Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Require	d	Mil Illum.
	04045	The lateral accleration sensor signal		CeLATR_e_V			00	0			<u>^</u>	Special
Transmission Control Module (TCM)	C124F	failed at a low voltge	hardware configuration	= oltageDirectPr	transient delay time	r >=	30	Sec	>=	/5	Sec	NO MIL
			Lateral accleration sensor raw	- 2.94000005 d's					out	120	Soc	
			signal	<= -3.049999900 gS					of	120	Sec	
			bardware configuration	= oltageDirectPr								
			indianalo comparation	op								
			Lateral accleration magnitude	>= -3.849999905 g's	Lateral anadoutter la							
					voltage diagnostic enable	5 =	1					
					calibration	1						
					Battery Voltage		31.999023	Volts				
					Battery voltage is within the	2	7	VUILS				
					allowable limits fo	r >=	0.1	Sec				
					Ignition Voltage	2 <=	31.999023	Volts				
					Service Fast Learn (SFL)	7	VUIIS				
					Mode VBS Failsafe	- - -	FALSE	Boolean				
					Ignition voltage and SFI	- >=	0.1	Sec				
					conditions metro							
						TOM 110070						
				Dis Conditi	IDIE MIL not Illuminated fo	r TCM: 00073						
						ECM: None						
												Special
Transmission Control Module (TCM)	C1250	The lateral accleration sensor signal	hardware configuration	= oltageDirectPr	transient delay time	r >=	30	Sec	>=	75	Sec	No MIL
		nalied at a high voltge		ор								
			Lateral accleration sensor raw	>= 3.849999905 g's					out	120	Sec	
			orgital.	CeLATR_e_V					0.			
			hardware configuration	 oltageDirectPr 								
			Lateral accleration magnitude	op <= 3.849999905 g's								
					Lateral acceleration high	ı						
					voltage diagnostic enable calibration	2 =	1					
					Battery Voltage	2 <=	31.999023	Volts				
					Battery Voltage) >=	9	Volts				
					Battery voltage is within the allowable limits fo	>=	0.1	Sec				
					Ignition Voltage	2 <=	31.999023	Volts				
					Ignition Voltage	>=	9	Volts				
					Service Fast Learn (SFL Mode VBS Failsaf) =	FALSE	Boolean				
					Ignition voltage and SFI		0.1	Soc				
					conditions met fo	r >=	0.1	366				
				Dis	ble MIL not Illuminated fo	r TCM: U0073						
				Condition	ns: DTC's	ECM: None						
						LOW. NUTE						
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck at a high magnitude in range	absolute value (lateral accleration)	>= 0.529999971 g's	absolute value (latera accleration) for stabilit	>=	0.53	g's	>=	75	Sec	Special No MIL

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable			Time	d	Mil
System	Coue	Description			absolute value (late	ral	0.0100000			Require	u	inciri.
			absolute value (lateral accieration)	<= 3.849999905 gs	accleration) for stab	<=	3.8499999	g s				
					stability tir	ne >=	30	Sec				-
					Diagnostic snifting overn	ae nd =	FALSE	Boolean				
					commu	iid	1 ok ihrough					
					Attained Gear Sta	= =	ISt through					
							oth					
					Attained Gear S	elip <=	100 Clutch to	RPM				
							Clutch					
					Transmission Ty	pe =	Transmissi					
							on					
					High Side Drivers enabl	ed =	IRUE 15	Boolean				
					l ateral acceleration stuck	in >=	15	крп				
					range diagnostic enal	= =	1					
					calibrati	on						
					Battery Volta	ge <=	31.999023	Volts				
					Battery voltage is within t	ge >= he	9	VOILS				
					allowable limits	for >=	0.1	Sec				
					Ignition Volta	ge <=	31.999023	Volts				
					Ignition Volta	ge >=	9	Volts				
					Service Fast Learn (SF Mode VBS Fails:	-L) =	FALSE	Boolean				
					Ignition voltage and S	FL	0.4	<u>_</u>				
					conditions met	for >=	0.1	Sec				
				г	isable MIL not Illuminated t	for TCM· P071	6 P0717 P0721	P0722				
				Cond	itions: DTC	's: P0723, P07	BF, P07C0, P07	7B, P077C,				
						P077D, P2	15C, U0073					
						ECM: Non	``````````````````````````````````````					
						ECIVI. NOIR						
		The longitudinal accleration sensor		CeLATR_e_V								Special
Transmission Control Module (TCM)	C1252	signal failed at a low voltge	hardware configuration	 oltageDirectPr 	transient delay tin	ier >=	30	Sec	>=	75	Sec	No MIL
			longitudinal accleration sensor raw	ор					out			
			signal	<= -3.849999905 g's					of	120	Sec	
				CeLATR_e_V								
			hardware configuration	 oltageDirectPr 								
			longitudinal accleration sensor raw	op								
			signal	>= -3.849999905 g's								
					longitudinal acceleration	w						
					voltage diagnostic enal	= op	1					
					Battery Volta	00 0e <=	31 999023	Volts				
					Battery Volta	ge >=	9	Volts				
					Battery voltage is within t	he >=	0.1	Sec				
					allowable limits	for	21 000022	Volto				
					Ignition Volta	ge <=	31.999023 9	Volts				
					Service Fast Learn (SF	E)		Deeleer				
					Mode VBS Fails	= =	FALSE	DUDIG9U				
					Ignition voltage and S	FL >=	0.1	Sec				
I	1	1	1	I	conditions met	IUI			1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time	ed	Mil Illum.
				Disab	e MIL not Illuminated fo s: DTC's	r TCM: U0073 : ECM: None						
Transmission Control Module (TCM)	C1253	The longitudinal accleration sensor signal failed at a high voltge	hardware configuration	CeLATR_e_V = oltageDirectPr	transient delay time	r >=	30	Sec	>=	75	Sec	Special No MIL
			longitudinal accleration sensor raw sianal	op >= 3.849999905 g's					out of	120	Sec	
			hardware configuration	CeLATR_e_V = oltageDirectPr								
			longitudinal accleration sensor raw signal	op <= 3.849999905 g's								
			¥		longitudinal acceleration high voltage diagnostic enable calibration) 9 =	1					
					Battery Voltage Battery Voltage	9 <= 9 >=	31.999023 9	Volts Volts				
					Battery voltage is within the allowable limits fo Ignition Voltage	5 7 8 8 8 8	0.1 31.999023	Sec Volts				
					Ignition Voltage Service Fast Learn (SFL) =	9 FALSE	Volts Boolean				
					Ignition voltage and SFI conditions met fo	- >=	0.1	Sec				
				Disab Condition:	e MIL not Illuminated fo s: DTC's	r TCM: U0073 : ECM: None						
Transmission Control Module (TCM)	C1254	The longitudinal accleration signal is stuck at a high magnitude in range	absolute value (longitudinal accleration)	>= 0.529999971 g's	absolute value (longitudina accleration) for stablit	>=	0.53	g's	>=	75	Sec	Special No MIL
		5 5 5	absolute value (longitudinal accleration)	<= 3.849999905 g's	absolute value (longitudina accleration) for stabilit	<=	3.84999999	g's	out of	120	Sec	
					Diagnostic shifting override	=< =	FALSE	Boolean				
					Attained Gear State	è =	1st through 8th					
					Attained Gear Slip) <=	100 Clutch to	RPM				
					Transmission Type	9 =	Clutch Transmissi on					
					High Side Drivers enabled transmssion output speed	= b =	TRUE 0.53	Boolean meter/second				
					Vehicle Speed longitudinal acceleration stuck	d >=	15	kph				
					in range diagnostic enable calibration Batteny Veltage	e = 1	1	Volts				
					Battery Voltage	2 >=	9	Volts				

16 OBDG05 TCM Summary	Tables Common 8 Speed Tables	87
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Component/	Fault	Monitor Strategy	Malfunction	Thre	eshold	Secondary		Enable			Tim	ne	Mil
System	Code	Description	Criteria	va	aiue	Battery voltage is within the		Conditions	-		Kequ	ired	mum.
						allowable limits for	>=	0.1	Sec			l	
						Ignition Voltage	<=	31.999023	Volts			l	
						Ignition Voltage	>=	9	Volts			l	
						Mode VBS Failsafe	=	FALSE	Boolean			l	
						Ignition voltage and SFL		0.1	Soc			l	
						conditions met for	>=	0.1	Sec			l	
												l	
					Disable	MIL not Illuminated for	TCM: P0716.	P0717, P072	. P0722.			l	
					Conditions:	DTC's:	P0723, P07B	F, P07C0, P07	7B, P077C,			l	
							P077D, P215	C, U0073				l	
							ECM: None					l	
							ECIVI. NUTIE						
		Battery to ignition voltage	delta = ABS(TCM battery voltage -									Fail counts	One Trip
Transmission Control Module (TCM)	P0561	performance error at the TCM for an extended period of time.	TCM ignition voltage)	>= 3	Volts					=	40	(100ms loop)	
		extended pendo of time.								Out		Sample Counts	
										of	50	(100ms loop)	
						battery to ignition voltage						l	
						performance diagnostic enable	=	1				l	
						TCM has battery voltage						l	
						circuit	=	1	Boolean			l	
						Service mode \$04 active and	=	FALSE	Boolean			l	
						end of trip pocessing active						l	
						(enabled above this value)	>	5	Volts			l	
						Ignition Voltage Hyst Lo	/-	2	Volts			l	
						disabled below this value)	<=	Z	VUILS			l	
												l	
					Disable	MIL not Illuminated for	TCM: None					l	
					Conditions:	DTC's:						l	
							ECM: None						
												Fail Counts	One Trip
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic	Incorrect program/calibrations	= TRUE	Boolean					>=	5	(background	
		Control Module Read Only Memory	checksum									task continuous)	
						NVM write error diagnotic		1	Dealers			continuousy	
						enable	=	I	Booleau			l	
												l	
					Disable	MIL not Illuminated for	TCM· P0601					l	
					Conditions:	DTC's:	10111110001					l	
							ECM: None					l	
		Transmission Electro-Hydraulic	Non-volatile memory (static or										One Trin
Transmission Control Module (TCM)	P0603	Control Module Long-Term Memory	dynamic) checksum failure at	= TRUE	Boolean						Runs		one mp
		Reset	controller initialization							(ontinously		
						not programmed diagnotic	=	1	Boolean			l	
						enable						l	
												l	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Three Val	shold lue	Secondary Malfunction		Enable Conditions	i		Ti Req	me uired	Mil Illum.
					Disable Conditions:	MIL not Illuminated for	TCM: P0603						
					Conditions.	0103.	ECM: None						
		Transmission Electro-Hydraulic											One Trip
Transmission Control Module (TCM)	P0604	Control Module Random Access	secondary micro processor RAM error	= TRUE	Boolean							1000 ms cont.	
		Memory	OR										
			dual store RAM write time out error	= TRUE	Boolean					>	175	seconds (interrupt driven based on calling functions)	
			OR system RAM fault	= TRUE	Boolean					>=	3	counts (controller initialization and background task continuous)	
			OR									counts	
			cashe RAM fault	= TRUE	Boolean					>=	3	(controller initialization and background task continuous)	
			OR secondary micro processor micro code error	= TRUE	Boolean					>=	3	counts (controller initialization and background task continuous)	
			OR write attempt occurred during RAM lock	= TRUE	Boolean	Service mode \$04 active or end of trip processing active	=	FALSE	Boolean	>	65534	counts (background task	
												continuous)	
					Disable	MIL not Illuminated for	TCM: None						
					Conditions.	Dics.	ECM: None						
Internal TCM Processor Integrity Fault	P0606	Transmission Electro-Hydraulic Control Module Processor Integrity	Loss or invalid message of SPI communication from the secondary rrocessor at initialization detected by the rrimary processor or loss or invalid message of SPI communication from the secondary processor after a valid message was received by the primary processor	Loss or invalid message at initialization detected or loss or invalid message after a valid message was recieved									One Trip

	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			Tir Req	me juired	Mil Illum.
				main processor RAM circuit hardware failure	=	TRUE	Boolean	RAM diagnotic test enable	=	1	Boolean	>=	5	counts (controller initialization)	
				OR				hardware reset source is controller power up reset	=	TRUE	Boolean				
				main processor flash EPROM circuit hardware failure	=	TRUE	Boolean	flash EPROM diagnotic test enable	=	1	Boolean	>=	5	counts (controller	
								hardware reset source is controller power up reset	=	TRUE	Boolean			minalization	
				main processor memory stack failure	=	TRUE	Boolean	Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean	>=	5	counts (100 msec	
								main processor memory stack test enable	=	1	Boolean			continuous)	
				OR secondary processor memory stack failure	=	TRUE	Boolean	secondary processor memory stack test enable	=	1	Boolean	>=	5	counts (12.5 msec continuous)	
				OR										counts	
				secondary micro processor remedial action active on request	=	FALSE	Boolean					>=	1	(controller power up, 12.5 ms continuous)	
				OR										counts (12.5	
				complete	=	FALSE	Boolean					>=	35	msec continuous)	
				secondary processor to main processor seed sequence fault OR	=	TRUE	Boolean					>=	0.5	seconds	
				seed sequence error	· ≠	FALSE	Boolean	program sequence watch communication fault	=	FALSE	Boolean	>=	3	counts (12.5 msec	
								main processor to secondary processor serial peripheral interface error	=	FALSE	Boolean	>=	17	counts (12.5 msec	
								seed sequence test enable	=	see table 50 in supporting documents	Boolean			oonningedey	
								battery voltage	>	11 11	Volts				
				OR	2			.g.mon rondgo		soo tabla					
				seed key fault current loop	=	TRUE	Boolean	seed key test enable	=	50 in supporting documents	Boolean				
								seed key fault previous loop	=	TRUE	Boolean				
								Service mode \$04 active and end of trip processing active	=	FALSE	Boolean				
ļ		I	I	UR	1			1 1				I			I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thr V	eshold /alue	Secondary Malfunction	lary Enable ction Conditions			Time Require	ed	Mil Illum.	
			normalize 0-5 volt (absolute value (analog to digital test voltage commanded - actual analog to digital voltage feedback))	> 3.29895019	5 percent	analog to digital voltage test enabled	=	1	Boolean	>=	3	counts (50 msec continuous)	
						ignition voltage	>=	7	Volts	>=	8	counts (50 msec continuous)	
						analog to digital voltage channel enabled	=	see Table 46 in supporting documents	Boolean				
						analog to digital test voltage command	=	see Table 47 in supporting documents	Volts	>=	0.2	seconds	
			OR			Service mode \$04 active and end of trip processing active	=	FALSE	Boolean				
			arithmatic logic unit 1 test pass	= FALSE	Boolean	arithmatic logic unit test enable	=	1	Boolean	at in th	t controller hitialization, hen 12.5 ms cont.		
						arithmatic logic unit 1 test pass previous loop	=	FALSE	Boolean				
						Service mode \$04 active and end of trip processing active	=	FALSE	Boolean				
						A and B and C must occur A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts				
						C: starter motor engaged time	<	0.025	sec				
						A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.4091797 2.50E-02	Volts sec	a	t controller		
			arithmatic logic unit 2 test pass	= FALSE	Boolean	arithmatic logic unit test enable	=	1	Boolean	in th	itialization, ien 12.5 ms		
						arithmatic logic unit 1 test pass previous loop	=	FALSE	Boolean		cont.		
						Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean				
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts				
						C: starter motor engaged time	<	0.025	sec				
			OR secondary processor arithmatic logic unit fault OR	= TRUE	Boolean								
			clock test fail current loop	= TRUE	Boolean	clock test enable	=	1	Boolean	at in th	t controller hitialization, hen 12.5 ms		
						clock test fail previous loop	=	TRUE	Boolean		cont.		

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Thre	eshold	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
		2003.10101				Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean		
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
						C: starter motor engaged time	<	0.025	sec		
			OR			A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.4091797 2.50E-02	Volts sec		
			configuration register test fail current loop	= TRUE	Boolean	configuration register test enable	=	1	Boolean	at controller initialization, then 12.5 ms cont.	
						configuration register test fail previous loop	=	TRUE	Boolean		
						Service mode \$04 active and end of trip processing active A and B and C must occur	=	FALSE	Boolean		
						A: starter motor engaged B: ignition voltage	= <=	TRUE 11	Boolean Volts		
						C: starter motor engaged time	<	0.025	sec		
						A and B must occur A: ignition voltage B: ignition low voltage time	<= >=	6.4091797 2.50E-02	Volts sec		
			OR secondary processor configuration register fault OR	= TRUE	Boolean						
			A or B occur A: direct memeory access (DMA) read/write test result	≠ FALSE	Boolean	flash data transfer test enable	=	1	Boolean	normal controller initialization	
			B: direct memeory access (DMA) read/write value	≠ \$5AA5A55A	hexadecimal value	flash data transfer test enable	=	1	Boolean	normal controller initialization	
			software uses DMA peripheral function to write and read \$5A45A55A to flash memory locations to verify each flash memory location			running reset	=	FALSE	Boolean		
			OR secondary micro processor detects main micro processor SPI	- TRUE	Boolean	normal power up reset	=	TRUE	Boolean		
			fault OR	INCE	Social						
			A or B or C or D occur			seed and key store fault test enable	=	0	Boolean		
			A: last 6.25 msec seed and key time	 see Table 48 in supporting documents 	g sec						
			B: last 12.5 msec seed and key time	 see Table 48 in supporting documents 	3 j sec						

Special Canada Service Service and Canada Service Service and Service and Canada Service Service and Service and Servic	Component/	Fault	Monitor Strategy	Malfunction		Thres	shold	Secondary Malfunction		Enable			Time	e red	Mil
Check in the conversion of upper lines of the conversion of the co	Jystein	Code	Description	Gritella	500 T	ahle 18	140	mananotion		conditions			Nequi		muni.
1 1				C: last 50 msec seed and key time	> in sur	norting	SPC								
h b beits resulting registry and the set of				c. last 50 misce seed and key time	doci	iments	300								
h is a proving vice or of vice or of vice or of vice is a spectra or of vice is a spectra is a spectra or of vice is a spectra is a spectra i					see T	ahle 18									
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$				D: last lores engine interrupt seed	> in sur	norting	SPC								
$ \begin{array}{ c c c } & & & & & & & & & & & & & & & & & & &$				and key time	doci	iments	300								
No. 100 (100) No. 100				OR	4000										
Image: Section 1 Section 2															
$ = \frac{1}{1000} + \frac{1}{10000} + \frac{1}{10000000000000000000000000000000000$										see					
A le le c'ar Di cours a ser Tale et a ser tale et								proram sequence watch test		3D_Table					
$ \left[\begin{array}{c c c c c } & & & & & & & & & & & & & & & & & & &$				A or B or C or D occur				enable	=	1 in	Boolean				
$ \left[\begin{array}{c c c c c c } \hline \\ \hline $										supporting					
 and Table 40 and T										documents					
A: 6.2.5 maic program support data fail core ball fail core ball fail core fail fail fail fail fail fail fail fail					600 T	able 10	counts (50 msec								
Image: Sequence built all court				A: 6.25 msec program sequence	See I	able 49	continuous on								
Automations Service program squares local fail cares Service fail server local fail serve				fault fail count	>= III Sul	monte	6.25 msec time								
B: 12.5 msc progon souporto Buil Si Const Surgition documents interrupped progon souporto Buil Si Const documents interrupped progon sequence Full Si Const documents interrupped Cocuments interrupped Const documents interru					uucu	inents	interrupt)								
Image: Service program squence (nutritic) Service mode SM active and (normatic) Service mode SM active and (normatic) Image: Service (normatic) Image:					500 T	able 10	counts (50 msec								
Image: Service mode SP and Service				B: 12.5 msec program sequence	>- in sur	norting	continuous on								
Image: Secondary process regions square fait fait courts sequence fault fait courts sequence fault fait courts courts (in the sequence fault fait courts) Sorvice mode 504 active and our store induces - FALSE Boelean Sorvice mode 504 active and ord full processing regions sequence fault fait courts courts (in the our store induces) - FALSE Boelean - FALSE Boelean Sorvice mode 504 active and ord full processing regions sequence fault fait courts communication faul main micro processor (influence) - FALSE Boelean - FALSE Boelean Sorvice mode 504 active and ord full processing regions SPI voil main micro processor (influence) - FALSE Boelean - FALSE Boelean SPI voil munication faul main micro processor (influence) - FALSE Boelean - TRUE Boelean SPI voil munication faul main micro processor (influence) - FALSE Boelean - TRUE Boelean SPI voil munication faul main micro processor (influence) - FALSE Boelean - TRUE Boelean Continuous main micro processor (influence) - FALSE Boelean - TRUE Boelean Contintuous main micro processor (influence)				fault fail count	doci	iments	12.5 msec time								
Image: Separation of the spectral of the spectra of the spectral of the spectral of the spectra					4000	incino	interrupt)								
Image: Secondary processor general secondary genetal secondary general secondary general se				C: 50 msec program sequence	see T	able 49	counts (50 msec								
observed observed <td< td=""><td></td><td></td><td></td><td>fault fail count</td><td>>= in sup</td><td>oporting</td><td>continuous)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>				fault fail count	>= in sup	oporting	continuous)								
sequence fault all courses sequence fault all courses sequence fault all courses sequence fault all courses oright secondary processor reports SP communication fault sequence fault all courses communication fault secondary processor reports SPI valid message received by main micro processor set fault 4 secondary processor reports SPI valid message received by main micro processor set fault 4 secondary processor reports SPI valid message received by main micro processor set fault 4 secondary processor reports SPI valid message received by main micro processor set fault 4 set fault 4 s					docu	uments									
D: engine tores interrupt roots sequence fault all cools only see called of sequence fault all cool only security or cessor documents service mode 504 active and only = FALSE Boolean Service mode 504 active and communication fault Secondary processor secondary processor secondary secondary secondary processor secondary secondary					_		counts (on								
secondary processor reports secondary processor reports communication fault P Service mode S04 active and end of trip processor agents secondary processor reports SP1 valid message received by main micro processor P SP1 valid message received by main micro processor P SP1 valid message received by main micro processor SP1 communication fault P SP1 valid message received by main micro processor SP1 communication fault SP1 valid message received by main micro processor SP1 message received by M SP1 message received by M SP1 message received by SP1 message received by S				D: engine lores interrupt program	see T	able 49	execution of								
adductments interrupts EUM only interrupts EUM only interrupts EUM only = FALSE Boolean = FALSE Boolean = FALSE Boolean Service mode S04 active and end di trip processing pactive socondary processor processor main micro processor = TRUE Boolean = TRUE Boolean = TRUE Boolean SPI valid message rocelly main micro processor = FALSE Boolean = TRUE Boolean =				sequence fault fail count	>= in sup	oporting	engine lores								
Image: Secondary processor reports SPI communication hall * TRUE Boolean Service mode \$04 active and of trip processing active secondary processor reports SPI communication hall * FALSE Boolean * TRUE Boolean * TRUE Boolean * TRUE Boolean *					docu	uments	interrupts ECM								
Service mode S04 active and end of the processing active secondary process or reports SPI and micro processing active SPI valid messsage received my main micro processor Service mode S04 active and end of the processing active secondary processor active SPI communication fault previous loop - FALSE Boolean SPI valid messsage received my main micro processor + FALSE Boolean - TRUE Boolean SPI valid messsage received my main micro processor + FALSE Boolean - TRUE Boolean Valid messsage received my main micro processor + FALSE Boolean - + <td></td> <td></td> <td></td> <td>0.0</td> <td></td> <td></td> <td>only)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>				0.0			only)								
Secure and solve and early actives and early active and solve and early active secondary processor reports communication fault active and active and solve and of this processing active secondary processor reports SPI valid messsage received by main micro processor and and and and and and and and and and				UR				Convine mode CO4 pathics and							
Image: Continuut.autor radii Continuut.autor radii Image: Continuut.autor radii <t< td=""><td></td><td></td><td></td><td>secondary processor reports SPI</td><td>= Tf</td><td>RUE</td><td>Boolean</td><td>Service mode \$04 active and</td><td>=</td><td>FALSE</td><td>Boolean</td><td></td><td></td><td></td><td></td></t<>				secondary processor reports SPI	= Tf	RUE	Boolean	Service mode \$04 active and	=	FALSE	Boolean				
SPI contary pocessor = TRUE Boolean SPI valid messsage received by main micro processor = FALSE Boolean = TRUE Boolean SPI valid messsage received by main micro processor = FALSE Boolean = TRUE Boolean SPI valid messsage received by main micro processor = FALSE Boolean = TRUE Boolean SPI valid messsage received by main micro processor = FALSE Boolean =				communication rauit				end of trip processing active							
Image: SPI valid messsage received by main micro processor = FALSE Boolean = FALSE Boolean Image: SPI valid messsage received by main micro processor = FALSE Boolean = <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>SPL communication fault</td><td>_</td><td>TDUE</td><td>Pooloan</td><td></td><td></td><td></td><td></td></td<>								SPL communication fault	_	TDUE	Pooloan				
OR SPI valid messsage received by main micro processor = FALSE Boolean -								provious loop	-	INUE	Dullean				
SPI valid messsage received by main micro processor = FALSE Boolean				OR				previous loop							
FALSE Boolean FALSE FAL				SPI valid messsage received by											
Image: Index index processes Image: Index processes Image: Index proceses Image: Index processes Image: Ind				main micro processor	= FA	ALSE	Boolean								
Image: Section of the section of t												ומ	revious SPI		
Image: Section of the section of th												= me	essage type		
$\left \begin{array}{c c c c c } & & & & & & & & & & & & & & & & & & &$													5.01		
$ \left \begin{array}{c} \left \left \begin{array}{c} \left \right \right }{1} \right \\ \left $														counts (12.5	
Image: Second												>=	10	msec	
Image: Section of the state of the sta														continuous)	
$ \left \begin{array}{c c c c c } & & & & & & & & & & & & & & & & & & &$														counts (12.5	
A and B and C must occur												>=	100	msec	
$\left \begin{array}{c c c c c } & & & & & & & & & & & & & & & & & & &$														continuous)	
Image: Second symple count >= 16 msec continuous) >= 8 msec continuous) A and B and C must occur A: starter motor engaged B: ignition voltage = TRUE Boolean SPI message checksum fault = TRUE Boolean Volts = I Volts = I I Volts I											counts (12.5			counts (12.5	
A and B and C must occur A and B and C must occur - TRUE Boolean A: starter motor engaged = TRUE Boolean Volts C: starter motor engaged time <								out of sample count	>=	16	msec	>=	8	msec	
A and B and C must occur A: starter motor engaged = TRUE Boolean B: ignition voltage <=											continuous)			continuous)	
A: starter motor engaged = TRUE Boolean B: ignition voltage <=								A and B and C must occur							
B: ignition voltage <=								A: starter motor engaged	=	TRUE	Boolean				
C: starter motor engaged time SPI message checksum fault ≠ FASLE Boolean								B: ignition voltage	<=	11	Volts				
SPI message checksum fault ≠ FASLE Boolean								C: starter motor engaged time	<	0.025	sec				
								SPI message checksum fault	≠	FASI F	Boolean				
								o. Thisosuge checksum laut	7	TAJLE	Doolcan				

Component/ System	Fault Code	Fault Monitor Strategy Malfunction Thresh Code Description Criteria Value	reshold /alue	Secondary Malfunction		Enable Conditions			Time Requir	ed	Mil Illum.		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Indicates that the TCM has detected an internal processor integrity fault	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory read or write error	= TRUE	Boolean					c ini	every ontroller tialization		One Trip
						NVM write error diagnotic enable	=	1	Boolean				
					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 (ground short) error flag	= TRUE	Boolean					>= out of	6 2395	Fail Counts (6.25 msec continuous) Sample Counts (6.25 msec continuous)	One Trip
						actuator supply voltage circuit low enable calibration Service mode \$04 active and end of trip pocessing active		1 FALSE	Boolean			continuousy	-
						P0658 Status is no	t =	Test Failed This Key On or Fault Active					
						P0658 Status is no	t =	Test Failed This Key On or Fault Active					
						Service Fast Learn (SFL) Mode VBS Failsafe High Side Driver 1 Or	=	FALSE True	Boolean Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None						
Transmission Fluid Temperature Sensor (TFT)	P0711	transmission fluid temperature sensor rationality	Fail Case 1 transmission fluid temperature warm up test transmission fluid temperature raw	<= 15	°C					>= in s dc	• Table 26 supporting ocuments	seconds	Two Trips
						transmission fluid temperature sensor performance diagnsotic enable calibration	=	1 Fault	Boolean				
						P0712 and P0713 Battery Voltage Battery Voltage	≠ <= >=	Active 31.999023 9	Volts Volts				
						allowable limits for lgnition Voltage lgnition Voltage	>= <= >=	0.1 31.999023 9	Sec Volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Requir	ed	Mil Illum.
					Service Fast Learn (SFL)	=	FALSE	Boolean				
					Mode VBS Failsafe		TREEL	Booloan				
					conditions met for	>=	0.1	Sec				
					transmission fluid temperature		1	Deeleen				
					enable	=	I	Booleau				
					driver accelerator pedal	=	TRUF	Boolean				
					position valid driver accelerator pedal							
					position	>=	5	%				
					engine torque valid	=	TRUE	Boolean				
					engine torque steady state raw	>=	50	N*m				
					engine speed valid	=	TRUE	Boolean				
					engine speed	>=	Fault	RPIVI				
					P0/22, P0/23, P0//C, P0//D	≠	Active					
					Vehicle Speed	>=	10	KPH				
					P2809 TCC stuck on fault fault		Test Failed					
					status	≠	On or Fault					
							Active					
					transmission fluid temperature	>=	-40	°C				
					engine coolant temperature	<=	150	°С				
					valid	=	IRUE	Boolean				
					engine coolant temperature engine coolant temperature	>= <=	-40 150	°C °C				
			Fail Case 2 transmission fluid temperature		F							
			intermittent delta temperature test	>= 10 °C					>=	8	seconds (100	
			transmission fluid temperature							0	ms cont.)	
											seconds (100	
									>=	12	ms cont.)	
					transmission fluid temperature		1	Deeleen				
					enable calibration	=	I	Booleau				
					P0712 and P0713	≠	Fault					
					Battery Voltage	<=	Active 31.999023	Volts				
					Battery Voltage	>=	9	Volts				
					Battery voltage is within the allowable limits for	>=	0.1	Sec				
					Ignition Voltage	<=	31.999023	Volts				
					Ignition Voltage Service Fast Learn (SEL)	>=	9	Volts				
					Mode VBS Failsafe	=	FALSE	Boolean				
					Ignition voltage and SFL	>=	0.1	Sec				
					transmission fluid temperature							
					intermittent delta temperature	=	1	Boolean				
					propulsion system active	=	TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	1	Ti	me	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	—	Req	uired	Illum.
			Fail Case 3 transmission fluid temperature stuck in range test						seconds (100	
			transmission fluid temperature	<= 0 °C			>=	300	ms cont.)	
					transmission fluid tomporature					
					sensor performance diagnsotic	= 1 Boolean				
					enable calibration					
						. Fault				
					P0/12 and P0/13	Active ≠				
					Battery Voltage	e <= 31.999023 Volts				
					Battery Voltage	e >= 9 Volts				
					Battery voltage is within the	>= 0.1 Sec				
					allowable limits for	21.000022 Valta				
					Ignition Voltage	<= 31.999023 VOIIS >= 0 Volts				
					Service East Learn (SEL)	- 7 VOIIS				
					Mode VBS Failsafe	= FALSE Boolean				
					Ignition voltage and SFL	>= 0.1 Sec				
					conditions met for transmission fluid temporature	ſ				
					stuck in range test calibration	= 1 Boolean				
					enable					
					propulsion system active	e = TRUE Boolean				
					transmission fluid temperature	e <= 150 °C				
					transmission fluid temperature	e >= -40 °C				
				Disable	MIL not Illuminated for	TCM: P0716 P0712 P0713 P0717				
				Conditions:	DTC's	: P0722, P0723, P077C, P077D, P02809				
						ECM: P0101, P0102, P0103, P0106,				
						P0107, P0108, P0171, P0172, P0174,				
						P0175, P0201, P0202, P0203, P0204,				
						P0205, P0206, P0207, P0208, P0300,				
						P0306 P0307 P0308 P0401 P042F				
						, ,				
Transmission Fluid Temperature Sensor	D0712	Transmission fluid temperature	If Transmission Fluid Temperature	<= 47.45000076 Obms			>=	10	Fail Time (Sec)	Two Trips
(TFT)	10/12	sensor failed at a low voltage	Sensor Raw Resistance	<= 47.43000070 Onins			/-	10		
							out	12	Sample Time	
					trans fluid temp sensor low	1	of	12	(Sec)	
					voltage diagnostic enable	= 1 Boolean				
1					Battery Voltage	e <= 31.999023 Volts				
1	1				Battery Voltage	e >= 9 Volts				
1	1				Battery voltage is within the	>= 0.1 Sec				
1	1				Innition Voltage	<= 31 999023 Volts				
1					Ignition Voltage	$2 \rightarrow 9$ Volts				
1					Service Fast Learn (SFL)					
1	1				Mode VBS Failsafe					
1					Ignition voltage and SFL	>= 0.1 Sec				
1					conditions met for					
1										
•	•	•	•	•	•					

Component/	Fault Code	Monitor Strategy	Malfunction	Tł	nreshold Value	Secondary Malfunction		Enable Conditions			Ti Reg	me uired	Mil Illum.
Gysten	Code	Description			Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None	Conditions			noq		
Transmission Fluid Temperature Sensor (TFT)	P0713	Transmission fluid temperature sensor failed at a high voltage	If Transmission Fluid Temperature Sensor Raw Resistance	>= 105445	Ohms					>= out	10	Fail Time (Sec	Two Trips
						trans fluid temp sensor high voltage diagnostic enable Battery Voltage Battery voltage is within the allowable limits for Ignition Voltage Ignition Voltage Service Fast Learn (SP Service Fast Learn (SP Mode VBS Failsafe Ignition voltage and SFL conditions met for	= <= >= >= = >=	1 31.999023 9 0.1 31.999023 9 FALSE 0.1	Boolean Volts Volts Sec Volts Volts Boolean Sec	of		(Sec)	
					Disable Conditions	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Abolute Value Of Transmission Input Speed Sensor Delta (loop to loop)	>= 850	RPM					>=	1.5	seconds	One Trip
						speed sensor processing	=	time based		/-	5	Idii evenits	1
						Service mode \$04 active and end of trip pocessing active transmission input speed	=	FALSE	Boolean				
						sensor performance diagnostic enable	=	1	Boolean				
						Ignition Voltage Hyst Hi (enabled above this value)	>	5	Volts				
						disabled below this value) Service Fast Learn (SFL)	<=	2 FALSE	Volts Boolean				
						Mode VBS Failsafe Ignition Voltage Max (disabled	<=	31.999023	Volts				
						Ignition Voltage Min (enabled above this value)	>=	9	Volts				
						P0717 Status is not	=	Test Failed This Key On					
						P07BF Status is not	=	This Key On					
						P07C0 Status is not	=	Test Failed This Key On					

Component/ System	Fault Code	Monitor Strategy Description		Malfunction Criteria	Three	eshold alue	Secondary Malfunction		Enable Conditions			Tim Requ	ne ired	Mil Illum.
- Oyotom	ooue	Description		enteria.			last valid transmission input	、 、	148	RPM		itoqu		
							speed	-	110					
							transmission input speed raw	>=	148	RPM				
							transmssion input speed last	>=	2	Seconds				
							transmission input speed							
							sensor performance test		FALSE	Dooloon				
							complete (initialized to FALSE	=	FALSE	DUUlean				
							transmission hydroulie system							
							pressurized	=	TRUE	Boolean				
							driver accelerator pedal	=	TRUE	Boolean				
							engine torque inaccurate	=	FALSE	Boolean				
							Transmission Output Speed	>=	230	RPM				
							driver accelerator pedal		E 00020E2	Det				
							position	>=	5.0005052	PU				
							state raw	<=	8191.875	N*m				
							engine actual torque steady	>=	30	N*m				
							Sidle Idw		Tect Foiled					
							D0714 Status is pol		This Key					
							PUT TO Status IS HU	=	On or Fault					
									Active					
						Disable	MIL not Illuminated for	TCM: P0716	, P0717, P07BF	, P07C0				
						Conditions.	Dic s.	ECM: P0101	, P0102, P0103	, P0121,				
								P0122, P012	23					
Transmission Innut Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low	Fail Case 1	Transmission Input Speed is	< 100	RPM					<u>\-</u>	4	Fail Time (Sec)	One Trip
	10/1/	Voltage		OR	100						~ -			
			Fail Case 2	P0722 DTC Status is Test Failed										-
				This Key On and and controller uses single power feed	< 175	RPM								
				Transmission Input Speed is			-							
							Controller uses a single power supply for the speed sensors	=	0	Boolean				
							speed sensor processing	=	time based					
							Service mode \$04 active and	=	FALSE	Boolean				
							end of trip pocessing active transmission input speed							
							sensor low diagnostic enable	=	1	Boolean				
							transmission hydraulic system pressurized	=	TRUE	Boolean				
							Ignition Voltage Hyst Hi	>	5	Volts				
							Ignition Voltage Hyst Lo	-	n	Volte				
							disabled below this value)	<=	Z	V UILS				
							speed sensor connected to controller	=	1	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Th	reshold	Secondary	1	Enable			Tir	ne	Mil
System	Code	Description	Criteria	,	Value	Malfunction		Conditions			Requ	uired	Illum.
						P0722 Status is no	t =	fault active					
						P0723 Status is no	t =	fault active					
						P077C Status is no	t =	fault active					
						P077D Status is no	t =	fault active					
						brake pedal position is no	t >=	69.999695	Pct				
						engine torque inaccurate	= =	FALSE	Boolean				
								Test Failed					
						P0716 Status is no	t =	This Key					
								On					
								Test Failed					
						P07BF Status is no	t =	This Key					
								On					
								Test Failed					
						P07C0 Status is no	t =	This Key					
								On					
						driver accelerator peda		on					
						anver accelerator peda	>=	5	Pct				
						engine actual torque stead							
						engine actual torque steady	<=	8191.875	N*m				
						State Tak	v						
						engine actual torque steady	>=	30	N*m				
						State rav	V	0.0000					
								CeCGSR_					
						attained gear low	V <	e_CR_Sixt					
								h					
						Transmission Output Speed	1						
						Sensor Raw Speed when	1 >=	72	RPM				
						attained gear low	V						
								CeCGSR_					
						attained gear high	1 >=	e_CR_Sixt					
								h					
						Transmission Output Speed	ł						
						Sensor Raw Speed when	1 >=	230	RPM				
						attained gear high	ı						
								Test					
								Test Falled					
						P0717 Status is no	t =	I his key					
								On or Fault					
								Active					
					Disable	MIL not Illuminated for	TCM· P071	6 P0722 P0723	P077C				
					Conditions:	DTC's	: P077D, P0	7BF. P07C0					
							ECM· P010	1 P0102 P0103					
							201111010	1,10102,10100					
								CeCGSR					One Trip
Transmission Output Speed Sensor	P0722	Output Speed Sensor Circuit Low	Transmission Output Speed	1 <= 30	RPM	attained dear high		e CR Fou	FNUM	>=	5	Fail Time (Sec)	one mp
(TOSS)	10722	Voltage	Sensor Raw Speed	1 - 50		uttained gear high		rth	LIVOIN	· -	0		
								TUT					
								CACCER					
						attained gear low	-	CECGSR_	ENILIM	<u> </u>	2 5	Eail Time (Sec)	
						attained gear low	<=	e_CR_FOU	ENUM	>=	3.0	Fall fille (Sec)	
								101					
								Test Failed					
						Dozoo Chatas la as		This Key					
	1					PU/22 Status IS NO	ι =	On or Fault					
							1	Active					
						Condex mode to t							
	1					Service mode \$04 active and	=	FALSE	Boolean				
1	1	1	1	1		end of trip pocessing active	9	-		I			

Component/ System	Fault	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
- Oystellin	ooue	Description		, and			eenanono		roquirou	
					transmission output speed sensor low diagnostic enable	=	1	Boolean		
					power flow not active (garage shift not complete, PRNDL = P or PRNDL = N, transmission range control in progress)	=	TRUE	Boolean		
					engine actual torque steady state raw power flow not active	>=	8192	N*m		
					driver accelerator position	>=	99.998474	Pct		
					power flow not active (garage shift not complete, PRNDL = P or PRNDL = N, transmission range control in progress)	=	FALSE	Boolean		
					attained gear high	>	CeCGSR_ e_CR_Fou rth	ENUM		
					high gear engine actual torque steady state raw power flow active hysteresis high	>=	50	N*m		
					high gear engine actual torque steady state raw power flow active hysteresis low not	<=	30	N*m		
					high gear accelerator pedal position power flow active hysteresis high	>=	4.9987793	Pct		
					high gear accelerator pedal position power flow active hysteresis low not	<=	2.9998779	Pct		
					attained gear low	<=	CeCGSR_ e_CR_Fou rth	ENUM		
					low gear engine actual torque steady state raw power flow active hysteresis high	>=	80	N*m		
					low gear engine actual torque steady state raw power flow active hysteresis low not	<=	50	N*m		
					low gear accelerator pedal position power flow active hysteresis high	>=	7.9986572	Pct		
					low gear accelerator pedal position power flow active hysteresis low not	<=	4.9987793	Pct		
					use transmission input speed sensor	=	TRUE	Boolean		
					speed sensors have single power feed	=	0	Boolean		
					transmission input speed sensor signal raw	<=	8191.875	RPM		
					transmission input speed sensor signal raw	>=	175	RPM		
I				I					l	I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre Va	shold	Secondary Malfunction		Enable Conditions			Ti Rea	me uired	Mil Illum.
						use transmission input speed	=	FALSE	Boolean				
						sensor speed sensors have single		THEOL	Doolouii				
						power feed	=	0	Boolean				
						engine speed sensor signal	<=	8191.875	RPM				
						engine speed sensor signal	>=	3500	RPM				
								Fault					
						P0716 Status is not	=	Active					
						P0717 Status is not	-	Fault					
								Active					
						P07BF Status is not	=	Active					
						D07C0 Status is not		Fault					
						PU/CU Status IS not	=	Active					
						PTO disable	=	1	Boolean				
						driver accelerator pedal	=	FALSE	DUUIEdII				
						position available	=	TRUE	Boolean				
						engine torque inaccurate	=	FALSE	Boolean				
						transmission hydraulic system	=	TRUE	Boolean				
						Ignition Voltage Hyst Hi							
						(enabled above this value)	>	5	Volts				
						Ignition Voltage Hyst Lo	<=	2	Volts				
						disabled below this value)							
						Mode VBS Failsafe	=	FALSE	Boolean				
						Ignition Voltage Max (disabled	<i>/</i> -	31 000023	Volts				
						above this value)	~-	51.777025	VOID				
						ignition voltage win (enabled above this value)	>=	9	Volts				
						transmssion fluid temperature		40	00				
						sensor	>=	-40	Ű				
						D0722 Status is not		Test Failed					
						PU725 Status IS HOL	=	On					
								Test Failed					
						P077C Status is not	=	This Key					
								On Tost Failed					
						P077D Status is not	=	This Key					
								On					
					Disable	MIL not Illuminated for	TCM: P071	6 P0717 P0723					
					Conditions:	DTC's:	1011.1071	0,10/17,10/20					
							ECM: P010	1, P0102, P0103	, P0121,				
							P0122, P01	23					
Transmission Output Speed Sansar		Output Spood Soper Circuit		see "set fail									One Trip
(TOSS)	P0723	Intermittent	transmission output speed delta	>= RPM	RPM					>=	1.5	Fail Time (Sec)	
				threshold"									
										>=	5	fail events	
						transmission output speed	>=	36	RPM				
						OR							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					transmission output speed last valid output speed before drop	>=	36	RPM		
					for TOSS output speed raw, TOSS last valid output speed,	>=	2	seconds		
					set fail RPM threshold 4WD low state valid	=	TRUE	Boolean		
					4WD low state 2WD delta transmission output	=	TRUE	Boolean		
					speed fail threshold	=	500	RPM		
					4WD gear ratio final delta transmission output speed fail threshold	=	2.71 1355	RPM		
					OR 4WD low state valid 4WD low state	=	TRUE FALSE	Boolean Boolean		
					OR 4WD low state valid	=	FALSE	Boolean		
					2WD delta transmission output speed fail threshold	=	500	RPM		
					final delta transmission output speed fail threshold	=	500	RPM		
					Range_Disable OR	=	FALSE	See Below		
					Neutral_Range_Enable	=	TRUE	See Below		
					And Neutral_Speed_Enable are TRUE concurrently	=	TRUE	See Below		
					Transmission_Range_Enable	=	TRUE	See Below		_
					Transmission_Input_Speed_E nable	=	TRUE	See Below		
					transmission output speed sensor performance diagnostic enable	=	1	Boolean		
					Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean		
					No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds		
					P0723 Status is not	=	Test Failed This Key On or Fault Active			
					Disable this DTC if the PTO is active	=	1	Boolean		
					Ignition Voltage Hyst Hi (enabled above this value)	>	5	Volts		
					Ignition Voltage Hyst Lo disabled below this value)	<=	2	Volts		
					Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean		
					Ignition Voltage Max (disabled above this value)	<=	31.999023	Volts		
					Ignition Voltage Min (enabled above this value)	>=	9	Volts		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	value	Manufiction		Conditions		Required	mum.
							Test Falled			
					PUT/C Status is not	=	This Key			
							Un			
					DOTTO Chabura la mat		Lest Failed			
					P07/D Status is not	=	This Key			
							Un			-
					Enable_Flags Defined Below					
					T					-
					Transmission_Input_Speed_E					
					nable IS TRUE when either TIS					
					Condition 1 or 115 Condition 2					
					IS TRUE:					
					TIC Condition 1 is TDUE when					
					hoth of the following conditions		2	Enable Time		
					both of the following conditions	>=	2	(Sec)		
					are satsilied for		1005 075	DDM		
					Input Speed Delta	<=	4095.875	RPIN		
					Raw Input Speed	>=	148	KPIVI		
					TIC Condition 2 is TDUE when					
					TIS Condition 2 is TRUE when					
					ALL OF THE NEXT TWO CONDITIONS					
					are satisfied			0.014		
					Input Speed	=	0	RPM		
					A Single Power Supply is used	=	TRUE	Boolean		
					tor all speed sensors					
					Neutral Pange Enable is					-
					TRUE when any of the next 3					
					conditions are TRUE					
					Transmission Range is	-	Neutral	FNUM		
					Transmission Range is		Reverse/N	ENOM		
					Transmission Range is	=	eutral	FNUM		
					in anomission realige is		Transitonal	LITOIN		
							Neutral/Dri			
							ve			
					Transmission Range is	=	Transitiona	ENUM		
							I			
					KeTOSI_n_OutSpdInNeutNois		50	DDM		
					eMaxLim	<	50	RPIVI		
					and when Loop to Loop Drop					
					of Transmission Output Speed	>	500	RPM		
					is					
					Range_Disable is TRUE when					
					any of the next three				1	
					conditions are TRUE					
					Transmission Range is	=	Park	ENUM		
							Park/Rever		1	
					Transmission Range is	=	se	ENUM		
							I ransitonal		1	
					Input Clutch is not	=	ON (Fully	ENUM	1	
							Applied)		1	
					Neutral Sneed Enable is					-1
					TRUE when All of the post				1	
					three conditions are satsified	>	2	Seconds		
					for				1	1
					Transmission Output Speed	>=	50	RPM	1	1
	•						00		•	•

