutral Enabled		Boolean				
			Tap Down Switch Stuck in the Down Position in Park Enabled	= 0	Boolean				
			Tap Down Switch Stuck in the Down Position in Reverse Enabled		Boolean				
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE	Boolean			>= 600 sec	

Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable					Mil
Code	Description	Criteria		Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P0816 Status is	>= >= <= >= <= >=	1 8.5996 31.99 400 7500 5 Test Failed This Key On or Fault Active	Enable Time (Sec) Volts Volts RPM RPM		Requii	red	Illum.
P0826	Up and Down Shift Switch Circuit			Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= >= <=	8.5996 31.99 400 7500	Volts Volts RPM RPM	>=	60	Fail Time (Sec)	Special No Trip
	Code	Code Description	P0826 Up and Down Shift Switch Circuit Reads Invalid	Code Description Criteria Value Disable Conditions:	Code Description Criteria Value Malfunction	Code Description Criteria Value Malfunction Criteria Value Criteria C	Code Description Criteria Value Maffunction Conditions	Code Description Criteria Value Malfunction Conditions	Code Description Criteria Value Malfunction Conditions	Disable Conditions Conditions Conditions Requirement	Description

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Value		Secondary Malfunction		Enable Conditions		Time quired	Mil Illum.
						P0826 Status is	≠	Test Failed This Key On or Fault Active			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761 ECM:				
							None				
Transmission Fluid Pressure Switch	P0872	Transmission Fluid Pressure (TFP) Sensor C Circuit Low Voltage	CB26 Hydraulic pressure	<= 50	КРа						Special No Trip
			Hydraulic Delay Timer (Table Based)	See Table >= 8 for Delay Timer Cal	Sec						
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter						>= 1	8 Fail 8 Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
Зузівії	oode	σεσυτριίστ	Note: Subsequent fail counts require CB26 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 Kpa			23		· roquirou	
					Transmission Fluid Temperature Lo	>=	0	°C		
					Transmission Fluid Temperature Hi	<=	120	°C		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action	=	FALSE			
					High Side Driver ON	=	TRUE			
					RVT Status	=	Normal			
					Hydraulic Pressure Available	=	TRUE			
					Engine Speed Min	>=	550	RPM		

Component/	Fault	Monitor Strategy	Malfunction	Thres Valu		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	vait	Disable	MIL not Illuminated	TCM:	Required	mum.
					Conditions:	for DTC's:	P0711,		
							P0712,		
							P0713, P0716,		
							P0716, P0717,		
							P0722,		
							P0723,		
							P0751, P0742,		
							P0756,		
							P0757,		
							P0973, P0974,		
							P0976,		
							P0977,		
							P1915, P182E		
							P102E		
							ECM:		
							None		
Transmission		Transmission Fluid Pressure (TFP)	CB26 Hydraulic						Special No Trip
Fluid Pressure	P0873	Sensor C Circuit High	Pressure	>= 700	KPa				NO THP
Switch		Voltage							
			Hydraulic Delay	See Table					
			Timer (Table	>= 8 for Delay	Sec				
			Based)	Timer Cal					
			Check for						
			Switch to be in						
			Pressurized Position after					>= 20 Fail	
			delay, If so					Counts	·
			then Increment						
			Fail Counter						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres		Secondary Malfunction		Enable Conditions	,	Time Required	Mil Illum.
- Oystein	Code	Description	Note: Subsequent fail counts require CB26 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	<	700	kpa						
							Transmission Fluid Temperature Lo	>=	0	°C		
							Transmission Fluid Temperature Hi		120	°C		
							Ignition Voltage Lo	>=	8.5996	Volts		
							Ignition Voltage Hi	<=	31.99	Volts		
							Engine Speed Lo	>=	400	RPM		
							Engine Speed Hi	<=	7500	RPM		
							Engine Speed is within the allowable limits for	>=	5	Sec		
							Default Gear Action		FALSE			
							High Side Driver ON	=	TRUE			
							RVT Status	=	Normal			
							Hydraulic Pressure Available	=	TRUE			
							Engine Speed Min	>=	550	RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Cinteria	Disable Conditions:			rtequired	
Transmission Fluid Pressure Switch	FU011	Transmission Fluid Pressure (TFP) Sensor D Circuit Low Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based)	<= 50 KPa See Table >= 6 for Delay Sec Timer Cal				Special No Trip
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 5 Fail Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
		200.161011	Note: Subsequent fail counts require C1234 pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa					•	
					Transmission Fluid Temperature Lo	>=	0	°C		
					Transmission Fluid Temperature Hi	<=	120	°C		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action	=	FALSE			
					High Side Driver ON	=	TRUE			
					RVT Status	=	Normal			
					Hydraulic Pressure Available	=	TRUE			
					Engine Speed Min	>=	550	RPM		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Ontena	Disak Condition	le MIL not Illuminated	TCM:	rtoquillo	
Transmission Fluid Pressure Switch	P0878	Transmission Fluid Pressure (TFP) Sensor D Circuit High Voltage	C1234 Hydraulic pressure Hydraulic Delay Timer (Table Based) Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter	>= 700 KPa See Table >= 6 for Delay Sec Timer Cal			>= 8 Fail Counts	Special No Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions	,	Time Required	Mil Illum.
System	Code	Description	Note: Subsequent fail counts require C1234 pressure below this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 Kpa			Octivitions		required	
					Transmission Fluid Temperature Lo	>=	0	°C		
					Transmission Fluid Temperature Hi	<=	120	°C		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Default Gear Action	=	FALSE			
					High Side Driver ON	=	TRUE			
					RVT Status	=	Normal			
					Hydraulic Pressure Available	=	TRUE			
					Engine Speed Min	>=	550	RPM		
1										

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Val		Secondary Malfunction		Enable Conditions			Time Requi		Mil Illum.
System	Code	Description	Griteria	Val	Disable Conditions:		TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None	Somutions			Nequil	Gu	
Variable Bleed Solenoid (VBS)		Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>= out of	0.3	Fail Time (Sec) Sample Time (Sec)	One Trip
						Ignition Voltage	>=	8.5996	Volts			(===)	
						Ignition Voltage	<=	31.99	Volts				
						Engine Speed	>=	400	RPM				
						Engine Speed Engine Speed is within the allowable limits for		7500 5	RPM Sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Va		Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
Зуѕіен	Code	Description	Onteria	7 4.	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None	Somulations			rtoquii	ou	
							ECM: None						
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.375	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
						Engine Speed is within the allowable limits for	>=	5	Sec				
						P0966 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM:						
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean		None			>=	0.3	Fail Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		shold Ilue	Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
										out of	0.375	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
						P0967 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
Variable Bleed Solenoid (VBS)		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 Trip
										out of	0.375	Sample Time (Sec)	
						P0970 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>=	8.5996 31.99 400 7500	Volts Volts RPM RPM				

MH2/T43 SECTION Page 217 of 276

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·			Engine Speed is within the allowable limits for			
				Disable Conditions:	MIL not Illuminated for DTC's:			
						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			Fail >= 0.3 Time (Sec)	One Trip
							out Sample of 0.375 Time (Sec)	
					P0971 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 Iimits for	<= 31.99 Volts >= 400 RPM <= 7500 RPM		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		reshold Value	Secondary Malfunction	(Enable Conditions	i		Tim Requi		Mil Illum.
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRU	E Boolean					>=	1.2	Fail Time (Sec)	One Trip
										out of	1.5	Sample Time (Sec)	
						P0973 Status is not	=	Test Failed This Key On or Fault Active					
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Shift Solinoid	P0974	Shift Solenoid A Control Circuit High (Mode 2 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	= TRU	E Boolean		TKCIIC .			>=	1.2	Fail Time (Sec)	Two Trips
										out of	1.5	Sample Time (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					P0974 Status is not	Test Failed This = Key On or Fault Active		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	<= 31.99 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		
				Disable Conditions:	MIL not Illuminated for DTC's:			
Mode 3 Multiplex Valve	P0976	Shift Solenoid BControl Circuit Low (Mode 3 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 1.2 Sec out	Two Trips
					P0976 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 Iimits for	<= 31.99 Volts >= 400 RPM <= 7500 RPM >= 5 Sec		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction		Enable Conditions			Time		Mil Illum.
		2000				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
								ECM: None						
Mode 3 Multiplex Valve	P0977	Shift Solenoid B Control Circuit High (Mode 3 Solenoid)	The HWIO reports a high voltage (open or power short) error flag	=	TRUE	Boolean					>=	1.2	Sec	One Trip
											out of	1.5	Sec	
							P0977 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM:						
								None						
Transmission Fluid Pressure Switch	P0989	Transmission Fluid Pressure (TFP) Sensor E Circuit Low Voltage	CBR1/C456 Hydraulic pressure	<=	50	Кра								Special No Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Безсприоп	Hydraulic Delay	See Table >= 9 for Delay Sec Timer Cal			rtoquilou	
			Check for Switch to be in Exhausted Position after delay, If so then Increment Fail Counter				>= 18 Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	> 50 kpa				
					Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Default Gear Action High Side Driver ON	>= 0 °C <= 120 °C >= 8.5996 Volts <= 31.99 Volts >= 400 RPM <= 7500 RPM >= 5 Sec = FALSE = TRUE		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(Enable Conditions	Time Required	Mil Illum.
					RVT Status Hydraulic Pressure Available Engine Speed Min	_	Normal TRUE 550 RPM		
				Disable Conditions		TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0742, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None			
Transmission Fluid Pressure Switch	P0990	Transmission Fluid Pressure (TFP) Sensor E Circuit High Voltage	CBR1/C456 Hydraulic pressure						Special No Trip
			Hydraulic Delay Timer (Table Based)	See Table >= 9 for Delay Sec Timer Cal					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions	.		Tim Requi		Mil Illum.
		·	Check for Switch to be in Pressurized Position after delay, If so then Increment Fail Counter						>=	15	Fail Counts	
			Note: Subsequent fail counts require C35R pressure above this value to re-enable fail logic. Results in one fail count per clutch transition	< 700 kpa								
					Transmission Fluid Temperature Lo	>=	0	°C				
					Transmission Fluid Temperature Hi	<=	120	°C				
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi Engine Speed Lo	<= >=	31.99 400	Volts RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					Default Gear Action	=	FALSE					
					High Side Driver ON	=	TRUE					
					RVT Status	=	Normal					
					Hydraulic Pressure Available	=	TRUE					
					Engine Speed Min	>=	550	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Cinteria	Disable Conditions:		TCM: P0711, P0712, P0713, P0716, P0717, P0722, P0723, P0751, P0756, P0757, P0973, P0974, P0976, P0977, P1915, P182E ECM: None	roquirou	
Mode 2 Multiplex Valve	P1751	Shift valve 1 performance	Attained Gear Slip is If Slip is Greater than the Above Cal Increment Fail Counter & Sample Counter	>= 100 RPM	Once this evaluation is complete the system will allow the valve to get back into position by delaying the next test for	= 1 Seconds	>= 5 Fail Counts Out 5 Sample of Counts	Two Trips