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			Ti	ne Jired	Mil Illum.
- Oystenii	oode	Description				The lean to lean change of the		20110110					
						Transmission Output Speed is	<	20	RPM				
						mansinission Output Speed is							
						The loop to loop change of the							
						Transmission Output Speed is	>	-140	RPM				
						Transmission Range Enable							-
						is TRUE when one of the next							
						six conditions is TRUE							
						Transmission Range is	=	Neutral	ENUM				
								Reverse/N					
						Transmission Range is	=	eutral	ENUM				
						, s		Iransitiona					
								i Neutral/Dri					
								Ve					
						Transmission Range is	=	Transitiona	ENUM				
								1					
								see Table					
						Time since a driven range		21 in					
						(R,D) has been selected	>=	supporting	Sec				
								documents					
						Transmission Output Speed							
						Sensor Raw Speed	>=	250	RPM				
						Output Speed when a fault	>=	250	DDM				
						was detected	/-	230					
					Disable	MIL not Illuminated for	TCM: P077	C. P077D					
					Conditions:	DTC's:							
							ECM: P277	1, P279A, P279	B, P279C				
		Description Control Colored A Church											On Tri
Variable Force Solenoid (VFS)	P0746	Off (clutch1/CB1278P)	absolute value (attained gear slip)	>= 400	RPM					>=	3	seconds	One Tri
												when fail time	
												reaches fail limi	it
												increment fail	
												event count	
										>=	3	event counts	_
						clutch solenoid stuck on							
						monitor test deceleration limit	=	TRUE	boolean				
						not							
						clutch solenoid stuck on							
						performance diagnostic		TDUE	hooloon				
						monitor test return to previous	=	IKUE	DOOIG911				
	1					range not							
	1					PRNDL State not	=	park	enumeration				
	1					PRIVUE State not while conditings A and P and	=	neutral	enumeration	1			
	1					C are met time down delay				1			
						from clibration to 0.0 seconds							
	1					delay time calibration	=	0.5	seconds	1			
	1					A) neutral condition fault		ENICE	booloon	1			
	1					pending	=	FALSE	nean	1			
1	1	1	1			 B) intrusive shift active 	=	FALSE	boolean	I			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
, i i i i i i i i i i i i i i i i i i i					C) range shift state	e = shift enumeration	1	
					intrusive shift allowed	= TRUE boolean		
					intrusive shift active	e = FALSE boolean		
					steady state pressure adapt in	= FALSE boolean		
					transmission output speed	>= 100 RPM		
					accelerator pedal position	>= 0.5004883 %		
					accelerator pedal position valid	= TRUE Boolean		
					engine speed valid	= TRUE Boolean		
					D) select battery voltage to			
					enable diagnsotic monitor	= 0 Boolean		
					E) battery voltage	<= 31.999023 volts		
					E) battery voltage	>= 9 Volts		
					F or G			
					F) select ignition voltage to	= 0 Boolean		
					enable diagnsotic monitor	21 000022 Volto		
					G) Ignition Voltage	>= 9 Volts		
					Service Fast Learn (SFL)	- EALSE Boolean		
					Mode VBS Failsafe			
					Ignition voltage and SFL conditions met for	>= 0.1 Sec		
					Hydraulic System Pressurized	= TRUE Boolean		
					high side driver 1 enabled	= TRUE Boolean		
					high side driver 2 enabled	= TRUE Boolean		
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,		
				Conditions:	DTC's	P077C, P077D, P07BF, P07C0, P1824,		
						P182A, P182B, P182C, P182D, P182E, p182E, p1838, p1830, p1840, p1841		
						P18B5, P18B6, P18B7, P18B8, P18B9,		
						P18BA, P18BB, P18BC, P18BD, P18BE		
						P18BF, P18C0, P18C1, P18C2, P18C3,		
						P 1915, P2534		
						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		
		Drocouro Control Colonald A Church	automatic transmission shift	see Table 32				One Trip
Variable Force Solenoid (VFS)	P0747	Pressure Control Solenoid A Stuck On (clutch1/CB1278R)	phase test (R) fail event count	>= in supporting fail event counts				
			deceleration limited	documents				
			automatic transmission shift	see Table 33				
			torque phase test (A) or inertia	>= in supporting fail event counts				
			deceleration	documents				
			A) absolute value (attained gear					
			slip), fail during post torque phase	40 004				
			or transmission automatic shift, before engine speed change, pull	<= 40 KPM				
			up or pull down occurs					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	ed.	Mil
Jystem	Coue	Description	increment fail time when slip	Value	Mananotion		Conditions		see Table 29	eu	indin.
			criteria met, fail time for power	~					>= in supporting	seconds	
			down shift	t					documents		
			increment fail time when slip						see Table 30		
			criteria met, fail time for up shift or						>= in supporting	seconds	
			closed throttle down shift						documents		
			increment fail time when slin								
			criteria met, fail time for up shift or						see Table 31		
			closed throttle down shift no	,					>= in supporting	seconds	
			deceleration						documents		
										when fail time	
										reaches fail limit	t
										increment fail	
										event count	
			B) absolute value (command gear							apove	
			slin) fail during inertia phase of	F							
			transmission automatic shift.	>= 70 RPM							
			engine speed change begins, pul								
			up or pull down								
			increment fail time when slip						see Table 35		
			criteria met, fail time during shift	1					>= in supporting	seconds	
			deceleration limited						documents		
			increment fail time when slip						see Table 36		
			criteria met, fail time during shift						>= in supporting	seconds	
			Tio deceleration						documents	when fail time	
										reaches fail limit	•
										increment fail	L L
										event count	
										above	
					inertia phase test measured	>-	0 558				1
					gear ratio	-	0.000				
					inertia phase test measured	<=	4.7150002				
					gear ratio						
					dear ratio time	>=	0.15	seconds			
					gedi fatto tinto						
							see lable				
					clutch test enabled	=	ni UI supporting	boolean			
							documents				
							documents				
					post torque phase test engine		see Table				
					torque hysteresis high enable	N-	11 in	N*m			
					for upshift or power on down	>=	supporting	IN III			
					shift		documents				
1					and the second second second						1
					post torque phase test engine		see lable				
					for upshift or power on down	>	supporting	N*m			
1					shift		documents				1
1					orme						1
1					nost torque phase test angles		see Table				1
1					torque hysteresis high enable	>=	13 in	N*m			1
1					for closed throttle down shift		supporting				1
							documents				1

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
oyuun	oode	Decomption			post torque phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 14 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift	>=	see Table 15 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 16 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 17 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 18 in supporting documents	N*m		
					off going clutch pressure	<=	see Table 37 in supporting documents	kPa		
					off going clutch pressure closed throttle down shift delay time	>=	see Table 2 in supporting documents	seconds		
					off going clutch pressure closed power down shift delay time	>=	see Table 38 in supporting documents	seconds		
					off going clutch pressure up shift delay time	>=	see Table 59 in supporting documents	seconds		
					on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable brake pedal position hysteresis	>=	27.000427 25	%		
	I	l		l	low enable	~-	23	70	l	I

Component/	Fault	Monitor Strategy	Malfunction	Thre	eshold	Secondary		Enable			Ti	me	Mil
System	Code	Description	Criteria	V	alue	Mairunction		Conditions		┣───	Requ	uired	illum.
						absolute value (attained gear	<=	40	RPM				
						sip)							
								see Table					
						shift type enable	_	45 in	hoolean				
						Shint type chable	_	supporting	boolcan				
								documents					
						clucth solenoid stuck off							
						intrusive shift request not	=	TRUE	boolean				
						traction control event test							
						suspend not	=	TRUE	boolean				
						transmission output speed	>=	100	RPM				
						accolorator podal position valid	_	TDUE	Pooloan				
						accelerator pedal position valid	-	TRUE	DUDIEdi				
						engine speed valid	=	TRUE	Boolean				
						D or E							
						 D) select battery voltage to 	=	0	Boolean				
						enable diagnsotic monitor	_	0	Doolean				
						E) battery voltage	<=	31.999023	volts				
						E) battery voltage	>=	9	volts				
						E) battery voltage time	>=	0.1	Sec				
						F or G							
						F) select ignition voltage to	=	0	Boolean				
						C) Ignition Voltage	-	21 000022	Volte				
						C) Ignition Voltage	<=	0	Volts				
						Service Fast Learn (SEL)	>=	9	VOILS				
						Mode VRS Failsafe	=	FALSE	Boolean				
						Ignition voltage and SEL							
						conditions met for	>=	0.1	Sec				
						Hydraulic System Pressurized	=	TRUE	Boolean				
						high side driver 1 enabled	=	TRUE	Boolean				
						high side driver 2 enabled	=	TRUE	Boolean				
						-							
					Disable	MIL not Illuminated for	TCM: P0716	5, P0717, P0722	, P0723,				
					Conditions:	DTC's:	P077C, P07	7D, P07BF, P0	7C0, P1824,				
							P182A, P18	2B, P182C, P18	2D, P182E,				
							P182F, P18	38, P1839, P18	40, P1841,				
							P18B5, P18	B6, P18B7, P18	B8, P18B9,				
							P18BA, P18	BB, P18BC, P1	8BD, P18BE,				
							P18BF, P18	CO, P18C1, P1	3C2, P18C3,				
							P1915, P25	34					
							ECM. D010	1 00102 0010	D0104				
							ECIVI. PUTU D0107 D01	1, PUIUZ, PUIU.	0, PUIU0, 70 D0174				
							P0107, P01 D0175 D02	06, PUT/T, PUT 01 D0202 D02	2, PU174,				
							P0205 P02	01, 1 0202, 1 020 06 P0207 P020	13, 1 0204, 18 P0300				
							P0301 P03	00, 1 0207, 1 020 02 P0303 P03	0, 1 0300, 14 P0305				
							P0306, P03	07, P0308, P04	01, P042E	1			
	D0	Pressure Control Solenoid B Stuck			0014								One Trin
Variable Force Solenoid (VFS)	P0776	Off (clutch2/CB12345R)	absolute value (attained gear slip)	>= 400	RPM					>=	3	seconds	
		· · · ·								1		when fail time	
										1		reaches fail limit	
										1		increment fail	
										1		event count	
	1									>=	3	event counts	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mil
System	Code	Description	Ciliena	Value	clutch solenoid stuck on		Contaitions		Kequileu	interni.
					performance diagnostic					
					monitor test deceleration limit	=	TRUE	boolean		
					not					
					clutch solenoid stuck on					
					performance diagnostic		TDUE	haalaan		
					monitor test return to previous	=	IRUE	DODIEGI		
					range not					
					PRNDL State not	=	park	enumeration		
					PRNDL State not	=	neutral	enumeration		
					while conditinos A and B and					
					C are met, time down delay					
					from clibration to 0.0 seconds		0.5			
					delay time calibration	=	0.5	seconds		
					A) neutral condition fault	=	FALSE	boolean		
					P) intrucivo chift activo	_	EALSE	booloon		
					b) Initiasive shint active	-	chift	DODIEGI		
					C) range shift state	=	complete	enumeration		
					intrusive shift allowed	_	TRUE	boolean		
					intrusive shift active	=	FALSE	boolean		
					steady state pressure adapt in					
					progress	=	FALSE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position	>=	0.5004883	%		
					accelerator pedal position valid	_	TRUE	Boolean		
					accolutor pedar position valia		INCE	Doolean		
					engine speed valid	=	TRUE	Boolean		
					D or E					
					D) select battery voltage to	=	0	Boolean		
					enable diagnsotic monitor		21 000022	ualta		
					E) battery voltage	<=	31.999023	volts		
					E) battery voltage time	>=	9 0 1	VUILS		
					E) ballery voltage line	/-	0.1	300		
					F) select ignition voltage to					
					enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage	<=	31.999023	Volts		
					G) Ignition Voltage	>=	9	Volts		
					Service Fast Learn (SFL)	_	EALSE	Pooloan		
					Mode VBS Failsafe	=	FALSE	DUUIEd()		
					Ignition voltage and SFL	>=	0.1	Sec		
					conditions met for		0.1	500		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	IRUE	Boolean		
	1	1							1	1
1	1			1	1					1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	e .	Mil
System	Code	Description	Criteria	Value	Mairunction	Conditions	Requir	red	ilium.
				Disable	MIL not Illuminated for	TCM: P0/16, P0/17, P0/22, P0/23,			
				Conditions:	DTC's:	P077C, P077D, P07BF, P07C0, P1824,			
						P182A, P182B, P182C, P182D, P182E,			
						P182F, P1838, P1839, P1840, P1841,			
						P18B5, P18B6, P18B7, P18B8, P18B9,			
						P18BA, P18BB, P18BC, P18BD, P18BE,			
						P18BF, P18C0, P18C1, P18C2, P18C3,			
						P1915, P2534			
						FCM: P0101, P0102, P0103, P0106,			
						P0107, P0108, P0171, P0172, P0174,			
						P0175 P0201 P0202 P0203 P0204			
						P0205 P0206 P0207 P0208 P0300			
						P0301 P0302 P0303 P0304 P0305			
						P0306 P0307 P0308 P0401 P042F			
	-		automatic transmission shift			10300,10307,10300,10401,10422			One Trip
		Pressure Control Solenoid B Stuck	torque phase test (A) or inertia	see Table 32					One mp
Variable Force Solenoid (VFS)	P0777	On (clutch2/CB12345P)	phase test (R) fail event count	>= in supporting fail event counts					
			deceleration limited	documents					
			automatic transmission shift						
			torque phase test (A) or inertia	see Table 33					
			nhase test (R) fail event count no	>= in supporting fail event counts					
			phase test (b) fail event count no	documents					
			A) absolute value (attained gear						
			A) absolute value (attailled geal						
			slip), fail during post torque priase	40 DDM					
			before opging speed change, pull	<= 40 KFW					
			beiore engine speed change, pui						
			up of pull down occurs				ana Tabla 20		
			Increment fail time for nouver				See Table 29	occordo	
			chiena met, rair time for power				>= In supporting	seconds	
			uowii shin				documents		
			increment fail time for up ohift or				see Table 30		
			criteria met, fail time for up shift of				>= in supporting	seconds	
			ciosed throttle down shift				documents		
			deceleration limited						
			increment fail time for up ohift or				see Table 31		
			criteria met, fail time for up shift of				>= in supporting	seconds	
			closed throttle down shift no				documents		
			deceleration					under son Coll Marco	
								when fall time	
								reaches fail limi	t
								increment fail	
								event count	
			D) shashda usha (sa	1		1		apove	1
			B) absolute value (command gear	1					
1			slip), fail during inertia phase of	70 0014		1			1
			transmission automatic shift,	>= /0 RPM		1			1
1			engine speed change begins, pull	1		1			1
1			up or pull down	1		1			1
			increment fail time when slip	1		1	see Lable 35		1
1			criteria met, fail time during shift	1		1	>= in supporting	seconds	1
			deceleration limited				documents		1
1			increment fail time when slip	1		1	see Table 36		1
			criteria met, fail time during shift				>= in supporting	seconds	1
1		1	no deceleration	I	I	I	documents		1

Component/ Svstem	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Reguired	Mil Illum.
									when fail time reaches fail limit increment fail event count above	t
					inertia phase test measured gear ratio inertia phase test measured	>=	0.558			-
					gear ratio inertia phase test measured gear ratio time	<=	4.7150002 0.15	seconds		
					clutch test enabled	=	see Table 10 in supporting documents	boolean		
					post torque phase test engine torque hysteresis high enable for upshift or power on down shift	>=	see Table 11 in supporting documents	N*m		
					post torque phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 12 in supporting documents	N*m		
					post torque phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 13 in supporting documents	N*m		
					post torque phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 14 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift	>=	see Table 15 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 16 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 17 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 18 in supporting documents	N*m		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
- Oyucm	oode				off going clutch pressure	<=	see Table 37 in supporting documents	kPa		
					off going clutch pressure closed throttle down shift delay time	>=	see Table 3 in supporting documents	seconds		
					off going clutch pressure closed power down shift delay time	>=	see Table 39 in supporting documents	seconds		
					off going clutch pressure up shift delay time	>=	see Table 60 in supporting documents	seconds		
					on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable	>=	27.000427	%		
					brake pedal position hysteresis low enable	<=	25	%		
					absolute value (attained gear slip)	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not	=	TRUE	boolean		
					traction control event test suspend not	=	TRUE	boolean		
					transmission output speed	>=	100	RPM		
					engine speed valid	=	TRUE	Boolean		
					D or E D) select battery voltage to	_	0	Boolean		
					enable diagnsotic monitor E) battery voltage	<=	31.999023	volts		
					E) battery voltage E) battery voltage time F or G	>= >=	9 0.1	volts sec		
					F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
	I	l	I	I	G) Ignition Voltage	<=	31.999023	Volts	l	

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Thres	shold	Secondary Malfunction		Enable Conditions			Time Required		Mil Illum.
Oystem	ooue	Description				G) Ignition Voltage	>=	9	Volts		rioquirou		
						Service Fast Learn (SFL)	=	FAI SE	Boolean				
						Mode VBS Failsafe		THEOL	Booloan				
						conditions met for	>=	0.1	Sec				
						Hydraulic System Pressurized	=	TRUE	Boolean				
						high side driver 1 enabled	=	TRUE	Boolean				
						high side driver 2 enabled	=	TRUE	Boolean				
					Disable	MIL not Illuminated for	TCM: P0716,	P0717, P0722	2, P0723,				
					Conditions:	DTC's:	P077C, P077I	D, P07BF, P0	7C0, P1824,				
							P182A, P182E P182F P1839	3, P182C, P18 2 P1830 P18	32D, P182E, /0 P18/1				
							P18B5, P18B6	6, P18B7, P18	3B8, P18B9,				
							P18BA, P18B	B, P18BC, P1	8BD, P18BE,				
							P18BF, P18C	0, P18C1, P1	8C2, P18C3,				
							P 1910, P2034						
							ECM: P0101,	P0102, P010	3, P0106,				
							P0107, P0108	, P0171, P01	72, P0174,				
							P01/5, P0201	, P0202, P02	03, P0204, 08 P0300				
							P0301, P0302	, P0303, P03	04, P0305,				
							P0306, P0307	, P0308, P04	01, P042E				
Transmission Output Speed Sensor	P077C	Output Speed Sensor Circuit Low	TOSS Analog Signal Voltage	<= 0.25	Volts					>= 5	5.00E-02	sec	One Trip
(1033)				Test Failed									
			P077C Status is not	= This Key On									
				or Fault Active									
			If the above conditions have been met_increment the P077C Fail										
			Counter										
			DTC P077C Sets when the Fail	44	Counts (6.25								
			Counter	>= 16	msec								
					continuousy	P077C Enable Calibration	=	1					
						Service mode \$04 active and	_	FAI SE	Boolean				
						end of trip pocessing active	_	THESE	Doolean				
						(enabled above this value)	>	5	Volts				
						Ignition Voltage Hyst Lo		n	Volto				
						disabled below this value)	<=	Z	VUILS				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Battery Voltage Max (disabled		21 000022	Valta				
						above this value)	<=	31.999023	VOILS				
						Battery Voltage Min (disabled	<=	10	Volts	1			
						Ignition Voltage Min (disabled							
						below this value)	>=	10	Volts				
						for voltage stablity time	>=	5	seconds				
					Disable	MIL not Illuminated for	TCM: P077D			1			
					Conditions:	DTC's:				1			
	1					1	I			1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre: Va	shold lue	Secondary Malfunction		Enable Conditions			Tin Requ	ne ired	Mil Illum.
Transmission Output Speed Sensor	P077D	Output Speed Sensor Circuit High	TOSS Analog Signal Voltage	>=	4.75	Volts					>=	5.00F-02	Sec	One Trip
(TOSS)			P077D Status is not	Te = Th or F	est Failed nis Key On Fault Active	2								
			met, increment the P077D Fail											
			DTC P077D Sets when the Fail Counter	>=	16	Counts (12.5 msec continuous)								
							P077D Enable Calibration Service mode \$04 active and end of trip pocessing active	=	1 FALSE	Boolean				
							Ignition Voltage Hyst Hi (enabled above this value)	>	5	Volts				
							disabled below this value) Service Fast Learn (SFL)	<=	2 FALSE	Volts Boolean				
							Mode VBS Failsafe Battery Voltage Max (disabled above this value)	<=	31.999023	Volts				
							Battery Voltage Min (disabled below this value) Ignition Voltage Min (disabled	<=	10	Volts				
							below this value) for voltage stablity time	>=	5	seconds				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P077C						
Variable Force Solenoid (VFS)	P0796	Pressure Control Solenoid C Stuck Off (clutch3/C13567)	absolute value (attained gear slip)	>=	400	RPM					>=	3	seconds	One Trip
													when fail time reaches fail lin increment fai event count	e nit I
							clutch solenoid stuck on performance diagnostic monitor test deceleration limit	=	TRUE	boolean	>=	3	event counts	<u>;</u>
							not clutch solenoid stuck on performance diagnostic monitor test return to previous	=	TRUE	boolean				
							PRNDL State not PRNDL State not PRNDL State not while conditions A and B and C are met, time down delay	=	park neutral	enumeration enumeration				
							A) neutral condition fault pending B) intrusive shift active	= =	0.5 FALSE FALSE	seconds boolean				
							C) range shift state	=	shift	enumeration				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre: Va	shold Iue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
- Cyotom	oouo	Decemption				intrusive shift allowed	=	TRUE	boolean		
						intrusive shift active	=	FALSE	boolean		
						steady state pressure adapt in	=	FALSE	boolean		
						transmission output speed	>=	100	RPM		
						accelerator pedal position	>=	0.5004883	%		
						accelerator pedal position valid	=	TRUE	Boolean		
						engine speed valio	=	TRUE	Boolean		
						D or E	_	INOL	Doolean		
						D) select battery voltage to	_	0	Boolean		
						enable diagnsotic monitor	-	0	Doolean		
						E) battery voltage	<=	31.999023	volts		
						E) battery voltage time	>=	9	VUILS		
						F or G		0.1	500		
						F) select ignition voltage to	_	0	Boolean		
						enable diagnsotic monitor	-	0	Doolean		
						G) Ignition Voltage	<=	31.999023	Volts		
						Service East Learn (SEL)	>=	9	VOILS		
						Mode VBS Failsafe	=	FALSE	Boolean		
						Ignition voltage and SFL		0.1	Soc		
						conditions met for		0.1	Jec		
						Hydraulic System Pressurized	=	TRUE	Boolean		
						high side driver 2 enabled	=	TRUE	Boolean		
						night side driver 2 chabled		INCL	Doolean		
					Disable	MIL not Illuminated for	TCM: P0716	6, P0717, P0722	2, P0723,		
					Conditions:	DICS	D1824 D18	7D, PU/BF, PU	7CU, P1824,		
							P182F, P18	38. P1839. P18	40. P1841.		
							P18B5, P18	B6, P18B7, P18	3B8, P18B9,		
							P18BA, P18	BB, P18BC, P1	8BD, P18BE,		
							P18BF, P18	CO, P18C1, P1	8C2, P18C3,		
							P1915, P25	34			
							ECM: P010	1, P0102, P010	3. P0106.		
							P0107, P01	08, P0171, P01	72, P0174,		
							P0175, P02	01, P0202, P02	03, P0204,		
							P0205, P02	06, P0207, P02	08, P0300,		
							P0301, P03	02, P0303, P03 07. P0308, P04	04, P0305, 01. P042F		
			automatic transmission shift	one Table 22							One Trip
Variable Force Solenoid (VES)	P0797	Pressure Control Solenoid C Stuck	torque phase test (A) or inertia	>= in supporting	fail event counts						
	10///	On (clutch3/C13567)	phase test (B) fail event count	documents	ian event counts						
1			deceleration limited								
			torgue phase test (A) or inertia	see Table 33							
1			phase test (B) fail event count no	>= in supporting	tail event counts						
1			deceleration	uocuments							
1			A) absolute value (attained gear								
1			slip), tail during post torque phase	- 40	DDM						
			before engine speed change pull	<= 4U	rr-'WI						
			up or pull down occurs								

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary Malfunction		Enable		Time	ed.	Mil Illum
Jystem	Coue	Description	increment fail time when slip	Value	Mananotion		Conditions		see Table 29	eu	
			criteria met, fail time for power						>= in supporting	seconds	
			down shift						documents		
			increment fail time when slip						see Table 30		
			criteria met, fail time for up shift or						>= in supporting	seconds	
			closed infolite down shift						documents		
			increment fail time when slin								
			criteria met, fail time for up shift or						see Table 31		
			closed throttle down shift no						>= in supporting	seconds	
			deceleration						documents		
										when fail time	
										reaches fail limit	
										increment fail	
										event count	
			B) absolute value (command dear							above	
			slip), fail during inertia phase of	F							
			transmission automatic shift,	>= 70 RPM							
			engine speed change begins, pull								
			up or pull down								
			increment fail time when slip	,					see Table 35		
			criteria met, fail time during shift						>= in supporting	seconds	
			deceleration limited						documents		
			criteria met, fail time during shift						see Table 30	soconds	
			no deceleration						>= III supporting documents	Seconds	
									documento	when fail time	
										reaches fail limit	
										increment fail	
										event count	
									L	above	-
					inertia phase test measured	>=	0.558				
					gear ratio						
					menia priase test measureu	<=	4.7150002				
					inertia phase test measured						
					gear ratio time	>=	0.15	seconds			
					-		soo Tablo				
							10 in				
					clutch test enabled	=	supporting	boolean			
							documents				
					post torque phase test engine		see Table				
					torque hysteresis high enable	>=	11 in	N*m			
					for upshift or power on down		supporting				
					Snitt		documents				
					post torque phase test engine		see Table		1		
					torque hysteresis low disable		12 in				
					for upshift or power on down	>	supporting	N^m			
					shift		documents		1		
1					post torque phase test engine		see Table				
					torque hysteresis high enable	>=	13 in	N*m	1		
1					for closed throttle down shift		documents				
1		1	1	1			uocuments				

ľ	Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
	Uysen	Code	Description			post torque phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 14 in supporting documents	N*m		
						inertia phase test engine torque hysteresis high enable for upshift or power on down shift	>=	see Table 15 in supporting documents	N*m		
						inertia phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 16 in supporting documents	N*m		
						inertia phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 17 in supporting documents	N*m		
						inertia phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 18 in supporting documents	N*m		
						off going clutch pressure	<=	see Table 37 in supporting documents	kPa		
						off going clutch pressure closed throttle down shift delay time	>=	see Table 4 in supporting documents	seconds		
						off going clutch pressure closed power down shift delay time	>=	see Table 40 in supporting documents	seconds		
						off going clutch pressure up shift delay time	>=	see Table 61 in supporting documents	seconds		
						on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		
						on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
						brake pedal position hysteresis high disable brake pedal position hysteresis low enable	>= <=	27.000427 25	% %		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	E	Enable	Tii Regi	ne	Mil Illum
System	Coue	Description	ontena	Value	absolute value (attained gea		40 000	Neq	lied	incirii.
					slip	<=	40 RPM			
						S	ee Table			
					shift type enable	=	45 in boolea	n		
					51	SU	upporting ocuments			
					aluath a classic atuals of		ocuments			
					intrusive shift request no	=	TRUE boolea	n		
					traction control event tes	t		_		
					suspend no	t =	100 DDM	1		
					transmission output speed	1 >=	100 RPM			
					accelerator pedal position valid	i =	TRUE Boolea	n		
					engine speed valid	=	TRUE Boolea	n		
					D) select battery voltage to	-				
					enable diagnsotic monito	=	0 Boolea	n		
					E) battery voltage	e <= 3 ⁻	1.999023 volts			
					E) battery voltage	2 >=	9 volts			
					F or G	>=	0.1 Sec			
					F) select ignition voltage to	_	0 Boole:	n		
					enable diagnsotic monito		1 000022 Valta			
					G) Ignition Voltage	2 <= 3	9 Volts			
					Service Fast Learn (SFL) _	EALSE Booles	n		
					Mode VBS Failsafe	5 =	FALSE BUUIER			
					Ignition voltage and SFL conditions met fo	>=	0.1 Sec			
					Hydraulic System Pressurized	=	TRUE Boolea	n		
					high side driver 1 enabled	i =	TRUE Boolea	n		
					high side driver 2 enabled	i =	TRUE Boolea	n		
				Disab	le MIL not Illuminated fo	TCM: P0716, P07	17, P0722, P0723,			
				Condition	s: DTC's	: P077C, P077D, P	07BF, P07C0, P182	4,		
						P182A, P182B, P P182F P1838 P1	182C, P182D, P182 1839 P1840 P1841	Ε,		
						P18B5, P18B6, P	18B7, P18B8, P18B	9,		
						P18BA, P18BB, P	218BC, P18BD, P18	BE,		
						P18BF, P18C0, P	218C1, P18C2, P180	:3,		
						1 1713,1 2334				
						ECM: P0101, P01	102, P0103, P0106,			
						P0107, P0108, P0	0171, P0172, P0174			
						P0175, P0201, P0 P0205, P0206, P0	0202, P0203, P0204 0207, P0208, P0300			
						P0301, P0302, P0	0303, P0304, P0305			
						P0306, P0307, P0	0308, P0401, P042E			0 T.
Transmission Input Speed Sensor (TISS) P07BF	Input/Turbine Speed Sensor A Circuit	TISS Analog Signal Voltage	e <= 0.25 Volts				>= 5.00E-02	sec	One Trip
				Test Failed						
			P07BF Status is not	t = This Key On						
			If the above conditons have been	or Fault Active						
			met, increment the P07BF Fail							
			Counter	r T						

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions		1	Time		Mil Illum.
Jystem	Coue	Description	DTC P07RE Sats when the Fail		Counts (12.5			Conditions		<u> </u>	riequirea		
			Counter	>= 16	msec								
					continuousy	speed sensor processing	_	time based					
						P07BE Enable Calibration	=	1					
						Service mode \$04 active and	_	FALSE	Boolean				
						end of trip pocessing active		THESE	Doolean				
						(enabled above this value)	>	5	Volts				
						Ignition Voltage Hyst Lo disabled below this value)	<=	2	Volts				
						Service Fast Learn (SFL)	=	FALSE	Boolean				
						Mode VBS Failsafe Battery Voltage Max (disabled							
						above this value)	<=	31.999023	Volts				
						Battery Voltage Min (disabled below this value)	<=	10	Volts				
						Ignition Voltage Min (disabled	>=	10	Volts				
						for voltage stablity time	>=	5	seconds				
						3 9							
					Disable	MIL not Illuminated for	TCM: P07C0						
					Conditions:	DTC's:							
Transmission Input Speed Sensor (TISS) P07C0	Input/Turbine Speed Sensor A Circuit	TISS Analog Signal Voltage	>= 4.75	Volts					>= 5	.00E-02	sec	One Trip
		, ngin		Test Failed									
			P07C0 Status is not	 This Key On or Fault Active 	e								
			If the above conditons have been										
			Counter										
			DTC P07C0 Sets when the Fail	. 14	Counts (12.5								
			Counter	>= 10	continuous)								
						speed sensor processing	=	time based					
						P07C0 Enable Calibration	=	1					
						Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
						Ignition Voltage Hyst Hi	>	5	Volts				
						(enabled above this value)		0	Volto				
						disabled below this value)	<=	2	Volts				
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean				
						Battery Voltage Max (disabled	<=	31.999023	Volts				
						above this value) Battery Voltage Min (disabled		10	Valta				
						below this value)	<=	10	VOILS				
						below this value)	>=	10	Volts				
						for voltage stablity time	>=	5	seconds				
										1			

16 OBDG05 TCM Summary	Tables	Common	8 Speed	T87
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value		eshold alue	Secondary Enable Malfunction Conditions		Time Required			Mil Illum.	
							Disable	MIL not Illuminated for	TCM: P07BF					
							Conditions:	DTC's:						
			E-11 O 1	Tao Un Cuitab Charlein the Un										Createl
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fall Case T	Position in Range 1 Enabled	=	1	Boolean							Special No MII
				Tan Un Switch Stuck in the Un										NO MIL
				Position in Range 2 Enabled	=	1	Boolean							
				Tap Up Switch Stuck in the Up		1	Pooloan							
				Position in Range 3 Enabled	-	I	Dulleall							
				Tap Up Switch Stuck in the Up	=	1	Boolean							
				Tap Up Switch Stuck in the Up										
				Position in Range 5 Enabled	=	1	Boolean							
				Tap Up Switch Stuck in the Up		1	Deeleen							
				Position in Range 6 Enabled	=	I	Boolean							
				Tap Up Switch Stuck in the Up	=	1	Boolean							
				Position in Range 7 Enabled		•	Boologin							
				Tap Up Switch Stuck in the Up Desition in Page 9 Enabled	=	1	Boolean							
				Tap Up Switch Stuck in the Up										
				Position in Neutral Enabled	=	0	Boolean							
				Tap Up Switch Stuck in the Up		0	Pooloan							
				Position in Park Enabled	=	0	DUUleal1							
				Tap Up Switch Stuck in the Up	=	0	Boolean							
				Position in Reverse Enabled	_	TDUE	Pooloan				<u> </u>	1	Eail Time (Sec)	
				Tap up Switch ON	=	IRUE	DUUleal1				>=	I	rali fille (Sec)	
			Fail Case 2	Tap Up Switch Stuck in the Up		1	Deeleen							
				Position in Range 1 Enabled	=	I	Boolean							
				Tap Up Switch Stuck in the Up	=	1	Boolean							
				Position in Range 2 Enabled										
				Position in Range 3 Enabled	=	1	Boolean							
				Tap Up Switch Stuck in the Up										
				Position in Range 4 Enabled	=	1	Boolean							
				Tap Up Switch Stuck in the Up	_	1	Boolean							
				Position in Range 5 Enabled			Doolean							
				Tap Up Switch Stuck in the Up Desition in Page 6 Enabled	=	1	Boolean							
				Tan Un Switch Stuck in the Un										
				Position in Range 7 Enabled	=	1	Boolean							
				Tap Up Switch Stuck in the Up		1	Pooloan							
				Position in Range 8 Enabled	-	I	Doolean							
				Tap Up Switch Stuck in the Up	=	0	Boolean							
				Tap Up Switch Stuck in the Up										
				Position in Park Enabled	=	0	Boolean							
				Tap Up Switch Stuck in the Up		0	Dealers							
				Position in Reverse Enabled	=	0	Boolean							
				Tap Up Switch ON	=	TRUE	Boolean							
				NOTE: Both Failcase1 and							>=	120	Fail Time (Sec)	
				Falicase 2 Must be Met										
l	I	I	I		l i			I	I		I			I
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thr V	eshold /alue	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.			
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						upshift switch diagnostic monitor enable calibration Service mode \$04 active and	=	1 FALSE	Boolean					
						Ignition Voltage Hyst H (enabled above this value)	>	5	Volts					
						Ignition Voltage Hyst Lo disabled below this value)	<=	2	Volts					
						Service Fast Learn (SFL) Mode VBS Failsafe	=	FALSE	Boolean					
						Ignition Voltage Max (disabled above this value)	<=	31.999023	Volts					
						above this value) Time Since Last Range	>=	9	Volts Enable Time					
						Change	>=	Test Failed	(Sec)					
						P0815 Status is	. ≠	This Key On or Fault Active						
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0826 P182C, P18 P1839, P184 P1887, P18	, P1824, P182A 2D, P182E, P18 0, P1841, P18B B8, P18B9, P1	, P182B, 2F, P1838, 5, P18B6, 8BA,					
							P18BB, P18 P18BF, P18 P1915, P17	8BC, P18BD, P C0, P18C1, P18 61	18BE, C2, P18C3,					
							ECM: None				0			
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fall Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	= 1	Boolean						Special No MIL			
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	= 1	Boolean									
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	= 1	Boolean									
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	= 1	Boolean									
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	= 1	Boolean									
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	= 1	Boolean									
			Tap Down Switch Stuck in the Down Position in Range 7 Enabled	= 1	Boolean									

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Enable Malfunction Conditions		Time Required	Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 8 Enabled	=	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	-	0 Boolean				
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	0 Boolean				
			Tap Down Switch ON	= TF	RUE Boolean			>= 1 sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 7 Enabled	-	1 Boolean				
			Tap Down Switch Stuck in the Down Position in Range 8 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	= TF	RUE Boolean			>= 120 sec	

16 OBDG05 TCM Summary	y Tables Common 8 Speed T8
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Three V	eshold alue	Secondary Malfunction		Enable Conditions			Time Required	Mil Illum.
Jystem	Code	Description	ontonu		uiuc	downshift switch diagnostic	=	1			Required	
						monitor enable calibration	1					
						end of trip pocessing active	=	FALSE	Boolean			
						Ignition Voltage Hyst H	i .	F	Valta			
						(enabled above this value)) >	0	VOILS			
						Ignition Voltage Hyst Lo) <=	2	Volts			
						disabled below this value, Service East Learn (SEL)						
						Mode VBS Failsafe	=	FALSE	Boolean			
						Ignition Voltage Max (disabled	1	21 000022	Volte			
						above this value))	31.777023	VOILS			
						Ignition Voltage Min (enabled	>=	9	Volts			
						Time Since Last Range			Enable Time			
						Change	>=	1	(Sec)			
						Ŭ		Test Failed				
								This Key				
						P0816 Status is	5 ≠	On or Fault				
								Active				
					Disable	MIL not Illuminated for	TCM: P0826	6, P1824, P182	A, P182B,			
					Conditions:	DICS	P182C, P18	2D, P182E, P1 40 P1841 P18	82F, P1838, B5 P18B6			
							P18B7, P18	3B8, P18B9, P	18BA,			
							P18BB, P1	8BC, P18BD,	P18BE,			
							P18BF, P18	CO, P18C1, P1	8C2, P18C3,			
							P1915, P17	/61				
							ECM: None					
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid	= TRUE	Boolean					>=	60 Fail Time (Sec) Special
			Voltage			Service mode \$04 active and	ł					INO IVIL
						end of trip pocessing active		FALSE	Boolean			
						upshift downshift switch circuit	t					
						diagnostic monitor enable	=	1				
						Ignition Voltage Hyst H	i					
						(enabled above this value)) >	5	Volts			
						Ignition Voltage Hyst Lo	<=	2	Volts			
						Service Fast Learn (SFL)		ENISE	Pooloan			
						Mode VBS Failsafe	=	FALSE	DUURGII			
						above this value)	<=	31.999023	Volts			
						Ignition Voltage Min (enabled	=<	9	Volts			
						adove this value;	, 					
								This Key				
						P0826 Status is	5 ≠	On or Fault				
								Active				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions		i		T	ime luired	Mil Illum.
	Coue		e norte		Disable Conditions	MIL not Illuminated for DTC's:					Not		
Variable Force Solenoid (VFS)	P0960	Pressure Control Solenoid A Control Circuit Open (clutch1/CB1278R VES)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR_ e_HSD2	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time battery voltage	>=	1	seconds				
						battery voltage	<=	32	Volts				
					Disable Conditions	MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
Variable Force Solenoid (VFS)	P0962	Pressure Control Solenoid A Control Circuit Low (clutch1/CB1278R VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean				
						high side driver VFS source is		CeTSCR_ e_HSD2	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time	>=	1 8	seconds				
						battery voltage	<=	32	Volts				
					Disable	MIL not Illuminated for	TCM: None						
					Conditions	ידע שוניאיניאניאנער אוניאני	ECM: None						
Variable Force Solenoid (VFS)	P0963	Pressure Control Solenoid A Control Circuit High (clutch1/CB1278R VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip

			Criteria	Value	Malfunction		Conditions			Reg	uired
									out	0.5	Sample Time
					diagnostic monitor enable	=	TRUE	Boolean	U		(360)
					VFS source must be high side driver 1 or 2 or 3						
					high side driver VFS source is	=	CeTSCR_ e HSD2	enumeration			
					high side driver VFS source	=	TRUE	Boolean			
					controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean			
					stability time	>=	1	seconds			
					battery voltage	>=	8	volts			
					battery voltage	<=	32	Volts			
				Disable	MIL not Illuminated for	TCM: None					
						ECM: None					
Variable Force Solenoid (VFS)	P0964	Pressure Control Solenoid B Control Circuit Open (clutch2/CB12345B VES)	The HWIO reports open crcuit error flag	= TRUE Boolean					>=	0.3	Fail Time (Sec)
									out	0.5	Sample Time
					diagnostic monitor enable calibration	=	TRUE	Boolean	OT		(Sec)
					VFS source must be high side driver 1 or 2 or 3						
					high side driver VFS source is	=	CeTSCR_ e_HSD2	enumeration			
					high side driver VFS source enabled	=	TRUE	Boolean			
					controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean			
					stability time battery voltage stability time	>=	1	seconds			
					battery voltage	>=	8	volts			
					battery voltage	<=	32	Volts			
				Disable	MIL not Illuminated for	TCM: None					

TRUE Boolean

diagnostic monitor enable

VFS source must be high side driver 1 or 2 or 3

calibration

The HWIO reports open crcuit

error flag

Pressure Control Solenoid B Control

(clutch2/CB12345R VFS)

P0966 Circuit Low

Variable Force Solenoid (VFS)

One Trip

Fail Time (Sec)

Sample Time (Sec)

0.3

0.5

>=

out

of

Boolean

TRUE

=

Mil Illum.

One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Three V	eshold alue	Secondary Malfunction	Enable Conditions			Enable Time Conditions Required		me uired	Mil Illum.
System	Code	Description	Criteria		aue Disable Conditions:	high side driver VFS source is high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage stability time battery voltage battery voltage battery voltage battery voltage	= = >= >= <= TCM: None	CeTSCR_ e_HSD2 TRUE TRUE 1 8 32	enumeration Boolean Boolean seconds volts Volts		ĸeq	urea	iium.
							ECM: None						
Variable Force Solenoid (VFS)	P0967	Pressure Control Solenoid B Control Circuit High (clutch2/CB12345R VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	-
		Prascura Control Solanoid C Control			Disable Conditions:	diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3 high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage stability time battery voltage stability time battery voltage MIL not Illuminated for DTC's:	= = = >= <= TCM: None ECM: None	TRUE CeTSCR_ e_HSD2 TRUE TRUE 1 8 32	Boolean enumeration Boolean Boolean seconds volts Volts				One Trin
Variable Force Solenoid (VFS)	P0968	Circuit Open (clutch3/C13567 VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>= out	0.3	Fail Time (Sec) Sample Time	one mp
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3 high side driver VFS source is high side driver VFS source enabled controller power mode state is	=	TRUE CeTSCR_ e_HSD2 TRUE	Boolean enumeration Boolean	of	0.0	(Sec)	-

Component/	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable			Ti Reg	ime wired	Mil Illum.
Jysten	Coue	Description	Unterta		ande	battery voltage in range for stability time battery voltage stability time battery voltage battery voltage	>= >= <=	1 8 32	seconds volts Volts		Neg	uneu	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)	P0970	Pressure Control Solenoid C Control Circuit Low (clutch3/C13567 VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
						diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean	of	0.5	(Sec)	-
						driver 1 or 2 or 3 high side driver VFS source is high side driver VFS source	=	CeTSCR_ e_HSD2 TRUE	enumeration Boolean				
						controller power mode state is ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean				
						battery voltage stability time battery voltage battery voltage	>= >= <=	1 8 32	seconds volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)	P0971	Pressure Control Solenoid C Control Circuit High (clutch3/C13567 VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
						diagnostic monitor anabla				out of	0.5	Sample Time (Sec)	-
						VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR_ e_HSD2	enumeration				
						enabled	=	TRUE	Boolean				
						ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean				
						battery voltage stability time battery voltage battery voltage	>= >= <=	1 8 32	seconds volts Volts				
1		1											1

Component/	Fault Code	Monitor Strategy	Malfunction	Threshold Value		Secondary Malfunction	Enable Conditions				Tin Regu	ne uired	Mil Illum.	
	ooue	Description				Disable	MIL not Illuminated for	TCM: None	eenunene			rioqu		
						Conditions:	DIC's:	ECM: None						
Transmission Control Module (TCM)	P16F3	Transmission Control Module	diagnostic monitor fails when any of the following conditions occur A											One Trip
			A) command pressure and its dual store do not equal	= 1	FRUE	Boolean	redundent memory command pressure disable calibration not	=	TRUE	Boolean				
			OR				OR redundent memory command pressure enable calibration	=	TRUE	Boolean				
			B) command shift and its dual store do not equal	= 7	FRUE	Boolean	redundent memory command shift disable calibration not OR	=	FALSE	Boolean Boolean				
			OR				redundent memory command shift enable calibration	=	TRUE	Boolean				
			C) rate limited vehicle speed and its dual store do not equal	= 1	[RUE	Boolean	rate limited vehicle speed dual store enable calibration	=	TRUE	Boolean	>=	10	counts (25 msec continuous) counts (25	
											>=	20	continuous)	
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Control Module (TCM)	P16F4	Transmission Control Module	redundent path calculation of driver selected transmission range error	= 1	TRUE	Boolean					>=	6	counts (25 msec continuous)	One Trip
											>=	8	counts (25 msec continuous)	
							secureed controller or emission critical ignition voltage	>=	11	volts				
							P16F4 status is not	=	test pass this key on	Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Control Module (TCM)	P16FB	Transmission Control Module	transmission output speed raw (25 ms loop value) - transmission output speed raw (6.25 ms loop value)	>=	60	RPM					>=	8	seconds	One Trip
							Service Fast Learn (SFL) Mode VBS Failsafe Battery Voltage Max (disabled above this value)	= <=	FALSE 31.999023	Boolean Volts	>=	10	seconds	_

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions				Ti Rea	me uired	Mil Illum.
- Of State		Decemption				Battery Voltage Min (disabled	<i>/-</i>	10	Volts				
						below this value)	<=	10	VUILS				
						Ignition Voltage Min (disabled	>=	10	Volts				
						for voltage stablity time	>=	5	seconds				
						transmission output speed raw	>=	150	RPM				
						(6.25 ms loop value)		100					
						(25 ms loop value)	>=	150	RPM				
						Service mode \$04 active and		FALSE	Dooloon				
						end of trip pocessing active	=	FALSE	DUUledII				
						diagnostic monitor enable	=	1	Boolean				
						calibration							
					Disable	MIL not Illuminated for	TCM: None						
					Conunions.	DTC 5.	FCM: None						
I stored a scalar them along t	D1755	Lateral acceleration signal circuit	P175F will fail when A: message										Special
Lateral acceleration signal	P1/5F	(rolling count or checksum)	alive rolling count error or B: message checksum error										NO MIL
			A: Rolling count value received									Fail Counter (50	0
			from EBCM and expected TCM	= TRUE	Boolean					>=	9	msec	
			calculated value not									continuous)	
										>	54	Fail Timer (Sec	:)
						Lateral acceleration message							
						health (message receive	=	TRUE	Boolean				
						OCCUF)							
						circuit rolling count diagnostic	=	1	Boolean				
						monitor enable calibration							
						battery voltage	<=	31.999023	volts				
						battery voltage	>=	9	VOIts				
						Ignition Voltage	<=	31.999023	Volts				
						Ignition Voltage	>=	9	Volts				
						Service Fast Learn (SFL)	=	FALSE	Boolean				
						Ignition voltage and SEL							
						conditions met for	>=	0.1	Sec				
			B: checksum of lateral	= TRUE	Boolean					>=	54	Fail Timer (Sec	:)
			acceleration message value error			Lateral acceleration message							
						health (message receive	=	TRUE	Boolean				
						occur)							
						Lateral acceleration signal	_	1	Pooloan				
						monitor enable calibration	-	I	DUUlean				
						battery voltage	<=	31.999023	volts				
						battery voltage	>=	9	volts				
						battery voltage time	>=	0.1 31 000022	Sec				
	1					Ignition Voltage	>=	9	Volts				
	1					Service Fast Learn (SFL)	_	FALSE	Boolean				
	1					Mode VBS Failsafe	_	THESE	Doolcan				
						conditions met for	>=	0.1	Sec				

Component/	Fault	Monitor Strategy	Malfunction		Threshold	Secondary Malfunction		Enable			T	ime	Mil
System	Coue	Description	Onena		Value	normal serial data communication enabled	=	TRUE	Boolean		i tet	quireu	
					Disab Condition	le MIL not Illuminated fo s: DTC's	TCM: U0073 ECM: None						
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM and expected TCN calculated value no	= TRI	UE Boolean					>=	3	Fail Counter (100 msec continuous)	Special No MIL
						Tap up/down message health (message receive occur Tap up/downswitch signa circuit (rolling count) diagnostio	=	TRUE 1	Boolean Boolean	>	10	Fail Timer (Sec)
						monitor enable calibration Ignition Voltage Ignition Voltage Service Fast Learn (SFL Mode VBS Failsafe	2 <= 2 >= =	31.999023 9 FALSE	Volts Volts Boolean				
						conditions met fo Service mode \$04 active and end of trip pocessing active	>=	0.1 FALSE	Sec Boolean				
					Disab Condition	le MIL not Illuminated fo s: DTC's							
Transmission Intermediate Speed Sensor	P176B	Transmission Intermediate Speed Sensor Performance	attained gear is Reverse or 1st or 2nc transmssion intermediate speec attained gear is 3rd or 4th or 5th or 6th or 7th or 8th calculated intermediate gear slip absolute value (transmission inpu speed - (transmission intermediate speed * command gear	- 60 61 61	D PRM D PRM	fail time	>=	4	seconds	>=	4	counts (25 msec continuous)	Two Trip:
			intermediate ratio)			calculated gear slip = absolute value (transmission inpu speed - (transmission outpu speed * command gear ratio)	<=	60	RPM				_
						time when all of the conditions below are me diagnostic monitor enable	>= t	1	seconds				
						calibration transmission output speed transmission input speed neutral idle mode requesting	= >= >= =	100 100 FALSE	RPM RPM Boolean				
						holding clutch disable range shift state is Hydraulic System Pressurized	5 = 4 =	shift complete TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time		Mil
System	Code	Description	Criteria	value	Mairunction		Conditions		Requir	ed	illum.
					battery voltage	<=	31.999023	VOItS			
					battery voltage	>=	9	VOILS			
					Lanition Voltage	>=	21 000023	Volte			
					Ignition Voltage	<=	0	Volts			
					Service East Learn (SEL)	>=	7	VUILS			
					Mode VBS Failsafe	=	FALSE	Boolean			
					Ignition voltage and SEI						
					conditions met for	>=	0.1	Sec			
				Disable	MIL not Illuminated for	TCM: P0716	P0717 P07BF	P07C0			
				Conditions	DTC's:	P0722, P0723	3. P077C. P077	7D			
							-,				
							Table				Two Trips
Transmission Intermediate Speed		Intermediate Speed Sensor Circuit		see Table 51			See Lable		see Table 52	counts (12.5	· ·
Soncor	P176C	Internediate Speed Sensor Circuit	speed sensor1 voltage	<= in supporting volts	speed sensor1 fail time	>=	00 III	seconds	>= in supporting	msec	
Sensor		LOW		documents			supporting		documents	continuous)	
							documents				
							soo Tablo				
					speed sensor1 circuit low		See Table				
					diagnostic monitor enable	=	Supporting	Boolean			
					calibration		supporting				
							documents				
					Service mode \$04 active and	_	EALSE	Pooloan			
					end of trip pocessing active	_	FALSE	DUDIEdIT			
					Service Fast Learn (SFL)	_	EALSE	Roolean			
					Mode VBS Failsafe	_	TALSE	Doolean			
					Battery Voltage Max (disabled	-	21 000022	Volte			
					above this value)	<=	31.999023	VUILS			
					Battery Voltage Min (disabled		10	Volte			
					below this value)	<-	10	VOILS			
					Ignition Voltage Min (disabled	>-	10	Volts			
					below this value)		10	VOILS			
					for voltage stablity time	>=	5	seconds			
							Test Failed				
							This Key				
					P176C Status is not	=	On or Fault				
							Active				
							7101110				
				Disable	MIL not Illuminated for	TCM: P176D					
				Conditions	DIC'S:						
		<u> </u>									Two Tries
				soo Tablo 55			see Table		soo Tablo 56	counts (12 5	Two Trips
Transmission Intermediate Speed	D174D	Intermediate Speed Sensor Circuit	chood concert veltage	see Table 55	cnood concor1 fail time		57 in	cocondo	See Table 50	COUNTS (12.5	
Sensor	P1/0D	High	speed sensor i voitage	>= III Supporting Voits	speed sensor rail time	>=	supporting	Seconds	>= III Supporting	(IIISEL	
				documents			documents		uocuments	continuous)	
1											1
					speed sensor1 circuit biab		see Table				1
					diagnostic monitor proble	_	58 in	Boolean			
1					calibration	_	supporting	Doolean			1
1					Campiation		documents				1
					Service mode \$04 active and						
1					end of trip pocessing active	=	FALSE	Boolean			1

	1		and the state						— —			
Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable			T	ime	Mil
System	Code	Description	Criteria	value			Conditions		──	Rec	uirea	mum.
					Service Fast Learn (SFL)	=	FALSE	Boolean				
					Mode VBS Failsate							
					Battery Voltage Max (disabled	<=	31 999023	Volts				
					above this value	-	011777020	1010				
					Battery Voltage Min (disabled		10	Volto				
					below this value	<=	10	VOILS				
					Ignition Voltage Min (disabled							
					below this value	>=	10	Volts				
					for voltage stability time	~-	5	soconds				
					for voltage stability time	-	5	3600103				
							Test Failed					
							This Key					
					P1/6D Status is not	=	On or Fault					
							Active					
							/ Clive					
				Disable	MIL not Illuminated for	TCM: P176C						
				Conditions	DTC's							
				oonanions.								
	+	Internal Made Switch D. Circuit Lligh			1				──		Foil Counto	Two Trips
Internal Mode Switch (IMS)	P1824	Mallana Mode Switch P Circuit High	IMS switch P voltage	> 2.380000114 volts					>=	70		Two Trips
		voltage	_								(25ms loop)	
									out	80	Sample Counts	
									of	00	(25ms loop)	
					Diagnostic monitor enable	-	1	Boolean				
					calibration	-		Doolean				
					Ignition Voltage Lo) >=	9	Volts				
					Ignition Voltage H	<=	31.999023	Volts				
					If ignition voltage was							
					previously between the above							
					low / high throsholds, then the							
					following conditions apply and							
					Tonowing conditions apply once							
					per auto start even		-					
					Ignition Voltage Lo	>=	/	Volts				
					Ignition Voltage H	<	9	Volts				
					Ignition Voltage within the							
					abovo low / bigh throsholds for	<=	7.50E-02	seconds				
					above low / high thresholds loi							
				Disable	MIL not Illuminated for	TCM None						
				Conditions	DTC's							
				oonanions.		ECM: None						
						EGIVI. NOTIC						
	+	Internal Made Switch A Circuit Law			1				──		Foil Counto	Two Trips
Internal Mode Switch (IMS)	P182A	Veltere	IMS switch A voltage	< 0.69999988 volts					>=	70		Two Trips
		voltage	_								(25ms loop)	
									out	80	Sample Counts	
									of		(25ms loop)	
					Diagnostic monitor enable	-	1	Boolean				
					calibration	-		Doolean				
					Ignition Voltage Lo	>=	9	Volts				
					Ignition Voltage H	<=	31.999023	Volts				
					If ignition voltage was							
	1	1			nreviously between the above	1			1			
	1	1			low / high throsholds then the				1			
	1	1			for a second sec				1			
					rollowing conditions apply once							
	1	1			per auto start even	I I			1			
	1	1			Ignition Voltage Lo) >=	7	Volts	1			
	1	1	1		Ignition Voltage H	<	9	Volts	1			1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable			Т	ime	Mil
System	Code	Description	Criteria	value	Ignition Voltage within the		Conditions			Rec	luirea	mum.
					above low / high thresholds for	<=	7.50E-02	seconds				
				Disable	MIL not Illuminated for	TCM: Nono						
				Conditions	DTC's							
						ECM: None						
Internal Mode Switch (IMS)	P182B	Internal Mode Switch B Circuit Low	IMS switch B voltage	< 0.69999988 volts					>=	70	Fail Counts (25ms loop)	Two Trips
		tonago							out	80	Sample Counts	5
					Diagnostic monitor enable		1	Boolean	OT		(25ms 100p)	-
					calibration	>=	9	Volts				
					Ignition Voltage H	<=	31.999023	Volts				
					previously between the above							
					low / high thresholds, then the following conditions apply once							
					per auto start even		7	Volto				
					Ignition Voltage H	>= <	9	Volts				
					Ignition Voltage within the	<=	7.50E-02	seconds				
					above low / high thresholds for							
				Disable	MIL not Illuminated for DTC's	TCM: None						
						ECM: None						
Internal Mode Switch (IMS)	P182C	Internal Mode Switch B Circuit High	IMS switch B voltage	> 2.380000114 volts					>=	70	Fail Counts	Two Trips
		vollage							out	80	Sample Counts	5
					Diagnostic monitor enable				of	00	(25ms loop)	-
					calibration	=	1	Boolean				
					Ignition Voltage H	>= <=	9 31.999023	Volts				
					If ignition voltage was previously between the above							
					low / high thresholds, then the							
					per auto start even							
					Ignition Voltage Lo	>=	7 9	Volts Volts				
					Ignition Voltage within the			cocondo				
					above low / high thresholds for	<=	7.30E-02	Seconds				
				Disable	MIL not Illuminated for	TCM: None						
				Conditions		ECM: None						
	Diaco	Internal Mode Switch P Circuit Low		0 (00000000 H						70	Fail Counts	Two Trips
Internal Mode Switch (IMS)	P182D	Voltage	IMS switch P voltage	< 0.69999988 volts					>=	/0	(25ms loop)	

16 OBDG05 TCM Summary	Tables Common 8 Speed Tables	87
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Component/ System	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Rea	me uired	Mil Illum.
	ooue	Description		Value			Contailionio		out	80	Sample Counts	
					Diagnostic monitor enable	2 =	1	Boolean	of		(25ms loop)	-
					Ignition Voltage Lo) >=	9	Volts				
					Ignition Voltage H If ignition voltage was	<=	31.999023	Volts				
					previously between the above low / high thresholds, then the							
					following conditions apply once per auto start even	t						
					Ignition Voltage Lo Ignition Voltage H) >= i <	7 9	Volts Volts				
					Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
				Disable	MIL not Illuminated for	TCM: None						
				Conditions	. 5103.	ECM: None						
				Illegal (SABCP=								Two Trips
Internal Mode Switch (IMS)	P182E	Internal Mode Switch Illegal Range	Range	= 00000 or enumeration					>=	108	Fail Counts (25ms loop)	
				SABCP= 10000)								
									out of	125	Sample Counts (25ms loop)	_
					Diagnostic monitor enable calibration	=	1	Boolean				
					Ignition Voltage Lo Ignition Voltage H	>= <=	9 31.999023	Volts Volts				
					If ignition voltage was previously between the above							
					low / high thresholds, then the following conditions apply once							
					per auto start even Ignition Voltage Lo	>=	7	Volts				
					Ignition Voltage H	<	7 505 00	VOIts				
					above low / high thresholds for	. <=	7.50E-02	seconds				
				Disable	MIL not Illuminated for	TCM: None						
				Conditions	: DTC's	ECM: None						
Internal Mode Switch (IMS)	P187F	Internal Mode Switch C Circuit High	IMS switch C voltage	> 2.380000114 volts					<u> </u>	70	Fail Counts	Two Trips
	1021	Voltage	invis switch o voltage	2.00000117 1003					out	80	(25ms loop) Sample Counts	
				<u> </u>	Diagnostic monitor enable	2 =	1	Boolean	of		(25ms loop)	-
					calibration Ignition Voltage Lo Ignition Voltage H	>= <=	9 31.999023	Volts Volts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable			Ti	ime	Mil
System	Code	Description	Citeria	Value	If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start even Ignition Voltage Lc Ignition Voltage H Ignition Voltage within the above low / high thresholds for	2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	7 9 7.50E-02	Volts Volts seconds				
				Disable Conditions:	MIL not Illuminated for DTC's	TCM: None : ECM: None						
Internal Mode Switch (IMS)	P1838	Internal Mode Switch A Circuit High Voltage	IMS switch A voltage	> 2.380000114 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
				Disable Conditions	Diagnostic monitor enable calibration Ignition Voltage Lc Ignition Voltage Lc Ignition voltage Mas previously between the above low / high thresholds, then the following conditions apply once per auto start even Ignition Voltage Lc Ignition Voltage Lc Ignition Voltage M Ignition Voltage within the above low / high thresholds for MIL not Illuminated for DTC's	= = = = = = = = = = = = = = = = = = =	1 9 31.999023 7 9 7.50E-02	Boolean Volts Volts Volts Volts seconds				
Internal Mode Switch (IMS)	P1839	Internal Mode Switch C Circuit Low Voltage	IMS switch C voltage	< 0.69999988 volts	Diagnostic monitor enable calibratior Ignition Voltage Lc Ignition Voltage H If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start even Ignition Voltage Lc Ignition Voltage H Ignition Voltage Within the above low / high thresholds for		1 9 31.999023 7 9 7.50E-02	Boolean Volts Volts Volts Volts seconds	>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable			T	ime	Mil
System	Code	Description	Unena	Disabl	e MIL not Illuminated for : DTC's:	TCM: None ECM: None	Conditions				uneu -	
Internal Mode Switch (IMS)	P1840	Internal Mode Switch S Circuit Low Voltage	IMS switch S voltage	e < 0.699999988 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibratior Ignition Voltage Lc Ignition Voltage H If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once	= >= <= <=	1 9 31.999023	Boolean Volts Volts				_
					Ignition Voltage Lc Ignition Voltage H Ignition Voltage within the above low / high thresholds for) >= (((((((((((((7 9 7.50E-02	Volts Volts seconds				
				Disabl Conditions	e MIL not Illuminated for : DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P1841	Internal Mode Switch S Circuit High Voltage	IMS switch S voltage	2 > 2.380000114 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
					Diagnostic monitor enable calibratior Ignition Voltage LC Ignition Voltage H If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once	= >= >= <=	1 9 31.999023	Boolean Volts Volts				-
					Ignition Voltage Lo Ignition Voltage H Ignition Voltage within the above low / high thresholds for) == ; < ; <=	7 9 7.50E-02	Volts Volts seconds				
				Disabl Conditions	e MIL not Illuminated for : DTC's	TCM: None : ECM: None						
Internal Mode Switch (IMS)	P18B5	Internal Mode Switch A Circuit Shorted	IMS switch A voltage	e < 1.679999948 volts > 0.966000021 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable			Ti	ime wired	Mil
System	Code	Description		value	Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the above low / high thresholds for	= >= <= <	1 9 31.999023 7 9 7.50E-02	Boolean Volts Volts Volts Volts seconds		<u>keq</u>	₄ นกชน	
				Disable Conditions	e MIL not Illuminated for : DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B6	Internal Mode Switch B Circuit Shorted	IMS switch B voltage	< 1.679999948 volts > 0.966000021 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trip:
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition voltage Ha previously between the above low / high thresholds, then the following conditions apply once per auto start event Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the above low / high thresholds for	= <= <= <	1 9 31.999023 7 9 7.50E-02	Boolean Volts Volts Volts Volts seconds				
				Disable Conditions	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B7	Internal Mode Switch C Circuit Shorted	IMS switch C voltage IMS switch C voltage	< 1.679999948 volts > 0.966000021 volts					>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trip
					Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event	= >= <=	1 9 31.999023	Boolean Volts Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			T	ime Iuired	Mil Illum.
						Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the above low / high thresholds for	>= < <=	7 9 7.50E-02	Volts Volts seconds				
				Di Condi	isable tions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B8	Internal Mode Switch P Circuit Shorted	IMS switch P voltage IMS switch P voltage	< 1.679999948 volts> 0.966000021 volts						>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
						Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once	= >= <=	1 9 31.999023	Boolean Volts Volts				
						per auto start even Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the above low / high thresholds for	>= < <=	7 9 7.50E-02	Volts Volts seconds				
				Di Condi	isable tions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18B9	Internal Mode Switch S Circuit Shorted	IMS switch S voltage	< 1.679999948 volts						>= out of	70 80	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
						Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Was previously between the above low / high thresholds, then the following conditions apply once per auto start event	= >= <=	1 9 31.999023	Boolean Volts Volts				
						Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the above low / high thresholds for	>= < <=	7 9 7.50E-02	Volts Volts seconds				

Component/	Fault	Monitor Strategy	Malfunction Criteria	-	Threshold Value	Secondary Malfunction		Enable			Ti	ime wired	Mil
	oouc				Disab Condition	le MIL not Illuminated for s: DTC's	TCM: None ECM: None	Conditione				un ou	
Internal Mode Switch (IMS)	P18BA	Internal Mode Switch A Stuck Off	Range	Transitio = (SABC 0000	n 30 P= enumeration					>=	108	Fail Counts (25ms loop)	Two Trips
			Switch A	≠ True (this cycle	s key boolean					out of	125	Sample Counts (25ms loop)	5
						Diagnostic monitor enable calibratior Ignition Voltage L Ignition Voltage Ma If ignition voltage was previously between the above low / high thresholds, then the	2 = 0 >= i <= 2	1 9 31.999023	Boolean Volts Volts				
						following conditions apply once per auto start even Ignition Voltage Lc Ignition Voltage H Ignition Voltage within the above low (high threeholds for	2) i ~ ~	7 9 7.50E-02	Volts Volts seconds				
					Disab Condition	le MIL not Illuminated for s: DTC's	TCM: None : ECM: None						
Internal Mode Switch (IMS)	P18BB	Internal Mode Switch B Stuck Off	Range	Transitio = (SABC 0001	n 29 P= enumeration))					>=	108	Fail Counts (25ms loop)	Two Trips
			Prev Range	Transitio = (SABC 1000	n 14 P= I)					out of	125	Sample Counts (25ms loop)	5
						Diagnostic monitor enable calibratior Ignition Voltage Lo Ignition Voltage H If ignition voltage was previously between the above	= 1 = 2 >= i <=	1 9 31.999023	Boolean Volts Volts				
						following conditions apply once per auto start even Ignition Voltage Lc Ignition Voltage L	2 t 0 >= i <	7 9	Volts Volts				
					Disab Condition	Ignition Voltage within the above low / high thresholds for MIL not Illuminated for s: DTC's	<= TCM: None	7.50E-02	seconds				
							ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre: Va	shold lue	Secondary Malfunction	n Enable n Conditions		Time Required			Mil Illum.	
Internal Mode Switch (IMS)	P18BC	Internal Mode Switch C Stuck Off	Range	9 =	Transition 27 (SABCP= 00100)	enumeration					>= out	108 125	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
							Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event Ignition Voltage Lo Ignition Voltage Hi	= >= <= >= <	1 9 31.999023 7 9	Boolean Volts Volts Volts Volts			(20115 1000)	-
					T	Disable Conditions	above low / high thresholds for MIL not Illuminated for DTC's:	<= TCM: None ECM: None	7.50E-02	seconds				
Internal Mode Switch (IMS)	P18BD	Internal Mode Switch P Stuck Off	Range Prev Range	6 = 6 =	Transition 23 (SABCP= 01000) Transition 11 (SABCP= 10100)	enumeration					>= out of	108 125	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips
							Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event	= >= <=	1 9 31.999023	Boolean Volts Volts				-
							Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage within the above low / high thresholds for	>= <	9 7.50E-02	Volts Volts seconds				
						Disable Conditions	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18BE	Internal Mode Switch S Stuck Off	Range Prev Range	5 =	Drive 8 Transition 26 (SABCP= 00101)	enumeration					>= out of	108 125	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trips

16 OBDG05 TCM Summar	y Tables Common 8 Speed	d T87
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thr V	eshold alue	Secondary Malfunction		Enable Conditions			Ti	me uired	Mil Illum.
		2000.19.001	Switch A	= True (this ke	^y boolean								
			Switch S	≠ True (this ke	^y boolean								
				Cycicy		Diagnostic monitor enable	=	1	Boolean				-
						Ignition Voltage Lo	>=	9	Volts				
						If ignition voltage was	<=	31.999023	VOIIS				
						low / high thresholds, then the							
						per auto start event		-					
						Ignition Voltage Lo	>= <	9	Volts				
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
					Disable	MIL not Illuminated for	TCM: None						
					Conditions	DIC'S:	ECM: None						
Internal Mode Switch (IMS)	P18C0	Internal Mode Switch B Stuck On	Range	= Drive 8	enumeration					>=	108	Fail Counts	Two Trips
			Prev Range = Park for	>= 80	counts (25ms					out	125	Sample Counts	
			- Switch B	≠ False (this	boolean					01		(25ms 100p)	
				key cycle)		Diagnostic monitor enable	=	1	Boolean				-
						Ignition Voltage Lo	>=	9	Volts				
						Ignition voltage Hi If ignition voltage was	<=	31.999023	VOItS				
						low / high thresholds, then the							
						per auto start event		-					
						Ignition Voltage Lo	>= <	9	Volts				
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
					Disable	MIL not Illuminated for	TCM: None						
					Conditions	DIC'S	ECM: None						
Internal Mode Switch (IMS)	D18C1	Internal Mode Switch C Stuck On	Dango	Transition 2) enumeration					\	102	Fail Counts	Two Trips
	1 1001	Internal mode Switch C Stuck Off	Kange	01011)	chumeration					out	100	(25ms loop) Sample Counts	
			Switch C	≠ key cycle)	boolean					of	125	(25ms loop)	
						Diagnostic monitor enable	=	1	Boolean				1
						Ignition Voltage Lo	>=	9	Volts				

Component/	Fault	Monitor Strategy	Malfunction		Thre	shold	Secondary Malfunction		Enable			Ti Reg	me	Mil Illum
- Cylan	out						Ignition Voltage Hi If ignition voltage was previously between the above	<=	31.999023	Volts			unou	
							following conditions apply once per auto start event Ignition Voltage Lo Ignition Voltage Within the above low / high thresholds for	>= < <=	7 9 7.50E-02	Volts Volts seconds				
						Disable Conditions	e MIL not Illuminated for : DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P18C2	Internal Mode Switch P Stuck On	Range	=	Transition 24 (SABCP=	enumeration					>=	108	Fail Counts (25ms loop)	Two Trips
					00111)						out of	125	Sample Counts (25ms loop)	5
						Disable Conditions	Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage I If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event Ignition Voltage Lo Ignition Voltage Hi Ignition Voltage Within the above low / high thresholds for MIL not Illuminated for DTC's:	= >= <= >= < < TCM: None ECM: None	1 9 31.999023 7 9 7.50E-02	Boolean Volts Volts Volts Volts seconds				-
Internal Mode Switch (IMS)	P18C3	Internal Mode Switch S Stuck On	Range Prev Range = Park for	= >=	Drive 7 80 False (this	enumeration counts (25ms loop)					>= out of	108 125	Fail Counts (25ms loop) Sample Counts (25ms loop)	Two Trip
			Switch S	≠	key cycle)	Doolean	Diagnostic monitor enable calibration Ignition Voltage Lo Ignition Voltage Hi If ignition voltage was previously between the above low / high thresholds, then the following conditions apply once per auto start event Ignition Voltage Lo	= >= <=	1 9 31.999023 7	Boolean Volts Volts Volts				-

Component/	Fault	Monitor Strategy	Malfunction	Three	shold	Secondary		Enable			Tim	ie in d	Mil
System	Code	Description	Criteria	va	liue	Ignition Voltage H	<	9	Volts		Requi	rea	mum.
						Ignition Voltage within the above low / high thresholds for	<=	7.50E-02	seconds				
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None						
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	Range The following events must occur Sequentially Initial Engine speed Ther Engine Speed Between Following Cals Engine Speed Lo Hist Engine Speed Lo Hist Engine Speed Hi Hist Ther Final Engine Speed Final Transmission Input Speed	Park Neutral Transition 1 (SABCP= 11110) Transition 2 (SABCP= 11011) Transition 4 (SABCP= 01110) Transition 11 (SABCP= 01101) Transition 11 (SABCP= 01101) Transition 2 (SABCP= 01101) CABCP= 01101) Transition 2 (SABCP= 01010) <= 50 <= 50 <= 480	RPM RPM RPM RPM RPM	DTC has Ran this Key Cycle Ignition Voltage Lc Ignition Voltage Lc Ignition Voltage Hyst Ign (enables above this value) Ignition Voltage Hyst Low (disabled below this value) Transmission Output Speec P1915 Status is		FALSE 6 31.900391 5 2 90 Test Failed This Key On or Fault Active	Boolean V V V V V rpm	>= >=	0.475	Enable Time (Sec) Enable Time (Sec) Fail Time (Sec)	Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value		eshold	Secondary Malfunction	Enable Conditions			Time Required			Mil Illum
Jystem	Coue	Description	ontena		vc	Disable	MIL not Illuminated for	TCM: P0722,	P0723			Ney	unea	indin.
						Conditions:	DTC's:							
								ECM: None						
Transmission Control Module (TCM)	D2534	Ignition Switch Run/Start Position	TCM Run crank active (based on	_	EVICE	Boolean								One Trip
	FZJ34	Circuit Low	voltage thresholds below)	-	FALJE	Boolean								
			Ignition Voltage High Hyst (run crank goes true when above this	>	5	Volts					>=	280	one fail count	
			value)		Ū	VORS						200	per 25 ms loop	
			Ignition Voltage Low Hyst (run		0						Out	000	one sample	
			crank goes faise when below this value)	<	2	Volts					of	280	count per 25 ms	5
							Ignition Switch Run/Star							
							Position Circuit Low diagnaotic	=	1	Boolean				
							ECM run/crank active status							
							available from serial data	=	TRUE	Boolean				
							ECM run/crank active status	=	TRUE	Boolean				
							Service mode \$04 active and end of trip pocessing active	=	FALSE	Boolean				
						Dicabla	MIL not Illuminated for	TCM: Nono						
						Conditions:	DTC's	TCIVI. NOTIE						
								ECM: None						
		Ignition Switch Dun/Start Desition	TCM Dup graph active (based on											Ono Trin
Transmission Control Module (TCM)	P2535	Circuit High	voltage thresholds below)	=	TRUE	Boolean								One mp
			Ignition Voltage High Hyst (run		-							000	one fail count	
			crank goes true when above this	>	5	Volts					>=	280	per 25 ms loop	
			Ignition Voltage Low Hyst (run								Out		one sample	
			crank goes false when below this	<	2	Volts					of	280	count per 25 ms	5
			Value)				Ignition Switch Run/Start						юор	-
							Position Circuit High	=	1	Boolean				
							diagnaotic enable calibration							
							available from serial data	=	TRUE	Boolean				
							ECM run/crank active status	=	FALSE	Boolean				
							Service mode \$04 active and	=	FALSE	Boolean				
							end of the pocessing active							
						Disable Conditions	MIL not Illuminated for	TCM: None						
						oonanions.		ECM: None						
													E all Querrata	On a Tala
Hiah Side Driver 2	P2670	Actuator Supply Voltage B Circuit	The HWIO reports a low voltage	=	TRUF	Boolean					>=	6	(6.25 msec	One Trip
		Low	(ground short) error flag										continuous)	
											out	220E	Sample Counts	
											of	7940	(o.∠o msec continuous)	
							actuator supply voltage circuit	_	1					1
							low enable calibration	_						
							end of trip pocessing active	=	FALSE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Rec	ime Iuired	Mil Illum.
		2001,0001			P2670 Status is not	=	Test Failed This Key On or Fault Active					
					P2670 Status is not	=	Test Failed This Key On or Fault Active	:				
					Service Fast Learn (SFL) Mode VBS Failsafe High Side Driver 2 On	=	FALSE True	Boolean Boolean				
				Disabl Conditions	e MIL not Illuminated for :: DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)	P2714	Pressure Control Solenoid D Stuck	absolute value (attained gear slip)	>= 400 RPM					>=	3	seconds	One Trip
		UIT (Clutch4/C23468)									when fail time reaches fail lim increment fail	it
									>=	3	event count event counts	
					clutch solenoid stuck on performance diagnostic monitor test deceleration limit	=	TRUE	boolean				
					not clutch solenoid stuck on performance diagnostic	=	TRUE	boolean				
					range not PRNDL State not PRNDL State not	=	park neutral	enumeration enumeration				
					while conditinos A and B and C are met, time down delay from clibration to 0.0 seconds							
					delay time calibration A) neutral condition fault	=	0.5	seconds				
					pending B) intrusive shift active	=	FALSE	boolean				
					C) range shift state	=	shift complete	enumeration				
					intrusive shift allowed intrusive shift active	=	TRUE	boolean boolean	l			
					steady state pressure adapt in progress	=	FALSE	boolean	l			
					transmission output speed accelerator pedal position	>= >=	100 0.5004883	RPM %				
					accelerator pedal position valid	=	TRUE	Boolean	l			
					engine speed valid D or F	=	TRUE	Boolean				
					D) select battery voltage to enable diagnostic monitor	=	0	Boolean				
					E) battery voltage	<= >=	31.999023 9	volts volts	l			

Component/ System	Fault Code	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Oystem	ooue	Description		, Tuluo	E) battery voltage time	e >= 0.1 sec		
Component/ System	P2715	Monitor Strategy Description	Malfunction Criteria Criteria	Threshold Value Disability Disability Disability Condition: Condition: See Table 32 >= in supporting fail event counts See Table 33 >= in supporting fail event counts documents >= in supporting fail event counts <	Secondary Malfunction F or C F) select ignition voltage time renable diagnsotic monito G) Ignition Voltage G) Ignition Voltage Service Fast Learn (SFL' Mode VBS Failsafe Ignition voltage and SFL conditions met for Hydraulic System Pressurizeet high side driver 1 enabled high side driver 2 enabled S: DTC's	Enable Conditions >= 0.1 Sec = 0 Boolean <=	Time Required >= see Table 29 >= in supporting documents see Table 30 >= in supporting seconds	Mil Illum.
			criteria met, fail time for power down shift increment fail time when slip criteria met, fail time for up shift or closed throttle down shift deceleration limited increment fail time when slip criteria met. fail time for up shift or				 >= in supporting seconds documents see Table 30 >= in supporting documents see Table 31 	
			closed throttle down shift no deceleration				>= in supporting seconds documents when fail time reaches fail lin increment fai event count above	e nit I

ľ	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enabl	e Ins	Time Required	Mil Illum.
	System		Description	B) absolute value (command gear slip), fail during inertia phase of transmission automatic shift, engine speed change begins, pull up or pull down increment fail time when slip criteria met, fail time during shift deceleration limited increment fail time during shift no deceleration	>= 70 RPM				see Table 35 >= in supporting seconds documents see Table 36 >= in supporting seconds documents when fail tim reaches fail li increment fa event cour above	ie mit iil t
						inertia phase test measured gear ratio	>= 0.55	8		
						inertia phase test measured gear ratio	<= 4.7150	02		
						gear ratio time	>= 0.15	seconds		
						clutch test enabled	see Ta 10 ir suppor docume	ble boolean nts		
						post torque phase test engine torque hysteresis high enable for upshift or power on down shift	see Ta 11 ir suppor docume	ole N*m nts		
						post torque phase test engine torque hysteresis low disable for upshift or power on down shift	see Ta 12 ir suppor docume	ole N*m nts		
						post torque phase test engine torque hysteresis high enable for closed throttle down shift	see Ta 13 ir suppor docume	ole Ing nts		
						post torque phase test engine torque hysteresis low disable for closed throttle down shift	see Ta 14 ir suppor docume	ole Ing nts		
						inertia phase test engine torque hysteresis high enable for upshift or power on down shift	see Ta 15 ir suppor docume	ole Ing nts		
						inertia phase test engine torque hysteresis low disable for upshift or power on down shift	see Ta 16 ir suppor docume	ng N*m nts		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
- Oyacan					inertia phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 17 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 18 in supporting documents	N*m		
					off going clutch pressure	<=	see Table 37 in supporting documents	kPa		
					off going clutch pressure closed throttle down shift delay time	>=	see Table 5 in supporting documents	seconds		
					off going clutch pressure closed power down shift delay time	>=	see Table 41 in supporting documents	seconds		
					off going clutch pressure up shift delay time	>=	see Table 62 in supporting documents	seconds		
					on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis	>=	27.000427	%		
					brake pedal position hysteresis	<=	25	%		
					absolute value (attained gear	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not	=	TRUE	boolean		
					traction control event test	=	TRUE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position valid	=	TRUE	Boolean		
I	I	I	I	I	engine speed valid	=	TRUE	Boolean	I	I

16 OBDG05 TCM Summary	/ Tables Common 8 Speed T87
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Component/	Fault	Monitor Strategy	Malfunction	Threshol	d	Secondary Malfunction		Enable			Tin Requ	ne vired	Mil Illum
Jystem	Coue	Description	Griteria	Value		D or F		Conditions			Nequ	lieu	incarn.
						D) select battery voltage to		0	Deeleen				
						enable diagnsotic monitor	=	0	DUUIEdII				
						E) battery voltage	<=	31.999023	volts				
						E) battery voltage	>=	9	VOIts				
						E) ballery vollage line	>=	0.1	Sec				
						F) select ignition voltage to		2					
						enable diagnsotic monitor	=	0	Boolean				
						G) Ignition Voltage	<=	31.999023	Volts				
						G) Ignition Voltage	>=	9	Volts				
						Service Fast Learn (SFL) Mode VRS Epilepie	=	FALSE	Boolean				
						Ignition voltage and SEI							
						conditions met for	>=	0.1	Sec				
						Hydraulic System Pressurized	=	TRUE	Boolean				
						high side driver 1 enabled	=	TRUE	Boolean				
						high side driver 2 enabled	=	TRUE	Boolean				
					Disable	MIL not Illuminated for	TCM: P0716	. P0717. P072	2. P0723.				
					Conditions:	DTC's:	P077C, P07	7D, P07BF, P0	7C0, P1824,				
							P182A, P18	2B, P182C, P18	82D, P182E,				
							P182F, P183	38, P1839, P18	40, P1841,				
							P18B5, P18	B6, P18B7, P18	3B8, P18B9,				
							P10DA, P10 P18RF P18	DD, P10DC, P1 C0 P18C1 P1	8C2 P18C3				
							P1915, P253	34	002,11003,				
							ECM: P0101	, P0102, P010	3, P0106,				
							P0107, P010	08, P0171, P01	72, P0174,				
							P0175, P020	01, P0202, P02	03, P0204,				
							P0203, P020	0, F0207, F02)2. P0303. P03	08, P0300, 04, P0305.				
							P0306, P030	07, P0308, P04	01, P042E				
		Pressure Control Solenoid D Control	The HW/IQ reports open creuit										One Trip
Variable Force Solenoid (VFS)	P2718	Circuit Open	error flag	= TRUE Bo	olean					>=	0.3	Fail Time (Sec)	
		(clutch4/C23468 VFS)											
										out	0.5	Sample Time	
						diagnostic monitor enable				UI		(3ec)	
						calibration	=	TRUE	Boolean				
						VFS source must be high side							
						driver 1 or 2 or 3							
						high side driver VFS source is	=	CelSCR_	enumeration				
						high side driver VES source		e_nsb1					
						enabled	=	TRUE	Boolean				
						controller power mode state is	_	TDUE	Pooloan				
						ignition or accessory	-	TRUE	Duolean				
						battery voltage in range for							
						Stability time hattery voltage stability time	<u>\-</u>	1	seconds				
						battery voltage stability time	>=	8	volts				
						battery voltage	<=	32	Volts				
1		1								1			

Component/ Svstem	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions		Time Required			Mil Illum.	
					Disabl Conditions	e MIL not Illuminated for :: DTC's:	TCM: None ECM: None		-				
Variable Force Solenoid (VFS)	P2720	Pressure Control Solenoid D Control Circuit Low (clutch4/C23468 VES)	The HWIO reports open crcui error flag	= TRI	JE Boolean					>=	0.3	Fail Time (Sec	One Trip
		(50,00,00,00,00,00,00,00,00,00,00,00,00,0								out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side	=	TRUE	Boolean				
						ariver 1 or 2 or 3 high side driver VFS source is	=	CeTSCR e HSD1	- enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						battery voltage stability time battery voltage battery voltage battery voltage	2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	1 8 32	seconds volts Volts				
					Disabl Conditions	e MIL not Illuminated for :: DTC's	TCM: None						
							ECM: None						
Variable Force Solenoid (VFS)	P2721	Pressure Control Solenoid D Control Circuit High (clutch4/C23468 VFS)	The HWIO reports open crcui error flag	= TRI	JE Boolean					>=	0.3	Fail Time (Sec	One Trip
						diamantia mantia mantu				out of	0.5	Sample Time (Sec)	_
						VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR e_HSD1	- enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						battery voltage stability time battery voltage battery voltage	>= >= <=	1 8 32	seconds volts Volts				
					Disabl	e MIL not Illuminated for	TCM: None	52					
					Conditions	DIC'S	ECM: None						
Variable Force Solenoid (VFS)	P2723	Pressure Control Solenoid E Stuck Off (clutch5/C45678R)	absolute value (attained gear slip)	>= 40	0 RPM					>=	3	seconds	One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Req	.ne uired	Mil Illum.
											when fail time	
											reaches fail limit	t
											increment fail	
											event count	
					alistali a disertal alisati an				>=	3	event counts	4
					clutch solenoid stuck on							
					performance diagnostic monitor tost doceleration limit	=	TRUE	boolean				
					not							
					clutch solenoid stuck on							
					performance diagnostic		TOUL	h e e le e e				
					monitor test return to previous	=	TRUE	boolean				
					range not							
					PRNDL State not	=	park	enumeration				
					PRNDL State not	=	neutral	enumeration				
					while conditinos A and B and							
					from clibration to 0.0 seconds							
					delay time calibration	_	0.5	seconds				
					A) neutral condition fault	_	5.5					
					pending	=	FALSE	boolean				
					B) intrusive shift active	=	FALSE	boolean				
					C) range shift state	_	shift	enumeration				
					of range shint state	_	complete	circumoration				
					intrusive shift allowed	=	TRUE	boolean				
					Intrusive shirt active	=	FALSE	Doolean				
					steauy state pressure adapt in	=	FALSE	boolean				
					transmission output speed	>=	100	RPM				
					accelerator pedal position	>=	0.5004883	%				
					accelerator nedal position valid	_	TRUE	Boolean	1			
						-	TRUE	Doolean	1			
					engine speed valid	=	TRUE	Boolean				
					D or E							
					enable diagnsotic monitor	=	0	Boolean				
					E) battery voltage	<=	31 999023	volts				
					E) battery voltage	>=	9	volts	1			
					E) battery voltage time	>=	0.1	sec				
					F or G							
					 F) select ignition voltage to 	=	0	Boolean	1			
					enable diagnsotic monitor	_		Doolean				
					G) Ignition Voltage	<=	31.999023	Volts				
					G) Ignition Voltage	>=	9	VOIIS	1			
					Mode VRS Failsafe	=	FALSE	Boolean	1			
					Ignition voltage and SFL		0.4	0	1			1
					conditions met for	>=	0.1	Sec	1			1
					Hydraulic System Pressurized	=	TRUE	Boolean	1			1
					high side driver 1 enabled	=	TRUE	Boolean	1			
					high side driver 2 enabled	=	TRUE	Boolean	1			
									1			
		I			1				1			1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Tim	e	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Requir	red	Illum.
				Disable	MIL not Illuminated for	TCM: P0/16, P0/17, P0/22, P0/23,			
				Conditions:	DTC's:	P077C, P077D, P07BF, P07C0, P1824,			
						P182A, P182B, P182C, P182D, P182E,			
						P182F, P1838, P1839, P1840, P1841,			
						P18B5, P18B6, P18B7, P18B8, P18B9,			
						P18BA, P18BB, P18BC, P18BD, P18BE,			
						P18BF, P18C0, P18C1, P18C2, P18C3,			
						P1915, P2534			
						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			
			automatic transmission shift	see Table 32					One Trip
Variable Force Solenoid (VES)	D2724	Pressure Control Solenoid E Stuck	torque phase test (A) or inertia	>= in supporting fail event counts					
Valiable Force Solehold (VES)	1 2/24	On (clutch5/C45678R)	phase test (B) fail event count	documents					
			deceleration limited	uocumenta					
			automatic transmission shift	see Table 33					
			torque phase test (A) or inertia	>- in supporting fail event counts					
			phase test (B) fail event count no	documents					
			deceleration	documents					
			 A) absolute value (attained gear 						
			slip), fail during post torque phase						
			of transmission automatic shift,	<= 40 RPM					
			before engine speed change, pull						
			up or pull down occurs						
			increment fail time when slip				see Table 29		
			criteria met, fail time for power				>= in supporting	seconds	
			down shift				documents		
			increment fail time when slip				see Table 30		
			criteria met, fail time for up shift or				>= in supporting	seconds	
			closed throttle down shift				documents	30001103	
			deceleration limited				documents		
			increment fail time when slip				see Table 31		
			criteria met, fail time for up shift or				>- in supporting	seconds	
			closed throttle down shift no				documents	30001143	
			deceleration				doodinonto		
								when fail time	
				1				reaches fail limi	t
								increment fail	
								event count	
				1				above	
			B) absolute value (command gear						
			slip), fail during inertia phase of						
			transmission automatic shift,	>= 70 RPM					
			engine speed change begins, pull						
			up or pull down						
			increment fail time when slip				see Table 35		
			criteria met, fail time during shift	1			>= in supporting	seconds	
			deceleration limited				documents		
			increment fail time when slip				see Table 36		
			criteria met, fail time during shift	1			>= in supporting	seconds	
I		I	no deceleration	1	1	1	documents		1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
									when fail time reaches fail limit increment fail event count above	t
					inertia phase test measured gear ratio inertia phase test measured	>=	0.558			-
					gear ratio inertia phase test measured gear ratio time	<=	4.7150002 0.15	seconds		
					clutch test enabled	=	see Table 10 in supporting documents	boolean		
					post torque phase test engine torque hysteresis high enable for upshift or power on down shift	>=	see Table 11 in supporting documents	N*m		
					post torque phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 12 in supporting documents	N*m		
					post torque phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 13 in supporting documents	N*m		
					post torque phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 14 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for upshift or power on down shift	>=	see Table 15 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for upshift or power on down shift	>	see Table 16 in supporting documents	N*m		
					inertia phase test engine torque hysteresis high enable for closed throttle down shift	>=	see Table 17 in supporting documents	N*m		
					inertia phase test engine torque hysteresis low disable for closed throttle down shift	>	see Table 18 in supporting documents	N*m		