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illum
-,		20001,000			M2 Solenoid is Commanded On	=	TRUE	Boolean		
					Current Gear ≠ 2nd Gear	≠	2nd Gear	Gear		
					Calcaluted line pressure is	>=	1300	kPa		
					The test can begin when the M2 valve is verified to be in place because absolute value of attained gear slip and commanded gear slip is	<=	110	RPM		
					Test is delayed by a calibrated amount of time to allow the M2 valve to get into position	=	0.5	Sec		
					Upshift is In Progress	=	FALSE	Boolean		
					Input Speed Sensor Signal Hyst High (enabled above this value)	>=	1200	RPM		
					Input Speed Sensor Signal Hyst Low (disabled below this value)	<=	900	RPM		
					The torque converter clutch has transition from Locked to Unlocked.	=	TRUE	Boolean		

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enable Conditions		Time	Mil Illum.
System	Code	Description	Criteria	value	TCC Stuck On Enable		Conditions	>	Required	mum.
					Criteria:					
					Gear Ratio	<=	3.073	Ratio		
					Gear Ratio	>=	0.6901	Ratio		
					Engine Speed Hi Engine Speed Lo	<= >=	6500 500	RPM RPM		
					Vehicle Speed HI	<=	511	KPH		
					Vehicle Speed Lo	>=	16	KPH		
					Stuck On During	=	0	Boolean		
					Upshift Enabled	_	U	Doolean		
					If Stuck On During					
					Upshift is enabled (See Above),	>=	55	Nm		
					Engine Torque Must	/-	55	INIII		
					be					
					Down Shift In	=	ENICE	Boolean		
					Progress	_	FALSE	Doolean		
							1st			
					Current Gear	≠	Gear	Boolean		
							Locked			
					Engine Torque Hi	<=	1492	Nm		
					Engine Torque Lo	>=	80	Nm		
					Current Range	≠	Neutral	Range		
						-		9		
					Current Range	≠	Revers e	Range		
					Transmission Sump					
					Temperature	<=	130	°C		
					Transmission Sump	>=	20	°C		
					Temperature		20	Ŭ		
					Throttle Position Hyst	>=	8.0002	Pct		
					High Throttle Position Hyst					
					Low	<=	2.9999	Pct		
								Deals		
					PTO Active	=	FALSE	Boolean		
					Disable if in D1 and	=	0	Boolean		
					value true		ŭ	200,00,1		
					Disable if in D2 and value true	=	0	Boolean		
					Disable if in D3 and					
					value true	=	0	Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illum
2,220		· · · · · · · · · · · · · · ·			Disable if in D4 and value true	_	0	Boolean	•	
					Disable if in D5 and value true	_	0	Boolean		
					Disable if in MUMD and value true	_	0	Boolean		
					Disable if in TUTD and value true	_	0	Boolean		
					4 Wheel Drive Active		FALSE	Boolean		
					Air Purge Active	=	FALSE	Boolean		
					Ignore Air Purge if value = true		0	Boolean		
					TCC Mode Common Enables:	=	OFF			
					Ignition Voltage	>=	8.5996	V		
					Ignition Voltage	<=	31.99	V		
					Vehicle Speed	<=	511	KPH		
					Engine Speed		400	RPM		
					Engine Speed Engine Speed is	<=	7500	RPM		
					within the allowable limits for	>=	5	Sec		
					Engine Torque Signal Valid	_	TRUE	Boolean		
					Throttle Position Signal Valid	_	TRUE	Boolean		
					P1751 Status is	≠	Test Failed This Key On			
				Disable						
				Conditions:	for DTC's:	P0716,				
						P0717,				
						P0722,				
						P0723,				
						P0741,				
						P0742,				
						P2763,				

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Value		P2764 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E	Required	
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Circuit A Low Reported as Internal Mode Switch- Invalid Range	Fail Case 1 Current range	= "Transition Range State al 1"				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Previous range	CeTRGR_ != e_PRNDL_ Range State Drive6	2			
			Previous range	CeTRGR_ != e_PRNDL_ Range State Drive4	÷			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"					
			Engine Torque	>= -50 Nm				
			Engine Torque	<= 1492 Nm				
			If the above conditions are present Increment Fail Timer				Fail >= 0.225 Second s	
			If Fail Timer has Expired then Increment Fail Counter				>= 15 Fail Counts	
			Fail Case Current range 2	= "Transition Range State al 1"	;			
			S3 Pressure Switch indicates "Exhausted"					
			Commanded Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thresh Valu		Secondary Malfunction		Enable Conditions	s		Time Requir		Mil Illum.
		·	If the above conditions are present Increment Fail Timer								>=	0.225	Fail Second s	
			If Fail Timer has Expired then Increment Fail Counter								>=	15	Fail Counts	
			Fail Case 3 Current range	=	"Transition al 13"		Previous range	!=	CeTRG R_e_P RNDL_ Drive3					
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	H	TRUE	Boolean	Previous range	!=	CeTRG R_e_P RNDL_ Drive2					
			Engine Torque	>=	-1492	Nm	IMS is 7 position configuration	=	0	Boolean				
			Engine Torque	<=	1492	Nm	If the "IMS 7 Position config" = 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transitional 13"							
			If the above conditions are present Increment Fail Timer								>=	0.225	Second s	
			If Fail Timer has Expired then Increment Fail Counter								>=	15	Fail Counts	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	Fail Case 4 Current range	"Transition = al 2" or "Transition al 8"	Disable Fail Case 4 if last positive range was Drive 6 and current range is transitional 8			
			Either the S1 or S3 Pressure Switch indicates "Pressure Present"	= TRUE Boolean				
			Steady State Engine Torque	>= 100 Nm				
			Steady State Engine Torque	<= 1492 Nm				
			If the above conditions are present Increment Fail Timer				>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 5 Current range	= "Transition al 11"				
			Engine Torque	>= -50 Nm				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Oydidiii	9040	Возоприон	Either the S1 or S3 Pressure Switch indicates "Pressure Present"				. 1	
			If the above conditions are present Increment Fail Timer				>= 0.225 Second s	
			If the above Condtions have been met, Increment Fail Counter				>= 15 Fail Counts	
			Fail Case 6 Current range	= "Illegal"	A Open Circuit Definition (flag set false if the following conditions are met):			
			or		Current Range	"Transiti ≠ onal 11"		
			ECM Park/Neutral Message	= "Park/Neutr al"	or			
			and		Last positive state	≠ Neutral		
			Current Range	Park, Neutral, Reverse, ≠ Transitiona I 8, or Transitiona I 11	or			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thres Valu		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum
Oystem	Oode	Безсприон	and			Previous transitional state	Transiti onal 8 ≠ and Illegal		
			A Open Circuit (See Definition)	= FALSE	Boolean	and			
						PRNDL Circuit A	= Open Circuit		
						PRNDL Circuit B	= Closed Circuit		
						PRNDL Circuit C	= Open Circuit		
						PRNDL Circuit P	= Open Circuit		
			If the above Condtions are present, Increment Fail timer					>= 6.25 Second	I
			Fail Case Current PRNDL T State	PRNDL circuit ABCP =					
			Previous valid state	PRNDL encoded = value of ABCP =1111	Range				
			Input Speed Reverse Trans		RPM				
			Ratio	<= 2.6783447 >= 3.081543					
			Condtions are present, Increment Fail timer					>= 6.25 Second	

	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable ondition	s	Time Required	Mil Illum.
Component/ Fault Code	Monitor Strategy Description	P182E will report test fail when any of the above 7 fail cases are met		Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Engine Torque Signal Valid	>= <= <= >= >= =	8.5996 31.99 511 400 7500	Volts Volts KPH RPM RPM Sec Boolean		

Component/	Fault	Monitor Strategy	Malfunction Criteria		Thres Val		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria		vali	ue	Manufiction	P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E	Required	
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumeratio n				One Trip
			The following events must occur Sequentially							
			Initial Engine speed	<=	50	RPM			>= 0.25 Time (Sec)	
			Then Engine Speed Between Following Cals							
			Engine Speed Lo Hist	>=	50	RPM			Enable	
			Engine Speed Hi Hist	<=	480	RPM			>= 0.06875 Time (Sec)	
			Then Final Engine Speed	>=	525	RPM			Foil	
			Final Transmission Input Speed	>=	200	RPM	DTC hoo Don this Kou		Fail >= 1.25 Time (Sec)	
							DTC has Ran this Key Cycle? Ignition Voltage Lo Ignition Voltage Hi	= FALSE Boolea >= 6 V <= 31.99 V	n	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		eshold alue	Secondary Malfunction		Enable Conditions		Time Require		Mil Illum.
		·				Ignition Voltage Hyst High (enables above this value)	>=	5	V			
						Ignition Voltage Hyst Low (disabled below this value)	<=	2	V			
						Transmission Output Speed		90	rpm			
						P1915 Status is	≠	Test Failed This Key On or Fault Active				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722, P0723					
							ECM: None					
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case: Steady Case State 2nd Gear									One Trip
			Gear slip	>= 200	RPM					Please See Table 5 >= For Neutral Time Cal	Neutral Timer (Sec)	
			Intrusive test: commanded 3rd gear									

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
,				Table Based Time = Please see Table 2 in Supporting Documents				
			If Above Conditions have been met					
			Increment 2nd gear fail count				2nd Sear Fail Count	
			and CB26 Fail Count				or CB26 >= 14 Fail Count	
			Fail Case: Steady Case State 6th Gear				Please	
			Gear slip	>= 200 RPM			See Neutral >= Table 5 Timer For (Sec) Neutral Time Cal	
			Intrusive test: commanded 5th gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(Enable Condition	s		Time Require		Mil Illun
Oystem	Code	Description	If attained Gear = 5th For Time	Table Based Time Enable								
			If Above Conditions have been met, Increment 5th gear fail counter						>=	3	5th Gear Fail Count	
			and CB26 Fail Count						>=	14	or CB26 Fail Count	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag	=	TRUE	Boolean				
					Hydraulic System Pressurized	=	TRUE	Boolean				
					Minimum output speed for RVT A OR B	>=	0	RPM				
					(A) Output speed enable	>=	16	RPM				
					(B) Accelerator Pedal enable Common Enable Criteria	>=	0.3998	Pct				
					Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996 31.99	Volts Volts				

MH2/T43 SECTION Page 239 of 276

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illum.
System	Code	Description	Omena	Taluc	Engine Speed Lo Engine Speed Hi Engine Speed is	>= <=	400 7500	RPM RPM	rtoquilou	
					within the allowable limits for	>=	5	Sec		
					Throttle Position Signal valid	=	TRUE	Boolean		
					HSD Enabled		TRUE	Boolean		
					Transmission Fluid Temperature	/-	0	°C		
					Input Speed Sensor fault	_	FALSE	Boolean		
					Output Speed Sensor fault		FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresho Value		Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Безсприон	Cinteria	value			P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E	rtoquillou	
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers)	= TRUE E	Boolean				One Trip
			Primary Oncoming Clutch Pressure Command Status	Maximum = pressurize d					
			Primary Offgoing Clutch Pressure Command Status	Clutch = exhaust command					
			Range Shift Status Attained Gear Slip	Control	RPM				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	Value	a.ra.ro.ro.r	Conditions	required	
			If above coditons are true, increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-1 shifting with throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (2-1 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (2-3 shifting with throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (2-3 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (2-4 shifting with throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (2-4 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (6-4 shifting with throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (6-4 shifting without throttle)	>= 1.2001953 Fail Time (Sec)				
			fail timer 1 (6-5 shifting with throttle)					