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions			Time Required	Mil Illum.
- Oyucm	oode	2000 pilot			off going clutch pressure	<=	see Table 37 in supporting documents	kPa		
					off going clutch pressure closed throttle down shift delay time	>=	see Table 6 in supporting documents	seconds		
					off going clutch pressure closed power down shift delay time	>=	see Table 42 in supporting documents	seconds		
					off going clutch pressure up shift delay time	>=	see Table 63 in supporting documents	seconds		
					on coming clutch pressure for up shift	>=	see Table 8 in supporting documents	kPa		
					on coming clutch pressure for down shift	>=	see Table 7 in supporting documents	kPa		
					brake pedal position hysteresis high disable	>=	27.000427	%		
					brake pedal position hysteresis low enable	<=	25	%		
					absolute value (attained gear slip)	<=	40	RPM		
					shift type enable	=	see Table 45 in supporting documents	boolean		
					clucth solenoid stuck off intrusive shift request not	=	TRUE	boolean		
					traction control event test suspend not	=	TRUE	boolean		
					transmission output speed	>=	100 TRUE	RPM Region		
					engine speed valid	=	TRUE	Boolean		
					D or E D) select battery voltage to	=	0	Boolean		
					enable diagnsotic monitor E) battery voltage	<=	31.999023	volts		
					E) battery voltage E) battery voltage time F or G	>= >=	9 0.1	volts sec		
					F) select ignition voltage to enable diagnsotic monitor	=	0	Boolean		
		l	l	I	G) Ignition Voltage	<=	31.999023	Volts	l	I

16 OBDG05 TCM Summary	y Tables Common 8	Speed T87
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Component/ Svstem	Fault Code	Monitor Strategy Description	Malfunction Criteria	Three	eshold alue	Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.		
System	Code	Description	Criteria	v	Disable Conditions	Malfunction G) Ignition Voltage Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL conditions met for Hydraulic System Pressurized high side driver 1 enabled high side driver 2 enabled MIL not Illuminated for DTC's:	>= = = = = TCM: P0716	Conditions 9 FALSE 0.1 TRUE TRUE TRUE , P0717, P0722	Volts Boolean Sec Boolean Boolean Boolean 2, P0723,		Req	uired	Illum.
					Conditions.		P182A, P182 P182A, P182 P182F, P183 P1885, P18E P188F, P18E P188F, P18C P188F, P18C P198F, P18C P1915, P253 ECM: P0101 P0107, P010 P0175, P020 P0205, P020 P0301, P030 P0306, P030	 Ho, Forbi F, FC HB, P182C, P1 P1839, P18 P1887, P1 P18B7, P1 P18B7, P1 P18B7, P1 P18B7, P1 P10102, P010 P0102, P010 P0102, P020 P0207, P02 P0207, P02 P0203, P03 P0303, P03 P0303, P03 P0303, P03 	 A. P. 1824, 1825, 210, 11826, 210, 21826, 21826, 21826, 218866, 2188666, 2188666, 2188666, 2188666, 21886666, 21886666, 21886666, 2188666, 21886666, 21886666666, 218866666666666666666666666666666666666				
Variable Force Solenoid (VFS)	P2727	Pressure Control Solenoid E Control Circuit Open	The HWIO reports open crcuit	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
		(clutch5/C45678 VFS)	enumag							out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR_ e_HSD1	enumeration				
						controller power mode state is ignition or accessory	=	TRUE TRUE	Boolean Boolean				
						stability time stability time battery voltage stability time battery voltage battery voltage	>= >= <=	1 8 32	seconds volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Force Solenoid (VFS)	P2729	Pressure Control Solenoid E Control Circuit Low (clutch5/C45678 VES)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibration	=	TRUE	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre Va	shold alue	Secondary Malfunction	Enable Conditions			Ti Rea	me uired	Mil Illum.		
						VFS source must be high side driver 1 or 2 or 3 high side driver VFS source is high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage stability time battery voltage	= = >= >= >= <=	CeTSCR_ e_HSD1 TRUE TRUE 1 8 32	enumeration Boolean Boolean seconds volts Volts					
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None							
Variable Force Solenoid (VFS)	P2730	Pressure Control Solenoid E Control Circuit High (clutch5/C45678 VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>= out	0.3 0.5	Fail Time (Sec) Sample Time	One Trip	
						diagnostic monitor enable calibratior VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean	U		(Sec)		
						high side driver VFS source is high side driver VFS source	=	e_HSD1	enumeration					
						enablec controller power mode state is ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean					
						battery voltage stability time battery voltage battery voltage	2 >= 2 >= 2 <=	1 8 32	seconds volts Volts					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None							
Variable Force Solenoid (VFS)	P2736	Pressure Control Solenoid F Control Circuit Open (line pressure VES)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip	
										out of	0.5	Sample Time (Sec)		
						diagnostic monitor enable calibratior VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean					
						high side driver VFS source is high side driver VFS source enabled	=	e_HSD2 TRUE	enumeration Boolean					
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Three	eshold alue	Secondary Malfunction	Enable Conditions			nable Time nditions Required		'ime quired	Mil Illum.	
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						controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage battery voltage	= >= >= >= <=	TRUE 1 8 32	Boolean seconds volts Volts					
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None							
Variable Force Solenoid (VFS)	P2738	Pressure Control Solenoid F Control Circuit Low (line pressure VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>= out	0.3 0.5	Fail Time (Sec) Sample Time (Sec)	One Trip	
						diagnostic monitor enable calibratior VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean	01		(300)		
						high side driver VFS source is high side driver VFS source enabled	=	CeTSCR_ e_HSD2 TRUE	enumeration Boolean					
						controller power mode state is ignition or accessory battery voltage in range for stability time	=	TRUE	Boolean					
						battery voltage stability time battery voltage battery voltage	e >= e >= e <=	8 32	volts Volts					
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None							
Variable Force Solenoid (VFS)	P2739	Pressure Control Solenoid F Control Circuit High (line pressure VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip	
						diagnostic monitor enable				out of	0.5	Sample Time (Sec)	_	
						Calibration VFS source must be high side driver 1 or 2 or 3		TRUE	Boolean					
						high side driver VFS source is	=	CeTSCR_ e_HSD2	enumeration					
						enablec controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean Boolean					
						stability time battery voltage stability time battery voltage battery voltage	>= >= >= <=	1 8 32	seconds volts Volts					

Component/ Fault Monitor Strategy System Code Description		Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions		e Time ns Required		Mil Illum.	
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None				
VFS characterization	P27A7	VFS characterization	clutch1/CB1278R pressure control solenoid characterization not programmed	= TRUE	Boolean	manufacture enable counter memory type updated	- =	0 non- volatile memory	counts		One Trip
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None				
VFS characterization	P27A8	VFS characterization	clutch2/CB12345R pressure control solenoid characterization not programmed	= TRUE	Boolean	manufacture enable counter memory type updated		0 non- volatile	counts		One Trip
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None	memory			
VFS characterization	P27A9	VFS characterization	clutch3/C13567 pressure control solenoid characterization not programmed	= TRUE	Boolean	manufacture enable counter	1 =	0	counts		One Trip
						memory type updated	=	non- volatile memory			
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None				
VFS characterization	P27AA	VFS characterization	clutch4/C23468 pressure control solenoid characterization not programmed	: = TRUE	Boolean						One Trip
						manufacture enable counter	=	0 non- volatile memory	counts		
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None				

Component/	Fault	Monitor Strategy	Malfunction Criteria	Thr	eshold /alue	Secondary Malfunction		Enable			Tin Regi	ne	Mil Illum
VFS characterization	P27AB	VFS characterization	clutch5/C45678R pressure control solenoid characterization not programmed	= TRUE	Boolean			Conditions					One Trip
						manufacture enable counter memory type updated	=	0 non- volatile memory	counts				
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None						
VFS characterization	P27AC	VFS characterization	line pressure control solenoid characterization not programmed	= TRUE	Boolean								One Trip
						manufacture enable counte		0 non- volatile memory	counts				
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None						
VFS characterization	P27AD	VFS characterization	TCC pressure control solenoid characterization not programmed	= TRUE	Boolean								One Trip
						manufacture enable counter	r = I =	0 non- volatile memory	counts				
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None						
Torque Converter Clutch (TCC)	P2808	TCC System Stuck OFF	TCC Pressure	>= 750	Кра					>=	2	Enable Time (Sec)	Two Trips
			TCC capacity Either Condition (A) or (B) Must be Met	>= 0	%					>=	0	Enable Time (Sec)	
			(A) TCC Slip Error @ TCC On Mode	<pre>see Table 1 >= Supporting Decument</pre>	in g RPM					>=	4	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode If Above Conditions Have been	>= 130	RPM					>=	4	Fail Time (Sec)	
			Met, and Fail Timer Expired, Increment Fail Counter							>=	3	TCC Stuck Off Fail Counter	
						TCC Mode	=	On or Lock					
						diagnostic monitor enable of	=	1 biab					
						default valve state	=	(active)					
						ausolute value of attained geal slip	>=	25	RPM				

16 OBDG05 TCM Summary	/ Tables Common	8 Speed T87
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre V	eshold alue	Secondary Malfunction		Enable Conditions			Tir Requ	ne Jired	Mil Illum.
									CeCGSR_			·		
							attained gear	>=	e_CR_Fou					
									rtn shift					
							range shift state	=	complete					
							Hydraulic System Pressurized	=	TRUE	Boolean				
							battery voltage	<=	31.999023	volts				
							battery voltage	>=	9	volts				
							battery voltage time	>=	0.1	Sec				
							Ignition Voltage	>=	31.999023 9	Volts				
							Service Fast Learn (SFL)		FALCE	Dealean				
							Mode VBS Failsafe	=	FALSE	Boolean				
							Ignition voltage and SFL	. >=	0.1	Sec				
							conditions met for		FO	N*m				
							Engine Torque	>=	00 8101 75	N*m				
							Throttle Position	>=	8.0001831	Pct				
							Throttle Position	<=	99.998474	Pct				
							Transmission Fluid	>=	-6 65625	°C				
							Temperature		0.00020	0				
							Transmission Fluid	<=	130	°C				
							PTO Not Active		TRUF	Boolean				
							Engine Torque Signal Valid	=	TRUE	Boolean				
							Accelerator Pedal Position	_	TDHE	Boolean				
							Signal Valid	_	INUL	Doolean				
							D2000 Chalus is	4	Test Failed					
							P2808 Status is	<i>. ∓</i>	On					
									OII					
						Disable	MIL not Illuminated for	TCM: P0716	5, P0717, P07BF	, P07C0,				
						Conditions:	DTC's	P0722, P07	23, P077C, P07	7D, P2808,				
								P2812, P28	14, P2815					
								ECM: P010	1. P0102. P010	3. P0106.				
								P0107, P01	08, P0171, P017	2, P0174,				
								P0175, P02	01, P0202, P020	03, P0204,				
								P0205, P02	06, P0207, P020)8, P0300,				
								P0301, P03	02, P0303, P030	04, P0305,				
								1 0300, 1 03	J7, 1 0300, 1 040	/1,1042L				
Torque Converter Clutch (TCC)	P2809	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM								One Trip
			TCC Slip Speed	<=	30	RPM								
			If About Conditions Lique been								>=	1.5	Fail Time (Sec)	
			If Above Conditions Have been Mot, and Fail Timor Expired									6	Eail Countor	
			Increment Fail Counter								/-	0	i all counter	
							TCC Mode	=	Off					-
							default valve state	_	high					
									(active)					
							derault valve state previous	=	low to high					
									24 in					
1							set default valve state time	- =	Supporting	seconds				
									Document					
		1							S					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
		2000			default valve state timer times down to zero (0.0) when default valve state not	=	high (active)			
					default valve state timer times down to zero (0.0) when default valve state previous not	=	low to high			
					either A or B ro C must be met					
					 A) default valve state B) default valve state timer C) low TCC slip fail timer clutch solenoid stuck off performance (neutral) test 	= > > =	low to high 0 0 FALSE	seconds seconds Boolean		
					active clutch solenoid stuck on performance (tie-up) test active	=	FALSE	Boolean		
					TCC Slip Speed	<=	300 see Table 25 in Supporting	RPM RPM/sec		
							Document s			
					TCC system stuck on diagnostic monitor enable c	=	1			
					Engine Speed	<=	5500	RPM		
					Vehicle Speed HI	>= <=	400 45	KPM KPH		
					Engine Torque	<=	800	Nm		
					Engine Torque	>=	55 Noutral	Nm		
					Current Range	≁ ≠	Reverse	Range		
					Transmission Fluid Temperature	<=	130	°C		
					Transmission Fluid	>=	-6.65625	°C		
					Temperature Throttle Position Hyst High	>=	3.9993286	Pct		
					Max Vehicle Speed to Meet Throttle Enable	<=	8	KPH		
					Once Hyst High has been met, the enable will remain while	>=	0.9994507	Pct		
					Throttle Position Disable for Throttle Position	>=	94.999695	Pct		
					value true	=	1			
					enable if tap up/down mode is false or tap up/down TCC	=	0	Boolean		
					calibration value is false enable if manual up/down mode is false or manual		-			
					up/down TCC calibration value is false enable if misfire disengage	=	0	Boolean		
					TCC is false or value TCC misfire calibration value is false	=	0	Boolean		
				I	4 Wheel Drive Low Active	=	FALSE	Boolean		

16 OBDG05 TCM Summary	/ Tables Common	8 Speed T87
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre Va	eshold alue	Secondary Malfunction	Enable Conditions		Enable Conditions		Enable Conditions		Enable Conditions		Enable Conditions		Enable Conditions		Enable Conditions		Enable Conditions		Enable Conditions		Ti Req	me uired	Mil Illum.
						battery voltage battery voltage time Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL conditions met for Engine Torque Signal Valid Throttle Position Signal Valid P0742 Status is	<= >= <= >= = = *	31.999023 9 0.1 31.999023 9 FALSE 0.1 TRUE TRUE Test Failet This Key On	yolts volts sec Volts Volts Boolean Boolean Boolean																		
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716 P0722, P072 P2812, P281 ECM: P010 ⁻ P0107, P010 P0175, P020 P0205, P020 P0301, P030 P0306, P030	, P0717, P07E 23, P077C, P0 14, P2815 1, P0102, P01 38, P0171, P0 30, P0202, P02 30, P0207, P02 32, P0303, P03 37, P0308, P04	3F, P07C0,)77D, P2809, 03, P0106, 172, P0174, 203, P0204, 208, P0300, 304, P0305, 401, P042E																		
Variable Force Solenoid (VFS)	P2812	Pressure Control Solenoid G Control Circuit Open (TCC pressure VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>= out	0.3	Fail Time (Sec) Sample Time	One Trip														
					Disable Conditions:	diagnostic monitor enable calibration VFS source must be high side driver 1 or 2 or 3 high side driver VFS source enabled controller power mode state is ignition or accessory battery voltage in range for stability time battery voltage stability time battery voltage duttery voltage battery voltage battery voltage	= = = >= <= TCM: None ECM: None	TRUE CeTSCR e_HSD2 TRUE TRUE 1 8 32	Boolean enumeration Boolean Boolean seconds volts Volts	OI		(Sec)															
Variable Force Solenoid (VFS)	P2814	Pressure Control Solenoid G Control Circuit Low (TCC pressure VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>= out of	0.3 0.5	Fail Time (Sec) Sample Time (Sec)	One Trip														

Component/	Fault	Monitor Strategy	Malfunction	Three	eshold	Secondary	Enable		Enable Time		ime	Mil	
System	Code	Description	Criteria	Vi	aiue	diagnostic monitor enable		Conditions			Req	uirea	nium.
						VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR_ e_HSD2	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time battery voltage	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 8	seconds volts				
						battery voltage	. <=	32	Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
Variable Force Solenoid (VFS)	P2815	Pressure Control Solenoid G Control Circuit High (TCC pressure VFS)	The HWIO reports open crcuit error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable calibratior VFS source must be high side driver 1 or 2 or 3	=	TRUE	Boolean				
						high side driver VFS source is	=	CeTSCR_ e_HSD2	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time battery voltage stability time	>=	1	seconds				
						battery voltage battery voltage	e >= e <=	8 32	volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None						
							ECM: None						
default valve on/off valve solenoid	P2817	Hydraulic on/off Control Solenoid H Stuck Off (default valve on/off solenoid)	absolute value (attained gear slip) 4th gear commanded	>= 400	RPM	6th gear intrusive shift command when fail time reaches fail limit	t l			>=	3	seconds	One Trip
						attained gear when intrusive	=	3rd					
						attained gear slip 3rd gear	<=	75	RPM				
						intrusive 6th gear commanded	>=	2	counts				
						event count	L			>=	2	counts	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mil
System	Code	Description	Ciliena	Value	clutch solenoid stuck on		Contaitions		Kequileu	interni.
					performance diagnostic					
					monitor test deceleration limit	=	TRUE	boolean		
					not					
					clutch solenoid stuck on					
					performance diagnostic		TDUE	haalaan		
					monitor test return to previous	=	IRUE	DODIEGI		
					range not					
					PRNDL State not	=	park	enumeration		
					PRNDL State not	=	neutral	enumeration		
					while conditinos A and B and					
					C are met, time down delay					
					from clibration to 0.0 seconds		0.5			
					delay time calibration	=	0.5	seconds		
					A) neutral condition fault	=	FALSE	boolean		
					P) intrucivo chift activo	_	EALSE	booloon		
					b) Initiasive shint active	-	chift	DODIEGI		
					C) range shift state	=	complete	enumeration		
					intrusive shift allowed	_	TRUE	boolean		
					intrusive shift active	=	FALSE	boolean		
					steady state pressure adapt in					
					progress	=	FALSE	boolean		
					transmission output speed	>=	100	RPM		
					accelerator pedal position	>=	0.5004883	%		
					accelerator pedal position valid	_	TRUE	Boolean		
					accolutor pedar position valia		INCE	Doolean		
					engine speed valid	=	TRUE	Boolean		
					D or E					
					D) select battery voltage to	=	0	Boolean		
					enable diagnsotic monitor		21 000022	ualta		
					E) battery voltage	<=	31.999023	volts		
					E) battery voltage time	>=	9 0 1	VUILS		
					E) ballery voltage line	/-	0.1	300		
					F) select ignition voltage to					
					enable diagnsotic monitor	=	0	Boolean		
					G) Ignition Voltage	<=	31.999023	Volts		
					G) Ignition Voltage	>=	9	Volts		
					Service Fast Learn (SFL)	_	EALSE	Pooloan		
					Mode VBS Failsafe	=	FALSE	DUUIEd()		
					Ignition voltage and SFL	>=	0.1	Sec		
					conditions met for		0.1	500		
					Hydraulic System Pressurized	=	TRUE	Boolean		
					high side driver 1 enabled	=	TRUE	Boolean		
					high side driver 2 enabled	=	IRUE	Boolean		
	1	1							1	1
1	1			1	1					1

Component/ Fault Monitor Strategy System Code Description		yy Malfunction Threshold Se		Secondary		Mil				
System	Code	Description	Criteria	Value	Mill not Illuminated for	Conditions	+	Req	lairea	mum.
				Condition	s: DTC's:	TCM: P0710, P0717, P0722, P0723, P077C, P077D, P07BF, P07C0, P1824, P182A, P182B, P182C, P182D, P182F, P182F, P1838, P1839, P1840, P1841, P18B5, P18B6, P18B7, P18B8, P18B9, P18BA, P18BB, P18BC, P18BD, P18BE, P18BF, P18C0, P18C1, P18C2, P18C3, P1915, P2534				
						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				
default valve on/off valve solenoid	P2818	Hydraulic on/off Control Solenoid H Stuck On (default valve on/off solenoid)	TCC slip speed	d <= 6 RPM			>=	0.5	seconds	Two Trips
							>= >=	3 5	counts counts	
					delay time after TCC intrusive command pressure reaches intrusive value	see Table 28 in seconds supporting documents				
					TCC intrusive command pressure	>= 600 kPa				
					test delay timer times down from calibration to zero (0.0) when all of the following conditions are main	= 0.3 Seconds				
					engine speed engine speed transmission temperature	>= 400 RPM <= 900 RPM >= 0 °C				
					Hydraulic System Pressurized battery voltage	e = park enumeration = TRUE Boolean <= 31.999023 volts				
					battery voltage battery voltage time Ignition Voltage Ignition Voltage	e >= 9 Volts >= 0.1 sec <= 31.999023 Volts e >= 9 Volts				
					Service Fast Learn (SFL) Mode VBS Failsafe Ignition voltage and SFL conditions met for	= FALSE Boolean >= 0.1 Sec				
				Disab Condition	le MIL not Illuminated for s: DTC's:	TCM: P0716, P0717, P07BF, P07C0, P2812, P2814, P2815				
default valve on/off solenoid	P281D	Pressure Control Solenoid H Control Circuit Low	The HWIO reports open crcuit	t = TRUE Boolean		ECM: none	>=	0.3	Fail Time (Sec)	One Trip
		(default valve on/off solenoid)	enorma				out of	0.5	Sample Time (Sec)	

Component/	Fault	Monitor Strategy	Malfunction	Thre	eshold	Secondary Malfunction		Enable			Ti	me	Mil
Jystem	Coue	Description	Griteria	v	alue	diagnostic monitor enable		TOUL	Dealars		Neg	uilea	indiri.
						calibration	=	TRUE	Booleau				
						VFS source must be high side							
						high side driver VFS source is	=	CeTSCR_	enumeration				
						high side driver VFS source	_	e_HSD1	Boolean				
						enabled controller power mode state is	_	INOL	Doolean				
						ignition or accessory battery voltage in range for	=	TRUE	Boolean				
						stability time	~-	1	seconds				
						battery voltage stability time battery voltage	>=	8	volts				
						battery voltage	<=	32	Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
							ECM: None						
default valve on/off solenoid	P281E	Pressure Control Solenoid H Control Circuit High	The HWIO reports open crcuit	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
		(default valve on/off solenoid)	error flag							out		Sample Time	
						diagnastis monitor snakla				of	0.5	(Sec)	-
						diagnostic monitor enable calibration	=	TRUE	Boolean				
						VFS source must be high side driver 1 or 2 or 3							
						high side driver VFS source is	=	CeTSCR_ e_HSD1	enumeration				
						high side driver VFS source enabled	=	TRUE	Boolean				
						controller power mode state is ignition or accessory	=	TRUE	Boolean				
						battery voltage in range for stability time							
						battery voltage stability time	>=	1	seconds				
						battery voltage	<=	32	Volts				
					Disable	MIL not Illuminated for	TCM: None						
					Conditions:	DICS	ECM: None						
		Pressure Control Solenoid J Control											One Trip
clutch2/CB12345R boost valve on/off	P2826	Circuit Low	The HWIO reports open crcuit	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	p
Solenoid		clutch2/CB12345R boost valve on/off solenoid)	error flag									. ,	
										out of	0.5	Sample Time (Sec)	
						diagnostic monitor enable	=	TRUE	Boolean				
						VFS source must be high side							
						high side driver VFS source is	=	CeTSCR_ e_HSD2	enumeration				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre	eshold alue	Secondary Malfunction		Enable Conditions			Ti Reg	ime luired	Mil Illum.
							high side driver VFS source enabled	=	TRUE	Boolean				
							controller power mode state is ignition or accessory	=	TRUE	Boolean				
							battery voltage in range for stability time							
							battery voltage stability time	>=	1	seconds				
							battery voltage	>= <=	8 32	Volts				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
								ECM: None						
clutch2/CP12245D boost value op/off		Pressure Control Solenoid J Control		+										One Trip
solenoid	P2827	(clutch2/CB12345R boost valve	error flag	9	TRUE	Boolean					>=	0.3	Fail Time (Sec))
		onion solcholdy									out of	0.5	Sample Time (Sec)	
							diagnostic monitor enable	=	TRUE	Boolean				1
							VFS source must be high side driver 1 or 2 or 3							
							high side driver VFS source is	=	CeTSCR_ e HSD2	enumeration				
							high side driver VFS source	=	TRUE	Boolean				
							controller power mode state is	=	TRUE	Boolean				
							battery voltage in range for							
							battery voltage stability time	>=	1	seconds				
							battery voltage battery voltage	>= <=	8 32	volts Volts				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
								ECM: None						
Communication	U0073	Controller Area Network Bus	CAN Hardware Circuitry Detects a	=	TRUE	Boolean					>=	62	counts	One Trip
			Bus voltage Error (CAN bus off Bus off delay time) 2 >=	0.1125	Sec					>=	70	counts	
							all conditions A and B and C below must occur for							1
							stabilization time		n	ocondo				
							A) Service mode \$04 active	>=	3	Seconds				
							and end of trip pocessing active	=	FALSE	Boolean				
							 A) normal serial data communication enabled 	=	TRUE	Boolean				
							A) P0073 status not B) secured controller or	=	fault active CeCANR					
							emission critical then use ignition voltage	=	e_OBDII_ Dsbl	Boolean				

16 OBDG05 TCM Summary	/ Tables Common 8 Speed T8	37
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Office Observe of the set	Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold /alue	Secondary Malfunction		Enable		Time	d	Mil
Amount of the second	System	Code	Description	Cillena	v	alue	B) secureed controller or		Conditions		Kequire	u	intarii.
Commancian							emission critical Ignition	>=	11	volts			
$\left \left \left$							Voltage			TORS			
$ \begin the set of the tens $							B) Power Mode	=	Run				
							 B) secured controller or 		CeCANR_				
$ \begin that the set of the set$							emission critical then use	=	e_OBDII_	Boolean			
Connuclations with controls Lot Connuclations with CMM in Controls Lot Connuclations with CMM i							controller power mode		Dsbl				
Communication In the Second Secon							B) Power Mode	=	Run				
cmmunication keys							C) ignition off enable	=	TRUE	Boolean			
Commutation No All controls and it houses into the problem intered into the problem into the problem into the problem i							C) Power Mode	=	accessory				
Communication Value Instanta Instantes							C) battery voltage	>=	11	volts			
Communication Image: control contro contro control control control contro control contro							all conditions A and B below						
$ \left[Communication \ In the interval in the interval in the interval in the interval interval in the interval interva$							must occur						
Communication UP 00 If Communication with FCM For Tom Ressage missed frame with and							A) post clear code timer	>=	0.15	seconds			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							B) when Propulsion System	=	FALSE	Boolean			
Low of the construction of the biols during the constr							Active use low voltage check		THEOL	Dooloun			
Lessen							conditions A or B below during						
$ \left \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$							low voltage occur while low						
Image: constraint of the second se							voltage mode hysteresis time						
Communication Unit distance - 0.1 seconds Communication Unit seconds - 2.50E.02 seconds Communication - 2.50E.02 seconds - - 6.601170 vols Communication - - 2.50E.02 seconds - <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>James In a state in a state of the state of</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							James In a state in a state of the state of						
Image: Second							low voltage mode hysteresis	<=	0.1	seconds			
Communication Image: Control Module) Image: Con							time		2 505 02	onumoration			
Communication V0100 Lost Communications with ECM (Engine Control Model) TCM Rx message missed frame frame Image: TRUE Boolean TCM Rx message missed frame continues A and Socie Trans- control Model in the instrument of the instrument							A) system voltage mode	=	2.50E-02	enumeration			
Communication U010 dcd Communications will ECM CCM Rx message missed frame a TRUE Bodee a 0.5 scond s							B) Ignition voltage, set low	<=	6.4091797	volts			
Communication Image: Communication with ECM Image:							voltage mode						
Lonnunication U100 Lost communications with ECM Lost Communications with ECM TCM Rx message missed frame Image: I							conditions A or B above occur						
Communication UD10 Loss Communications with ECM Engine Control Module) Cont CMR x message missed frame frame message missed frame frame Image: True Boolean in supporting all conditions and B and C A) Service mode S04 active and end tripporting security Image: True Boolean in supporting all conditions and B and C A) Service mode S04 active and end tripporting active and en							bysteresis time and low						
Image: control to contro control to control to control to control to control to co							voltage time						
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$							low voltage mode time	>=	2 50F-02	seconds			
Image: set condition MIL not Illuminated processing CM: None Set Condition MIL not Illuminated processing CM: None Set Condition MIL not Illuminated processing MIL not Illuminated processing <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>low voltage mode time</td> <td>× -</td> <td>2.002 02</td> <td>30001143</td> <td></td> <td></td> <td></td>							low voltage mode time	× -	2.002 02	30001143			
Image: Communication Image: Communication <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>													
Image: Condition Image: Condition <th< td=""><td></td><td></td><td></td><td></td><td></td><td>Disable</td><td>MIL not Illuminated for</td><td>TCM: None</td><td></td><td></td><td></td><td></td><td></td></th<>						Disable	MIL not Illuminated for	TCM: None					
Image: control in the control in th						Conditions:	DTC's:						
Image: control bound in the control boun								ECM: None					
Communication U0100 Lost Communications with ECM (Engine Control Module) TCM Rx message missed frame and the second second control methods and control in supporting seconds documents Tx control in supporting seconds documents See Table see Table 65 see Tab													
Communications with ECM (Engine Control Module) TCM Rx message missed frame on Rx message enable calibration set to CeCANR_e_BusA_ECM : TX: Control = to calibration set to CeCANR_e_BusA_ECM see Table see Table calibration set to CeCANR_e_BusA_ECM : see Table supporting documents : see Table see Table supporting documents : see Table see Table see Table supporting documents : see Table see Table see Table supporting documents : see Table see Table see Table supporting documents Communications with ECM (Engine Control Module) TCM Rx frame message missed fram frame : TRUE Boolean : see Table see Table supporting all conditions And B and below must court for stabilization time A) Service mode \$04 active and end of trip pocessing e : seconds : seconds Image: To see Table for supporting : seconds : seconds : seconds : seconds Image: To see Table for supporting : seconds : seconds : seconds : seconds Image: To seconds : seconds : seconds : seconds : seconds : seconds Image: To seconds : seconds : seconds : seconds : seconds : seconds Image: To seconds : seconds : seconds : seconds : seconds : seconds Image: To seconds : seconds : seconds : seconds <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>fail times are caculated based</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>One Trip</td>							fail times are caculated based						One Trip
Communication and the form of the sage nitsed name is the frame is the	Communication	110100	Lost Communications with ECM	TCM Py mossage missed frame			on Rx message enable		Тх				
TCM Rx frame message missed frame = TRUE Boolean TCM Rx frame calibration enabled ≠ See Table 65 supporting enumeration documents >= in supporting seconds Image: See Table 65 supporting enumeration delay all conditions A and B and C below must occur for stabilization time and end of trip pocessing a	Communication	00100	(Engine Control Module)	I CIVI KX Message missed frame			calibration set to		controller				
TCM Rx frame message missed frame = TRUE Boolean TCM Rx frame calibration enabled ≠ See Table 65 Supporting documents documents seconds documents documents documents documents documents documents documents documents documents documents							CeCANR_e_BusA_ECM						
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$									see Table				
$\frac{1}{10000000000000000000000000000000000$				TCM Rx frame message missed			TCM Rx frame calibration		64 in		see Table 65		
Frame recovery stabilization delay all conditions A and B and C below must occur for stabilization time A) Service mode S04 active and end of trip pocessing active A) normal serial data communication enabled A) PD073 status not >= 0.5 seconds A TRUE Boolean active A) PD073 status not = TRUE Boolean active A) PD073 status not = TRUE Boolean active				frame	= TRUE	Boolean	enabled	¥	supporting	enumeration	>= in supporting	seconds	
Frame recovery stabilization >= 0.5 seconds all conditions A and B and C >= 0.5 seconds below must occur for stabilization time >= 3 seconds Bus Stabilization time >= 3 seconds and end of trip pocessing = FALSE Boolean active - - - - A) Normal serial data = TRUE Boolean communication enabled = fault active -									documents		documents		
Frame recovery stabilization delay >= 0.5 seconds all conditions A and B and C below must occur for stabilization time >= 3 seconds Bus Stabilization time >= 3 seconds A) Service mode \$04 active and end of trip pocessing active = FALSE Boolean A) normal serial data communication enabled communication enabled communication enabled = TRUE Boolean							-						4
all conditions A and B and C all conditions A and B and C below must occur for stabilization time Bus Stabilization time A) Service mode \$04 active and end of trip pocessing active A) normal serial data communication enabled A) P0073 status not = fault active							Frame recovery stabilization	>=	0.5	seconds			
ail condutions A and B and C below must occur for stabilization time Bus Stabilization time >= 3 seconds A) Service mode \$04 active and end of trip pocessing = FALSE Boolean active A) normal serial data communication enabled = TRUE Boolean A) P0073 status not = fault active							delay						
Bit is a construction of the isotropy of the is							all conditions A and B and C						
Stabilization time >= 3 seconds Bus Stabilization time >= 3 seconds A) Service mode \$04 active and end of trip pocessing = FALSE Boolean active A) normal serial data = TRUE Boolean A) P0073 status not = fault active		1					stabilization time						
A) Service mode \$04 active and end of trip pocessing = FALSE Boolean active A) normal serial data communication enabled A) P0073 status not = fault active							Rus Stabilization time	~-	2	seconde			
and end of trip pocessing = FALSE Boolean active A) normal serial data = TRUE Boolean communication enabled = TRUE Boolean	1	1					A) Service mode \$04 active	>=	э	2001102			
active active A) normal serial data = communication enabled = A) P0073 status not =	1						and end of trin nocessing	=	FALSE	Boolean			
A) normal serial data communication enabled A) P0073 status not = fault active		1					active	_	THESE	Doolcan			
communication enabled A) P0073 status not = fault active							A) normal serial data						
A) P0073 status not $=$ fault active	1	1					communication enabled	=	TRUE	Boolean			
	1	1					A) P0073 status not	=	fault active				

16 OBDG05 TCM Summary	/ Tables Common 8	Speed T87
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre	eshold alue	Secondary Malfunction		Enable Conditions		Time	ed	Mil Illum.
Jystem	Coue	Description	Ghiena	v	aide	B) secured controller or		CeCANR		Require	5u	indin.
						emission critical then use	=	e OBDII	Boolean			
						ignition voltage		Dsbl				
						B) secureed controller or						
						emission critical Ignition	>=	11	volts			
						Voltage						
						B) Power Mode	=	Run				
						B) secured controller or		CeCANR_				
						emission critical then use	=	e_ORDII_	Boolean			
						P) Dower Mode	_	DSDI				
						C) ignition off_enable	_	TRUE	Boolean			
						C) Power Mode	=	accessory	Doolcall			
						C) battery voltage	>=	11	volts			
						all conditions A and B below						
						must occur						
						A) post clear code timer	>=	0.15	seconds			
						 B) when Propulsion System 	_	FALSE	Boolean			
						Active use low voltage check	_	TALUL	Doolcan			
						conditions A or B below during						
						low voltage occur while low						
						voltage mode hysteresis time						
						low voltage mode hysteresis						
						time	<=	0.1	seconds			
						 A) system voltage mode 	=	2.50E-02	enumeration			
						B) ignition voltage, set low	<=	6.4091797	volts			
						voltage mode						
						conditions A or B above occur						
						while low voltage mode						
						voltare time						
						low voltage mode time	>=	2 50F-02	seconds			
						U0100 fault status is not	=	fault active	30001103			
					Disable	MIL not Illuminated for	TCM: U0073					
					Conditions:	DTC's						
							ECM: None					
	<u> </u>					fell there are an added by a d						Caralal
		Loss Communications with APS (Anti				rall times are caculated based		Τv				Special No MI
Communication	U0121	Loss Communications with ABS (Anti-	TCM Rx message missed frame			on the following KX messages		controller				NUIVIL
		lock blake System)				CeCANR e BusA ABS		CONTRIONED				
						000,000,000,000,000						
			TOM Du forma managementaria			TOM Du fame a allhastian		see Table		see Table 65		
			I CM RX frame message missed	= TRUE	Boolean	I CIVI RX frame calibration	¥	64 IN	enumeration	>= in supporting	seconds	
			lialle			enabled		documents		documents		
								uocuments				
						Frame recovery stabilization	>=	0.5	seconds			
1	1					delay all conditions A and B and C						
1	1					below must occur for						
1	1					stabilization time						
1	1					Bus Stabilization time	>=	3	seconds			
1	1					A) Service mode \$04 active						
1	1					and end of trip pocessing	=	FALSE	Boolean			
1	1	1				active						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Three	eshold alue	Secondary Malfunction		Enable Conditions		Time Require	ed	Mil Illum.
		Decemption				A) normal serial data	=	TRUE	Boolean			
						Communication enabled Δ) P0073 status not	_	fault active				
						B) secured controller or	_	CeCANR				
						emission critical then use	=	e_OBDII_	Boolean			
						ignition voltage		Dsbl				
						B) secureed controller or						
						emission critical Ignition	>=	11	VOItS			
						B) Power Mode	=	Run				
						B) secured controller or		CeCANR_				
						emission critical then use	=	e_OBDII_	Boolean			
						controller power mode		Dsbl				
						B) Power Mode	=	Run	Decloop			
						C) ignition on enable	_	accessory	DUUledII			
						C) battery voltage	>=	11	volts			
						all conditions A and B below						
						must occur						
						A) post clear code timer	>=	0.15	seconds			
						B) when Propulsion System	=	FALSE	Boolean			
						Active use low voltage check						
						conditions A or B below during						
						voltage mode hysteresis time						
						low voltage mode hysteresis time	<=	0.1	seconds			
						A) system voltage mode	=	2.50E-02	enumeration			
						B) ignition voltage, set low	<=	6.4091797	volts			
						voltage mode						
						while low voltage mode						
						hysteresis time and low						
						voltage time						
						low voltage mode time	>=	2.50E-02	seconds			
						U0121 fault status is not	=	fault active				
					Disable	MIL not Illuminated for						
					Conditions:	DTC's:	TCIVI. 00073					
							ECM: None					
		Loss Communications with DCM				fail times are caculated based		Tv				Special No MI
Communication	U0140	(Body Control Module)	TCM Rx message missed frame			enable calibration set to		controller				INO IVITE
		(),				CeCANR_e_BusA_BCM						
								soo Tablo				
			TCM Rx frame message missed			TCM Rx frame calibration		64 in		see Table 65		
			frame	= IRUE	Boolean	enabled	≠	supporting	enumeration	>= in supporting	seconds	
								documents		uocuments		
						Frame recovery stabilization	>=	0.5	seconds			
1						all conditions A and B and C						
1						below must occur for						
1						stabilization time						
I		1	1			Bus Stabilization time	>=	3	seconds			l

16 OBDG05 TCM Summar	y Tables Common 8 Sp	peed T87
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Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mil
System	Code	Description	Criteria	Value			Conditions		Required	mum.
					A) Service mode \$04 active		EAL OF	Dealars		
					and end of trip pocessing	=	FALSE	Booleau		
					A) normal serial data	=	TRUE	Boolean		
					communication enabled		<i>c</i>			
					A) P00/3 status not	=	fault active			
					B) secured controller or		CeCANR_			
					emission critical then use	=	e_OBDII_	Boolean		
					ignition voltage		Dsbl			
					B) secureed controller or					
					emission critical Ignition	>=	11	volts		
					Voltage					
					B) Power Mode	=	Run			
					 B) secured controller or 		CeCANR_			
					emission critical then use	=	e_OBDII_	Boolean		
					controller power mode		Dsbl			
					B) Power Mode	=	Run			
					C) ignition off enable	=	TRUE	Boolean		
					C) Power Mode	=	accessory			
					C) battery voltage	>=	11	volts		
					all conditions A and B below					
					must occur					
					A) post clear code timer	>=	0.15	seconds		
					B) when Propulsion System		541.05			
					Active use low voltage check	=	FALSE	Boolean		
					conditions A or B below during					
					low voltage occur while low					
					voltage mode hysteresis time					
					low voltage mode hysteresis					
					time	<=	0.1	seconds		
					A) system voltage mode	=	2 50F-02	enumeration		
					B) ignition voltage set low		2.002 02	on an or a dom		
					voltage, set low	<=	6.4091797	volts		
					conditions A or B above occur					
					while low voltage mode					
					hysteresis time and low					
					voltago timo					
					low voltage mode time	>=	2 50E 02	seconds		
					100 voltage mode time	>=	2.JUE-UZ	SECOLIDS		
					OUT40 TAULI STATUS IS NOT	=	Tault active			

Table 1	
	Axis 0.00 64.00 128.00 192.00 256.00 320.00 384.00 448.00 512.00 N*m Curve 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.00 RPM
Table 2	Axis -40.001 -20.001 0.001 110.001°C
	Curve 1.6000 1.1000 0.9500 0.8500 seconds
Table 3	Axis -40.00 -20.00 0.00 30.00 110.00 °C
	Curve 1.5500 1.0500 0.9000 0.8000 0.8000 seconds
l able 4	Axis -40.00 -20.00 0.00 30.00 110.00 ⁰C
	Curve 1.4000 0.9000 0.7500 0.6500 0.6500 seconds
Table C	
Table 5	Axis -40.00 -20.00 0.00 30.00 110.00 ℃
	Curve 1.5500 1.0500 1.0000 1.0000 seconds
Table 6	
Tuble 0	Axis -40.00 -20.00 0.00 30.00 110.00 °C
	Curve 1.5500 1.0500 0.9000 0.8000 seconds
Table 7	
	Axis R e CD 21 R e CD 32 R e CD 42 R e CD 43 R e CD 51 R e CD 53 R e CD 54 R e CD 63 R e CD 65 R e CD 71 R e CD 75 R e CD 76
	Curve 750.0 <th< td=""></th<>
	Curve 750.0 750.0 750.0 kPa
Tabla 9	
	Axis R_e_US_12\$R_e_US_23\$R_e_US_34\$R_e_US_45\$R_e_US_56\$R_e_US_56\$R_e_US_78\$R_e_US_13\$R_e_US_24\$R_e_US_35\$R_e_US_35\$R_e_US_57\$R_e_US_68 up shift type: 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 1-3, 2-4, 3-5, 4-6, 5-7, 6-8
	Curve 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 750.0 RPa
Table 9	
	NOT USED
Table 10	
	Axis bC1_Clutch C2_Clutch C2_Clutch C3_Clutch C4_Clutch C4_Clutch C4_Clutch C4_Clutch C4_C12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
Table 11	
	Axis C1_Clutch C2_Clutch C1_Clutch C1_
Table 12	
	$\frac{P_{12}}{P_{12}} = \frac{P_{12}}{P_{12}} = P_$
Table 13	Axise C1 Clutche C2 Clutche C3 Clutche C4 Clutche C5 Clutche clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
	Curve 10.0 10.0 10.0 10.0 N*m
Table 14	

Axis action
Table 15
Axis C1_Clutch C3_Clutch C4_Clutch C1_Clutch C1_Clutch <thc1_clutch <="" th=""> C1_Clutch </thc1_clutch>
Table 16 Axis <a href="https://www.com/com/com/com/com/com/com/com/com/com/</td>
Curve 00.0 00.0 00.0 00.0 00.0 00.0
Axis <u>a_C1_Clutch b_C2_Clutch b_C3_Clutch b_C4_Clutch b_C5_Clutch</u> clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678 Curve 10.0 10.0 10.0 10.0 10.0 N*m
Table 18 Axis C1_Clutch C2_Clutch C4_Clutch C5_Clutch clutch1 CB12345R, clutch2 C13567, clutch4 C23468, clutch5 C45678 Curve -30.0 -30.0 -30.0 -30.0 N*m
Table 19 NOT USED NOT USED
Table 20 NOT USED NOT USED
Axis -40.00 0.00 40.00 °C Curve 5.00 5.00 Sec
Table 22 NOT USED NOT USED
Table 23 NOT USED NOT USED
Axis -7.00 10.00 40.00 ℃ Curve 1.50 1.25 1.00 Sec
Table 25 Axis -7.00 10.00 40.00 ℃ Curve -2000.00 -2000.00 RPM/Sec
Axis -40.00 -30.00 -20.00 0.00 20.00 °C Curve 1800.00 1500.00 1200.00 600.00 Sec
Axis 0.00 20.00 60.00 100.00 120.00 Kph Curve -8.00 -8.00 -8.00 -8.00 °C