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum
System	Code	Description	Criteria fail timer 1	Value >= 1.2001953 Fail Time (Sec)	Malfunction	Conditions	Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, sec and Referenc e Supporti	Illum.
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 2nd gear fail counter				ng Table 15 for Fail Timer 2 Fail Counter >= 3 From 2nd Gear OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s		Tim Requi		Mil Illum.
		2000	6th gear fail counter						>=	3	Fail Counter From 6th Gear OR	
			total fail counter						>=	5	Total Fail Counter	
					Trans oil temperature	>	0	°C				
					Input Speed Sensor fault		FALSE	Boolean				
					Output Speed Sensor fault	_	FALSE	Boolean				
					Command / Attained Gear	/	1st	Boolean				
					High Side Driver ON	=	TRUE	Boolean				
					output speed limit for TUT	>=	350	RPM				
					input speed limit for TUT	>=	200	RPM				
					TUT Enable temperature		0	°C				
					PRNDL state defaulted		FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				
					Service Fast Learn Mode		FALSE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E						

Component/	Fault	Monitor Strategy	Malfunction	Thres		Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Valu	ıe	Malfunction	Conditions	Required	Illum.
							ECM:		
							P0101,		
							P0102,		
							P0103,		
							P0106,		
							P0107,		
							P0108,		
							P0171,		
							P0172,		
							P0174,		
							P0175,		
							P0201, P0202,		
							P0202, P0203,		
							P0203, P0204,		
							P0204, P0205,		
							P0205, P0206,		
							P0200, P0207,		
							P0207, P0208,		
							P0300,		
							P0300, P0301,		
							P0302,		
							P0303,		
							P0304,		
							P0305,		
							P0306,		
							P0307,		
							P0308,		
							P0401,		
							P042E		
							1 0 122		
			<u>Fail</u>						One
		D	Case						Trip
Variable Bleed	D0745	Pressure Control (PC) Solenoid D Stuck On	1 Case: Steady						'
Solenoid (VBS)	1 2/ 13	Soletiola D Stack Off	Ctata 1at						
` ′		[CB26] (Steady State)							
			Attained Gear	>= 200	DDM				
			slip	>= 200	RPM				

Component/	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	If the Above is True for Time	Table Based Time Please Enable	manuficien	Conditions	required	
				<= 3.0159912				
			Gear Ratio If the above parameters are true	>= 2.7280273			Fail >= 0.75 Timer (Sec)	
							Fail >= 2 Count in 1st Gear	
			Fail Case Case: Stoody				or Total >= 3 Fail Counts	
			Case: Steady State 3rd Gear					

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to rpm/sec	Manufaction	Continuons	Required	inuin.
			Min Delta Output Speed Hysteresis	>= Please rpm/sec				
			If the Above is True for Time	Table Based Time Please Refer to Table 19 in supporting documents				
				<= 3.0159912 >= 2.7280273				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Require		Mil Illum.
							>=	0.75	Fail Timer (Sec)	
							>=	1	Fail Count in 3rd Gear	
			Fail O Ot				>=	3	or Total Fail Counts	
			Case: Steady State 4rd Gear							
			Max Delta Output Speed Hysteresis	>= Please rpm/sec						
			Min Delta Output Speed Hysteresis	>= Please rpm/sec						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
•		·	If the Above is True for Time	Table Based Time Please Sec Refer to Table 19 in supporting documents				
				<= 0.7790527 >= 0.7049561			Fail	
							>= 0.75 Timer (Sec)	
							Fail >= 1 Count in 4th Gear	
							or Total >= 3 Fail Counts	
			Fail Case: Steady Case State 5th Gear					