Table 28							
	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	5.00	3.00	2.00	1.75	1.00	Sec
Table 29							
	Axis e_	C1_Clutch e	_C2_Clutch e	_C3_Clutch e	_C4_Clutch e	_C5_Clutch	clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
	Curve	0.9000	0.9000	0.9000	0.9000	0.9000	seconds
Table 30							
Table 30	Axise	C1 Clutche	C2 Clutch e	C3 Clutche	C4 Clutche	C5 Clutch	clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
	Curve	0.9000	0.9000	0.9000	0.9000	0.9000	seconds
					•		
Table 31	A i a	Od Olutah	CO. Clutable	C2 Clutch	CA Clutch	OF Obstate	
	Curve						CIUTCH I CB1278R, CIUTCH 2 CB12345R, CIUTCH3 C13567, CIUTCH4 C23468, CIUTCH5 C45678R
		0.3000	0.3000	0.3000	0.3000	0.3000	3600103
Table 32							
	Axise_	C1_Clutch e	_C2_Clutch e	_C3_Clutch e	_C4_Clutch e	_C5_Clutch	clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
	Curve	4	4	4	4	4	counts
Table 33							
	Axise_	C1_Clutch e	_C2_Clutch e	_C3_Clutch e	_C4_Clutch e	_C5_Clutch	clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
	Curve	4	4	4	4	4	counts
Table 24							
Table 34	NOTUSE	=D					
	NOT USE	ED					
Table 35	Aviab	C1 Clutch	C2 Clutch	C2 Clutch	C4 Clutch	CE Clutch	alutabil CR4070B, alutabil CR4004EB, alutabil C12E67, alutabil C02469, alutabis C45670B
	Curve		0.5000	0.5000	0 5000	0.5000	culoni CB1276R, culoni 2 CB12345R, culonis C13567, culoni4 C23466, culonis C45676R seconds
		0.0000	0.0000	0.0000	0.0000	0.0000	
Table 36							
	Axise_	C1_Clutch e	_C2_Clutch e	_C3_Clutch e	_C4_Clutch e	_C5_Clutch	clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
	Curve	0.5000	0.5000	0.5000	0.5000	0.5000	seconds
Table 37							
	Axis e_	C1_Clutch e	_C2_Clutch e	_C3_Clutch e	_C4_Clutch e	_C5_Clutch	clutch1 CB1278R, clutch 2 CB12345R, clutch3 C13567, clutch4 C23468, clutch5 C45678R
	Curve	300.0	300.0	300.0	300.0	300.0	kPa
Table 20							
Table 30	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	0.9500	0.4500	0.3000	0.3000	0.3000	seconds
		· · · · ·					
Table 39	🗖	(0.00					
	Axis	-40.00	-20.00	0.00	30.00	110.00	ocondo
	Guive	0.9500	0.4500	0.3000	0.2000	0.2000	
Table 40							
	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	0.9500	0.4500	0.3000	0.2000	0.2000	seconds

Table 41





Table 65

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Axis	g_0BE_BusA	GACY_BusA	_0C1_BusA	g_0C5_BusA	_0C9_BusA	g_0F1_BusA	28_CA_BusA	g_12A_BusA	g_185_BusA	g_18E_BusA	GACY_BusA	g_191_BusA	g_1A1_BusA	g_1A3_BusA	1A5_BusA	1AA_BusA	ACY_BusA	1BA_BusA	1CB_BusA	1DF_BusA	frame
Curve	12.000	12.000	12.000	12.000	0.500	12.000	12.000	12.000	12.000	0.500	12.000	12.000	12.000	12.000	12.000	0.500	12.000	0.500	12.000	12.000	seconds
	Axis	_1E9_BusA	g_1F1_BusA	g_1F3_BusA	g_1F9_BusA	_1FC_BusA	g_287_BusA	g_2D1_BusA	g_2F9_BusA	g_3D1_BusA	g_3E9_BusA	g_3FC_BusA	g_4A3_BusA	g_4C1_BusA	4C7_BusA	4DF_BusA	4E1_BusA	4E9_BusA	4F1_BusA	_589_BusA	frame
	Curve	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	0.500	seconds

3D1 Bus/

_18E_BusAGACY_BusA

3E9 Bus/

g_191_BusA

alidRxDevice

3FC Bus

1A1_BusAg

4A3 BusA

1A3_BusA_1A5_BusA_1AA_BusA

C7 BusA 4DF Bus

BusA ECM BusA ECM dRxDeviceBusA ECM

4C1 BusA

CY_BusA 1BA_BusA 1CB_BusA

dRxDeviceBusA ECM dRxDevice

E9 Bus/

4F1 BusA

E1 Bus/

1DF BusA

dRxDevice

89 BusA

rame

frame

enable or invalid

185_BusAg

Supporting Documents - 3D Tables

3D Table 1	CeTSKR_Cnt_MaxCPUs	X-Axis Calibration		CelSKR_e	e_CPU			CeTSKR_e	_CPU2	CPU
	CePISR_e_NumOfSeqTasks	Y-Axis Calibration	CePISR_e_6p25msSeq	CePISR_e_12p5msSeq	CePISR_e_25msSeq	CePISR_e_LORES_C	CePISR_e_6p25msSeq	CePISR_e_12p5msSeq	CePISR_e_25msSeq	CePISR_e_LORES_C loop test ty
	KaPISD_b_ProgSeqWatchEnbl	Table Calibration	1	1	1	0	0	0	0	0 BOOLEAN

16 OBDG05 TCM Summar	y Tables Uniqu	e 8 Speed T87
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Component/	Fault	Monitor Strategy		Malfunction Criteria		Thre	shold	Secondary Malfunction		Enable			Tin	ne	Mil
System	Code	Description	E-11 0 1	Criteria	<u> </u>	Va	alue	Walturiction		Conditions			Requ	lired	mum.
Tap Up Tap Down Switch (TUTD)	P1765	Upshift Switch Circuit #2	Fail Case T	Position in Range 1 Enabled	=	1	Boolean								Special No MIL
				Tap Up Switch Stuck in the Up		1	Baalaan								
				Position in Range 2 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Deeleen								
				Position in Range 3 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Declean								
				Position in Range 4 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Deeleen								
				Position in Range 5 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Deeleen								
				Position in Range 6 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		0	Deeleen								
				Position in Neutral Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up		0	Deeleen								
				Position in Park Enabled	=	0	Boolean								
				Tap Up Switch Stuck in the Up		0	Deeleen								
				Position in Reverse Enabled	=	0	Booleau								
				Tap Up Switch ON	=	TRUE	Boolean					>=	1	Fail Time (Sec)	
			Fail Case 2	Tap Up Switch Stuck in the Up		1	Deeleen								
				Position in Range 1 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Deeleen								
				Position in Range 2 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Deeleen								
				Position in Range 3 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Deeleen								
				Position in Range 4 Enabled	=	I	Booleau								
				Tap Up Switch Stuck in the Up		1	Dealers								
				Position in Range 5 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		1	Dealean								
				Position in Range 6 Enabled	=	I	Boolean								
				Tap Up Switch Stuck in the Up		0	Deeleen								
				Position in Neutral Enabled	=	0	Booleau								
				Tap Up Switch Stuck in the Up		0	Deeleen								
				Position in Park Enabled	=	0	Booleau								
				Tap Up Switch Stuck in the Up		0	Decloop								
				Position in Reverse Enabled	=	0	DUUIEdIT								
				Tap Up Switch ON	=	TRUE	Boolean								
				NOTE: Both Failcase1 and									120	Fail Time (See)	
				Failcase 2 Must Be Met								>=	120	rali fille (Sec)	
								Time Since Last Range	>=	1	Enable Time				
								Change	/-	1	(Sec)				
								Ignition Voltage Lo	>=	9	Volts				
								Ignition Voltage Hi	<=	31.999023	Volts				
								Engine Speed Lo	>=	250	RPM				
	1		1		1			Engine Speed Hi	<=	7500	RPM				
			1					Engine Speed is within the	~-	5	Sec				
	1		1		1			allowable limits for	>=	0	JCL				
			1							Test Failed					
	1		1		1					This Kov					
1			1					P1765 Status is	¥						
1	1		1		1					Active					
1			1							ACING					
1	1		1		1										
1	1		1									l			

16 OBDG05 TCM Summary Tables Unique 8 Speed T87

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	shold Ilue	Secondary Malfunction	Enable Conditions		Time Required	1	Mil Illum.
						Disable	MIL not Illuminated for	TCM: P1767, P1761, P182E, P1915				
						Conditions:	DTC's:	FCM: None				
Tap Up Tap Down Switch (TUTD)	P1766	Downshift Switch Circuit #2	Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean						Special No MIL
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean			>=	1	sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean						-
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Neutral Enabled Tap Down Switch Stuck in the	=	0	Boolean						
			Down Position in Park Enabled	=	U	Rooleau						
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean						
		I	Tap Down Switch ON	=	TRUE	Boolean		l				1

16 OBDG05 TCM Summary Tables Unique 8 Speed T87

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thresh Valu	hold Je	Secondary Malfunction		Enable Conditions			Tir Requ	ne uired	Mil Illum.
			NOTE: Both Failcase1 and Failcase 2 Must Be Met							>=	120	Sec	
			Failcase 2 Must Be Met			Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for P1766 Status is	>= <= <= >= >=	1 9 18 250 7500 5 Test Failed This Key On or Fault Active	Sec Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1767, ECM: None	P1761, P182E,	P1915				
Tap Up Tap Down Switch (TUTD)	P1767	Up and Down Shift Switch Circuit #2	TUTD Circuit Reads Invalid Voltage	= TRUE	Boolean					>=	60	Fail Time (Se	c) Special
					Disable	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within the allowable limits for P1767 Status is MIL not Illuminated for	>= <= >= ≠ TCM: P1761	9 31.999023 250 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec				
					Conditions:	DIC'S:	ECM: None						
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range TUTD Enable Switch is Active	Park or = Reverse or Neutral = TRUE	Range State Boolean	Ignition Voltage Lo Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed is within the allowable limits for P1876 Status is	>= <= >= <= >=	9 31.999023 511.99219 250 7500 5 Test Failed This Key On or Fault Active	Volts Volts KPH RPM RPM Sec	>= >=	3 5	Fail Time (Se Fail Counts	c)

16 OBDG05 TCM Summary Tables Unique 8 Speed T87

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0815, P0816, P0826, P1761, P1825, P1877, P1915, U0100 ECM: None		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Three V	eshold alue	Secondary Malfunction		Enable Conditions			Tim Requ	ie ired	Mil Illum.
Transmission Control Module (TCM)	P0601	Transmission Electro-Hydraulic Control Module Read Only Memory	Incorrect program/calibrations checksum	= TRUE	Boolean					>=	5	Fail Counts	One Tri
					Disable	MIL not Illuminated for	TCM: P0601						
					Conditions:	: DTC's:	ECM: None						
Transmission Control Module (TCM)	P0603	Transmission Electro-Hydraulic Control Module Long-Term Memory Reset	Non-volatile memory (static or dynamic) checksum failure at Powerup	= TRUE	Boolean					Cor	Runs ntinously		One Tri
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0603 ECM: None						
Transmission Control Module (TCM)	P0604	Transmission Electro-Hydraulic Control Module Random Access	RAM Read/Write Failure (Single	= TRUE	Boolean					>=	5	Fail Counts	One Tri
		Memory	word)							=	16	Sample Count	s
					Disable Conditions:	e MIL not Illuminated for DTC's:	TCM: P0604						
							ECIVI: NOTIE						
Transmission Control Module (TCM)	P062F	Transmission Electro-Hydraulic Control Module Long Term Memory Performance	TCM Non-Volatile Memory bit Incorrect flag at Powerdown	= TRUE	Boolean					Cor	Runs ntinously		One Tri
					Disable	MIL not Illuminated for	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					>=	4	Fail Counts	One Tri
										out of	6	Sample Count	s
						P0658 Status is not	=	Test Failed This Key On or Fault Active					
						High Side Driver 1 On	=	True	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None						
							ECIVI: NOTIE						
Transmission Control Module (TCM)	P0667	TCM Internal Temp (substrate) Sensor Circuit Range/Performance	If transmission oil temp to substrate temp Δ	Refer to Tab 19 in supporting documents	°C								⊺™o Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	l Co	Enable onditions			Tin Requ	ne ıired	Mil Illum.
			If TCM substrate 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)	
			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)	
					Engine Tergue Signel Velid		TDUE	Pooloon	Out of	875	Sample Counts (100ms loop)	
					Accelerator Position Signal Valid	=	TRUE TRUE	Boolean				
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= 3 >= <=	400 7500	Volts RPM RPM				
					Engine Speed is within the allowable limits for Brake torque active	>=	5 FALSE	Sec				
					Below describes the brake torque entry criteria Engine Torque	>=	90	N*m				
					Transmission Input Speed Vehicle Speed	>= 3 <= <=	200 8 8	Pct RPM Kph				
					Transmission Range Transmission Range PTO Set Brake Torque Active	≠ ≠ = N	Neutral Not Active					
					TRUE if above conditions are met for: Below describes the brake	>=	7	Sec				
					torque exit criteria Brake torque entry criteria	=	Not Met Clutch					
					Clutch hydraulic pressure	≠ /	Hydraulic Air Purge Event					
					Clutch used to exit brake torque active	=	C3_RatlE nbl					
					greater than this value for one loop Set Brake Torque Active	>=	600	kpa				
					FALSE if above conditions are met for:	>=	20	Sec				

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

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tiı Requ	me uired	Mil Illum.
			Either condition above will satisfy						>=	60	Fail Timer (Sec))
					Ignition Voltage Lo Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits for	=< 0 == 0 == 0 == 0 == 0 == 0 == 0	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				-
					P0669 Status is	\$ ≠	Test Failed This Key On or Fault Active					
					must also be mel Estimated Motor Power Loss greater than limit for time Lost Communication with Hybrid Processor Contro	t 5 >= 5 >= 1 =	0 0 FALSE	kW Sec				
				N.J.	Module Estimated Motor Power Loss Faul	= t	FALSE	00700				
				Condition	IS: MIL NOT IIIUMINATED TO DTC'S	ECM: P0716,	P0/17, P0/22	P0723				
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 20 in °C supporting documents								Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table 18 in °C supporting documents								
			Both conditions above required to increment fail counter Note: table reference temp = to) -					>=	3000	Fail Counts (100ms loop)	-
			the median temp of trans oil temp, substrate temp and power up temp.						Out of	3750	Sample Counts (100ms loop)	
			Non-continuous (intermittent) fail conditions will delay resetting fail counter until						>=	700	Pass Counts (100ms loop)	
					Eppino Termio Cimpl V-11	4	TDUC	Doolser	of	875	Sample Counts (100ms loop)	
					Engine Torque Signal Valic Accelerator Position Signa Valic Ignition Voltage Lc Ignition Voltage H Engine Speed Lc		TRUE TRUE 8.5996094 31.990234 400 7500	Boolean Boolean Volts Volts RPM RPM				

16 OBDG05 TCM S	ummary Tables	Common 6 Speed	Г43
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Component/ Svstem	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
0,000		2000.1911011			Engine Speed is within the	e 5 Sec		1
					allowable limits for			
					Brake torque active Relow describes the brake	e = FALSE		-
					torque entry criteria	2		
					Engine Torque	e >= 90 N*m		
					Throttle	e >= 30.000305 Pct		
					Transmission Input Speed	d <= 200 RPM		
					Transmission Range	d <= o r∨n ⇒ ≠ Park		
					Transmission Range	e ≠ Neutral		
					PTC	D = Not Active		
					Set Brake Torque Active			
					TRUE IF above conditions are met for	e >= / sec		
					Below describes the brake	9	1	-
					torque exit criteria	а		
					Brake torque entry criteria	a = Not Met		
						Clutch		!
					Clutch hydraulic pressure	e ≠ Air Purge		
						Event		
					Clutch used to exit brake	CeTFTD_e		
					torque active	= _C3_RatIE		
					The above clutch pressure is	ומח		
					greater than this value for one	e >= 600 kpa		
					loop	D		
					Set Brake Torque Active	9		
					FALSE if above conditions are	e >= 20 Sec		
					Illet IU			
						Test Failed		
					P06AC Status is	s ≠ On or Fault		
						Active		
				Disable	MIL not Illuminated for	r TCM: P0658, P0668, P0669, P06AD,		
				Conditions:	DTC's	: P06AE, P0716, P0712, P0713, P0717,		
						P0722, P0723, P0962, P0963, P0966,		
						P0967, P0970, P0971, P215C, P2720, P2721 P2729 P2730		
						1 2121, 1 2121, 1 2130		
						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		
	\bot							
Transmission Control Module (TCM)	P06AD	TCM power-up thermistor circuit	Power Up Temp	<= -59 °C			>= 60 Fail Time (Sec)	Two Trips
		Voltage IOW			Ignition Voltage Lo	o >= 8.5996094 Volts		-
					Ignition Voltage H	i <= 31.990234 Volts		
					Engine Speed Lo	D >= 400 RPM		
					Engine Speed H	II <= /500 RPM		
					allowable limits for	>= 5 Sec		

16 OBDG05 TCM Summary	/ Tables Common	6 Speed T43
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Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary Malfunction	Enable		Tim Requi	ie ired	Mil Illum.
					P06AD Status is	Test Failed This Key On or Fault Active				
					For Hybrids, below conditions must also be me Estimated Motor Power Loss greater than limit for time Lost Communication with Hybrid Processor Contro Module Estimated Motor Power Loss Faul	S = 0 kW S >= 0 Sec T = FALSE T = FALSE				
				Disabl Conditions	e MIL not Illuminated foi :: DTC's	r TCM: P0716, P0717, P0722, P0723 : ECM: None				
Transmission Control Module (TCM)	P06AE	TCM power-up thermistor circuit voltage high	Power Up Temp	>= 164 °C			>=	60	Fail Time (Sec)	Two Trips
					Ignition Voltage Lo Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits for P06AE Status is	o >= 8.5996094 Volts i <= 31.990234 Volts >= 400 RPM i <= 7500 RPM >= 5 Sec Test Failed S ≠ This Key On or Fault Active				
				Disabl	e MIL not Illuminated fo :: 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 > 19 in °C supporting documents						Two Trips
			If transmission oil temp to power up temp Δ	Refer to Table 18 in °C supporting documents						
			Both conditions above required to increment fail counter Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp.				>= Out of	3000 3750	Fail Counts (100ms loop) Sample Counts (100ms loop)	

Non-continuous (intermittent) fail conditions will delay resetting fail counter until >= 700 Pass Ca (100ms) Out of 875 Sample Conditions Signal Valid = TRUE Boolean Accelerator Position Signal Valid = TRUE Boolean Valid ->= 8.5996094 Volts Impliciton Voltage Lo >= 8.5996094 Volts	ts p) nts o)
counter until Coun	nts o)
Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Li Ignition	p)
Engine Torque Signal Valid = TRUE Boolean Accelerator Position Signal Valid = TRUE Boolean Ignition Voltage Lo >= 8.5996094 Volts	-
Accelerator Position Signal Valid Ignition Voltage Lo >= 8.5996094 Volts	
Ignition Voltage Li >= 8.5996094 Volts	
Ignition Voltage Hi - 21.000224 Volte	
ignition voltage m <= 51.990234 VOIIS	
Engine Speed Lo >= 400 RPM	
Engine Speed Hi <= 7500 RPM	
engine Speen is within the allowable limits for >= 5 Sec	
Brake torque active = FALSE	
Below describes the brake	-
torque entry criteria	
Engine Torque >= 90 N*m	
Throttle >= 30.000305 Pct	
Iransmission input speed <= 200 KPM	
venue specu <= o vµn Transmission Ranne ≠ Park	
Transmission Range \neq Neutral	
PTO = Not Active	
Set Brake Torque Active	
TRUE if above conditions are >= 7 sec	
Poley describer the brake	_
below testines inte la date torque exit criteria	
Brake torque entry criteria = Not Met	
Clutch	
Chutch bydraulic pressure ≠ Hydraulic	
Air Purge	
Clutch used to exit brake – C3 PallE	
torque active nbl	
The above clutch pressure is	
greater than this value for one >= 600 kpa	
Set Brake Torque Active	
FALSE IT above conditions are >= 20 Sec met for:	
Test Failed	
I EST FallED	
P0711 Status is \neq On or Fault	
Active	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	Value	Ie MIL not Illuminated for TCM: P0658_P0668_P0669_P06AD		Required	mum.
				Condition	s: DTC's	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	00740	Transmission fluid temperature	T (0)	CeTFTI e Vol				Two Trips
(TFT)	P0/12	thermistor failed at a low voltage	l ype of Sensor Used	= tageDirectProp				
			If Transmission Fluid Temperature					
			Sensor = Direct Proportional and	<= -74 °C				
			Temp					
			If Transmission Fluid Temperature	74 00				
			Sensor = Indirect Proportional and	>= -/4 °C				
			Either condition above will satisfy					
			the fail conditions				>= 60 Fail Time (Se	c)
					Ignition Voltage Lo	>= 8.5996094 Volts		
					Ignition Voltage H	i <= 31.990234 Volts		
					Engine Speed Lo	>= 400 RPM		
					Engine Speed is within the	(<= 7500 RPM		
					allowable limits fo	>= 5 Sec		
						Test Failed		
					D0712 Status k	This Key		
					PU/12 Sidius is	On or Fault		
						Active		
					For Hybrids, below conditions	5		
					must also be me	t		
					Estimated Motor Power Loss	s >= 0 kW		
					EStimated Motor Power Loss greater than limit for time	>= 0 Sec		
					Lost Communication with			
					Hybrid Processor Control	I = FALSE		
					Module	5		
					Estimated Motor Power Loss	= FALSE		
					Faul	T		
				Disat	le MIL not Illuminated fo	TCM: P0716, P0717, P0722, P0723		
				Condition	s: DIC's	ECM: None		
	 							
Transmission Fluid Temperature Sensor	P0713	Transmission fluid temperature	Type of Sensor Used	CeTFTI_e_Vol				Two Trips
(TFT)		thermistor failed at a high voltage	Type of Sensor Oscu	tageDirectProp				
			If Transmission Fluid Temperature					
			Sensor = Direct Proportional and	>= 174 °C				
1	1	1	Lemp	1	1	1	1	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thr V	eshold alue	Secondary Malfunction	Secondary Enable Malfunction Conditions		Time Required			Mil Illum.	
			If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp	<= 174	°C								
			Either condition above will satisfy the fail conditions							>=	60	Fail Time (Sec)	
						Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
						P0713 Status is	¥	This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0713 P0723 ECM: Nono	, P0716, P0717,	P0722,				
Variable Bleed Solenoid (VBS)	P0961	Pressure Control (PC) Solenoid A Control Circuit Rationality Test	The HWIO reports an invalid	= TRUE	Boolean		ECIVI: NOTE			>=	4.4	Fail Time (Sec)	Two Trips
		(Line Pressure VBS)	voltage (out of range) error hag							out	5	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0962	Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	1.5	Fail Time (Sec)	One Trip
										out of	1.875	Sample Time (Sec)	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0963	Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	4.4	Fail Time (Sec)	Two Trips

16 OBDG05 TCM Summary	/ Tables Common	6 Speed T43
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.
										out	5	Sample Time	
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec	01		(Set)	-
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0966	Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for P0966 Status is not	>= <= <= >= =	8.5996094 31.990234 400 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec	of	0.375	(Sec)	-
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P0967	Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>= out	0.3	Fail Time (Sec) Sample Time	One Trip
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for P0967 Status is not	>= <= <= >= =	8.5996094 31.990234 400 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec	of		(Sec)	
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						

Component/	Fault	Monitor Strategy	Malfunction	Threshold		Secondary Malfunction	Enable Conditions			Time Required			Mil Illum.	
System	Code	Pressure Control (PC) Solenoid C		v	alue	Waltunetion		Conditions			Req	Illea	One Trip	
Variable Bleed Solenoid (VBS)	P0970	Control Circuit Low Voltage (C456/CBR1 VBS)	Ine HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)		
										of	0.375	(Sec)		
						P0970 Status is not	=	Test Failed This Key On or Fault Active						
						Ignition Voltage Ignition Voltage Engine Speed	>= <=	8.5996094 31.990234	Volts Volts					
						Engine Speed Engine Speed Engine Speed is within the allowable limits for	<=	7500 5	RPM Sec					
					Disable	MIL not Illuminated for	TCM: None							
					Conditions:	DTC's:	ECM: None							
Variable Bleed Solenoid (VBS)	P0971	Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	One Trip	
										out of	0.375	Sample 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 limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None							
							ECM: None							
Shift Solinoid	P0973	Shift Solenoid A Control Circuit Low (Mode 2 Solenoid)	The HWIO reports a low voltage (ground short) error flag	= TRUE	Boolean					>=	1.2	Fail Time (Sec)	One Trip	
										out of	1.5	Sample Time (Sec)	-	
						P0973 Status is not	=	Test Failed This Key On or Fault Active						
						Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996094 31.990234 400 7500	Volts Volts RPM RPM					
						Engine Speed is within the allowable limits for	>=	5	Sec					
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	shold Ilue	Secondary Malfunction		Enable Conditions			Tir Rear	me uired	Mil Illum.
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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	Disable Conditions: Boolean	MIL not Illuminated for DTC's:	TCM: None ECM: None			>= out	1.2	Fail Time (Sec) Sample Time	Two Trips
							P0974 Status is not	= >=	Test Failed This Key On or Fault Active 8.5996094	Volts			(SEL)	-
							Ignition Voltage	- <=	31.990234	Volts				
						Dirabla	Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >=	400 7500 5	RPM RPM Sec				
						Conditions:	DTC's:	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					>= out of	1.2 1.5	Sec Sec	One Trip
							P0977 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	>= <= >= <=	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P1915	Internal Mode Switch Does Not Indicate Park/Neutral (P/N) During Start	PRNDL State is	≠	Park or Neutral	Enumeration								One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	1	hreshold Value	Secondary Malfunction	E	nable			Tin Regu	ne lired	Mil Illum.
Gystem	ooue	Description	The following events must occur		- undo						noqu		
			Sequentially									Enchlo Timo	
			Initial Engine speed	<= 50	RPM					>=	0.25	(Sec)	
			Then Engine Speed Between Following										
			Cals										
			Engine Speed Lo Hist	>= 50	RPM							Enchlo Timo	
			Engine Speed Hi Hist	<= 480	RPM					>=	0.06875	(Sec)	
			Then Final Engine Speed	>= 525	RPM								
			Final Transmission Input Speed	>= 100	RPM					>=	1.25	Fail Time (Sec)	_
						DTC has Ran this Key Cycle?	=	FALSE B	Boolean				
						Ignition Voltage Hi	>= <= 31	.999023	V				
						Ignition Voltage Hyst High	>=	5	V				
						(enables above this value)		0					
						(disabled below this value)	<=	2	V				
						Transmission Output Speed	<=	90	rpm				
							Те	est Failed					
						P1915 Status is	≠ T	his Key					
							0	Active					
					Disable	MIL not Illuminated for	TCM: P0722, P072	23					
					Conditions	DICS	ECM: None						
Transmission Control Module (TCM)	P2534	Ignition Switch Run/Start Position	ICM Run crank active (based on voltage thresholds below)	= FALS	E Boolean								One Trip
		onour con	Ignition Voltage High Hyst (run	1								Eail Counte	
			crank goes true when above this	5	Volts					>=	280	(25ms loop)	
			value) Ignition Voltage Low Hyst (run										
			crank goes false when below this	2	Volts					Out	280	(25ms loop)	
			value)			ECM run/crank active status						(-
						available	=	TRUE B	Boolean				
						ECM run/crank active status	=	TRUE B	Boolean				
					Disable	MIL not Illuminated for	TCM: None						
					Conditions	. Dics.	ECM: None						
													0 T.
Transmission Control Module (TCM)	P2535	Ignition Switch Run/Start Position	I CM Run crank active (based on voltage thresholds below)	= TRUE	Boolean								Une Trip
			Ignition Voltage High Hyst (run									Fail Counts	
			crank goes true when above this	5	Volts					>=	280	(25ms loop)	
			value) Ignition Voltage Low Hvst (run							0.1		Convel C	
			crank goes false when below this	2	Volts					Out	280	(25ms loop)	
			value)			ECM run/crank active status				5		(20110-1009)	-
						available	=	TRUE B	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Coue	Description	Cintena	Value	ECM run/crank active status	= FALSE Boolean	Nequieu	
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None		
Variable Bleed Solenoid (VBS)	P2714	Pressure Control (PC) Solenoid D Stuck Off [CB26]	Fail Case 1 Case: Steady State 2nd Gea	r				One Trip
			Gear sli	p >= 400 RPM			Please See Table 5 For Neutral Tim Neutral Time (Sec) Cal	9r
			Intrusive test commanded 3rd gea	t: Ir Table Based				
			If attained Gear = 3rd for Time	e >= see Table 2 in Supporting Documents				
			If Above Conditions have been me	n				. 1
			Increment 2nd gear fail cour	ıt			>= 3 2nd Gear Fa	"
			and CB26 Fail Coun	nt			>= 14 CB26 Fail	
			Fail Case 2 Case: Steady State 6th Gea	IL			Plaza Saa	_
			Gear sli	p >= 400 RPM			>= Table 5 For Neutral Tim Neutral Time (Sec) Cal	эr
			Intrusive test commanded 5th gea	t: rr Table Based				
			If attained Gear = 5th For Time	e >= see Table 2 in Supporting Documents				
			If Above Conditions have been met, Increment 5th gear fa counte	n Il Ir			>= 3 5th Gear Fa Count	.il
			and CB26 Fail Cour	ıt			or >= 14 CB26 Fail Count	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR B	= FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE Boolean >= 0 RPM		
					(A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo	<pre>>= 36 RPM >= 0.5004883 Pct >= 8.5996094 Volts <= 31.990234 Volts >= 400 RPM</pre>		

Component/	Fault	Monitor Strategy	Malfunction	Three	eshold	Secondary Malfunction		Enable		1	Tii	me	Mil
System	Code	Description	Cinteria	v.	aiue	Engine Speed H	<=	7500	RPM		Keqi	uireu	indiri.
						Engine Speed is within the	>=	5	Sec				
						allowable limits for Throttle Position Signal valid	_	TRUE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
						Transmission Fluid	>=	-6.65625	°C				
						I emperature Input Speed Sensor fault	_	FALSE	Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not	=	TRUE					
						present							
					Disable	MIL not Illuminated for	TCM: P0716	, P0717, P0722	, P0723,				
					Conditions:	DICS	PI82E						
							ECM: P0101	, P0102, P0103	, P0106,				
							P0107, P010 P0175, P020	6, P0171, P017 1. P0202, P020	2, P0174, 13. P0204.				
							P0205, P020	6, P0207, P020	8, P0300,				
							P0301, P030	2, P0303, P030	4, P0305,				
							FU300, FU30	17, FU3U0, FU4U	1, FU42E				
	D0700	Pressure Control (PC) Solenoid D	The HWIO reports a low voltage	TOUE									One Trip
Variable Bleed Solenoid (VBS)	P2/20	Control Circuit Low (CB26 VBS)	(ground short) error flag	= IRUE	Boolean					>=	0.3	Fail Time (Sec)	
		(0020 100)								out	0 375	Sample Time	
										of	0.375	(Sec)	-
								Test Failed					
						P2770 Status is not	=	This Key On or Fault					
								Active					
						Ignition Voltage	>=	8.5996094	Volts				
						Ignition Voltage	<=	31.990234	Volts				
						Engine Speed	>=	400	RPM				
						Engine Speed is within the	~-	7300	C				
						allowable limits for	>=	5	Sec				
					Disable	MIL not Illuminated for	TCM: None						
					Conditions:	DTC's	ECM: None						
							ECIVI: NOTIE						
		Pressure Control (PC) Solenoid D	The HWIO reports a high voltage							1			One Trip
Variable Bleed Solenoid (VBS)	P2721	Control Circuit High	(open or power short) error flag	= TRUE	Boolean					>=	0.3	Fail Time (Sec)	
										out	0.075	Sample Time	
										of	0.375	(Sec)	
								Test Failed					
						P2721 Status is no	=	This Key					
								Active					
						Ignition Voltage	>=	8.5996094	Volts				
						Ignition Voltage	<=	31.990234	Volts				
	1					Engine Speed	>=	400	RPM	1			

Component/ System	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary Malfunction	Enable	Time Required	Mil Illum.
- Cyclom	0000	Decemption			Engine Speed	<= 7500 RPM		
					Engine Speed is within the	>= 5 Sec		
					allowable limits for			
				Disable	MIL not Illuminated for	TCM: None		
				Conditions	DICS:	ECM: None		
Variable Bleed Solenoid (VBS)	P2723	Pressure Control (PC) Solenoid E	Fail Case 1 Case: Steady State 1st Gea					One Trip
		Sluck off					Please See	
			Gear slip	>= 400 RPM			>= Table 5 For Neutral Timer	
							Neutral Lime (Sec)	
			Intrusive test				Gui	
			commanded 2nd gea	Dia ana mafamba				
				Table 3 in automatic construction				
			If attained Gear ≠ 2nd for Time	<pre>>= Supporting Shift Time (Sec)</pre>				
			If Above Conditions have been	Documents				
			met, Increment 1st gear fai				>= 3 1st Gear Fail	
			counte				Count	
							Or C1234 Clutch	
			and C1234 fail counte				>= 14 Fail Count	
			Fail Case 2 Case: Steady State 2nd Gea					
							Table 5 For Neutral Timer	
			Gear slip	>= 400 RPM			>= Neutral Time (Sec)	
			Interchica koot				Cal	
			commanded 3rd gea					
				Please refer to				
			If attained Gear ≠ 3rd for Time	<pre>>= Table 3 in Supporting Shift Time (Sec)</pre>				
				Documents				
			If Above Conditions have been				2nd Gear Fail	
			met, Increment 2nd gear fai				>= 3 Count	
			counte				or	
			and C1234 fail counte				>= 14 C1234 Clutch	
			Fail Case 3 Case: Steady State 3rd Gea				Fail Count	-
							Please See	
			Gear slip	>= 400 RPM			>= Table 5 For Neutral Timer	
							Cal	
			Intrusive test					
			commanded 4th gea	Please refer to				
			If other and Coost of the fact the	Table 3 in				
			ir attained Gear ≠ 4th for time	Supporting Snitt Lime (Sec)				
			If Above Conditions have been	Documents				
			met, Increment 3rd gear fai				>= 3 3rd Gear Fail	
			counte				Count	
1	1	1	1	I	I	I	Or	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Requir	ed	Mil Illum.
			and C1234 fail counter	er			>=	14	C1234 Clutch Fail Count	
			Fail Case 4 Case: Steady State 4th Gear Gear slip	ar ip >= 400 RPM			>= 1	Please See Table 5 For Neutral Time	Neutral Timer (Sec)	
			Intrusive test commanded 5th gear If attained Gear = 5th For Time If Above Conditions have been	t: ar Please refer to Table 3 in Supporting Documents				Cai		
			met, Increment 4th gear fai counter and C1234 fail counter				>=	3	4th Gear Fail Count or C1234 Clutch	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Hi Engine Speed swithin the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	= FALSE Boolean $= FALSE Boolean$ $= FALSE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$ $>= 0 RPM$ $>= 0 RPM$ $>= 36 RPM$ $>= 0.5004883 Pct$ $>= 8.5996094 Volts$ $<= 31.990234 Volts$ $>= 400 RPM$ $<= 7500 RPM$ $>= 5 Sec$ $= TRUE Boolean$ $= TRUE Boolean$ $= FALSE Boolean$ $= FALSE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$			Fail Count	
				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 Criteria	Γ	Three	shold lue	Secondary Malfunction		Enable Conditions			Ti Rea	ime wired	Mil 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) Primary Oncoming Clutch	=	TRUE	Boolean								One Trip
			Pressure Command Status Primary Offgoing Clutch Pressure Command Status	=	Clutch exhausi command	t								
			Range Shift Status	. ≠	Initial Clutch Control									
			Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below:	<=	40	RPM								
			(2-6 shifting with throttle) fail timer 1	>=	0.5 0.5	sec								
			(2-6 shiring windou throug) fail timer 1 (3-5 shifting with throttle)	>=	0.5	sec								
			fail timer 1 (3-5 shifting without throttle) fail timor 1	>=	0.5	sec								
			(4-5 shifting with throttle) fail timer 1	>=	0.5	sec								
			(4-5 shifting without throttle) fail timer 1 (4-6 shifting with throttle)	>=	0.5	sec								
			fail time 1 (4-6 shifting without throttle)	>=	0.5	sec								
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers	1							T = 2 T >=	otal Fail Tir (Fail 1 + F) See Enab imers for F Timer 1, an Reference Supporting Table 15 fo Fail Timer 2	me ail ole ail d sec e J or 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter	l í										
			2nd gear fail counter								>=	3	Fail Counte From 2nd Ge	er ear
			3rd gear fail counter								>=	3	Fail Counte From 3rd Ge	er ear
			4th gear fail counter								>=	3	Fail Counte From 4th Ge	er ear
			total fail counter								>=	5	Total Fail Counter	
							IUI Enable temperature Input Speed Sensor fault Output Speed Sensor fault	>= = =	-6.65625 FALSE FALSE	°C Boolean Boolean				

16 OBDG05 TCM Summary	/ Tables Common 6	Speed T43
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Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Description	Criteria	value	Command / Attained Coar	t dist Pooloon	Required	mum.
						– TRUE Boolean		
					output speed limit for TLIT	- 100 DDM		
					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	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,		
				Conditions:	DTC's	: P182E		
						ECM: P0101, P0102, P0103, P0106,		
						P0107, P0108, P0171, P0172, P0174, p0175, p0201, p0202, p0202, p0204		
						P0175, P0201, P0202, P0203, P0204, D0205, D0204, D0207, D0209, D0200		
						P0203, F0200, F0207, F0208, F0300, P0301 P0302 P0303 P0304 P0305		
						P0306 P0307 P0308 P0401 P042F		
Variable Blood Salapaid (VBS)	02724	Pressure Control (PC) Solenoid E	Fail Case 1 Cases Eth Case					One Trip
	P2724	Stuck On (Steady State)	Case. Sul Geal					
				Table Based				
				value Please				
			Max Delta Output Speed	>= Refer to Table				
			Hysteresis	22 in				
				supporting				
				documents Table Record				
				value Diese				
			Min Delta Output Speed	Refer to Table				
			Hysteresis	>= 23 in rpm/sec				
				supporting				
				documents				
				Table Based				
				Time Please				
			If the Above is True for Time	Refer to Table Sec				
				17 in 3000				
				supporting				
				documents				
			Intrusive test:					
			(C35R Cluich exhausted)	1 404005252				
			Gear Ratio	<= 1.404903332				
			If the above parameters are true	// 1.343017370				
							>= 1.1 Fail Timer (Sec	:)
							Fail Count in	
							>= 5 5th Gear	
							OR	1
							>= 3 Total Fail	1
			Eail Case 2 Case: 4th Case				Counts	-
1	1	1	raii Case z Case: 6th Gear	1	1	1	1	1

All and a set of the basic value Please water Please
Max Delta Output Space Refer to Table 22 n normsec 22 n normsec 23 n normsec 24 n normsec 25 n
Max Delta Olduri Speeds Hysterests Refer to Table pm/fsec supporting documents Table Based value Phases Refer to Table supporting documents Refer to Table pm/fsec supporting documents Refer to Table pm/fsec supporting documents Image to table supporting documents Image to t
Min Delta Output Speed Hysterests - 22 m Hysterests - <td< td=""></td<>
suporting Table Based Value Plase Refer to Table Refer to Table Refer to Table Sec: T7h Segreting (CB2c clutch exhause) (CB2c c
Image: Section of the section of th
Image: Sease of the sease
Min Delta Output Speed Hystersis Refer to Table profisec supporting documents 23 in profisec 23 in profisec If the Above is True Plassed Time Plassed Time Plassed If the Above is True for Time supporting documents If the Above is True for Time (CB26 clutch exhausted) If the Above is True for Time supporting documents If the Above is True for Time supporting If the Above parameters are true supporting If the Above parameters are tru
Min Della Jupper Spear Hysteresis 2 3 supporting documents Table Based The Please Refer to Table Soc 17 in Please Refer to Table Soc 17 in Please Refer to Table Soc 2 3 contis 17 in Supporting documents documents 17 in Please Refer to Table Soc 17 in Please 17 in Please
1 1
Supporting documents Refer to Table Based Trable Based Refer to Table Sace 17 in Supporting documents If the Above is True for Time = Refer to Table Sec 17 in Supporting documents intrusive test (CB26 cluich exhausted) Gear Ratio = 1.484963552 Gear Ratio = 1.484963552 Ge
Introvise last Intro
Image:
If the Above is True for Time >= Refer to Table Sec 17 in supporting documents >= Refer to Table Sec 17 in supporting documents >= Ist Sec 17 in supporting documents >= Ist Sec 184985352 Intrusive test: (B26 clutch exhausted) = 1.484985352 = Ist Sec 1.484985352 = Ist Sec 1.484985352 If the above parameters are true If the above parameters are true = 1.484985352 = = Ist Sec 1.484985352 If the above parameters are true If the above parameters are true = 1.484985352 = = Ist Sec 1.484985352 If the above parameters are true If the above parameters are true = 1.484985352 = = = Ist Sec 0R If the above parameters are true = Ist Sec 1.484985352 = = Ist Sec 0R = = = Ist Sec 0R = = = = = = = = 0R OR
If the Above is True for Time >= 17 in Sec supporting documents Intrusive test: (CB26 clutch exhausted)
Intrusive fest: Supporting documents supp
$ \left[\begin{array}{c} \begin{tabular}{c c c c c c } \hline \\ \hline $
Intrusive lest: (CB26 cluth exhaused)
Image: CB26 clutch exhausted) Gear Ratio <= 1.484985352.
Gear Ratio Gear Ratio If the above parameters are true <
$\left \begin{array}{c c c c c c c c c c c c c c c c c c c $
$\left \begin{array}{c} \text{If the above parameters are true} \\ If the above paramet$
$ \left \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ $
$\left \begin{array}{cccccccccccccccccccccccccccccccccccc$
$\left \begin{array}{c} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$
PRNDL State defaulted = FALSE Boolean IMB fault pending indication = FALSE Boolean Output speed >= 0 RPM
PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean output speed >= 0 RPM
inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean output speed >= 0 RPM
IMS fault pending indication = FALSE Boolean output speed >= 0 RPM
output speed >= 0 RPM
TPS validity flag = TRUE Boolean
HSD Enabled = TRUE Boolean
Hydraulic_system_Pressurize = TRUE Boolean
(A) Output speed enable $z = 36$ Nm
(b) Accelerator Pedal enable $>= 0.5004883$ Nm
lanition Voltage Lo >= 8.5996094 Volts
Ignition Voltage Hi <= 31.990234 Volts
Engine Speed Lo >= 400 RPM
Engine Speed Hi <= 7500 RPM
Engine Speed is within the $\geq = 5$ Sec
allowable limits for
If Attained Gear=ISLEW >= 5.0003052 Pct
if Attained Gear=1st FW
Engine Torque Enable >= 20 Nm
if Attained Gear=1st FW
Engine Torque Enable
Transmission Fluid $>= -6.65625$ °C
lemperature Input Second Server fault
Input Speed Sensor Tault = FALSE Boolean
Default Gear Ontion is not
present = TRUE

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Tir Reau	ne Jired	Mil Illum.
				C	Disable onditions:	MIL not Illuminated for DTC's:	TCM: P0716, P182E ECM: P0101, P0107, P0108 P0175, P0201 P0205, P0206 P0301, P0302 P0306, P0307	P0717, P0722, P0102, P0103, 8, P0171, P0172 , P0202, P0203 9, P0207, P0206 2, P0303, P0304 7, P0308, P0401	P0723, P0106, P0174, P0204, P0204, P0300, P0305, P0325, 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 Boolea	n					>= out	0.3 0.375	Fail Time (Sec) Sample Time	One Trip
						P2729 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	= <= >= <= >=	Test Failed This Key On or Fault Active 8.5996094 31.990234 400 7500 5	Volt Volt RPM RPM Sec	OT		(Sec)	-
				Ci	Disable onditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Variable Bleed Solenoid (VBS)	P2730	Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS)	The HWIO reports a high voltage (open or power short) error flag	= TRUE Boolea	n					>= out	0.3 0.375	Fail Time (Sec) Sample Time	One Trip
						P2730 Status is not Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for	= <= >= <= >=	Test Failed This Key On or Fault Active 8.5996094 31.990234 400 7500 5	Volt Volt RPM RPM Sec			(200)	
				C	Disable onditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			Ti Rea	ime Iuired	Mil Illum.
Variable Bleed Solenoid (VBS)	P2763	Torque Converter Clutch Pressure High	The HWIO reports a low pressure/high voltage (open or power short) error flag	=	TRUE	Boolean					>= out	4.4 5	Fail Time (Sec) Sample Time	Two Trips
							P2763 Status is not	=	Test Failed This Key On or Fault Active		ot		(Sec)	
							Ignition Vollage Ignition Vollage Engine Speed Engine Speed Engine Speed is within the	>= <= >= <=	8.5996094 31.990234 400 7500	Volt Volt RPM RPM				
							allowable limits for High Side Driver Enabled	>=	5 TRUE	Sec Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658 ECM: None	, P0659					
Variable Bleed Solenoid (VBS)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	The HWIO reports a high pressure/low voltage (ground short) error flag	=	TRUE	Boolean					>=	4.4	Fail Time (Sec)	One Trip
											out of	5	Sample Time (Sec)	
							P2764 Status is not	=	Test Failed This Key On or Fault Active					
							Ignition Voltage Ignition Voltage Engine Speed Engine Speed	>= <= >= <=	8.5996094 31.990234 400 7500	Volt Volt RPM RPM				
							Engine Speed is within the allowable limits for High Side Driver Enabled	>= =	5 TRUE	Sec Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0658 ECM: None	, P0659					
Communication	U0073	Controller Area Network Bus Communication Error	CAN Hardware Circuitry Detects a Low Voltage Error	=	TRUE	Boolean					>= Out	62	Fail counts (≈ 10 seconds) Sample Counts	One Trip
			Delay timer	>=	0.1125	Sec	Stabilization delay Ignition Voltage Ignition Voltage Power Mode	>= >= <= =	3 8.5996094 31.990234 Run	sec Volt Volt	of	70	(≈ 11 seconds)	-

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: None ECM: None		
Communication	U0100	Lost Communications with ECM (Engine Control Module)	CAN messages from ECM are not received by the TCM	t = TRUE Boolean	Stabilization delay Ignition Voltage Ignition Voltage Power Mode	>= 3 sec >= 8.5996094 Volt <= 31.990234 Volt = Run	>= 12 sec	One Trip
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: U0073 ECM: None		