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to rpm/sec		Conditions	roquilou	
			Min Delta Output Speed Hysteresis	>= Please rpm/sec				
			If the Above is True for Time	Table Based Time Please Refer to Table 19 in supporting documents				
				<= 0.7790527 >= 0.7049561				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions	s		Time Requi		Mil Illum.
- System									>=	0.75	Fail Timer (Sec)	
									>=	1	Fail Count in 5th Gear	
									>=	3	or Total Fail Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=		Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pr essurized		TRUE	Boolean				
					Minimum output speed for RVT		0	Nm				
					A OR B (A) Output speed enable	\-	16	Nm				
					(B) Accelerator Pedal enable	>=	0.3998	Nm				
					Ignition Voltage Lo	>=	8.5996	Volts				
					Ignition Voltage Hi		31.99	Volts				
					Engine Speed Lo Engine Speed Hi		400 7500	RPM RPM				
					Engine Speed is within the allowable	>=	5	Sec				
					limits for if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003	Pct				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illun
-					if Attained Gear=1st FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st FW Engine Torque Enable	<=	1492	Nm		
					Transmission Fluid Temperature	>=	0	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present	=	TRUE			
				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,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	C	Enable conditions			Time Requir		Mil Illum.
						P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E						
Variable Bleed Solenoid (VBS)	P2720	Pressure Control (PC) Solenoid D Control Circuit Low (CB26 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean					>= out of	0.3	Fail Time (Sec) Sample Time (Sec)	One Trip
					P2770 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable Iimits for	>= <= >= <=	Test Failed This Key On or Fault Active 8.5996 31.99 400 7500	Volts Volts RPM RPM			(Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val		Secondary Malfunction		Enable Conditions	i		Time Requir		Mil Illum.
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2721	Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS)	The HWIO reports a high voltage (open or power short) error flag	= -	TRUE	Boolean		None			>=	0.3	Fail Time (Sec)	One Trip
											out of	0.375	Sample Time (Sec)	
							P2721 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable	>= <= >= <=	8.5996 31.99 400 7500	Volts Volts RPM RPM				
							limits for		5	Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM:						
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E Stuck Off	Fail Case Case: Steady 1 State 1st Gear					None						One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Oode	Безсприон	Gear slip				Please See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 2nd gear					
			If attained Gear ≠ 2nd for Time	Table based Timer, >= Please See Table 3 in Supporting Documents				
			If Above Conditions have been met, Increment 1st gear fail counter				1st >= 2 Gear Fail Count	
			and C1234 fail counter				or C1234 Clutch Fail Count	
			Fail Case Case: Steady 2 State 2nd Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Oystoni	3046	Sescription	Gear slip				Please See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 3rd gear					
			If attained Gear ≠ 3rd for Time	Table based Timer, >= Please See Table 3 in Supporting Documents				
			If Above Conditions have been met, Increment 2nd gear fail counter				2nd Sear Fail Count	
			and C1234 fail counter				or C1234 >= 14 Clutch Fail Count	
			Fail Case 3 Case: Steady State 3rd Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Gear slip			Containone	Please See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 4th gear					
			If attained Gear ≠ 4th for time	Table based Timer, >= Please See Table 3 in Supporting Documents				
			If Above Conditions have been met, Increment 3rd gear fail counter				3rd Sear >= 2 Fail Count	
			and C1234 fail counter Fail				or C1234 >= 14 Clutch Fail Count	
			Case Case: Steady State 4th Gear					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Безсприоп	Gear slip			Conditions	Please See Table 5 For Neutral Timer (Sec) Time Cal	
			Intrusive test: commanded 5th gear					
			If attained Gear = 5th For Time	Table based Timer, >= Please See Table 3 in Supporting Documents				
			If Above Conditions have been met, Increment 4th gear fail counter				4th >= 3 Gear Fail Count	
			and C1234 fail counter				or C1234 Clutch Fail Count	
					PRNDL State defaulted inhibit RVT	= FALSE Boolean = FALSE Boolean		
					IMS fault pending indication			
					TPS validity flag	= TRUE Boolean		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illum.
	2003	2000			Hydraulic System Pressurized	_		Boolean	•	
					Minimum output speed for RVT	>=	0	RPM		
					A OR B (A) Output speed enable	>-	16	RPM		
					(B) Accelerator Pedal enable	>=	0.3998	Pct		
					Common Enable Criteria Ignition Voltage Lo		8.5996	Volts		
					Ignition Voltage Hi		31.99	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	/-	0	°C		
					Input Speed Sensor fault	_	FALSE	Boolean		
					Output Speed Sensor fault	_	FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				Disable Conditions:	MIL not Illuminated for DTC's:	P0716, P0717,				
						P0722, P0723, P182E				
						ECM: P0101,				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		•				P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0301, P0302, P0303, P0304, P0305, P0304, P0305, P0306, P0307, P0308, P0306, P0307, P0308, P0307, P0308, P0309, P0		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 10 in Supporting Documents for Exhaust Delay Timers)	- TDLIE Poologn				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
		·	Primary Oncoming Clutch Pressure Command Status					
			Primary Offgoing Clutch Pressure Command Status					
			Range Shift Status Attained Gear Slip	Initial ≠ Clutch Control <= 40 RPM				
			If the above conditions are true increment appropriate Fail 1 Timers Below:					
			fail timer 1 (2-6 shifting with throttle)	>= 1.2001953 sec				
			fail timer 1 (2-6 shifting without throttle)	>= 1.2001953 sec				
			fail timer 1 (3-5 shifting with throttle)	>= 1.2001953 sec				
			fail timer 1 (3-5 shifting without throttle)	>= 1.2001953 sec				
			fail timer 1 (4-5 shifting with throttle)	>= 1.2001953 sec				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
,,,,,			fail timer 1	>= 1.2001953 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 1.2001953 sec				
			fail timer 1 (4-6 shifting without throttle)	>= 1.2001953 sec				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, sec and Referenc e Supporti ng Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s		Tim Requi		Mil Illum.
			2nd gear fail counter						>=	3	Fail Counter From 2nd Gear	
			3rd gear fail counter						>=	3	Fail Counter From 3rd Gear	
			4th gear fail counter						>=	3	Fail Counter From 4th Gear	
			total fail counter						>=	5	Total Fail Counter	
					Trans oil temperature		0	°C				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault		FALSE	Boolean				
					Command / Attained Gear	→	1st	Boolean				
					High Side Driver ON		TRUE	Boolean				
					output speed limit for TUT	>=	350	RPM				
					input speed limit for TUT	>=	200	RPM				
					TUT Enable temperature	>=	0	°C				
					PRNDL state defaulted	=	FALSE	Boolean				
					IMS Fault Pending	=	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Condition	s	Time Required	Mil Illum.
- Cyclom	0000	Bootiption	- Cittoria		Service Fast Learn	=		Boolean	- 1	
					Mode					
					HSD Enabled	=	TRUE	Boolean		
				Diaghla	MIL is at Illiumin ata d	TCN4:				
				Disable		TCM: P0716,				
				Conditions:	for DTC's:	P0710,				
						P0722,				
						P0723,				
						P182E				
						ECM:				
						P0101,				
						P0102,				
						P0103, P0106,				
						P0106, P0107,				
						P0108,				
						P0171,				
						P0172,				
						P0174,				
						P0175,				
						P0201,				
						P0202,				
						P0203,				
						P0204, P0205,				
						P0206,				
						P0207,				
						P0208,				
						P0300,				
						P0301,				
						P0302,				
						P0303,				
						P0304,				
						P0305, P0306,				
						P0306, P0307,				
						1 0307,				
						DOSOS				
						P0308, P0401,				
						P0401, P042E				
						1 0 12				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear					One Trip
			Max Delta Output Speed Hysteresis	>= Please rpm/sec				
			Min Delta Output Speed Hysteresis	>= Please rpm/sec				
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 19 in supporting documents				
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Oystem	Code	Безсприон	If the above parameters are true				Fail >= 0.75 Timer (Sec) Fail Count in 5th Gear OR Total	
			Fail Case Case: 6th Gear 2 Max Delta Output Speed Hysteresis				>= 3 Fail Counts	
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to Table 18 in supporting documents				

Component/	Fault	Monitor Strategy	Malfunction Critoria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
System	Code	Description	Criteria	value	WalluffClfOff	Conditions	Required	mum.
			If the Above is True for Time	Table Based Time Please Sec Refer to Table 19 in supporting documents				
				<= 1.4849854 >= 1.3430176				
							Fail >= 0.75 Timer (Sec) Fail	
							>= 1 Count in 6th Gear OR	
							Total >= 3 Fail Counts	
					PRNDL State defaulted	= FALSE Boolean		
					inhibit RVT	= FALSE Boolean		
					IMS fault pending indication	= FALSE Boolean		
					output speed	>= 0 RPM		
					TPS validity flag	= TRUE Boolean		
					HSD Enabled	= TRUE Boolean		
					Hydraulic_System_Pr essurized	= TRUE Boolean		

MH2/T43 SECTION Page 267 of 276

Component/ System	Fault Monitor Strategy Malfunction Code Description Criteria		Threshold Value	Secondary Malfunction		Enable Conditions	s	Time Required	Mi Illur	
-,					Minimum output speed for RVT A OR B	>=	0	Nm	·	
					(A) Output speed enable	\-	16	Nm		
					(B) Accelerator Pedal enable	>=	0.3998	Nm		
					Ignition Voltage Lo	>=	8.5996	Volts		
					Ignition Voltage Hi	<=	31.99	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is					
					within the allowable limits for		5	Sec		
					if Attained Gear=1st					
					FW Accelerator Pedal enable		5.0003	Pct		
					if Attained Gear=1st					
					FW Engine Torque Enable	>=	20	Nm		
					if Attained Gear=1st					
					FW Engine Torque Enable		1492	Nm		
					Transmission Fluid	>-	0	°C		
					Temperature					
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not present		TRUE			
				Disable	MIL not Illuminated	TCM:				
				Conditions:						
						P0722, P0723,				
						P182E				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Tii Requ	ne uired	Mil Illum.
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0307, P0308, P0307, P0308, P0307, P0308, P0401, P042E			
Variable Bleed Solenoid (VBS)	P2729	Pressure Control (PC) Solenoid E Control Circuit Low (C1234 VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE Boolean			>= 0.3 out of 0.375	Fail Time (Sec) Sample Time (Sec)	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Requir		Mil Illum.
3,					P2729 Status is not	=	Test Failed This Key On or Fault Active			-		
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is	>= <= >= <=	8.5996 31.99 400 7500	Volt Volt RPM RPM				
					within the allowable limits for	>=	5	Sec				
				Disable Conditions:		TCM: None						
						ECM: None						
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolean					>=	0.3	Fail Time (Sec)	One Trip
									out of	0.375	Sample Time (Sec)	
					P2730 Status is not	=	Test Failed This Key On or Fault Active					
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996 31.99 400 7500	Volt Volt RPM RPM				

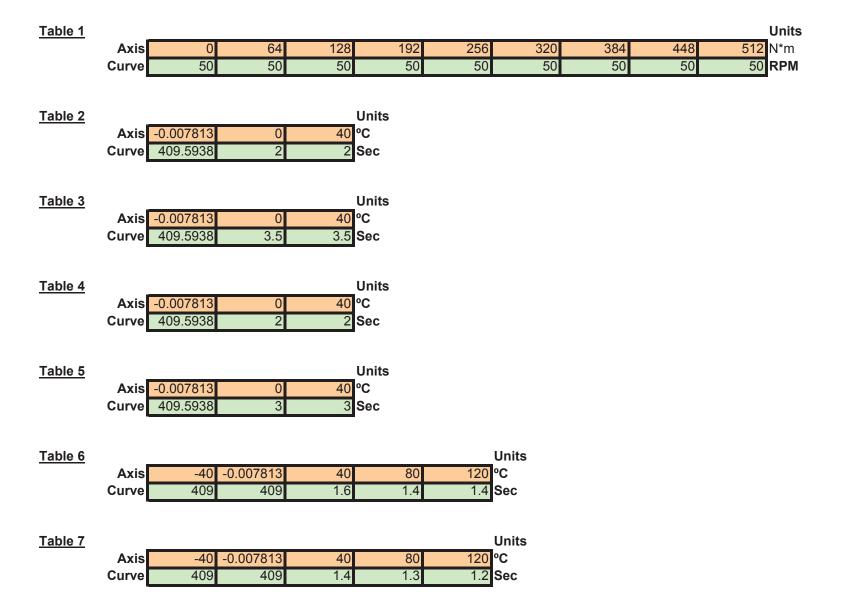
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		nable nditions		Time Requir		Mil Illum.
					Engine Speed is within the allowable limits for	>=	5 Sec				
				Disable Conditions:							
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	= TRUE Boolean		THEIR		>=	4.4	Fail Time (Sec)	One Trip
								out of	5	Sample Time (Sec)	
					P2763 Status is not	= K	Test Failed This Gey On r Fault Active				
					Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is	<= 3 >= <=	3.5996 Volt 31.99 Volt 400 RPM 7500 RPM				
					within the allowable limits for High Side Driver Enabled		5 Sec				

Component/	Fault	Monitor Strategy	Malfunction		Thres		Secondary Malfunction		Enable			Time		Mil Illum.
System	Code	Description	Criteria		Val	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659	condition:	s		Requi	rea	mum.
								ECM: None						
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	= 1	TRUE	Boolean					>= out	4.4	MPH	One Trip
											of	5	MPH	
							P2764 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is	>= <= >= <=	8.5996 31.99 400 7500	Volt Volt RPM RPM				
							within the allowable limits for High Side Driver	>=	5	Sec				
							Enabled	=	TRUE	Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658, P0659						
								ECM: None						
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	= 7	TRUE	Boolean					>=	62	Fail counts (≈ 10 seconds	One Trip

MH2/T43 SECTION Page 272 of 276

Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value		Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
		Delay timer	>=	0.1125	sec					Out of	70	Sample Counts (≈ 11 seconds	
						Stabilization delay Power Mode Ignition Voltage Lo Ignition Voltage Hi	>= = >= <=	3 Run 8.5996 31.99	sec Volt Volt				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
				TRUE	Boolean					>=	12	sec	One Trip
						Stabilization delay Power Mode Ignition Voltage Lo Ignition Voltage Hi	>= = >= <=	3 Run 8.5996 31.99	sec Volt Volt				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM:						
	Code U0100	Code Description	Code Description Criteria Delay timer Lost Communications with ECM (Engine Control Module) Cal March Module Control Module	Code Description Criteria Delay timer >= Lost Communications with ECM (Engine Control Module) Can Delay timer >= CAN messages from ECM are not received by	Code Description Criteria Val Delay timer >= 0.1125 Lost Communications with ECM (Engine Control Module) Can messages from ECM are not received by TRUE	Code Description Criteria Value Delay timer >= 0.1125 sec Disable Conditions: CAN messages from ECM are not received by the TCM Disable Control Module) Disable Disable	Delay timer >= 0.1125 sec Stabilization delay Power Mode Ignition Voltage Lo Ignition Voltage Hi	Delay timer Stabilization delay Power Mode Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Hi ECM: None	Delay timer Stabilization delay Stabilization delay Stabilization delay Stabilization delay Stabilization delay Stabilization voltage Lo Stabilization voltage Lo Stabilization voltage Lo Stabilization delay Stabilization delay Stabilization delay Stabilization delay Stabilization delay Stabilization voltage Lo Stabilization voltage Lo Stabilization delay Sta	Delay timer Stabilization delay Stabilization Voltage Lost Communications with ECM (Engine Control Module) CAN messages from ECM are not received by the TCM Disable Conditions: CAN messages TRUE Boolean Stabilization delay Stabilization delay Stabilization Voltage Lost Communications with ECM (Engine Control Module) TRUE Boolean Stabilization delay Stabilization delay Stabilization delay Stabilization Voltage Lost Communications TRUE Boolean Stabilization Voltage Lost Communications TRUE Boolean Stabilization Voltage Lost Communications TRUE Boolean TRUE Boolean TRUE Delay timer >= 0.1125 sec	Delay timer >= 0.1125 sec Stabilization delay >= 3 sec sec Stabilization delay >= 3 sec sec Stabilization delay >= 8.5996 Volt sec Volt Stabilization delay >= 8.5996 Volt sec Stabilization delay >= 1 Stabilization delay >= 1 Stabilization delay >= 1 Stabilization delay >= 3 sec Stabilization delay >= 8.5996 Volt Volt Volt Vol	Delay timer	

Supporting Documents - MH2/T43 Tables



Supporting Documents - MH2/T43 Tables

Table 8	_						Units				
	Axis	-40	-0.007813	40	80	120					
	Curve	409	409	1.6	1.5	1.4	Sec				
Table 9							Units				
Table 3	Axis	-40	-0.007813	40	80	120					
	Curve	409	409	1.3	1.2	1.1					
		.00	.00								
<u>Table 10</u>							Units				
	Axis	-40	-20	0	30	110					
	Curve	3.099609	1.900391	1.099609	0.799805	0.599609	Sec				
Table 11							Units				
Table 11	Axis	-40	-20	0	30	110					
	Curve	1.799805	1.200195	0.599609	0.400391	0.299805					
						0.20000					
Table 12	_						Units				
	Axis	-40	-20	0	30	110					
	Curve	2.200195	1.400391	0.900391	0.700195	0.400391	Sec				
Table 13							Units				
14510 10	Axis	-40	-20	0	30	110					
	Curve		1	0.5	0.299805	0.200195					
Table 14							Units				
	Axis	-40	-20	0	30	110					
	Curve	3	0.900391	0.5	0.299805	0.200195	Sec				
Table 15											Units
Table 15	Axis	-40	-30	-20	-10	0		10	20	30	40 °C
	Curve	-40	-30	0	-10	0		0	0	0	0 Sec
	Oui vo	U	U	U	0	0		J	J	U	000

Supporting Documents - MH2/T43 Tables

<u>Table 16</u>	Avia	0.007040	0		Units °C						
		-0.007813 409.5938	1.5		Sec						
	•										
Table 17	_				Units						
		-0.007813	0	40							
	Curve	8191	1676	1676	Unknown l	Jnit					
Table 40					l luite						
Table 18	Axis	-0.007813	0	40	Units °C						
	Curve	8191	500		Unknown l	Jnit					
	_										
Table 19					Units						
	_	-0.007813	0	40							
	Curve	0.4	0.35	0.3	Sec						
<u>Table 20</u>											Units
	Axis Curve	-40.10156 255.9961	-40 50	-20 45	0 40	30 34	60 25	100 20	149 20	149.1016 255.9961	
	Curve	255.9901	50	45	40	34	25	20	20	255.9901	10
<u>Table 21</u>	Axis	-40.10156	-40	-20	0	30	60	100	149	149.1016	Units
	Curve	255.9961	50	45	40	34	25	20	20	255.9961	
Table 22											Units
I UDIC ZZ	Axis	-40.10156	-40	-20	0	30	60	100	149	149.1016	_
	Curve	255.9961	10	8	8	8	8	8	8	255.9961	