Supporting Documents

<u>Table 1</u>										
	Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
	Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00 RPM
	_									
Table 2										
	Axis	-6.67	-6.66	40.00 °C	2					
	Curve	409.59	2.00	2.00 S	ec					
Table 3	_									
	Axis	-6.67	-6.66	40.00 °C	2					
	Curve	409.59	4.00	4.00 S	ec					
	_									
Table 4	_									
	Axis	-6.67	-6.66	40.00 °C	2					
	Curve	409.59	2.00	2.00 S	ec					
	_									
Table 5	_									
	Axis	-6.67	-6.66	40.00 °C	2					
	Curve	409.59	3.00	3.00 S	ec					
Table 6	_									
	Axis	-6.67	-6.66	40.00	80.00	120.00 %	2			
	Curve	409.00	3.60	1.60	1.40	1.40 S	ec			
<u>Table 7</u>		<u> </u>								
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C	2			
	Curve	409.00	3.40	1.40	1.30	1.20 S	ec			
Table 8										

16 OBDG05 2D Summary Tables TCM Common 6 Speed T43

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

Table 9

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

<u>Table 10</u>

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	3.10	1.90	1.10	0.80	0.60	Sec

<u>Table 11</u>

Axis	-40.00	-20.00	0.00	30.00	110.00	⁰С
Curve	1.80	1.20	0.60	0.40	0.30	Sec

Table 12

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	2.20	1.40	0.90	0.70	0.40	Sec

Table 13

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	2.60	1.00	0.50	0.30	0.20	Sec

Table 14

Axis	-40.00	-20.00	0.00	30.00	110.00	°C
Curve	3.00	0.90	0.50	0.30	0.20	Sec

<u>Table 15</u>

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

16 OBDG05 2D Summary Tables TCM Common 6 Speed T43

<u>Table 16</u>

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

<u>Table 17</u>

Axis	-6.67	-6.66	40.00	⁰С
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 °C
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °C

<u>Table 19</u>

Axis	-40.10	-40.00	-20.00	0.00	30.00	60.00	100.00	149.00	149.10	٥C
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	٥C

<u>Table 21</u>

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

<u>Table 22</u>

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

Table 23

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

Component/	Fault	Monitor Strategy	Malfunction		Thr	eshold	Secondary Malfunction		Enable			Tim	le irod	Mil
System	Code	The lateral accleration signal is stuck	Cinena		v	alue	Manufiction		Conditions			Kequi	lieu	Special
Transmission Control Module (TCM) Acceleration Sensor	C124F	at a low magnitude out of range because of a low circuit	Lateral accleration magnitude	>=	-3.85	g's					>=	105	seconds	No MIL
			Lateral accleration magnitude is within the range above for	>=	120	Sec					out of	120	sample	
							Lateral accleration magnitude	>= >=	-3.85 105	g's Sec				
							is within the range above for	~	Voltage					
							Sensor Type		Proportion					
									Clutch to					
							Transmission Type	=	Transmissi					
							Lateral acceleration sensor circuit low diagnostic enable	=	TRUE	Boolean				
							Battery Voltage Battery Voltage	e <= e >=	31.99902 9	Volts Volts				
							Battery voltage is within the allowable limits for	>=	0.1	Sec				
							Ignition Voltage Ignition Voltage Service Fact Learn (SEL)	<= >=	31.99902 9	Volts				
							Mode Ignition voltage and SEL	=	FALSE	Boolean				
							conditions met for	>=	0.1	Sec				
						Disable Conditions	MIL not Illuminated for DTC's	TCM: If calibr (U0073, U010	ated to illumina 0)	ate the MIL				
								ECM: None						
Transmission Control Module (TCM) Acceleration Sensor	C1250	The lateral accleration signal is stuck at a high magnitude out of range because of a high circuit	Lateral accleration magnitude	>=	3.85	g's					>=	105	seconds	Special No MIL
			Lateral accleration magnitude is within the range above for	>=	120	Sec					out of	120	sample	
							Lateral accleration magnitude Lateral accleration magnitude	>=	3.85 105	g's Sec				
							is within the range above for		Voltage Directional					
							Sensor Type	=	Proportion ate					
							Transmission Type) =	Clutch to Clutch Transmissi					
							Lateral acceleration sensor circuit high diagnostic enable	=	TRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Thr	eshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria		V	alue	Malfunction		Conditions		Required	Illum.
							Battery Voltage	<=	31.99902	Volts		
							Battery Voltage	>=	9	Volts		
							Battery voltage is within the	>=	0.1	Sec		
							allowable limits for		21 00002	Valta		
							Ignition Voltage	<=	31.99902	Volts		
							Service Fact Learn (SEL)	>=	9	VOILS		
							Service Fast Learn (SFL)	=	FALSE	Boolean		
							Innition voltage and SEI					
							conditions met for	>=	0.1	Sec		
							conditions metro					
						Disabl	e MIL not Illuminated for	TCM: If call	ibrated to illumina	ate the MIL		
						Conditions	DTC's:	(U0073, U0	100)			
								ECM: None	9			
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck	Lateral accleration magnitude	<=	3 85	a's						Special
		at a high magnitude in range			0.50	5-						No MIL
			Lateral accleration magnitude	>=	0.53	g's						
			Lateral accleration magnitude is	>=	120	Sec						
			within the range above for									_
							Lateral accleration magnitude	/=	3.85	a's		
							Lateral accleration magnitude	>=	0.53	y s n's		
							Lateral accleration magnitude	~-	0.55	93		
							is within the range above for	>=	90	Sec		
							Diagnostic shifting override					
							command	=	FALSE	Boolean		
									1st through			
							Attained Gear State	=	ist tillougii			
									our			
							Attained Gear Slip	<=	100	RPM		
									Clutch to			
							Transmission Type	=	Clutch			
									Transmissi			
							Ulah Cida Dahara 1 Or		ON	Dealara		
							High Side Driver 1 On	=	I RUE	Boolean		
							Lateral acceleration stuck in	>=	15	крп		
							range diagnostic enable	=	TRUE	Boolean		
							Battery Voltage	<=	31 999023	Volts		
							Battery Voltage	>=	9	Volts		
							Battery voltage is within the					
							allowable limits for	>=	0.1	Sec		
							Ignition Voltage	<=	31.999023	Volts		
	1						Ignition Voltage	>=	9	Volts		
							Service Fast Learn (SFL)	-	FALSE	Boolean		
	1						Mode	_	I ALUL	Doolcan		
							Ignition voltage and SFL	>=	0.1	Sec		
							conditions met for		-			
1												
1	1			1				1				1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Т	rreshold Value	Secondary Malfunction		Enable Conditions			Ti Reg	ime Iuired	Mil Illum.
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: If calit (P0716, P07 P07BF, P07 P215C, U00 ECM: None	orated to illumin 17, P0721, P07 C0, P077B, P0 73)	ate the MIL 722, P0723, 77C, P077D,				
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>= 146.2968	75 °C					>=	5	Fail Time (Sec	One Trip
			Fail Case 2 Substrate Temperature Ignition Voltage	>= 50 >= 18	°C Volts					>=	2	Fail Time (Sec)
			Note: either fail case can set the										
						Ignition Voltage Lo Ignition Voltage H Substrate Temp Lo Substrate Temp H Substrate Temp Betweer Temp Range for Time	>= i <= >= i <= >=	8.5996094 31.990234 0 170 0.25	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: 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 Speec Engine Speed Engine Speed is within the allowable limits fo Vehicle Speed is Throttle Position is Transmission Input Speed is The previous requirement has been satisfied fo The change (loop to loop) ir transmission input speed is The previous requirement has been satisfied fo Throttle Position Signal Valid Engine Torque Signal Valid Engine Torque Signal Valid		0 8191.875 400 7500 5 10 0 0 0 8191.875 0 TRUE TRUE 8.5996094 31 99034	N*m N*m RPM RPM Sec Kph Pct RPM Sec RPM/Loop Sec Boolean Boolean Volts				

Component/	Fault	Monitor Strategy	Malfunction	Th	reshold /alue	Secondary Malfunction	Enable			Time Required	Mil
Gysten	Code					P0716 Status is not	= Test Failed This Key On or Fault Active			Required	
					Disable Conditions	MIL not Illuminated for DTC's	TCM: P0717, P0752, P0973, P097 ECM: P0101, P0102, P0103, P012 P0122, P0123	4			
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1 Transmission Input Speed is	< 33	RPM				>= 4	.5 Fail Time (Sec) One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	< 1000	RPM	Controller uses a single power supply for the speed sensors	, = 1 Boo	ean			
						Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valic Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for P0717 Status is not	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	m m ean Its Its M M M ec			-
					Disable Conditions	MIL not Illuminated for DTC's	TCM: P0722, P0723 ECM: P0101, P0102, P0103				
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<= 35	RPM				>= 3.	75 Fail Time (Sec) One Trip
						P0722 Status is not	Test Failed This Key On or Fault Active				
						Transmission Input Speed Check	= TRUE Boo	ean			
						Engine Torque Check Throttle Positior Transmission Fluic	= TRUE Boo >= 8.0001831 Pr	ean ct			
						Temperature Disable this DTC if the PTO is	>= -40 %	ean			
						Engine Torque Signal Valic Throttle Position Signal Valic Ignition Voltage is Ignition Voltage is Engine Speed is	= TRUE Boo = TRUE Boo >= 8.5996094 Vo <= 31.990234 Vo >= 400 RF	ean ean Its Its M			

16 OBDG05 TCM Summary Tables Unique Passenger Car LFX FWD 6 Speed T43

Component/	Fault	Monitor Strategy	Malfunction	Tł	reshold Value	Secondary Malfunction		Enable			Tii Regi	me	Mil
Gystem	coue	Description	onena		Funde	Engine Speed is	<=	7500	RPM		neq		
						Engine Speed is within the allowable limits for	>=	5	Sec				
						Enable_Flags Defined Below	1						-
						The Engine Torque Check is TRUE, if either of the two							
						following conditions are TRUE							
						Engine Torque Condition 1		Range					
						Range Shift Status	≠	shift completed	ENUM				
						UR Transmission Range is	=	Park or					
						Engine Torque is	>=	Neutral 8191.75	N*m				
						Engine Torque is	<=	8191.75	N*m				
						Engine Torque Condition 2 Engine Torque is	>=	35	N*m				
						Engine Torque is	<=	8191.75	N*m				
						The Transmission Input Speed (TIS) Check is TRUE, if either	-						
						of the two following conditions are TRUE							
						TIS Check Condition 1 Transmission Input Speed is	>=	1000	RPM				
						Transmission Input Speed is	<=	8191	RPM				
						TIS Check Condition 2 Engine Speed without the							
						brake applied is	>=	3200	RPM				
						applied is	>=	3200	RPM PDM				
						Controller uses a single power	=	1	Boolean				
						Powertrain Brake Pedal is	=	TRUE	Boolean				
						Value							
					Disable	MIL not Illuminated for	TCM: P071	6 P0717 P0723	1				
					Conditions	: DTC's:	FCM: P010	1 P0102 P0103	P0121				
							P0122, P01	23	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed	>= 105	RPM					>=	0.2	Enable Time (Sec)	One Trip
			Output Speed Delta	<= 8191	RPM					>=	0	Enable Time (Sec)	
			Output Speed Drop	> 650	RPM					>=	1.5	Output Speed Drop Recovery	
			AND									Fail TIME (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
			Transmission Range is	Driven range						
				(R,D)						
					Range_Disable	=	FALSE	See Below		
					OR					
					Neutral_Range_Enable	=	TRUE	See Below		
					And Neutral Speed Enable	_	TDUE	See Below		
					are TRUE concurrently	=	TRUE	See below		
					Transmission Dange Enable		TDUE	See Below		
					Transmission_Input_Speed_E	_	TDUE	See Delow		
					nable	=	IRUE	See Delow		
					Range (High <-> Low) for	>=	5	Seconds		
							Test Failed			
					P0723 Status is not	=	This Key			
							On or Fault Active			
					Disable this DTC if the PTO is		7101110			
					active	=	1	Boolean		
					Ignition Voltage is	>=	8.5996094	Volts		
					Engine Speed is	<=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the allowable limits for	>=	5	Sec		
					Enable_Flags Defined Below					
					Transmission Input Speed F					
					nable is TRUE when either TIS					
					Condition 1 or TIS Condition 2 is TRUE					
					is moe.					
					TIS Condition 1 is TRUE when		0	Enable Time		
					are satsified for	>=	0	(Sec)		
					Input Speed Delta	<=	4095	RPM		
					Raw Input Speed	>=	500	KhM		
					TIS Condition 2 is TRUE when					
					ALL of the next two conditions are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used	=	TRUE	Boolean		
					Neutral_Range_Enable is					
					conditions are TRUE					
					Transmission Range is	=	Neutral	ENUM		
					Transmission Range is	=	Reverse/N eutral	FNUM		
					rianoniooion ridinge io		Transitonal	2.10.		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Reguired	Mil Illum.
.,							Neutral/Dri			
					Transmission Range is	=	ve Transitiona	ENUM		
					And when a drop occurs		I			
					Loop to Loop Drop of Transmission Output Speed is	>	650	RPM		
					Range Disable is TRUE when					
					any of the next three					
					Transmission Range is	=	Park Park/Rever	ENUM		
					Transmission Range is	=	Se Transitonal	ENUM		
					Input Clutch is not	=	ON (Fully Applied)	ENUM		
					Neutral_Speed_Enable is TRUE when All of the next	>	1.5	Seconds		-
					three conditions are satsified for			00001140		
					The loop to loop change of the	>	130	RPM		
					Transmission Output Speed is	<	20	RPM		
					The loop to loop change of the Transmission Output Speed is	>	-10	RPM		
					Transmission_Range_Enable					-
					is TRUE when one of the next six conditions is TRUE					
					Transmission Range is	=	Neutral Reverse/N	ENUM		
					Transmission Range is	=	eutral Transitiona	ENUM		
							Neutral/Dri			
					Transmission Range is	=	Transitiona I	ENUM		
							Table Based			
					Time since a driven range (R D) has been selected	>=	Please Refer to	Sec		
							Table 21 in supporting documents			
					Transmission Output Speed	>=	500	RPM		
					Output Speed when a fault	>=	500	RPM		
					พลร นะเชินเชิน					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		T	ime	Mil
System	Code	Description	Criteria	Value	Mainunction MIL not Illuminated for	Conditions TCM: P0973_P0974_P0976_P0977	┼───	Req	lairea	illum.
				Conditions	DTC's:					
						ECM: P0101, P0102, P0103, P0121,				
						P0122, P0123				
							╂───		Enoble Time	Two Trip
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	e >= 750 Kpa			>=	2	(Sec)	Two Trips
			Either Condition (A) or (B) Must be	9					(000)	
			Met	t						
				Refer to Table						
			(A) TCC Slip Error @ TCC On	>= 1 in RPM			>=	5	Fail Time (Sec)	
			Mode	e Supporting						
			(B) T.C. Slip @ Lock On Mode	$\rightarrow = 130$ RPM			>=	5	Fail Time (Sec)	
			If Above Conditions Have been					Ū	T00.01 1.07	
			Met, and Fail Timer Expired,	,			>=	2	Foil Counter	
			Increment Fail Counter	r					Fail Counter	
					TCC Mode	= On or Lock				
					Ignition Voltage Lo	>- 8 5996094 Volts				
					Ignition Voltage Hi	<pre>>= 0.3770074 Volt3 <= 31.990234 Volt3</pre>				
					Engine Speed	>= 400 RPM				
					Engine Speed	<= 7500 RPM				
					Engine Speed is within the	>= 5 Sec				
					allowable limits for	50 11				
					Engine Torque Lo	$>= 50 N^{m}$				
					Throttle Position Lo	>= 8 0001831 Pct				
					Throttle Position Hi	i <= 99.998474 Pct				
					2nd Gear Ratio Lo	>= 2.6710205 Ratio				
					2nd Gear Ratio High	<= 3.072998 Ratio				
					3rd Gear Ratio Lo	>= 1.7130127 Ratio				
					3rd Gear Ratio High	I <= 1.9709473 Ratio 1.2150425 Datio				
					4th Gear Ratio Light	>= 1.3130033 Ratio <= 1.5129395 Ratio				
					5th Gear Ratio Lo	>= 0.9300537 Ratio				
					5th Gear Ratio Hi	i <= 1.0699463 Ratio				
					6th Gear Ratio Lo	>= 0.6900635 Ratio				
					6th Gear Ratio High	<= 0.7939453 Ratio				
					Transmission Fluid	>= -6.664063 °C				
	1				Transmission Fluid		1			
	1				Temperature Hi	<= 130 °C	1			
	1				PTO Not Active	= TRUE Boolean	1			
	1				Engine Torque Signal Valid	= TRUE Boolean	1			
					Throttle Position Signal Valid	= TRUE Boolean				
	1				Dynamic Mode	e = FALSE Boolean	1			
	1					Test Failed	1			
					P0741 Status is	This Key				
					1 07 11 010103 15	On or Fault				
	1					Active	1			
	1						1			
1	1	1	1	1		1	1			

Component/	Fault	Monitor Strategy	Malfunction	Th	reshold		Secondary Malfunction		Enable			T	ime	Mil
System	Code	Description	Cinteria		Dis	sable	MIL not Illuminated for	TCM: P071	6. P0717. P0722	2. P0723.		Rec	lanea	indiri.
					Condit	ions:	DTC's:	P0742, P27	63, P2764					
								ECM: P010	01, P0102, P010	3, P0106,				
								P0107, P01 D0175_D03	108, P0171, P01	/2, P01/4, n2 D0204				
								P0175, P02 P0205 P02	201, P0202, P020 206 P0207 P020	03, P0204, N8 P0300				
								P0301, P03	802, P0303, P03	04, P0305,				
								P0306, P03	807, P0308, P04	01, P042E				
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>= -50	RPM									One Trip
			TCC Slip Speed	<= 13	RPM							2		
			If Above Conditions Have been								>=	2	Fail Time (Sec	.)
			Met. and Fail Timer Expired								>=	6	Fail Counter	
			Increment Fail Counter											
							TCC Mode	=	Off					
							Enable test if Cmnd Gear =	=	1	Boolean				
							1stFW and value true							
							= 2nd and value true	=	0	Boolean				
							Engine Speed Hi	<=	6000	RPM				
							Engine Speed Lo	>=	500	RPM				
							Vehicle Speed HI	<=	511	KPH				
							Vehicle Speed Lo	>=	1	KPH				
							Engine Torque Hi	<=	8191.875	Nm				
							Engine Torque Lo	>=	80 Noutral	Nm				
							Current Range	≁ ≠	Reverse	Range				
							Transmission Sump	,	Reverse	Runge				
							Temperature	<=	130	°С				
							Transmission Sump	>=	18	°C				
							Temperature	-	5 0000050					
							I hrottle Position Hyst High	>=	5.0003052	Pct				
							Max Vehicle Speed to Meet							
							Throttle Enable	<=	8	KPH				
						C	Once Hyst High has been met,							
							the enable will remain while	>=	2.0004272	Pct				
							Throttle Position		75	Dut				
							Disable for Throttle Position	>=	/5	PCI				
	1						value true	=	1	Boolean				
	1					1	Disable if in D1 and value true	=	1	Boolean				
						[Disable if in D2 and value true	=	1	Boolean				
						[Disable if in D3 and value true	=	1	Boolean				
							Disable if in D4 and value true	=	1	Boolean				
							Disable if in D5 and value true	=	I	Boolean				
	1						true	=	1	Boolean				
	1						Disable if in TUTD and value		1	Dooloon				
	1						true	=	I	Boolean				
	1						4 Wheel Drive Low Active	=	FALSE	Boolean				
	1					1	Uisable if Air Purge active and	=	0	Boolean				
	1						Value faise RVT Diagnostic Active	_	FAI SF	Boolean				
	1					1	Ignition Voltage	>=	8.5996094	V				
	1						Ignition Voltage	<=	31.990234	V				
1			l			1	Vehicle Speed	<=	511	KPH	l			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Γ	T Re	Time quired	Mil Illum.
					Engine Speed Engine Speed Engine Speed is within th allowable limits fo Engine Torque Signal Valid Throttle Position Signal Valid P0742 Status is	d >= 400 RPM <= 7500 RPM >= 5 Sec d = TRUE Boolean d = TRUE Boolean Test Failed This Key On or Fault Active			·	
				Disab Condition	le MIL not Illuminated fo s: 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	Commanded Gear Slip Commanded Gear Gear Ratio Gear Ratio If the above parameters are true	>= 400 RPM = 1st Lock rpm <= 1.484985352 >= 1.343017578	Ignition Voltage Lo Ignition Voltage H Engine Speed H Engine Speed Is engine Speed Is within the allowable limits fo Transmission Fluit Temperature Range Shift State Range Shift State Throttle Position Signal Valit from ECM, Engine Torque Signal Valit from ECM, High side driver is enabled High-Side Driver is Enabled Input Speed Sensor faul Output Speed Sensor faul	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	>= = >= >=	0.3 5 0 0.3 8	Fail Tmr Fail Counts Neutral Timer (Sec) Fail Timer (Sec) Counts	Two Trips

Component/	Fault	Monitor Strategy	Malfunction	Thresho	old	Secondary Malfunction		Enable		1	Tim	1e ired	Mil
Gystem	Code	Description	onena	Value		Default Gear Option is not		TDUE			nequ	licu	
						present	=	INUL					
					Disable	MIL not Illuminated for	TCM: P0716, I	P0717, P0722	, P0723,				
					Conditions:	DTC's:	P182E						
							ECM: P0101, I	P0102, P0103	, P0106,				
							P0107, P0108 P0175, P0201	, P0171, P017 , P0202, P020	2, P0174,)3, P0204,				
							P0205, P0206	, P0207, P020	08, P0300,				
							P0301, P0302 P0306 P0307	, P0303, P030 P0308 P040)4, P0305,)1 P042F				
							1 0000, 1 0007	11 0000 1 0 10					
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400 R	PM								One Trip
			Commanded Gear	= 3rd G	Gear								
			Commanded Gear has Achieved										
			1st Locked OR 1st Free-Whee OR 2nd with Mode 2 Sol	= TRUE B	oolean								
			Commanded Or										
			If the above parameters are true								Dianco Dofor		
										tr	o Table 16 ir	Neutral Timer	
										>=	Supporting	(Sec)	
			Command 4th Gear once Output								Documents		
			Shaft Speed	<= 800 R	PM								
			If Gear Ratio	>= 4.259765625									
			And Gear Raild	<= 4.708251953									
										>=	1.5	Fail Timer (Sec	:)
						Ignition Voltage Lo	>=	8 5996094	Volts	>=	5	Counts	-
						Ignition Voltage Hi	<=	31.990234	Volts				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed is within the	<=	7500	REIVI				
						allowable limits for	>=	5	Sec				
						High-Side Driver is Enabled Throttle Position Signal Valid	=	TRUE	Boolean				
						from ECM	=	TRUE	Boolean				
						Output Speed	>=	36	RPM				
						TPS	>=	0.5004883	%				
								Range					
						Range Shift State	=	Shift	ENUM				
								Completed					
						Transmission Fluid	>=	-6.65625	°C				
						Input Speed Sensor fault	=	FALSE	Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not present	=	TRUE					
1		1	1							1			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disabl Conditions	e 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	P0756	Shift Solenoid Valve B Stuck Off	Eail Case 1 Commanded Gear Gear Box Slip Intrusive Shift to 2nd Commanded Gear Previous Gear Ratio Gear Ratio If the above parameters are true	r = 1st Locked > = 400 RPM = 1st Locked Gear < = 3.015991211 = 2.728027344 Disable Conditions	Ignition Voltage Lc Ignition Voltage H Engine Speed L Engine Speed L Engine Speed Is within the allowable limits for Output Speec OR TPS Range Shift State Transmission Fluic Temperature High-Side Driver is Enablec Throttle Position Signal Valic from ECM Input Speed Sensor faul Output Speed Sensor faul Default Gear Option is no present MIL not Illuminated for DTC's	>= 8.5996094 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM >= 5 Sec >= 36 RPM >= 36 RPM >= 5 Sec >= 36 RPM >= 5 Sec >= 5 Sec >= 5 Sec = 5 Sec = 5 Sec = 5 Sec = 70004883 % = 7004883 % = 70048625 °C = 70048625 °C = 7004883625 °C = 70048625 °C = 70048625 °C = 70048625625 °C = $7004862562562562566256625666666666666666666$	Please Refer to Table 5 in Supporting Documents >= 1 sec >= 3 counts	One Trip
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val	shold lue	Secondary Malfunction		Enable Conditions			Tim Requi	ie ired	Mil Illum.
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B	Fail Case 1 Case: Steady State 3rd Gea	r										One Trip
		STUCK OTT [C35R]	Commanded Gea	[=	3rd	Gear								
			Gearbox Slip) >=	400	RPM								
												Please Refer	Neutral Timer	
											>= '	Supporting	(Sec)	
												Documents		
			Shaft Speed	; ;	800	RPM								
			If Gear Ratio) >=	1.343261719									
			And Gear Ratio	/ <=	1.484/41211									
											>=	3	Fail Timer (Sec)	
			It the above condiations are true	4							>=	3	3rd Gear Fail	
			Increment sid gear fail counte										or	
			and C35R Fail counte	r							>=	14	3-5R Clutch Fail	
			Fail Case 2 Case: Steady State 5th Gea										Counts	-
			Commanded Gea	í =	5th	Gear								
												Please Refer		
			Coorbox Slir		400	Dom						to Table 5 in	Neutral Timer	
			Gearbox Sit	>=	400	крш					>=	Supporting	(Sec)	
			heterolice Test. Openment (th. Open									Documents		
			Intrusive Test: Command our Gea											
					Please refer to Table 3 in)								
			If attained Gear=6th gear Time	: >=	supporting	Shift Time (Sec)								
			It the above condictions are true		documents								5th Coar Fail	
			Increment 5th gear fail counte	ŗ							>=	3	Counts	
													OF	
			and C35R Fail counte	i.							>=	14	3-5R Cluich Fail Counts	
							PRNDL State defaulted	=	FALSE	Boolean		-		
							INDUCT RV I IMS fault pending indication	=	FALSE FALSE	Boolean Boolean				
							TPS validity flag	=	TRUE	Boolean				
							Hydraulic System Pressurized Minimum output speed for	=	TRUE	Boolean				
							RVT	>=	36	RPM				
							A OR B		24	DDM				
							(B) Accelerator Pedal enable	>=	0.5004883	Pct				
							Common Enable Criteria		0 500 (00 4					
							Ignition Voltage Lo	>= <=	8.5996094 31 990234	Volts Volts				
							Engine Speed Lo	>=	400	RPM	1			
							Engine Speed Hi	<=	7500	RPM	1			
							allowable limits for	>=	5	Sec	1			
							Throttle Position Signal valid	=	TRUE	Boolean	1			
							HSD Enabled Transmission Fluid	=	IKUE	Roolean	1			
							Temperature	>=	-6.65625	°C	1			
	1	I	1	1			Input Speed Sensor fault	=	FALSE	Boolean	1			I

Component/	Fault	Monitor Strategy		Malfunction Criteria	Threshold	Secondary Malfunction	Enable		Ti Reg	me	Mil
Gystem	code	Description		ontena	Value	Output Speed Sensor fault	= FALSE Boolean		neq	uneu	
						Default Gear Option is not	= TRUE				
						present					
					Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,				
					Conditions:	DTC's:	P182E				
							ECM: 00101 00102 00103 00106				
							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				
							10300, 10307, 10300, 10401, 1042L				
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B	Fail Case 1	Case: Steady State 1st							One Trip
		Stuck On [C35R] (Steady State)		Attained Gear slin	>= 400 RPM						
				Attained Ocar sip	Table Based						
					Time Please						
				If the Above is True for Time	>= Refer to Table Enable Time						
					4 IN (Sec)						
					documents						
				Intrusive test:							
				(CBR1 clutch exhausted)	1.0220500/1						
				Gear Ratio	<= 1.933959901 >= 1.75						
				If the above parameters are true							
								>=	11	Fail Timer (Sec	c)
										Eail Count in	-,
								>=	2	1st Gear	
										or	
								>=	3	Total Fail	
			Fail Case 2	Case: Steady State 2nd gear						Counts	
				ousor oronay oraro zna goar	Table Based						
					value Please						
				Max Delta Output Speed	>= Refer to Table rpm/sec						
				пузіегезіз	supporting						
					documents						
					Table Based						
				Min Dolta Output Spood	value Please Refer to Table						
				Hysteresis	>= 23 in rpm/sec						
				,	supporting						
					documents						
					Time Please						
	1			Killer Alexande Trans (* 171	Refer to Table						1
	1			IT THE ADOVE IS TRUE FOR TIME	>= 17 in Sec						1
					supporting						
	1			Intructivo toet	documents						1
				(CB26 clutch exhausted)							
	1			Gear Ratio	<= 1.933959961						1
1	1			Gear Ratio	>= 1.75		I	1			1

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable		Ti	me	Mil Illum
System	Coue	Description	If the above parameters are true	Value	Manufiction	Conditions		Neq	uneu	mann.
							>=	1.1	Fall Timer (Sec)	
							>=	3	Fail Count in	
							-	5	2nd Gear	
									10 Total Fail	
							>=	3	Counts	
			Fail Case 3 Case: Steady State 4th gear						Counts	
				Table Based						
				value Please						
			Max Delta Output Speed	>= Refer to Table						
			Hysteresis	22 in						
				documents						
				Table Based						
				value Please						
			Min Delta Output Speed	Refer to Table rom/sec						
			Hysteresis	23 in						
				supporting						
				Table Based						
				Time Please						
			If the Above is True for Time	Refer to Table Sec						
			II THE ADOVE IS THE FOR THIS	>= 17 in Sec						
				supporting						
			lateral is tool.	documents						
			(C1234 clutch exhausted)							
			Gear Ratio	<= 1.050048828						
			Gear Ratio	>= 0.949951172						
			If the above parameters are true							
							>=	1.1	Fail Timer (Sec)	
									Fall Count in	
							>=	3	Ath Gear	
									or	
								2	Total Fail	
							>=	3	Counts	
			Fail Case 4 Case: Steady State 6th gear	Table David						
				Lable Based						
			Max Delta Output Speed	Refer to Table						
			Hysteresis	>= 22 in rpm/sec						
			5	supporting						
				documents						
				Table Based						
			Min Delta Output Spood	Value Please Defer to Table						
			IVIIII Della Output Speed Hystoriosis	>= 23 in rpm/sec						
			Trysteresis	supporting						
				documents						
				Table Based						
				Time Please						
			If the Above is True for Time	>= Refer to Lable Sec						
				supporting						
				documents						
	•					• · · · · · · · · · · · · · · · · · · ·				

weak here Searce (WS) Nov Prove Other (%) Sterent R Market bit (200 Market R) (200	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Value	hold Je	Secondary Malfunction	n Enable n Conditions				Req	ime juired	Mil Illum.
Normal Research (March (Marc				Intrusive test:	:					-					
Version Biologies Figure Control (C) Stered Biologies Control (C) Stered Biologies Control (C) Stered Biologies Figure				(CB26 clutch exhausted))										
weekekinews Saverau (WS) Par Par S Outro weekekinews Saverau (WS) Par Par S Outro Par S Outro weekekinews Saverau (WS) Par S				Gear Ratio) <=	1.050048828						>=	1.1	Fail Timer (Sec)	
water Beed Stated 1050 PVT Person Control (PC) Sched red 100 - - 1 - 1.1 Fail Time Sciege value Beed Stated 1050 - - 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0				Gear Ratio If the above parameters are true)))	0.949951172						>=	3	counts	
Number was and state and was an												>=	1.1	Fail Timer (Sec)	
Number of the second												>=	3	Fail Count in 6th Gear	
Vultible Bleed Solened (V65) P077 Persone defined Ble Persone defined Plees Persone												>=	3	or Total Fail Counts	
wate biest 3demod (VSS) P077 Provinc Canted (PO) Scientific (Sim) (PO) and (Sim) (Sim) (PO) (PRNDL State defaulted	=	FALSE	Boolean				
wrate Bleed Scienced (VDIS) PAT7 Parson Control (PC) Scienced (PC) Scie								INDIDIT RV I IMS fault pending indication	=	FALSE	Boolean Boolean				
writebe Bleed Solendig (VS) P37 Pressure Control (CT) Statuting III (Statuting III) - 10 Hand Mage								output speed	>=	0	RPM				
vertable Bised Solend (VRS) PUT Person Control (PC) Selend B Person Control (PC) Selen								TPS validity flag HSD Enabled	=	TRUE	Boolean Boolean				
Variable Bleed Solenaid (VSS) P077 Porty Porty Control (PC) Solenaid B Porty Porty Control (PC) Solenaid B Porty								Hydraulic_System_Pressurize	=	TRUE	Boolean				
Variable Bleed Solenoid (VBS) P077 Persup Control (PC) Solenoid B Persup Offiging Odd in 10 monoching Persop Officion Persop Pe								d A OR B							
Wariabe Bleed Solenoid (VBS) P1777 P07277								(A) Output speed enable	>=	36	Nm				
Variable Bleed Solenoid (VBS) P0777 Pressare Control (PC) Solenoid B Primary Offgoing Clutch is Cash participants Primary Offgoing Clutch is Cash participa								(B) Accelerator Pedal enable	>=	0.5004883	Nm				
Variable Bleed Salenoid (VBS) P077 Persure Control (PC) Salenoid B Permary Offgoing Cutch Is expansion of the control for Tothe Portage Parallel of the control for the control for Tothe Portage Parallel of								Ignition Voltage Lo	>=	8.5996094 31 990234	Volts				
Variable Bleed Solenoid (VBS) P077 Pessare Control (PC) Solenoid B Primary Offiging Clutch B Primary Offiging								Engine Speed Lo	>=	400	RPM				
Variable Bleed Solenoid (VBS) POT7 Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Beachange Idea 12 min. Primary Idea 12 min.								Engine Speed Hi	<=	7500	RPM				
Variable Beed Solenoid (VBS) Porsure Control (PC) Solenoid B Persaure Control (PC) Solenoid B Pere								Engine Speed is within the	>=	5	Sec				
Variable Bleed Solenoid (VBS) P0777 Pressure Control (PC) Solenoid B Primary Offgoing Clutch is exhausting (See Table 12 in Sporting Ocuments for Character) (See Table 12 in Sporting Ocuments for Sporting Ocuments for Character) (See Table 12 in Sporting Ocuments for Ch								allowable limits for if Attained Gear=1st FW							
Variable Bleed Solenoid (VBS) P0777 Pressure Control (PC) Solenoid B Primary Officing Clutch is Supporting Documents for Supporting DocuMent Supporting DocuMent Supporting DocuMent Supporting Doc								Accelerator Pedal enable	>=	5.0003052	Pct				
Variable Bleed Solenoid (VBS) P0777 Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Exhaust Delay Timesry = TRUE Boolean Control Control Points								if Attained Gear=1st FW	>=	20	Nm				
Variable Bleed Solenoid (VBS) P077 Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Cast Primary Offgoing Clutch is Cast Primary Offgoing Clutch is Cast Primary Officing Clutch is Primary Officing Clutch is Cast Primary Officing Clutch is Primary Officing P								if Attained Gear=1st FW							
Variable Bleed Solenoid (VBS) P077 Pressure Control (PC) Solenoid B Primary Offigoing Clubrity is performed in the performance of the performance								Engine Torque Enable	<=	8191.875	Nm				
Variable Bleed Solenoid (VBS) P077 Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic) Primary Officion (Casher) (Disable of the state of the st								Transmission Fluid	>=	-6 65625	°C				
Variable Bleed Solenoid (VBS) P0777 Pressure Control (PC) Solenoid B Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers) TRUE Boolean Import Speed Sensor fault = PALSE Boolean Output Speed Sensor fault = PALSE Boolean Pressure Control (PC) Solenoid B Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Exhaust Delay Timers) Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) = TRUE Boolean Import Speed Sensor fault = PALSE Boolean Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) = TRUE Boolean Import Speed Sensor fault = PALSE Boolean Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) = TRUE Boolean Import Speed Sensor fault = PALSE Boolean Pressure Control (PC) Solenoid B Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) = TRUE Boolean Import Speed Sensor fault = PALSE Boolean Pressure Control (PC) Solenoid B Primary Offgoing Clutch is B = TRUE Boolean Import Speed Sensor fault = PALSE Boolean Pressure Control (PC) Solenoid B Pressure Control (PC) Solenoid B = PALSE Boolean Import Speed Sensor fault = PALSE Boolean Pressure Control (PC) Solenoid B = PALSE Boolean Pressure Control (PC) Sol								Temperature	-	EALSE	Pooloan				
Image: Series of the series								Output Speed Sensor fault	=	FALSE	Boolean				
LineLi															
Variable Bleed Solenoid (VBS)P0777Pressure Control (PC) Solenoid B StuckOn [C3SR] (Dymanic)Primary Offgoing Clutch is exhaust Delay Timery Primary Oncoming ClutchTRUE Boolean MaximumDTC's: P182EP182E 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, P042EOne Trip P0107Variable Bleed Solenoid (VBS)P0777Pressure Control (PC) Solenoid B StuckOn [C3SR] (Dymanic)P17107, P17107, P1717, P172, P0174, P0175, P0207, P0208, P0307, P0308, P0401, P042EOne Trip Maximum							Disable	MIL not Illuminated for	TCM: P071	6, P0717, P0722	, P0723,				
Label La							Conditions:	DTC's:	P182E						
Variable Bleed Solenoid (VBS)P077Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)Primary Offgoing Clutch supporting Documents for Exhaust Delay Timers) Primary Oncoming ClutchTRUE BooleanBooleanImage: Clutter Portor, Po									ECM. D010	1 00102 00102	D0104				
LineLineLineLineLineP0175, P0201, P0202, P0203, P0204, P0205, P0200, P0205, P0200									P0107, P010	08, P0102, P0103	, P0106, 2, P0174,				
Variable Bleed Solenoid (VBS) P077 Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic) Primary Offgoing Dcutch is Exhausted (See Table 12 in Exhaust Delay Timers) Primary Oncoming Clutch TRUE Boolean P178									P0175, P02	01, P0202, P020	3, P0204,				
Variable Bleed Solenoid (VBS) P077 Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic) Primary Offgoing Documents for Exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers) TRUE Boolean Image: Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) Maximum Image: Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) Image: Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) Image: Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) Image: Primary Offgoing Clutch is Primary Offgoing Clutch is Supporting Documents for Exhaust Delay Timers) Image: Primary Offgoing Clutch is Prim									P0205, P02	06, P0207, P020	8, P0300,				
Image: A set of the set of t									P0301, P03 P0306, P03	02, P0303, P030 07, P0308, P040	14, P0305, 11, P042E				
Variable Bleed Solenoid (VBS) P077 Pressure Control (PC) Solenoid B exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Maximum															
Variable Bleed Solenoid (VBS) P0777 StuckOn [C35R] (Dymanic) SuckOn [C35R] (Dymanic) StuckOn [Pressure Control (PC) Solenoid B	Primary Offgoing Clutch is exhausted (See Table 12 in	5										One Trip
Exhaust Delay Timers) Primary Oncoming Clutch Maximum	Variable Bleed Solenoid (VBS)	P0777	StuckOn [C35R] (Dymanic)	Supporting Documents for	=	TRUE	Boolean								
Primary Oncoming Clutch Maximum				Exhaust Delay Timers))										
Processing Command Status = processing d				Primary Oncoming Clutch	1 =	Maximum									

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	shold lue	Secondary Malfunction		Enable Conditions			Time Requir	ed	Mil Illum.
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaus command	st								
			Range Shift Status	¥	Initial Clutch Control									
			Attained Gear Slip	<=	40	RPM								
			If the above conditions are true run appropriate Fail 1 Timers Below:											
			fail timer 1 (3-1 shifting with Closed Throttle) fail timer 1	>=	0.5	Fail Time (Sec)								
			(3-2 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(3-2 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			(3-4 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(3-4shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			(3-5 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(3-5 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			(5-3 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(5-3 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			(5-4 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(5-4 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			(5-6 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(5-6 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
											Tota = (F 2) S Time	I Fail Time ail 1 + Fail ee Enable		
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers								>= Tim Re Su Ta Fa	her 1, and eference upporting ble 15 for il Timer 2	Sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter											
			3rd gear fail counter								>=	3	3rd gear fail counts OR	
			5th gear fail counter								>=	5	5th gear fail counts	
			Total fail counter				THT Enable temperature		6 65405	00	>=	5	total fail counts	
							Input Speed Sensor fault	>=	-0.00025 FALSE	Boolean				

Component/	Fault	Monitor Strategy		Malfunction Criteria	Thre	shold	Secondary Malfunction		Enable			Time	e	Mil
System	Code	Description		Criteria	Va	alue	Output Speed Sensor faul	=	FALSE	Boolean		Requi	reu	mum.
							Command / Attained Gea	. ≠	1st	Boolean				
							High Side Driver ON	=	TRUE	Boolean				
							output speed limit for TUT	>=	100	RPM				
							input speed limit for TUT	>=	200	RPM				
							IMS Fault Pending	-	FALSE FALSE	Boolean				
							Service Fast Learn Mode	=	FALSE	Boolean				
							HSD Enabled	=	TRUE	Boolean				
							Default Gear Option is no	-	TDHE					
							presen	t –	INUL					
						Disable	MIL not Illuminated for	TCM: P0716	P0717 P07	2 P0723				
						Conditions:	DTC's	P182E	,10/17,10/1	2,10720,				
								ECM: P0101	, P0102, P01	03, P0106,				
								P0107, P010)8, P01/1, P0	1/2, P01/4,				
								P0175, P020)1, PU2U2, PU)6 P0207 P0	203, P0204, 208 P0300				
								P0301, P030)2. P0303. P0	304. P0305.				
								P0306, P030	07, P0308, P0	401, P042E				
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C	Fail Case 1	Case: Steady State 4th Gear										One Trip
		Stuck Off [C456] (Steady State)										Diasa Saa		
												Table 5 For	Neutral Timer	
				Gear slip	>= 400	RPM					>=	Neutral Time	(Sec)	
												Cal	. ,	
				Intrusive test:										
				commanded 5th gear										
					Please refer t	0								
				If attained Gear ≠5th for time	>= Supporting	Shift Time (Sec)								
					Documents									
				if the above conditions have been										
				met										
				Increment 4th Gear Fail Counter							>=	3	4th Gear Fail	
													OR	
													C456 Fail	
				and C456 Fail Counters							>=	14	Counts	
			Fail Case 2	Case: Steady State 5th Gear										
												Please See	New Josef Theorem	
				Gear slip	>= 400	RPM					>=	Neutral Time	Neutral Timer	
												Cal	(300)	
				Intrusive test:										
				commanded 6th gear										
					Please Refe	ſ								
				If attained Gear ≠ 6th for time	>= to Table 3 in	Shift Time (Sec)								
					Documents									
				if the above conditions have been	Documents						1			
				met							1			
				Increment 5th Gear Fail Counter							>=	3	5th Gear Fail	
				indication our ocar r al counter								5	Count	
1	1	1	I				1	1			1		OR	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Require	Mil Illum.	
			and C456 Fail Counters				>= 14	C456 Fail Counts	
			Fail Case 3 Case: Steady State 6th Gear Gear slip	>= 400 RPM			Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
			If attained Gear ≠ 5th for time if the above conditions have been met Increment 6th Gear Fail Counter and C456 Fail Counter	Please refer to Table 3 in Supporting Documents			>= 3	6th Gear Fail Count OR C456 Fail	
			and C456 Fail Counter		PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A ORB (A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Lo Engine Speed Lo Engine Speed Lo Engine Speed Li HE Engine Speed Li HSD Enabled Transmission Fluid Temperature Input Speed Sensor fault OutputSpeed Sensor fault Default Gear Option is nol present	$\begin{array}{ccccc} = & FALSE & Boolean \\ = & FALSE & Boolean \\ = & FALSE & Boolean \\ = & TRUE & Boolean \\ = & TRUE & Boolean \\ = & TRUE & Boolean \\ \end{array}$ $\begin{array}{cccccccccccccccccccccccccccccccccccc$	>= 14	Counts	
				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	Enable	Time	Mil
System	Code	Pressure Control (PC) Solenoid C	Fail Case 1	value	Manufiction	Conditions	Required	One Trip
Variable Bleed Solenoid (VBS)	P0797	Stuck On [C456] (Steady State)	Case: Steady State 1s	t				ono mp
			Attained Gear sli	o >= 400 RPM				
				Table Based				
				Time Please				
			If the Above is True for Tim	e >= 4 in (Sec)				
				supporting				
				documents				
			Intrusive tes					
			(CBR1 clutch exhausted)				
			Gear Rati	$0 \le 1.484985352$				
			If the above parameters are tru	2				
				_			1.1 E-11 Timer (Coo)	
							>= 1.1 Fail Timer (Sec)	1
							>= 2 Fail Count in	
							1st Gear	
							Total Fail	
							>= 3 Counts	
			Fail Case 2 Case Steady State 2n	Ł				
				Table Based				
			Max Delta Output Spee	Value Please				
			Hysteresi	>= 22 in rpm/sec				
				supporting				
				documents				
				Table Based				
			Min Dolta Output Spoo	value Please				
			Wiiii Deita Output Spee Hysteresi	>= 23 in rpm/sec				
				supporting				
				documents				
				Table Based				
				Time Please				
			If the Above is True for Tim	$e >= \frac{\text{Refer to Table}}{17 \text{ in}} \text{Sec}$				
				supporting				
				documents				
			Intrusive tes	4 4				
			(CB26 clutch exhausted)				
			Gear Rati	$D \le 1.484985352$				
			If the above parameters are true	2				
							>= 11 Fail Timer (Sec)	
							>= 3 Fail Count in	
							or	
							>= 3 Total fail counts	
			Fail Case 3 Case Steady State 3r	d Table David				
				Table Based				
			Max Delta Output Spee	Refer to Table				
			Hysteresi	s >= 22 in rpm/sec				
				supporting				
I			1	documents		1	1	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time		Mil	
System	Code	Description	Cinteria	Table Based	Manufiction		Conditions			Keqt	uireu	mum.
				value Please								
			Min Delta Output Speed	Refer to Table								
			Hysteresis	23 in								
				supporting								
				documents								
				Table Based								
				Time Please								
			If the Above is True for Time	e >= 17 in Sec								
				supporting								
				documents								
			Intrusive test:									
			(C35R clutch exhausted)									
			Gear Ratio	<= 1.484985352								
			Gear Ratio	>= 1.343017578								
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec))
										2	Fail Count in	
									>=	3	3rd Gear	
										OR		
									>=	3	Total Fail	
					DDNDL State defaulted		ENICE	Deeleen			Counts	-
					inhihit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurize	_	TRUE	Boolean				
					d	_	INCL	Doolcan				
					A OR B							
					(A) Output speed enable	>=	36	Nm				
					(b) ACCElerator Peual enable	>=	0.0004683	Volte				
					Ignition Voltage Lu	>= <=	31 990234	Volts				
					Enaine Speed I o	>=	400	RPM				
	1				Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the		Б	Soc				
1	1				allowable limits for	>=	0	JEL				
					if Attained Gear=1st FW	>=	5.0003052	Pct				
					Accelerator Pedal enable							
					Findine Torque Enable	>=	20	Nm				
					if Attained Gear=1st FW							
					Engine Torgue Enable	<=	8191.875	Nm				
1	1				Transmission Fluid		6 65675	°C				
1	1				Temperature	>=	-0.00025	۰L				
	1				Input Speed Sensor fault	=	FALSE	Boolean				
					Output Speed Sensor fault	=	FALSE	Boolean				
					Default Gear Option is not	=	TRUE					
1	1				present							
Component/ System	Fault	Monitor Strategy	Malfunction Criteria		Thre	shold lue	Secondary Malfunction	Enable	Time Required		Mil Illum.	
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- Oystenii	ooue	Description				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,	Roquirou			
						Conditions:	DTC's:	P182F				
								ECM: P0101, P0102, P0103, P0106,				
								P0107, P0108, P0171, P0172, P0174,				
								P0175, P0201, P0202, P0203, P0204,				
								P0205, P0206, P0207, P0208, P0300,				
								P0301, P0302, P0303, P0304, P0305,				
								P0306, P0307, P0308, P0401, P042E				
			Primary Offgoing Clutch is								One Trip	
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C	exhausted (See Table 11 in	=	TRUE	Boolean						
		Stuck On [C456] (Dynamic)	Supporting Documents for		IntoL	Boologin						
			Exhaust Delay Timers)									
			Primary Oncoming Clutch	=	Maximum							
			Pressure Command Status		pressurized							
			Primary Offgoing Clutch Pressure	_	Clutch exhaus	t						
			Command Status	-	command							
					Initial Clutch							
			Range Shift Status	≠	Control							
			Attained Gear Slip	<=	40	RPM						
			If the above conditions are true									
			increment appropriate Fail 1									
			Timers Below:									
			Tall timer 1 (4.1 chiffing with throttle)	>=	0.5	Fail Time (Sec)						
			(4-1 Shirung with through fail timer 1									
			(4-1 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			fail timer 1		0.5							
			(4-2 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			fail timer 1	>-	0.5	Fail Time (Sec)						
			(4-2 shifting without throttle)		0.5							
			fail timer 1	>=	0.5	Fail Time (Sec)						
			(4-3 shifting with throttle)			. ,						
			(A_3 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			fail timer 1									
			(5-3 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			fail timer 1		0.5							
			(5-3 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			fail timer 1	>=	0.5	Fail Time (Sec)						
			(6-2 shifting with throttle)	ľ.	0.0	1 uli 1 lillo (000)						
			tail timer 1	>=	0.5	Fail Time (Sec)						
			(6-2 shirting without throttie)									
									Total Fail Time			
									= (Fail 1 + Fail			
									2) See Enable			
			If Attained Gear Slip is Less than						Limers for Fail			
			Above Cal Increment Fail Timers						>= Timer T, and	Sec		
									Supporting			
									Table 15 for			
									Fail Timer 2			
1		1	1									

Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold	Secondary Malfunction	Enable		Tir	me	Mil
System	Code	Description	If fail timer is greater than	· · · · ·	alue	Manufiction	Conditions		Keqi	ulled	intaini.
			threshold increment corresponding gear fail counter and total fail counter								
			4th gear fail counter	-				>=	3	Fail Counter From 4th Gear	
			5th gear fail counter					>=	3	OR Fail Counter From 5th Gear	
			6th gear fail counter					>=	3	Fail Counter From 6th Gear OR	
			Total fail counter					>=	5	Total Fail Counter	
					Disable Conditions	TUT Enable temperature Input Speed Sensor faull Output Speed Sensor faull Command / Attained Gear High Side Driver ON output speed limit for TUT PRNDL state defaultec IMS Fault Pending Service Fast Learn Mode HSD Enablec MIL not Illuminated for DTC's	>= -6.65625 °C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean = TRUE Boolean = TRUE Boolean >= TRUE Boolean >= TRUE Boolean = FALSE Boolean = TRUE Boolean TCM: P0716, P0717, P0722, P0723, P0723, P0724, P0105, P0104, P0102, P0103, P0104, P0205, P0206, P0207, P0208, P0304, P0305, P0304, P0305, P0304, P0305, P0304, P0305, P0304, P0305, P0306, P0307, P0308, P0401, P0				-
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up	= 0	Boolean						Special No MIL
			Position in Range 2 Enabled Tap Up Switch Stuck in the Up	= 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	= TRUE	Boolean			>=	1	Fail Tíme (Sec)	

Component/ System	Fault Code	Monitor Strategy	Malfunction	Th	reshold Value	Secondary Malfunction		Enable Conditions			Tim Requi	e ired	Mil Illum.
Oystem	oouc	Description	Fail Case 2 Tap Up Switch Stuck in the Up) 1	Booloop			Contailorito			lioqui		
			Position in Range 1 Enabled	1 = t	Boolean								
			Tap Up Switch Stuck in the Up	. = 1	Boolean								
			Position in Range 2 Enabled	1									
			Position in Pange 3 Enabled) = 1	Boolean								
			Tap LIp Switch Stuck in the LI										
			Position in Range 4 Enabled	= 1	Boolean								
			Tap Up Switch Stuck in the Up										
			Position in Range 5 Enable	1 = 1	Boolean								
			Tap Up Switch Stuck in the Up	. 1	Boolean								
			Position in Range 6 Enabled	' ⁻ t	Dobicali								
			Tap Up Switch Stuck in the Up	0 = 0	Boolean								
			Position in Neutral Enabled	1									
			Position in Park Enabled) = 0	Boolean								
			Tap Up Switch Stuck in the Up	1									
			Position in Reverse Enabled	i = 0	Boolean								
			Tap Up Switch ON	= TRUE	Boolean								
			NOTE: Both Failcase1 and	ł						~-	600	Fail Time (Sec)	
			Failcase 2 Must Be Me	t						>=	000	Fail Tille (Sec)	
						Time Cines Lest Denge			Enchle Time				-
						Time Since Last Range	>=	1	(Sec)				
						Ignition Voltage Lo	>=	8 5996094	Volts				
						Ignition Voltage H	<=	31.990234	Volts				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed H	<=	7500	RPM				
						Engine Speed is within the	>-	5	Sec				
						allowable limits for		5	500				
								Test Failed					
						D0815 Status is	+	This Key					
						1 0015 518103 13	7	On or Fault					
								Active					
					Disable	e MIL not Illuminated for	TCM: P0816	, P0826, P182E	, P1876,				
					Conditions	: DTC's:	P1877, P191	5, P1761					
							ECM: None						
			Fail Case 1			1	LOWI. NUTR			<u> </u>			Special
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Tap Down Switch Stuck in the	= 0	Boolean								No MIL
			Down Position in Range 1 Enabled	1									
			Tap Down Switch Stuck in the	2									
			Down Position in Range 2 Enabled	= 0	Boolean								
1			Down i oskion in range z Endbled	1									1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction	Enable Conditions		Time Required		Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	0	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON	=	TRUE	Boolean			>=	1	sec	
			Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean						
			Tap Down Switch Stuck in the Down Position in Neutral Enabled Tap Down Switch Stuck in the	=	0	Boolean						
			Down Position in Park Enabled	=	0	Boolean						
			Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean						
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	=	TRUE	Boolean			>=	600	sec	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Th	reshold /alue	Secondary Malfunction		Enable Conditions			T Req	ime uired	Mil Illum.
						Time Since Last Dance			Epoblo Timo				
						Inne Since Last Range Change Ignition Voltage Lo	>= >=	1 8.5996094	(Sec) Volts				
						Ignition Voltage Hi	<=	31.990234	Volts				
						Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >=	400 7500 5 Test Failed	RPM RPM Sec				
						P0816 Status is	¥	This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0815 P1877, P191	, P0826, P182E 5, P1761	, P1876,				
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalio	= TRUE	Boolean		ECIVI. NUTIE			>=	60	Fail Time (Sec)	Special No MII
			Voidge	2		Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5 Test Failed	Volts Volts RPM RPM Sec				NOTVIL
						P0826 Status is	¥	This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P1761 ECM: None						
Acceleration Sensor Signal Message Counter Incorrect	P175F	\$1FC Rolling Count and CheckSum	Fail Case 1 CheckSum value received from EBCM does not match expected value	i = TRUE	Boolean					>=	54	Sec	Special No MIL
			Fail Case 2 Rolling count value received from EBCM does not match expected value	i = TRUE	Boolean					>=	9	Fail Counter (sliding window of 10 counts)	-
						Lateral/Longitudinal accleration serial data message State Of Health	=	TRUE	Boolean	>	54	Fail Timer (Sec)	
			P175F will report test fail when either fail case 1 or fail case 2 are mei	h e t		Engine Speed Lo	>=	400	RPM				

Component/	Fault Code	Monitor Strategy		Malfunction Criteria		Thre	shold lue	Secondary Malfunction		Enable			T	ime wired	Mil Illum.
Gystem	Code	Description		Uniona		vu		Engine Speed I Engine Speed is within th allowable limits fo	Hi <= e >= or >=	7500 5	RPM Sec Volts		noc	uncu	
							Disable Conditions	Ignition Voltag MIL not Illuminated fo	e <= r TCM: None ECM: None	31.99023	Volts				
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)		Rolling count value received from BCM does not match expected value	=	TRUE	Boolean					>=	3	Fail Counter	Special No MIL
												>	10	Sample Timer (Sec)	
								Tap Up Tap Down Messag Healt Engine Speed L Engine Speed H	e = h >= ii <=	TRUE 400 7500	Boolean RPM RPM				
								allowable limits for	or >=	5	Sec				
							Disable Conditions	MIL not Illuminated fo	TCM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1	Current range	=	Transition 1 (bit state 1110)	Range								One Trip
				Previous range	¥	CeTRGR_e_F RNDL_Drive6	Range								
				Previous range	¥	CeTRGR_e_F RNDL_Drive4	Range								
				Range Shift State	=	Range Shift Completed	ENUM								
				Absolute Attained Gear Slip Attained Gear	<= <=	50 Sixth	rpm								
				Attained Gear Throttle Position Available	>=	First TRUE									
				Throttle Position	>=	8.000183105	pct								
				Output Speed Engine Torque	>=	200 50	rpm Nm								
				Engine Torque	<=	8191.75	Nm								
				If the above conditions are met								>=	1	Fail Seconds	
				If Fail Timer has Expired then								<u> </u>	Б	Eail Counts	
			Fail Case 2	Increment Fail Counter		70	rpm					>-	5	T all Courits	-
			<u>Fall Gase Z</u>	The following PRNDL sequence	<=	70	ipin								
				events occur in this exact order:		Drive 6 (hit									
				PRNDL state	=	state 0110)	Range								
				PRNDL state = Drive 6 for	>=	1 Transition 8	Sec								
				PRNDL state	=	(bit state 0111)	Range								
				PRNDL state	=	Drive 6 (bit state 0110)	Range								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre: Va	shold lue	Secondary Malfunction		Enable Conditions			Tim Requ	ie ired	Mil Illum.
			PRNDL state Above sequencing occurs ir Neutral Idle Mode If all conditions above are me Increment delay Time	= <= =	Transition 1 (bit state 1110) 1 Inactive	Range Sec								
			If the below two conditions are me Increment Fail Time delay time Input Speec If Fail Timer has Expired ther	- - >= >=	1 400	Sec Sec					>=	3	Fail Seconds	
			Increment Fail Counter Fail Case 3 Current range		Transition 13 (bit state 0010)	Range	Previous range	¥	CeTRGR_ e_PRNDL _Drive4 CeTRGR_			2		
			Engine Torque Engine Torque	e >= e <=	-8192 8191.75	Nm Nm	Previous range IMS is 7 position configuration If the "IMS 7 Position config" = 1 then the "revious range"	≠ =	e_PRNDL _Drive1 0	Boolean				
			If the above conditions are me then, Increment Fail Time If Fail Timer has Expired ther	1			criteria above must also be satsified when the "current range" = "Transition 13"				>=	0.225	Seconds	
			Increment Fail Counter Fail Case 4 Current range		Transition 8 (bit state 0111)	Range	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8				>=	15	Fail Counts	
			Inhibit bit (see definition)	=	FALSE		Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)							
			Steady State Engine Torque Steady State Engine Torque If the above conditions are me then Increment Fail Time	e >= e <=	100 8191.75	Nm Nm					>=	0.225	Seconds	
			If the above Condtions have beer met, Increment Fail Counter								>=	15	Fail Counts	
			Fail Case 5 Throttle Position Available The following PRNDL sequence events occur in this exact order		TRUE	Boolean								
			PRNDL State	-	state 1100) Transition 11	Range								
			PRNDL State	=	(bit state 0100) Neutral (bit	Range								
			PRNDL State	=	state 0101) Transition 11 (bit state	Range								
			Above sequencing occurs in Then delay timer increments Delay time	<=	0100) 1 5	Sec								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Time Requir	e ed	Mil Illum.
			Range Shift State	Range Shift								
			Absolute Attained Gear Slip	<= 50 rpm								
			Attained Gear	<= Sixth								
			Attained Gear	>= First								
			Output Speed	>= 200 rpm								
			If the above conditions are met Increment Fail Timer						>=	20	Seconds	
			Fail Case 6	Illegal (bit	A Open Circuit Definition (flag							
			Current range	= state 0000 or 1000 or 0001)	conditions are met):							
							Transition					
			and		Current Range	≠	11 (bit state 0100)					
			A Open Circuit (See Definition)	= FALSE Boolean	or							
					Last nositive state	¥	Neutral (bit					
					Lust positive state	,	state 0101)					
					Or		Transition					
					Previous transition state	≠	8 (bit state					
					Fail case 5 delay timer	=	0	sec				
			If the above Condtions are met then, Increment Fail timer						>=	6.25	Seconds	
			Fail Case 7 Current PRNDL State	= PRNDL circuit ABCP = 1101 Range								
			and									
			Previous PRNDL state	= ABCP =1111 Range								
			Input Speed Reverse Trans Ratio	>= 150 RPM								
			Reverse Trans Ratio	>= 3.081542969 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	>=	8.5996094	Volts				
					Ignition Voltage Hi Engine Speed Lo	<= >=	31.990234 400	voits RPM				
					Engine Speed Hi	<=	7500	RPM				
					allowable limits for	>=	5	Sec				
					Engine Torque Signal Valid	=	IRUE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Γ	Three	shold	Secondary Malfunction	Enable	Time		Mil Illum
System	Coue	Description	Ginena		۷a	Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,	Nequireu		indin.
						Conditions:	DTC's:	P07C0, P07BF, P077C, P077D			
								ECM: P0101, P0102, P0103, P0106,			
								P0107, P0108, P0171, P0172, P0174,			
								P0175, P0201, P0202, P0203, P0204, D0205, D0206, D0207, D0208, D0200			
								P0301, P0302, P0303, P0304, P0305,			
								P0306, P0307, P0308, P0401, P042E			
			Primary Offgoing Clutch is	5							One Trip
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CR26] (Dynamic)	exhausted (See Lable 13 in Supporting Documents for] =	TRUE	Boolean					
		Stack On [CB20] (Dynamic)	Exhaust Delay Timers)								
			Primary Oncoming Clutch	'n	Maximum						
			Pressure Command Status	=	pressurized						
			Primary Offgoing Clutch Pressure	9	Clutch exhaus	t					
			Command Status	=	command						
					Initial Clutch						
			Range Shift Status	5 ≠	Control						
			Attained Gear Slip) <=	40	RPM					
			If above coditors are true								
			increment appropriate Fail 1	1							
			Timers Below:								
			fail timer 1		0.5	Epil Time (Sec)					
			(2-1 shifting with throttle)) >=	0.5	Fall Fille (Sec)					
			fail timer 1 (2.1 shifting without throttle)	>=	0.5	Fail Time (Sec)					
			(2-1 shining without throug) fail timer 1								
			(2-3 shifting with throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(2-3 shifting without throttle))	010	1 un 11110 (0.00)					
			(2-4 shifting with throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1		0.5						
			(2-4 shifting without throttle)) >=	0.5	Fail Time (Sec)					
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(6-4 Shirting with throttle) fail timer 1	2							
			(6-4 shifting without throttle)	>=	0.5	Fail Time (Sec)					
			fail timer 1	>=	0.5	Fail Time (Sec)					
			(6-5 shifting with throttle))	0.0						
			fail timer 1 (6-5 shifting without throttle)	>=	0.5	Fail Time (Sec)					
				1							
									Total Fail Timo		
	1			1					= (Fail 1 + Fail		
									2) See Enable		
	1		If Attained Gear Slin is Less than						Timers for Fail		
	1		Above Cal Increment Fail Timers	5					>= Timer 1, and	sec	
									Reference		
	1			1					Table 15 for		
	1			1					Fail Timer 2		
1	1	1	1	1			1		1		I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Ti Reg	ime Juired	Mil Illum.
System	Code	Description	Criteria If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 2nd gear fail counter 6th gear fail counter total fail counter	Value Disable Conditions:	TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled MIL not Illuminated for DTC's:	Conditions >= -6.65625 °C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean >= TRUE Boolean >= 100 RPM = FALSE Boolean >= 100 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TR	>= >= >=	3 3 5	Fail Counter From 2nd Gear OR Fail Counter From 6th Gear OR Total Fail Counter	
						P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip If the Above is True for Time If the Above is True for Time Intrusive test (CBR1 clutch exhausted) Gear Ratic Gear Ratic Gear Ratic If the above parameters are true Fail Case 2	>= 400 RPM Table Based Time Please Refer to Table Enable Time 4 in (Sec) supporting documents = 3.015991211 >= 2.728027344			>= >= >=	1.1 5 5	Fail Timer (Sec) Fail Count in 1st Gear or Total Fail Counts	One Trip

American American Intervenia Intervenia Not Del Dug types Provide Provide Provide Provide Provide Not Del Dug types Provide Provide Provide Provide Provide <t< th=""><th>Component/ System</th><th>Fault Code</th><th>Monitor Strategy Description</th><th>Malfunction Criteria</th><th>Threshold Value</th><th>Secondary Malfunction</th><th>Enable Conditions</th><th></th><th>Ti Rea</th><th>me uired</th><th>Mil Illum.</th></t<>	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Ti Rea	me uired	Mil Illum.
Image: Set in the set	oyotom		200011911011		Table Based						
1 100 000 0000 0000 0000 0000 0000 0000					value Please			1			
image:				Max Delta Output Speed	>= Refer to Table rpm/sec			1			
Advances advances Marine hand ust speed (by show) advances Marine hand ust speed (conserved) advances Marine hand ust speed (conserv				Trysteresis	supporting			1			
He Dela Degt Speed pystered pystered He Dela Degt Speed pystered pystered He Dela Degt Speed pystered He Dela Degt Speed pystered He Dela Degt Speed Pystered He Dela Degt Speed He Dela Degt Spe					documents			1			
Man Bada Dagat Sayae Baganting accurate Sa The Adaministic The Adamini					Table Based			1			
1 in prince 2:10 prince appending 1 in the Aboxe is Turn torm 2:86 In Table Sec. 3:86 In Table Sec. 1 in the Aboxe is Turn torm 2:86 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:86 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:86 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:82 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. 1 in the Aboxe is Turn torm 2:8 In Table Sec. 3:8 In Table Sec. <				Min Delta Output Speed	Refer to Table			1			
End Cane 2 Case Starty State of Case 10 State Action 10 State 10 State Action 20 State (Case State				Hysteresis	>= 23 in rpm/sec			1			
Image: Provide a transmitter of transmitter in the Access is Turne Provide a tra					supporting						
Image Property True Property Image Property Image Property Image Property 1000000000000000000000000000000000000					Table Based			1			
If the Above is True or Table Soc seporting supporting supporting (CSR data relaxated) : 305971711 Gene Ratio : 306 Reso Refere Table Sec : 105971711 Gene Ratio : 10597171 Mate Dela Output Speet Refere Table speet Nate Dela Output Speet : 10597171 Gene Ratio : 105971714 Gene Ratio<					Time Please			1			
Image: Second				If the Above is True for Time	>= Refer to Table Sec						
documents (CSE cutch envised CGR Ratio > 2.73697711 Gre Ratio > 2.7207344 If the above parameters are tra- referent Table Based value Please Max Delta Output Spect Hystersts CC122 Locuments Min Delta Output Spect Hystersts CC122 Locuments CC122 Loc					I / IN supporting			1			
Image: Intersection of the source of the					documents			1			
Image: Construint of the state of the s				Intrusive test:							
Image: Constraints of the above parameters are use >2.23207334 > > 1.1 Fail Time (Sec) 2 3				(C35R clutch exhausted) Gear Ratio	<- 3.015991211						
If the above parameters are tine > 1.1 Fall There (Sec) Pail Cappe 3 Caper: Steady State 4rd Geor Hystersis Table Based whate Please Pail Caper 3 Table Based whate Please Pail Caper 3 Table Based whate Please Pail Caper 3 Table Based whate Please Plea				Gear Ratio	>= 2.728027344			1			
Fail Case: Case: Stad Gear				If the above parameters are true				1			
Fail Case: 3 Case: Steady State 4rd Caar Fail Case: 3 Case: Steady State 4rd Caar Value Please Table Based: value Please Value Please Value Please Value P								>=	1.1	Fail Timer (Sec)	
Fall Case 3 Case: Steady State 4d Gear Hysteress Table Based Hysteress Table Based Value Please Hysteress Image Please Value Please Hysteress Image Please Value Please Hysteress Image Please Value Please Hysteress Image Please Value Please Val									2	Fail Count in	
$\begin{bmatrix} -\frac{1}{2} \\ -\frac{1}{2$								>=	3	3rd Gear	
Fail Case 3 Case: Steady State 4d Geat value Piasse Table Based value Piasse Table Based value Piasse Improve: 22 in Improve: 23 in Improve: 23 in Improve:										Or Total Fail	
Fail Case 3 Case: Steady State 4rd Gea Table Based Value Please Value Please Value Please Value Please 22 in rpm/sec 22 in tpm/sec 23 in visite Please 23 in supporting documents Table Based value Please 1 fbe Based value Please 28 feel to Table visiter Please Please 28 feel to Table 1 fbe Based value Please 28 feel to Table 2 fbe Based value Please 28 feel to Table 2 fbe Based value Please 28 feel to Table 1 fbe Based 17 in supporting 2 fbe Based 20 in supporting 1 fbe Based 21 in supporting 1 fbe Based 21 in supporting 2 fbe Based 20 in supporting 2 fbe Based 21 in supporting 1 fbe Based 21 in supporting 2 fbe Based 20 in supporting 2 fbe Based 21 in supporting 3 fbe Based 21 in supporting								>=	5	Counts	
Avar Delta Output Speed Hysteresis 2 2 n "provisec" Supporting documents Table Based Hysteresis 2 2 n "provisec" Supporting documents Table Based 1 ft he Above is True for Table See Refer to Tab				Fail Case 3 Case: Steady State 4rd Gear	T 11 D 1						
Max Delta Output Speed Hystereds > Refer to Table supporting documents pm/sec supporting documents Min Delta Output Speed Hystereds > Refer to Table 23 in supporting documents pm/sec 23 in supporting documents > I If the Above is True for Table Supporting documents > Refer to Table 3 is supporting documents > Refer to Table 3 is supporting documents > > I If the Above is True for Table Care Refit > Refer to Table 3 is supporting documents > > I > I					Table Based value Please						
2 2 ln 'ngrade supporting documents Table Based value Peace Refer to Table 3 2 no supporting documents Table Based 1 the Above is True for Time 2 in 'ngrade 2				Max Delta Output Speed	Refer to Table						
Supporting documents Table Based Hysteress >= Refer to Table Based Time Please Intruskve test (C1234 clutch exhausdid) Gear Ratio Gear Ratio Sec 1 the above parameters are true C1234 clutch exhausdid Gear Ratio Sec 1 the above parameters are true Supporting documents Table Based Time Please Sec Time Please Sec Sec Sec Sec Sec Sec Sec Se				Hysteresis	22 in 1011/3ec						
Image: Section of the section of th					documents			1			
Value Please Hysteresis Hysteresis Hysteresis Hithe Above is True for Time Hithe Above is T					Table Based			1			
Will Della Output Speed Hysteresis > Refer to Table supporting documents Table Based Time Please Refer to Table 0 coursents > Refer to Table 1 in > Supporting documents > 0.779052734 0 coursents > > Intrusive test (C1234 clutch exhausted) Gear Ratio > 0.779052734 0 coursents > > If the above parameters are true > 0.779052734 0 coursents > > > If the above parameters are true > 0.779052734 0 coursents > > >				Min Dolto Output Crood	value Please						
supporting documents Table Based Time Please Refer to Table Sec 17 In 7 In Supporting documents Intrusive test (C1234 clutch exhausted) Gear Ratio Gear Ratio Supporting documents Intrusive test If the above parameters are true If the above parameters are true I				Min Delta Output Speed Hysteresis	>= 23 in rpm/sec						
If the Above is True for Time >= Refer to Table Based Time Please Refer to Table Sec 17 in documents Intrusive tests <=				,	supporting			1			
If the Above is True for Time Sec 17 in supporting documents if the above parameters are true if the					documents						
Inf the Above is True for Time >= Refer to Table Sec 17 in supporting documents Intrusive test: (C1234 clutch exhausted) Gear Ratio If the above parameters are true <=					Time Please						
17 in Cod supporting documents Intrusive test: (C1234 clutch exhausted) Gear Ratio <=				If the Above is True for Time	>= Refer to Table Sec						
supporting documents (C1234 clutch exhausted) Gear Ratio If the above parameters are true If the ab					17 in						
Intrusive test: (C1234 clutch exhausted) <= 0.779052734					documents						
(C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true Fail Count in Ath Gear C1234 clutch exhausted) Sear Ratio Sear				Intrusive test:							
Gear Ratio >= 0.704956055 If the above parameters are true A Fail Count in A fail Count				(C1234 clutch exhausted) Gear Ratio	<= 0.779052734						
If the above parameters are true $>= 1.1 Fail Timer (Sec)$ $>= 3 \begin{cases} Fail Count in \\ A Gear \\ or \end{cases}$				Gear Ratio	>= 0.704956055						
>= 1.1 Fail Timer (Sec) $>= 3 Fail Count in 4th Gear or 0r or 0r or 0r 0r$				If the above parameters are true				1			
>= 3 Fail Count in 3 4th Gear or		1						>=	1.1	Fail Timer (Sec)	
4th Gear or		1						>=	3	Fail Count in	
		1							5	4th Gear or	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
									>=	5	Total Fail	
			Fail Case 4 Case: Steady State 5th Gear								Counts	-
				Table Based								
			May Dolto Output Spood	value Please								
			Max Della Output Speed Hysteresis	>= 22 in rpm/sec								
				supporting								
				documents								
				Table Based								
			Min Delta Output Speed	Refer to Table								
			Hysteresis	>= 23 in rpm/sec								
				supporting								
				Table Based								
				Time Please								
			If the Above is True for Time	>= Refer to Table Sec								
				I / IN supporting								
				documents								
			Intrusive test:									
			(C35R clutch exhausted) Gear Ratio	<= 0.779052734								
			Gear Ratio	>= 0.704956055								
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec)
									>=	3	Fail Count in 5th Gear	
											or	
									>=	5	Total Fail	
					PRNDL State defaulted	=	FALSE	Boolean			Counts	-
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					TPS validity flag	>=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurize	=	TRUE	Boolean				
					a OR B							
					(A) Output speed enable	>=	36	Nm				
					(B) Accelerator Pedal enable	>=	0.5004883	Nm				
					Ignition Voltage Lo	>= <=	0.0990094 31.990234	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW	>=	5 0003052	Pct				
					Accelerator Pedal enable	-	5.000000Z	1.00				
					Engine Torque Enable	>=	20	Nm				
					if Attained Gear=1st FW	<=	8191 875	Nm				
					Engine Torque Enable	-	0171.070					
					Temperature	>=	-6.65625	°C				
			I	I	Input Speed Sensor fault	=	FALSE	Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria		Value	Maifunction	– EALSE Boolean	Required	llium.
						Default Gear Option is not	- TALSE Booldan		
						present	= IRUE		
					Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,		
					Conditions	: DTC's:	P182E		
							FCM: P0101, P0102, P0103, P0106,		
							P0107, P0108, P0171, P0172, P0174,		
							P0175, P0201, P0202, P0203, P0204,		
							P0205, P0206, P0207, P0208, P0300, P0301 P0302 P0303 P0304 P0305		
							P0306, P0307, P0308, P0401, P042E		
		Pressure Control (PC) Solenoid F	Primary Offgoing Clutch is exhausted (See Table 10 in						One Trip
Variable Bleed Solenoid (VBS)	P2724	Stuck On (Dynamic)	Supporting Documents for	= TRI	UE Boolean				
			Exhaust Delay Timers)						
			Primary Oncoming Clutch	= Maxir	mum				
				pressu	unzeu				
			Primary Offgoing Clutch Pressure	= Clutch e	exhaust				
			Command States	Initial (Clutch				
			Range Shift Status	≠ Con	ntrol				
			Attained Gear Slip	<= 40	0 RPM				
			If the above conditions are true						
			increment appropriate Fail T Timers Below:						
			fail timer 1	. 0	F 000				
			(2-6 shifting with throttle)	>= 0.	.o sec				
			fail timer 1 (2-6 shifting without throttle)	>= 0.	.5 sec				
			fail timer 1	. 0	F				
			(3-5 shifting with throttle)	>= 0.	.o sec				
			fail timer 1 (3.5 shifting without throttle)	>= 0.	.5 sec				
			fail timer 1	0	F				
			(4-5 shifting with throttle)	>= 0.	.5 Sec				
			fail timer 1 (4.5 chiffing without throttle)	>= 0.	.5 sec				
			fail timer 1	0	F				
			(4-6 shifting with throttle)	>= 0.	.5 Sec				
			fail timer 1 (4.6 shifting without throttle)	>= 0.	.5 sec				
			(4-6 Shinting without throtte)						
								Total Fail Time	
								2) See Enable	
			If Attained Gear Slin is Less than					Timers for Fail	
			Above Cal Increment Fail Timers					>= Timer 1, and se	C
								Supporting	
								Table 15 for	
								Fail Timer 2	

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable		Ti	me	Mil
Jysten	Code	Description	If fail timer is greater than threshold increment corresponding gear fail counter and total fai counter	Value		Contritions		<u> </u>		
			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	_
				Disable Conditions:	TUT Enable temperature Input Speed Sensor faull Output Speed Sensor faull Command / Attained Geau High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaultec IMS Fault Pending Service Fast Learn Mode HSD Enablec	 >= -6.65625 °C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean ≠ 1st Boolean >= TRUE Boolean >= 200 RPM >= 200 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE Boolean = CALSE Boolean = FALSE Boolean = COULT POULT POULT POULT POULT POULT = FALSE Boolean = TRUE Boolean 				
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear	Table Based						One Trip
			Max Delta Output Speec Hysteresis	>= Refer to Table 22 in pm/sec supporting documents Table Based						
			Min Delta Output Speed Hysteresis	>= Refer to Table 23 in rpm/sec documents Table Based Time Please						
			If the Above is True for Time	>= Refer to Table 17 in Sec supporting documents						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	(Enable Conditions			Ti Rea	me uired	Mil Illum.
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 1.484985352 >= 1.343017578								
									>=	1.1	Fail Timer (Sec)	
										-	5th Gear OR Total Fail	
			Fail Case 2 Case: 6th Gear						>=	3	Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please 22 in rpm/sec supporting documents Table Based								
			Min Delta Output Speed Hysteresis	<pre>>= Refer to Table</pre>								
			If the Above is True for Time	>= Refer to Table 17 in supporting documents								
			initrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 1.484985352 >= 1.343017578								
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 6th Gear OR	
									>=	3	Total Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication output speed TPS validity flag USD Epabled	= = >= =	FALSE FALSE FALSE 0 TRUE	Boolean Boolean RPM Boolean Roolean				
					Hydraulic_System_Pressurize	=	TRUE	Boolean				
					A OR B (A) Output speed enable (B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	>= >= <= >= <=	36 0.5004883 8.5996094 31.990234 400 7500	Nm Nm Volts Volts RPM RPM				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction		Enable		Time	Mil
System	Coue	Description	Ginena	Value	Engine Speed is within the		-		Nequieu	indini.
					allowable limits for	>=	5	Sec		
					if Attained Gear=1st FW	>=	5 0003052	Det		
					Accelerator Pedal enable	>-	3.0003032	T CL		
					if Attained Gear=1st FW	>=	20	Nm		
					Engine Torque Enable					
					If Attained Gear=1st FW	<=	8191.875	Nm		
					Transmission Fluid					
					Temperature	>=	-6.65625	°C		
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not	_	TDUE			
					present	-	INUL			
				Disable	Million at Illions in a trait fam	TO14 0074	. 00747 00700	D0700		
				DISable	MIL NOT HIUMINATED FOR	TCM: P0/1	6, P0/17, P0/22	, P0723,		
				Conditions.	DIC 3.	PIOZE				
						FCM: P010	1. P0102. P0103	. P0106.		
						P0107, P01	08, P0171, P017	72, P0174,		
						P0175, P02	01, P0202, P020)3, P0204,		
						P0205, P02	06, P0207, P020	08, P0300,		
						P0301, P03	02, P0303, P030	04, P0305,		
						P0306, P03	07, P0308, P040	01, P042E		
									1	

Component/	Fault	Monitor Strategy	Malfunction	Ť	Thr	eshold	Secondary		Enable			Ti	me	Mil
System	Code	Description	Criteria		V	alue	Malfunction		Conditions			Req	uired	Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperatur	e >=	146.296875	j °C					>=	5	Fail Time (Sec)	One Trip
			Fail Case 2 Substrate Temperatur Ignition Voltag Note: either fail case can set th	e >= e >=	50 18	°C Volts					>=	2	Fail Time (Sec)	
			DT				Ignition Voltage Lo Ignition Voltage Hi Substrate Temp Lo Substrate Temp Hi Substrate Temp Between Temp Range for Time P0634 Status is	>= <= >= >= ≠	8.5996094 31.990234 0 170 0.25 Test Failed This Key On or Fault Active	Volts Volts °C °C Sec				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Mode Switch	P0714	Transmission Mode Switch & Circuit	Tow Haul Mode Switch stat	۵ –	TRUE	Boolean					>-	600	Fail Time (Sec)	Special
						Disable Conditions:	Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for MIL not Illuminated for DTC's:	>= <= >= TCM: P1762	8.5996094 31.990234 400 7500 5	Volts Volts RPM RPM Sec				No MIL
								ECIVI: NONE						
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Senso Drop	S >=	1350	RPM					>=	0.8	Fail Time (Sec)	One Trip
							Engine Torque is Engine Speed Engine Speed Engine Speed allowable limits for Vehicle Speed is Throttle Position is Transmission Input Speed is The previous requirement has been satisfied for The change (loop to loop) in transmission input speed is	>= <= >= >= >= >= >= >= <	0 8191.875 400 7500 5 10 0 0 0 0 8191.875	N*m N*m RPM RPM Sec Kph Pct RPM Sec RPM/Loop				

Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold	Secondary		Enable			Ti	me	Mil
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	<u>Fail Case 1</u> Substrate Temperature	>= 146.29687	aue 5 °C	The previous requirement has been satisfied for Throttle Position Signal Valid Engine Torque Signal Valid Ignition Voltage Ignition Voltage P0716 Status is not	>= = >= <=	0 TRUE TRUE 8.5996094 31.990234 Test Failed This Key On or Fault Active	Sec Boolean Boolean Volts Volts	>=	5	Fail Time (Sec)	One Trip
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0717, ECM: P0101, P0122, P012	P0752, P0973 P0102, P0103 3	, P0974 , P0121,				
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1 Transmission Input Speed is	5 < 33	RPM					>=	4.5	Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	0 1 < 1000	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
					Dicabla	Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for P0717 Status is not	>= <= >= <= <= >= <= >= = =	50 8191.875 16 TRUE 8.5996094 31.990234 400 7500 5 Test Failed This Key On or Fault Active	N'm N'm Boolean Volts RPM RPM Sec				
					Conditions:	MIL not illuminated for DTC's:	ECM: P0722,	P0723 P0102, P0103					
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	i <= 35	RPM					>=	3.75	Fail Time (Sec)	One Trip
						P0722 Status is not	=	Test Failed This Key On or Fault Active					
						Transmission Input Speed Check Engine Torque Check Throttle Position	= = >=	TRUE TRUE 8.0001831	Boolean Boolean Pct				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions		Required	Illum.
		Transmission Electro-Hydraulic	Fail Case 1							One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.296875 °C					>= 5 Fail Time (See	:)
		Too High			Transmission Ehrid					
					I ransmission Fluid	>=	-40	°C		
					Disable this DTC if the DTC is					
					Disable this DTC if the PTO is	=	1	Boolean		
					Engine Torque Signal Valid	_	TRUE	Roolean		
					Throttle Position Signal Valid	_	TRUE	Boolean		
					Ignition Voltage is	>=	8 5996094	Volts		
					Ignition Voltage is	<=	31,990234	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPM		
					Engine Speed is within the		F	Caa		
					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 Terrus Condition 1					
					Engine Forque Condition T		Pango			
					Dango Shift Status	4	chift	ENILIM		
					Range Shin Status	+	completed	ENUIVI		
					OR		completed			
					UI OI		Park or			
					Transmission Range is	=	Neutral			
					Engine Torque is	>=	8191.75	N*m		
					Engine Torque is	<=	8191.75	N*m		
					Engine Torque Condition 2					
					Engine Torque is	>=	35	N*m		
					Engine Torque is	<=	8191.75	N*m		
					The Terrer is in least Court					
					(TIS) Chock is TRUE if either					
					(115) CHECK IS TRUE, IL EILIEL of the two following conditions					
					or the two following conditions are TRUE					
		1			TIS Check Condition 1					1
					Transmission Input Speed is	>=	1000	RPM		
					Transmission Input Speed is	<=	8191	RPM		
		1								1
		1			TIS Check Condition 2					1
					Engine Speed without the	>=	3200	RPM		
		1			brake applied is		5200			1
					Engine Speed with the brake	>=	3200	RPM		
					applied is		0101	DDM		
		1			Engine Speed IS Controller uses a single power	<=	0141	KPIVI		1
		1			supply for the speed sensors	=	1	Boolean		1
		1			Powertrain Brake Pedal is					1
					Valid	=	TRUE	Boolean		
		1								1
		1								

Component/	Fault	Monitor Strategy	Malfunction		Thre	shold	Secondary		Enable			Tin	ne	Mil
System	Code	Description	Criteria		Va	lue	Malfunction		Conditions			Requ	ired	Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature	Fail Case 1 Substrate Temperature	>=	146.296875	°C					>=	5	Fail Time (Sec)	One Trip
		Too High				Disable	MIL not Illuminated for	TCM: P071	6 P0717 P072	3				
						Conditions:	DTC's:	1011.1071	0,10/1/,10/2	5				
								ECM: P010 P0122, P01	1, P0102, P010 23	3, P0121,				
Transmission Output Speed Sensor	P0723	Output Speed Sensor Circuit	Transmission Output Speed	>=	105	RPM					>=	0.2	Enable Time	One Trip
(1055)		Intermitient	Output Speed	<	8191	RPM					>=	0	Enable Time	
					0171						~-	0	(Sec) Output Speed	
			Output Speed Drop) >	650	RPM					>=	1.5	Drop Recovery	
			AND											
			Transmission Range is	=	Driven range (R,D)									
							Range Disable	=	FALSE	See Below				
							OR							
							Neutral_Range_Enable	=	TRUE	See Below				
							And Neutral_Speed_Enable	=	TRUE	See Below				
							are TRUE concurrently							
							Transmission_Range_Enable	=	TRUE	See Below				-
							Transmission_Input_Speed_E nable	=	TRUE	See Below				
							No Change in Transfer Case Range (High <-> Low) for	>=	5	Seconds				
									Test Failed					
							P0723 Status is not	=	This Key On or Fault					
									Active					
							Disable this DTC if the PTO is	=	1	Boolean				
							Ignition Voltage is	>=	8.5996094	Volts				
							Ignition Voltage is Engine Speed is	<= >=	31.990234 400	Volts RPM				
							Engine Speed is	<=	7500	RPM				
							allowable limits for	>=	5	Sec				
							Enable_Flags Defined Below							
							Transmission_Input_Speed_E							
							Condition 1 or TIS Condition 2							
							is TRUE:							
				1			TIS Condition 1 is TRUE when		0	Enable Time				
				1			are satsified for	>=	0	(Sec)				
				1			Input Speed Delta Raw Input Speed	<=	4095	RPM RPM				
				1			Naw input Speed		500	INF IVI				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Tim Requ	ne ired	Mil Illum.
Transmission Control Modulo (TCM)	D0424	Transmission Electro-Hydraulic	Fail Case 1 Substrate Temperature	144 204075 00						F	Fail Time (See)	One Trip
Transmission Control Module (TCM)	P0034	Too High	Substrate Temperature	>= 140.290875 °C					>=	C	Fail Time (Sec)	
		-			TIS Condition 2 is TRUE when							
					ALL of the next two conditions are satisfied							
					Input Speed	=	0	RPM				
					A Single Power Supply is used	=	TRUE	Boolean				
					Neutral_Range_Enable is							
					conditions are TRUE							
					Transmission Range is	=	Neutral	ENUM				
					Transmission Range is	=	Reverse/N eutral	FNUM				
					Tunishission Runge is		Transitonal	ENOW				
							Neutral/Dri					
					Transmission Range is	=	ve Transitiona	ENUM				
							I					
					And when a drop occurs							
					Transmission Output Speed is	>	650	RPM				
					Range Disable is TRUE when							-
					any of the next three							
					conditions are TRUE		Dark	CALLINA				
					Transmission Range is	=	Park Park/Rever	ENUW				
					Transmission Range is	=	se	ENUM				
							ON (Fully					
					Input Clutch is not	=	Applied)	ENUM				
					Neutral Speed Enable is							-
					TRUE when All of the next		15	Seconds				
					three conditions are satsified		1.5	0000003				
					Transmission Output Speed	>	130	RPM				
					The loop to loop change of the	,	20	DDM				
					Transmission Output Speed is		20					
					The loop to loop change of the		10	DDM				
					Transmission Output Speed is	>	-10	RPIVI				
					Transmission Dense Fachle							-
					iransmission_Range_Enable is TRUE when one of the next							
					six conditions is TRUE							
					Transmission Range is	=	Neutral Reverse/N	ENUM				
					Transmission Range is	=	eutral	ENUM				
					manamisaion range ia	-	Transitiona	LINOW				
							Neutral/Dri					
					Transmission Range is	=	Ve	ENUM				

Component/	Fault	Monitor Strategy	Malfunction		Thres	hold		Secondary		Enable			Т	ime	Mil
System	Code	Description	Criteria		Valu	le		Malfunction		Conditions			Req	uired	Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1 Substrate Temperature	>=	146.296875	°C						>=	5	Fail Time (Sec)	One Trip
								Time since a driven range (R,D) has been selected	>=	Table Based Time Please Refer to Table 21 in supporting documents	Sec				
								Transmission Output Speed Sensor Raw Speed Output Speed when a fault was detected	>= >=	500 500	RPM RPM				
						(Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0973 ECM: P0101 P0122, P012	3, P0974, P0976, I, P0102, P0103 23	, P0977 , P0121,				-
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met	>=	750	Кра						>=	2	Enable Time (Sec)	Two Trips
			(A) TCC Slip Error @ TCC On Mode	>=	1 in Supporting Documents	RPM						>=	5	Fail Time (Sec)	
			(B) ICC Slip @ Lock On Mode If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	>=	130	RPM						>= >=	5	Fail Time (Sec) TCC Stuck 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 Throttle Position Lo Throttle Position Hi 2nd Gear Ratio Lo 3rd Gear Ratio Lo 3rd Gear Ratio Lo 3rd Gear Ratio Lo 5th Gear Ratio Lo 5th Gear Ratio Lo 6th Gear Ratio Lo		On or Lock 8.5996094 31.990234 400 7500 5 8191.875 8.0001831 99.998474 2.6710205 3.072998 1.7130127 1.9709473 1.3150635 1.5129395 0.9300537 1.0699463 0.6900635 0.7330453	Volts Volts RPM RPM Sec N*m Pct Pct Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio Ratio				

Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold alue	Secondary Malfunction		Enable Conditions			Ti Rea	me uired	Mil Illum.
System	Coue	Transmission Electro-Hydraulic	Fail Case 1		uluc	inditation		oonations			neq		One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.296875	5 °C					>=	5	Fail Time (Sec)	one mp
						Transmission Fluid Temperature Lo Transmission Fluid Temperature Hi PTO Not Active Engine Torque Signal Valid	>= <= = =	-6.664063 130 TRUE TRUE TRUE	°C °C Boolean Boolean Boolean				
						P0741 Status is	- = 	FALSE Test Failed This Key On or Fault Active	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0742, P276:	, P0717, P0722 3, P2764	, P0723,				
							ECM: P0101 P0107, P0100 P0175, P020 P0205, P0200 P0301, P0300 P0306, P030	, P0102, P010 8, P0171, P017 1, P0202, P020 6, P0207, P020 2, P0303, P030 7, P0308, P040	3, P0106, 72, P0174, 93, P0204, 98, P0300, 94, P0305, 91, P042E				
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>= -50	RPM RPM								One Trip
			ree silp speed	<- 15						>=	2	Fail Time (Sec)	
			If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter							>=	6	Fail Counter	
						TCC Mode Enable test if Cmnd Gear = 1stFW and value true Enable test if Cmnd Gear =	= =	Off 1	Boolean				
						2nd and value true	=	0	Boolean				
						Engine Speed Hi Engine Speed Lo	<= >=	6000 500	RPM RPM				
						Vehicle Speed HI	<=	511	KPH				
						Vehicle Speed Lo Engine Torque Hi	>= <=	1 8191 875	KPH Nm				
						Engine Torque Lo	>=	80	Nm				
						Current Range	≠	Neutral	Range				
						Transmission Sump	Ŧ	Reverse	Range				
						Temperature	<=	130	°C				
						Transmission Sump Temperature	>=	18	°C				
						Throttle Position Hyst High	>=	5.0003052	Pct				
						AND Max Vehicle Speed to Meet Throttle Enable	<=	8	KPH				
						Once Hyst High has been met, the enable will remain while Throttle Position	>=	2.0004272	Pct				
						Disable for Throttle Position	>=	75	Pct				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Τ	Time	e d	Mil
System	Code	Transmission Electro Hydraulic	Criteria	value	Wanunction	Conditions	──	Require	eu	Ono Trip
Transmission Control Modulo (TCM)	D0624	Control Modulo Internal Tomporature	<u>Fall Case I</u> Substrate Tomporature	> 146 206975 °C				Б	Eail Time (Sec)	One mp
	F 0034	Too High	Substrate remperature	>= 140.290875 C			>=	0	raii fille (Sec)	
		Too High			Disable if PTO active and	4				
					value true	= 1 Boolean				
					Disable if in D1 and value true	e = 1 Boolean				
					Disable if in D2 and value true	e = 1 Boolean				
					Disable if in D3 and value true	e = 1 Boolean				
					Disable if in D4 and value true	e = 1 Boolean				
					Disable if in D5 and value true	e = 1 Boolean				
					Disable if in MUMD and value	e				
					true	e = 1 Boolean				
					Disable if in TUTD and value	e				
					true	e 1 Boolean				
					4 Wheel Drive Low Active	e = FALSE Boolean				
					Disable if Air Purge active and	d a a a				
					value false	e 0 Boolean				
					RVT Diagnostic Active	e = FALSE Boolean				
					Ignition Voltage	e >= 8.5996094 V				
					Ignition Voltage	e <= 31.990234 V				
					Vehicle Speed	d <= 511 KPH				
					Engine Speed	d >= 400 RPM				
					Engine Speed	d <= 7500 RPM				
					Engine Speed is within the					
					allowable limits fo	r 5 5 5ec				
					Engine Torque Signal Valio	d = TRUE Boolean				
					Throttle Position Signal Valid	d = TRUE Boolean				
						Test Failed				
						This Key				
					P0742 Status is	s ≠ On or Fault				
						Active				
						16470				
				Disa	ble MIL not Illuminated fo	r TCM: P0/16, P0/17, P0/22, P0/23,				
				Conditio	ns: DIC's	:: P0/41, P2/63, P2/64				
						FOM 00101 00102 00102 0010/				
						ECM: P0101, P0102, P0103, P0106,				
						P0107, P0108, P0171, P0172, P0174,				
						P0175, P0201, P0202, P0203, P0204,				
						P0205, P0206, P0207, P0208, P0300,				
						P0301, P0302, P0303, P0304, P0303, P0306, P0307, P0308, P0401, P042F				
						1 0300, 1 0307, 1 0300, 1 0401, 1 042E				
										Two Trins
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400 RPM			1			
1	1		Commanded Gear	= 1st Lock rom			1			
			Gear Ratio	<= 1.484985352			>=	0.3	Fail Tmr	
			Gear Ratio	>= 1.343017578			=	5	Fail Counts	
			If the above parameters are true							
							4	0	Neutral Timer	
							Ŧ	0	(Sec)	
								0.2	Fail Timor (Saa)	
							>=	0.5	raii filliei (Sec)	
							>=	8	Counts	
					Ignition Voltage Lo	D >= 8.5996094 Volts				
	1				Ignition Voltage H	li <= 31.990234 Volts	1			
	1				Engine Speed Lo	0 >= 400 RPM	1			
	1	1			Engine Speed H	ii <= 7500 RPM	1			

Component/	Fault	Monitor Strategy	Malfunction	Three	shold	Secondary Malfunction	Enable Conditions			Time	ed	Mil	
System	Code	Transmission Electro-Hydraulic	Fail Case 1	va	lue	Manufiction		Conditions			Nequi	eu	One Trin
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146 296875	°C					>=	5	Fail Time (Sec)	One mp
	1 000 1	Too High		110.270070	0					-	0		
						Engine Speed is within the		F	C				
						allowable limits for	>=	5	Sec				
						Transmission Fluid	<u> </u>	6 65605	°C				
						Temperature	>=	-0.00020	·C				
								Range					
						Range Shift State	=	Shift	FNUM				
						rtange enint etate		Completed	Litoin				
						TDC		0 5004002	0/				
							>=	0.0004665	70				
						Output Speed	>=	36	RPM				
						Throttle Position Signal Valid	~=	50					
						from ECM	=	TRUE	Boolean				
						Engine Torque Signal Valid							
						from ECM, High side driver is	=	TRUE	Boolean				
						enabled							
						High-Side Driver is Enabled	=	TRUE	Boolean				
						Input Speed Sensor fault	=	FALSE	Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not	=	TRUE					
						present							
					Disable	MIL not Illuminated for	TCM: P0716	P0717 P0722	P0723				
					Conditions:	DTC's:	P182F	,10717,10722	10120				
							ECM: P0101	, P0102, P0103	, P0106,				
							P0107, P010	8, P0171, P017	2, P0174,				
							P0175, P020	1, P0202, P020	03, P0204,				
							P0205, P020	6, P0207, P020	08, P0300,				
							P0301, P030	12, P0303, P030	14, P0305,				
							P0306, P030	17, PU308, PU4U	JT, P042E				
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400	RPM								One Trin
wode 2 wamplex valve	10752		Gear Box Silp	>= 400									One mp
			Commanded Gear	= 3rd	Gear								
			Commanded Gear has Achieved										
			1st Locked OR 1st Free-Wheel	TDUE	Dooloon								
			OR 2nd with Mode 2 Sol.	= IKUE	DUUIEdI I								
			Commanded On										
			If the above parameters are true										
										Ple	ease Refer		
										>= 10	Table 16 In	Neutral Timer	
1	1									2	upput ling	(Sec)	
			Command 4th Gear once Output							D	Juments		
			Shaft Speed	<= 800	RPM								
1	1		If Gear Ratio	>= 4.259765625									
			And Gear Ratio	<= 4.708251953									
										>-	15	Fail Timor (Soc)	
										/=	1.J	i all filler (Sec)	
						Level March Mark		0.500/001	\ / - lk -	>=	5	Counts	
						Ignition Voltage Lo	>= <=	8.5996094 31.990234	Volts				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	e >= 146.296875 °C			>= 5 Fail Time (Sec)	One Thp
		i co rigii			Engine Speed Lo Engine Speed H	D >= 400 RPM i <= 7500 RPM		
					Engine Speed is within the	>= 5 Sec		
					allowable limits fo High-Side Driver is Enabled	r d = TRUE Boolean		
					Throttle Position Signal Valio	= TRUE Boolean		
					Trom ECN Output Speed	d >= 36 RPM		
					OF	R S >= 0.5004883 %		
					Range Shift State	Range = Shift ENUM Completed		
					Transmission Fluid	>= -6.65625 °C		
					Input Speed Sensor faul	t = FALSE Boolean		
					Output Speed Sensor faul Default Gear Option is no	t = FALSE Boolean		
					presen	t = TRUE		
				Disabl Conditions	e MIL not Illuminated fo :: DTC's	r TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204		
						P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,		
						P0306, P0307, P0308, P0401, P042E		
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gear	r = 1st Locked			Diago Dofor	One Trip
			Gear Box Slip	o >= 400 RPM			>= to Table 5 in Neutral Timer >= Supporting (Sec)	
							Documents	
			Intrusive Shift to 2nd Commanded Gear Previous	s = 1st Locked Gear				
			Gear Ratio	0 <= 3.015991211				
			If the above parameters are true	2) >= 2.728027344				
							>= 1 Sec	
					Ignition Voltage Lo	o >= 8.5996094 Volts		
					Ignition Voltage H Engine Speed Lo	<pre>1 <= 31.990234 Volts >= 400 RPM</pre>		
					Engine Speed H	i <= 7500 RPM		
					allowable limits fo	r >= 5 Sec		
					Output Speed	d >= 36 RPM		
					TPS	>= 0.5004883 %		

Component/	Fault	Monitor Strategy	Malfunction		Three	shold		Secondary Malfunction		Enable			Tim	e	Mil
System	Code	Transmission Electro Hydraulic	Criteria Fail Caso 1		Va	lue		Manufiction		Conditions			Requi	eu	One Trin
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperat	ne >=	146.296875	°C						>=	5	Fail Time (Sec)	One mp
								Range Shift State Transmission Fluid Temperature High-Side Driver is Enabled Throttle Position Signal Valid from ECM Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present		Range Shift Completed -6.65625 TRUE TRUE FALSE FALSE TRUE	ENUM °C Boolean Boolean Boolean				
						Co	Disable onditions:	MIL not Illuminated for DTC's:	TCM: P071 P182E	6, P0717, P072	2, P0723,				
									ECM: P010 P0107, P01 P0175, P02 P0205, P02 P0301, P03 P0306, P03	1, P0102, P0103 108, P0171, P01 201, P0202, P02 206, P0207, P02 302, P0303, P03 307, P0308, P04	3, P0106, 72, P0174, 03, P0204, 08, P0300, 04, P0305, 01, P042E				
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd G	ear											One Trip
			Commanded G Gearbox S	ear = Slip >=	3rd 400	Gear RPM						>= ^t	Please Refer o Table 16 in Supporting Documents	Neutral Timer (Sec)	
			Command 4th Gear once Out Shaft Spo If Gear R: And Gear R:	ed <= tio >= tio <=	800 1.343261719 1.484741211	RPM									
			It the above condiations are tr	Je, ter								>=	3 3	Fail Timer (Sec) 3rd Gear Fail	
			and C35R Fail cour	ter								>=	14	or 3-5R Clutch Fail Counts	
			Fail Case 2 Case: Steady State 5th G Commanded G	ear ear =	5th	Gear									
			Gearbox :	slip >=	400	Rpm						>=	Please Refer to Table 5 in Supporting Documents	Neutral Timer (Sec)	
			Intrusive Test: Command 6th G	ear											

16 OBDG05 TCM S	Summary Tables Ur	nique LLT FWD 6 Speed	T43
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Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		Ti	me	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions		Req	uired	ilium.
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Fail Case T Substrate Temperature	e >= 146.296875 °C			>=	5	Fail Time (Sec)	One Trip
		roo ingn	If attained Gear=6th gear Time	Please refer to Table 3 in supporting documents						
			It the above condiations are true, Increment 5th gear fail counter				>=	3	5th Gear Fail Counts or	
			and C35R Fail counter				>=	14	3-5R Clutch Fail Counts	
					PRNDL State defaulted	I = FALSE Boolean				
					inhibit RVT	= FALSE Boolean				
					IMS fault pending indication	n = FALSE Boolean				
					IPS validity flag	= IRUE Boolean				
					Minimum output speed for					
					RVT	>= 36 RPM				
					A OR E	3				
					(A) Output speed enable	e >= 36 RPM				
					(B) Accelerator Pedal enable	e >= 0.5004883 Pct				
					Common Enable Criteria	1				
					Ignition Voltage Lo	>= 8.5996094 Volts				
					Ignition Voltage H	I <= 31.990234 VOIIS				
					Engine Speed E	i <= 7500 RPM				
					Engine Speed is within the					
					allowable limits for	>= 5 Sec				
					Throttle Position Signal valid	i = TRUE Boolean				
					HSD Enabled	= TRUE Boolean				
						>= -6.65625 °C				
					Innut Sneed Sensor fault	= FALSE Boolean				
					Output Speed Sensor fault	= FALSE Boolean				
					Default Gear Option is not	t TDUE				
					present	t = IRUE				
				Disabl Conditions	e MIL not Illuminated for s: 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)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35B] (Steady State)	Fail Case 1 Case: Steady State 1st	t	1		1			One Trip
			Attained Gear slip	>= 400 RPM Table Based						
				Lime Please Refer to Table Enable Time						
			If the Above is True for Time	e >= 4 in (Sec)						
				supporting						
		1		aocuments	1	1	1			ı I

Component/	Fault	Monitor Strategy	Ι	Malfunction	Threshold	Secondary	Enable		т	ime	Mil
System	Code	Description	Fail Case 1	Criteria	Value	Maifunction	Conditions		Red	quired	IIIUM.
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature Too High	Fail Case T	Substrate Temperature	>= 146.296875 °C			>=	5	Fail Time (Sec)	One mp
				Intrusive test: (CBR1 clutch exhausted)							
				Gear Ratio Gear Ratio	<= 1.933959961 >= 1.75						
				If the above parameters are true				>-	11	Fail Timer (Sec)	
								/-	0	Fail Count in	
								>=	2	1st Gear or	
			Fail Case 2	Caso: Stoady State and goar				>=	3	Counts	-
			<u>Fall Case 2</u>	Case. Steady State 2nd year	Table Based						
				Max Delta Output Speed	<pre>value Please Refer to Table rpm/sec</pre>						
				Hysteresis	22 in supporting						
					documents Table Based						
				Min Delta Output Speed	value Please Refer to Table						
				Hysteresis	23 in supporting						
					documents Table Based						
					Time Please Refer to Table						
				If the Above is True for Time	>= 17 in Sec supporting						
				Intrusive test:	documents						
				(CB26 clutch exhausted) Gear Ratio	<= 1.933959961						
				Gear Ratio	>= 1.75						
				·				>=	1.1	Fail Timer (Sec)	
								>=	3	Fail Count in 2nd Gear	
										Or Total Fail	
			Fail Caso 3	Caso: Stoady State Ath goar				>=	3	Counts	
				Case. Steady State 4th year	Table Based						
				Max Delta Output Speed	<pre>>= Refer to Table >= 22 in rpm/sec</pre>						
				nysielesis	supporting						
					Table Based						
				Min Delta Output Speed	<pre>value Please Refer to Table >= rpm/sec</pre>						
				Hysteresis	23 in supporting						
1	I	I	I		documents		I	I			I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		۲ Re	Time quired	Mil Illum.
		Transmission Electro-Hydraulic	Fail Case 1				<u> </u>			One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	e >= 146.296875 °C			>=	5	Fail Time (Sec)	
		TOO HIGH		Table Based						
				Time Please						
			If the Above is True for Time	Refer to Table Soc						
				17 in 3ec						
				supporting						
			Intrusivo tost	documents .						
			(C1234 clutch exhausted							
			Gear Ratio	<= 1.050048828						
			Gear Ratio	0 >= 0.949951172						
			If the above parameters are true	ò						
							>=	1.1	Fail Timer (Sec)	
								2	Fail Count in	
							>=	3	4th Gear	
									Or Total Call	
							>=	3	Counts	
			Fail Case 4 Case: Steady State 6th gea	r						-
				Table Based						
			Max Delta Output Speed	Value Please Defer to Table						
			Hysteresis	>= 22 in rpm/sec						
				supporting						
				documents						
				Table Based						
			Min Delta Output Speer	Value Please Refer to Table						
			Hysteresis	>= 23 in rpm/sec						
				supporting						
				documents						
				Table Based						
				Refer to Table						
			If the Above is True for Time	$e >= \frac{17 \text{ in }}{17 \text{ in }}$ Sec						
				supporting						
				documents						
			Intrusive test							
			(CB20 Cluich exhausieu							
			Gear Ratio	0 <= 1.050048828			>=	1.1	Fail Timer (Sec)	
			Gear Ratio	o >= 0.949951172			>=	3	counts	
			If the above parameters are true	<u>þ</u>						
							>=	1.1	Fail Timer (Sec)	
								2	Fail Count in	
							>=	3	6th Gear	
									Or Total Fail	
							>=	3	Counts	
					PRNDL State defaulted	= FALSE Boolean	1		Joano	1
					inhibit RVT	= FALSE Boolean				
					IMS fault pending indication	= FALSE Boolean				
					output speed TPS validity flag	>= U KPM = TRUE Boolean				
					HSD Enabled	= TRUE Boolean				

Component/	Fault	Monitor Strategy	Malfunction		Thres	shold	Secondary Malfunction		Enable			Time	d	Mil
System	Code	Transmission Electro-Hydraulic	Eail Case 1	-	var	ue	Mananotion		Conditions			Require	iu -	One Trin
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>=	146.296875	°C					>=	5	Fail Time (Sec)	one mp
		Too High					Hydraulic System Pressurize							
							d	=	TRUE	Boolean				
							A OR B							
							(A) Output speed enable	>=	36	Nm				
							(B) Accelerator Pedal enable	>=	0.5004883	Nm				
							Ignition Voltage Lo	>=	8.5996094	Volts				
							Engine Speed Lo	>=	21.990234 200	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the		c.	See				
							allowable limits for	>=	5	Sec				
							if Attained Gear=1st FW	>=	5.0003052	Pct				
							Accelerator Pedal enable							
							Findine Torque Fnable	>=	20	Nm				
							if Attained Gear=1st FW							
							Engine Torque Enable	<=	8191.875	Nm				
							Transmission Fluid	>=	-6 65625	°C				
							Temperature		-0.03023					
							Input Speed Sensor fault	=	FALSE	Boolean				
							Output Speed Sensor Tault	=	FALSE	Booleau				
						Disable	MIL not Illuminated for	TCM: P0716	5, P0717, P0722	, P0723,				
						Conditions:	DTC's:	P182E						
								ECM: D0101	1 D0102 D0103	D0106				
								P0107, P010	08. P0171. P017	72. P0174.				
								P0175, P020	01, P0202, P020	03, P0204,				
								P0205, P020	06, P0207, P020	08, P0300,				
								P0301, P030	02, P0303, P030	04, P0305,				
								P0306, P030	07, P0308, P040	01, P042E				
			Primary Offgoing Clutch is											One Trip
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B	exhausted (See Table 12 in	=	TRUF	Boolean								
		StuckOn [C35R] (Dymanic)	Supporting Documents for											
			Exhaust Delay Timers)		Maximum									
			Pressure Command Status	=	pressurized									
			Drimony Offgoing Clutch Procesure		Clutch oxhouct									
			Command Status	=	command	L								
			Range Shift Status	¥	Initial Clutch									
			Attained Gear Slin	<=	40	RPM								
1				l	.0									
1			If the above conditions are true run											
1			appropriate Fail 1 Timers Below:											
			foll times 1											
			Tall timer 1 (3-1 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
1			fail timer 1		0 -	E 11 TH (0.)								
			(3-2 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1	>=	0.5	Fail Time (Sec)								
1		1	(3-2 shifting with Closed Throttle)	Ľ –	0.0		1				1			

Component/	Fault	Monitor Strategy	Malfunction		Thr	reshold	Secondary		Enable			Tim	ie	Mil
System	Code	Description	Criteria		v	/alue	Malfunction		Conditions			Requi	ired	Illum.
		Transmission Electro-Hydraulic	Fail Case 1											One Tri
ransmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>=	146.29687	5 °C					>=	5	Fail Time (Sec)	
		Too High												
		5	fail timer 1											
			(3-4 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1											
			(3-4shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1											
			(3-5 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(o o shirting with rhiotic) fail timer 1											
			(3-5 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1											
			(5-3 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1											
			(5-3 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1											
			(5-4 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1											
			(5-4 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1											
			(5-6 shifting with Throttle)	>=	0.5	Fail Time (Sec)								
			(3-0 shinting with Throtice) fail timer 1											
			(5-6 shifting with Closed Throttle)	>=	0.5	Fail Time (Sec)								
											То	utal Fail Time	e	
											=	(Fail 1 + Fai	il	
											2)	, See Enable	9	
			If Attained Gear Slin is Less than								Ti	mers for Fai	1	
			Above Cal Increment Fail Timers								>= T	imer 1, and	sec	
			Above carincrement rair rimers									Reference		
												Supporting		
											Т	ïable 15 for		
											F	Fail Timer 2		
			If fail timer is greater than											
			threshold increment corresponding											
			intestiona increment corresponding											
			year fair counter and total fair											
			counter										2rd goor foil	
			3rd gear fail counter								>=	3	Siù year ian	
													COUNTS	
													UK 5th goar fail	1
			5th gear fail counter								>=	5	our gear rall	1
			Total fail countor								>-	5	total fail counts	1
							TLIT Enable temperature	~-	-6 65625	۰۲	>=	- U	ioiai iali coufils	1
							Input Speed Sensor fault	=	FAI SF	Boolean				1
							Output Speed Sensor fault	_	FALSE	Boolean				
							Command / Attained Gear	- ≠	1st	Boolean				
							High Side Driver ON	=	TRUE	Boolean				1
							output speed limit for TUT	>=	100	RPM				1
							input speed limit for TUT	>=	200	RPM				
							PRNDL state defaulted	=	FALSE	Boolean				
							IMS Fault Pending	=	FALSE	Boolean				
							Service Fast Learn Mode	=	FALSE	Boolean				1
							HSD Enabled	=	TRUE	Boolean				1
							Default Gear Option is not							1
							present	=	TRUE					1
							F. 55011							1
														1

Component/	Fault	Monitor Strategy		Malfunction		Thresh	old	Secondary Malfunction	Enable		Time	e ed	Mil
System	Code	Transmission Electro Hydraulic	Eail Caso 1	Criteria		value	,	Manufiction	Conditions		Requi	eu	Ono Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	rail Case I	Substrate Temperature	>= 14	۰¢ 46.296875	С			>=	5	Fail Time (Sec)	One mp
		i oo nigii					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)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1	Case: Steady State 4th Gear									One Trip
				Gear slip	>=	400 R	RPM			>=	Please See Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
				Intrusive test: commanded 5th gear	Plea	ase refer to					our		
				If attained Gear ≠5th for time	>= T Su Do	able 3 in upporting ocuments	shift Time (Sec)						
				if the above conditions have been met									
				Increment 4th Gear Fail Counter						>=	3	4th Gear Fail Count OR	
				and C456 Fail Counters						>=	14	C456 Fail Counts	_
			Fail Case 2	Case: Steady State 5th Gear							Please See		
				Gear slip	>=	400 R	RPM			>=	Table 5 For Neutral Time Cal	Neutral Timer (Sec)	
				Intrusive test: commanded 6th gear	Dia	Dago Dafor							
				If attained Gear \neq 6th for time	>= to St	Table 3 in upporting	hift Time (Sec)						
				if the above conditions have been met		ocuments							
				Increment 5th Gear Fail Counter						>=	3	5th Gear Fail Count OR	
				and C456 Fail Counters						>=	14	C456 Fail Counts	
			Fail Case 3	Case: Steady State 6th Gear							Please See	Neutral Tire	
				Gear slip	>=	400 R	RPM			>=	Neutral Time Cal	(Sec)	
				Intrusive test: commanded 5th gear									

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable Conditions	Time	ed	Mil Illum.
System	Code	Transmission Electro-Hydraulic	Fail Case 1	value	manufiction	conditions	Kequire	<u>u</u>	One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	e >= 146.296875 °C			>= 5 F	Fail Time (Sec)	
		loo ngn	If attained Gear \neq 5th for time	e >= Please refer to Table 3 in Supporting Documents					
			if the above conditions have been	n					
			met Increment 6th Gear Fail Counter and C456 Fail Counter	21 27 27			>= 3	6th Gear Fail Count OR	
			and C456 Fail Counter	۲			>= 14	C456 Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Lo Ignition Voltage Lo Engine Speed Speed I HE Digues Speed Lo Engine Speed Speed I HE Speed Sensor Fluid Duput Speed Sensor fault Default Gear Option is not present	= FALSE Boolean $= FALSE Boolean$ $= FALSE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$ $>= 36 RPM$ $>= 0.5004883 Pct$ $>= 0.5004883 Pct$ $>= 8.5996094 Volts$ $<= 31.990234 Volts$ $>= 400 RPM$ $<= 7500 RPM$ $>= 5 Sec$ $= TRUE Boolean$ $= TRUE Boolean$ $= FALSE Boolean$ $= FALSE Boolean$ $= TRUE$			
				Disable Conditions	e MIL not Illuminated for : DTC's:	r 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)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1 Case: Steady State 1st	st					One Trip
		Sider on [0430] (Steady Sidle)	Attained Gear slip	p >= 400 RPM					

Component/	Fault	Monitor Strategy		Malfunction	Threshold	Secondary	Enable	Time		ime	Mil
System	Code	Description	E-11 O 1	Criteria	Value	Mairunction	Conditions		Req	uired	ilium.
Transmission Control Madula (TCM)	D0/24	Transmission Electro-Hydraulic	Fall Case T	Cubatrata Tamparatura	14/ 20/075 00				F		One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature		Substrate Temperature	>= 146.296875 °C			>=	5	Fall Time (Sec)	
					Table Based						
					Time Diago						
					Pofor to Table Enable Time						
				If the Above is True for Time	>= (in (Soc)						
					supporting						
					documents						
				Intrusive test:	documents						
				(CBR1 clutch exhausted)							
				Gear Ratio	<= 1.484985352						
				Gear Ratio	>= 1.343017578						
				If the above parameters are true							
									1 1		
								>=	1.1	Fail Timer (Sec)	
									2	Fail Count in	
								>=	Z	1st Gear	
										or	
								>-	3	Total Fail	
								/-	5	Counts	
			Fail Case 2	Case Steady State 2nd							
					Table Based						
					value Please						
				Max Delta Output Speed	>= Refer to Table rpm/sec						
				Hysteresis	22 in '						
					supporting						
					documents Table Deced						
					Table Based						
				Min Dolta Output Spood	Value Please Refer to Table						
				Will Della Output Speed	>= rpm/sec						
				Hystelesis	23 III supporting						
					documonts						
					Table Pased						
					Time Please						
					Refer to Table						
				If the Above is True for Time	>= 17 in Sec						
					supporting						
					documents						
				Intrusive test:							
				(CB26 clutch exhausted)	1						
				Gear Ratio	<= 1.484985352						
				Gear Ratio	>= 1.343017578						
				If the above parameters are true							
				·	1			25	11	Fail Timor (Soo)	
								>=	1.1	Fail Filler (Sec)	
								>=	3	Fail Count in	
					1				J	2nd Gear	
										or	
					1			>=	3	Total fail counts	
			E-11.0- 0	00							
			Fail Case 3	Case Steady State 3rd	Table David						
					Table Based						
				May Dalla Outration	Value Please						
				Max Delta Output Speed	>= Refer to Table rpm/sec						
				Hysteresis	ZZ III						
					supporting						
	l	I	I		uocuments	I	1				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable		Time		ime	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions		Required		Illum.		
		Transmission Electro-Hydraulic	Fail Case 1									One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.296875 °C					>=	5	Fail Time (Sec)	
		Too High										
				Table Based								
				value Please								
			Min Delta Output Speed	Refer to Table								
			Hysteresis	23 in								
				supporting								
				documents								
				Table Based								
				Time Please								
			If the Above is True for Time	Refer to Table Sec								
				17 in 0000								
				supporting								
				documents								
			Intrusive test:									
			(C35R clutch exhausted)									
			Gear Ratio	<= 1.484985352								
			Gear Ratio	>= 1.343017578								
			If the above parameters are true									
									>=	1.1	Fail Timer (Sec)
											Fail Count in	
									>=	3	3rd Gear	
										OR	Sid Ocai	
										OR	Total Fail	
									>=	3	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_Pressurize		TDUE	Deeleen				
					d	=	IRUE	DUDIEdIT				
					A OR B							
					(A) Output speed enable	>=	36	Nm				
				1	(B) Accelerator Pedal enable	>=	0.5004883	Nm				1
				1	Ignition Voltage Lo	>=	8.5996094	Volts				1
				1	Ignition Voltage Hi	<=	31.990234	Volts				1
				1	Engine Speed Lo	>=	400	RPM				1
					Engine Speed Hi	<=	7500	RPM				1
					Engine Speed is within the	>=	5	Sec				1
				1	allowable limits for	-	5	000				1
					if Attained Gear=1st FW	>=	5.0003052	Pct				1
				1	Accelerator Pedal enable	-						1
					if Attained Gear=1st FW	>=	20	Nm				
					Engine Torque Enable		-					1
					If Attained Gear=1st FW	<=	8191.875	Nm				1
					Engine Torque Enable							
				1	Tomporaturo	>=	-6.65625	°C				1
				1	Input Speed Sensor fault	_	EALSE	Boolean				1
					Output Speed Sensor fault	_	FALSE	Boolean				
					Default Gear Ontion is not	_	TALSE	DUDICALI				
				1	nrecent	=	TRUE					1
				1	present							1
				1								1
l l	1	I		1	1				1			1
Component/	Fault	Monitor Strategy	Malfunction		Thres	hold	Secondary	Enable		Time	Mil	
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System	Code	Transmission Electro-Hydraulic	Criteria Fail Case 1	—	Vall	ue	Manufiction	Conditions		Required	One Trin	
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature Too High	Substrate Temperature	>=	146.296875	°C			>=	5 Fail Time (Sec)	one mp	
						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, P0204				
								P0205, P0206, P0207, P0208, P0206, P0301, P0302, P0303, P0304, P0305, P0301, P0302, P0303, P0304, P0305,				
								P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for	=	TRUE	Boolean					One Trip	
			Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status	=	Maximum pressurized							
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command							
			Range Shift Status	¥	Initial Clutch Control							
			Attained Gear Slip	<=	40	RPM						
			If the above conditions are true increment appropriate Fail 1 Timers Below:									
			(4-1 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			(4-1 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			(4-2 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			(4-2 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			(4-3 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			(4-3 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			(5-3 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			(5-3 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			(6-2 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			rail timer 1 (6-2 shifting without throttle)	>=	0.5	Fail Time (Sec)						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature	Fail Case 1 Substrate Temperature	>= 146.296875 °C			>= 5 Fail Time (Sec)	One Trip
			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 sec Reference Supporting Table 15 for Fail Timor 2	
			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 >= 3 From 6th Gear OR	
			Total fail counter				>= 5 Total Pail Counter	
				Di Condi	TUT Enable temperatur Input Speed Sensor fau Output Speed Sensor fau Command / Attained Gea High Side Driver O output speed limit for TU input speed limit for TU PRNDL state defaulte IMS Fault Pendin Service Fast Learn Mod HSD Enable sable MIL not Illuminated fc	e >= -6.65625 °C It = FALSE Boolean It = FALSE Boolean V = TRUE Boolean V = TRUE Boolean V = TRUE Boolean T >= 100 RPM d = FALSE Boolean g = FALSE Boolean g = FALSE Boolean d = TRUE Boolean d = TRUE Boolean d = TRUE Boolean		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 2 Enabled Tap Up Switch Stuck in the Up	= 0 Boolean = 0 Boolean				Special No MIL
1			Position in Range 3 Enabled			1		

System Code Texpension Contreat Value Manufactori Control Module (ICM) Poission Required Manufactori Control Module (ICM) Poission Fail Case 1 Substrate Temperature	Component/	Fault	Monitor Strategy	Malfunction		Thre	shold	Secondary		Enable			Tim	1e irod	Mil
Intransition Control Module (TCM) P064 Control Module Internal Temperature Too High Substrate Temperature 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 5 Enabled Tap Up Switch Stuck in the Up Position in Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 5 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 5 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled = 1 Boolean >= 1 Fail Time (Sec) >= 1 Fail Time (Sec) >= 1 Fail Time (Sec)	System	Code	Description	Criteria	┣──	va	liue	Manunction		Conditions			Requ	irea	mum.
Tails ships on Collicol woodule (rCW) Poss 4 Collicol woodule internal reiniperature is a Usustate reiniperat	Francemiasian Control Madula (TCM)	00/24	Transmission Electro-Hydraulic	Fall Case I		14/ 20/075	00						-		One Trip
Image: Incomparison of the 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 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 Range 6 Enabled Tap Up Switch Stuck in the Up Position in Range 6 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 Enabled Tap Up Switch Stuck In the Up Positin In Kap Up Position In Kap Up Positin In Kap Up	ransmission control Module (TCM)	P0634	Control Module Internal Temperature	Substrate remperature	>=	140.2908/5	°C					>=	С	Fail Time (Sec)	
Image of 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 Range 6 Enabled = 0 Boolean Tap Up Switch Stuck in the Up Position in Range 6 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 Stuck in the Up Position in Reverse Enabled = 0 Boolean Tap Up Switch Stuck in the Up = 0 Boolean >= 1 Fail Case 2 Tap Up Switch Stuck in the Up Position in Reverse Enabled = 0 Boolean >= 1 Fail Case 2 Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled = 1 Boolean >= 1 Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled				Tap Lip Switch Stuck in the Lir											
Fail Case 2 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 = 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 Park Enabled = 0 Boolean Tap Up Switch Stuck in the Up Position in Reverse Enabled = 0 Boolean Tap Up Switch Stuck in the Up Position in Reverse Enabled = 0 Boolean Tap Up Switch Stuck in the Up Position in Reverse Enabled = 1 Boolean Tap Up Switch Stuck in the Up Position in Reverse Inabled = 1 Boolean Tap Up Switch Stuck in the Up Position in Range I Enabled = 1 Boolean				Position in Range / Enabled	=	0	Boolean								
Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up Position in Neural Enabled Tap Up Switch Stuck in the Up Position in Neural 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 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled = 0 Boolean Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled = 1 Boolean >= 1 Fail Time (Sec)				Tan Un Switch Stuck in the Ur	,										
Tap Up Switch Sluck in the Up Position in Range 6 Enabled Tap Up Switch Sluck in the Up Position in Neutral Enabled Tap Up Switch Sluck in the Up Position in Neutral Enabled Tap Up Switch Sluck in the Up Position in Reverse Enabled Tap Up Switch Sluck in the Up Position in Reverse Enabled Tap Up Switch Sluck in the Up Position in Reverse Enabled Tap Up Switch Sluck in the Up Position in Reverse Enabled Tap Up Switch Sluck in the Up Position in Reverse Enabled Tap Up Switch Sluck in the Up Position in Reverse Enabled Tap Up Switch Sluck in the Up Position in Range 1 Enabled Tap Up Switch Sluck in the Up Position in Range 1 Enabled Tap Up Switch Sluck in the Up = 0 Boolean >= 1 Fail Case 2 Fail Case 2 Tap Up Switch Sluck in the Up Position in Range 1 Enabled Tap Up Switch Sluck in the Up = 1 Boolean >= 1 Fail Case 2				Position in Range 5 Enabled	=	0	Boolean								
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 Party 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 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 1 Boolean Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 0 Boolean Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 1 Boolean				Tap Up Switch Stuck in the Up	,										
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 in the Up Position in Range 1 Boolean = 1 Boolean Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 0 Boolean Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 1 Boolean				Position in Range 6 Enabled	=	0	Boolean								
Fail Case 2 Tap Up Switch Stuck in the Up Position in Rarge 1 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 1 Enabled Tap Up Switch Stuck in the Up = 1 Boolean Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 1 Boolean >= 1 Fail Case 2				Tap Up Switch Stuck in the Up)										
Tap Up Switch Stuck in the Up Position in Park Enabled Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch ON = 1 Boolean >= 1 Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Switch Stuck in the Up Position In Range 1 Enabled Tap Up Swit				Position in Neutral Enabled	=	1	Boolean								
Position in Park Enabled = 1 Boolean Tap Up Switch Stuck in the Up = 0 Boolean Position in Reverse Enabled = TRUE Boolean Fail Case 2 Tap Up Switch Stuck in the Up = 1 Boolean Position in Range 1 Enabled = 1 Boolean >= 1 Fail Case 2 Switch Stuck in the Up Position in Range 1 Enabled = 1 Boolean >= 1 Boolean				Tap Up Switch Stuck in the Up	,	1	Deeleen								
Tap Up Switch Stuck in the Up Position in Reverse Enabled Tap Up Switch ON = 0 Boolean Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 1 Boolean				Position in Park Enabled	1 =	I	Boolean								
Position in Reverse Enabled = 0 Boolean Tap Up Switch ON = TRUE Boolean Fail Case 2 Tap Up Switch Stuck in the Up = 1 Boolean Position in Range 1 Enabled Tap Up Switch Stuck in the Up = 1 Boolean				Tap Up Switch Stuck in the Up)	0	Booloop								
Tap Up Switch ON = TRUE Boolean >= 1 Fail Time (Sec) Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled = 1 Boolean Tap Up Switch Stuck in the Up = 1 Boolean				Position in Reverse Enabled	i =	0	DUUIEdIT								
Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled = 1 Boolean Tap Up Switch Stuck in the Up = 1 Boolean				Tap Up Switch ON	1 =	TRUE	Boolean					>=	1	Fail Time (Sec)	
Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled = 1 Boolean Tap Up Switch Stuck in the Up															
Position in Range 1 Enabled				Fail Case 2 Tap Up Switch Stuck in the Up	,	1	Boolean								
Tap I in Switch Stuck in the I in				Position in Range 1 Enabled	- 1	I	Doolean								
Boolean				Tap Up Switch Stuck in the Up	=	1	Boolean								
Position in Range 2 Enabled				Position in Range 2 Enabled	6		Boologin								
Tap Up Switch Stuck in the Up = 1 Boolean				Tap Up Switch Stuck in the Up	. =	1	Boolean								
Position in Range 3 Enabled				Position in Range 3 Enabled	4										
Tap Up Switch Stuck in the Up = 1 Boolean				Tap Up Switch Stuck in the Up	=	1	Boolean								
Position in Range 4 Enabled				Position in Range 4 Enabled	-										
ap up switch Stuck in the Up				Tap Up Switch Stuck in the Up	=	1	Boolean								
Position in Range 5 Enabled				Position in Range 5 Enabled											
Decision in Decrea 6 France 1 Boolean				Position in Dange 4 Enables		1	Boolean								
POSIDUOI III Kafilgi o Entabled				Top Up Switch Stuck in the Ur											
$\frac{\partial p}{\partial r} = 0 \qquad Boolean$				Desition in Neutral Enables	=	0	Boolean								
Top II Switch Sheek in the IIn				Tap Lip Switch Stuck in the Lin											
Position in Park Franklard = 0 Boolean				Position in Park Enabled	=	0	Boolean								
Tan lin Switch the lin				Tan Lin Switch Stuck in the Lin	,										
Position in Reverse Fnabled Boolean				Position in Reverse Enabled	=	0	Boolean								
Tan Lin Switch ON = TRUE Boolean				Tap Up Switch ON		TRUE	Boolean								
NOTE: Both Failcase1 and				NOTE: Both Failcase1 and	i	IIIOE	Dooloan							=	
Failcase 2 Must Be Met >= 600 Fail Time (Sec)				Failcase 2 Must Be Me	t							>=	600	Fail Time (Sec)	
					1										
					—			TI OL LIS							
Time Since Last Range Enable Time					1			Time Since Last Range	>=	1	Enable Time				
Change (Sec)					1			Change		0.500/001	(Sec)				
Ignition Voltage LO >= 8.5996094 Volts					1			Ignition Voltage Lo	>=	8.5996094	Volts				
ignition Voltage H <= 31.990234 Volts					1			Ignition Voltage Hi	<=	31.990234	VOITS				
Engine Speed LU >= 400 KPM								Engine Speed L0	>=	400	RPIVI				
Eligital Speed Fill <= / JOU KPW					1			Engine Speed is within the	<=	1000	IN F IVI				
allowable limits for >= 5 Sec								allowable limits for	>=	5	Sec				

Component/	Fault	Monitor Strategy		Malfunction		Thres	shold	Secondary Malfunction		Enable Conditions		Time Required		Mil Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature Too High	Fail Case 1	Substrate Temperature	>=	146.296875	°C			T	>=	5 Fail Ti	me (Sec)	One Trip
								P0815 Status is	¥	This Key On or Fault Active				
							Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816 P1877, P19 ⁻	o, P0826, P182E, P1876, I5, P1761				
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	<u>Fail Case 1</u>	Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	0	Boolean		ECM. NOTE					Special No MIL
				Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	0	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	0	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	0	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	0	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	0	Boolean							
				Down Position in Range Neutral Enabled	=	1	Boolean							
				Down Position in Range Park Enabled	=	1	Boolean							
				Down Position in Range Reverse Enabled	=	0 TRUE	Boolean				~-	1	500	
			Fail Case 2	Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean							
				Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean							

Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold /alue	Secondary Malfunction		Enable Conditions			Tir Regi	ne Jired	Mil Illum.
Transmission Control Module (TCM)	P0634	Transmission Electro-Hydraulic Control Module Internal Temperature	Fail Case 1 Substrate Temperature	>= 146.29687	5 °C			Contaitions		>=	5	Fail Time (Sec)	One Trip
		Too High	Tap Down Switch Stuck in the Down Position in Range 6 Enabled Tap Down Switch Stuck in the Down Position in Neutral Enabled Tap Down Switch Stuck in the Down Position in Park Enabled	= 1 = 0 = 0	Boolean Boolean Boolean								
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	= 0	Boolean								
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	= TRUE	Boolean					>=	600	sec	
						Time Since Last Range Change	>=	1	Enable Time (Sec)				
						Ignition Voltage Lo	>=	8.5996094	Volts				
						Ignition Voltage H	<=	31.990234	Volts				
						Engine Speed Lo	>= <=	400 7500	RPM RPM				
						Engine Speed is within the allowable limits for	>=	5 Test Failed	Sec				
						P0816 Status is	. ≠	This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0815, P1877, P191	, P0826, P182E 5, P1761	, P1876,				
			TUTD Circuit Deada Invalid				ECM: None						Special
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	Voltage	= TRUE	Boolean	Incition Voltons 1		0 500/004	Volta	>=	60	Fail Time (Sec)	No MIL
						Ignition Voitage LC Ignition Voltage H Engine Speed Lc Engine Speed H	>= <= >= <=	8.5996094 31.990234 400 7500	Volts Volts RPM RPM				

SystemCodeDescriptionCriteriavaluemanufactionConditionsRequireTransmission Control Module (TCM)P0634Control Module Internal Temperature Too HighFail Case 1Substrate Temperature Substrate Temperature Too HighSubstrate Temperature Substrate Temperature Poesa>= 146.296875 °CFail Figine Speed is within the allowable limits for Poesa Status is>= 5Fail FailTransmission Control Module (TCM)P0634Control Module Internal Temperature Too HighSubstrate Temperature Poesa>= 146.296875 °CFail Figine Speed is within the allowable limits for Poesa Status is>= 5SecTest Failed \neq This Key On or Fault Active<= 5SecTest Failed Too Nor Conditions:>= 5FailTap Up Tap Down Switch (TUTD)P1761 Figure QuantTap Up and Down switch signal circuit (rolling count)Rolling count value received from BCM does not match expected value= TRUE RoleanRolean>= 5>= 3Fail SailTap Up Tap Down Switch (TUTD)P1761 Figure CountTap Up and Down switch signal circuit (rolling count)Rolling count value received from value= TRUE RoleanTRUE Rolean>= 3Fail Sail	One Trip me (Sec)
Transmission Control Module (TCM) P0634 Table formation formation of the formati	me (Sec) Special Counter No MIL le Timer
Image: Speed is within the allowable limits for allowable limits for one of the allowable limits for allowable limits for one of the allowable limits for allowable limits for the allowable limits for	Special Sounter No MIL
Image: state of the state	Counter Special No MIL
Image: Series of the series	Counter No MIL
Autor Autor Autor Autor Image: A	Special Counter No MIL
Image: Disable problem MIL not Illuminated for DrC's TCM: P1761 (CM: None CM: None Tap Up Tap Down Switch (TUTD) P1761 Tap Up and Down switch signal circuit (rolling count) Rolling count value received from BCM does not match expected value = TRUE Boolean >= 3 Fa Value Value FRUE FRUE FRUE Fa - 10 Sar	Special Counter No MIL le Timer
Image: Conditions: DTC's: ECM: None Tap Up Tap Down Switch (TUTD) P1761 Tap Up and Down switch signal circuit (rolling count) Rolling count value received from BCM does not match expected value = TRUE Boolean >= 3 Fa Value Value Value Value TRUE Boolean >= 3 Fa	Special Counter No MIL le Timer
Image: Second	Special Counter No MIL
Tap Up Tap Down Switch (TUTD) P1761 Tap Up and Down switch signal circuit (rolling count) Rolling count value received iron = TRUE Boolean >= 3 Fa Value Value Value Value Value Value > 10 Value	Counter No MIL
> 10 Sar	le Timer
	Sec)
Tap Up Tap Down Message	
Engine Speed Lo >= 400 RPM	
Engine Speed Hi <= 7500 RPM	
allowable limits for $>=$ 5 Sec	
Disable MIL not Illuminated for TCM: None Conditions: DTC's:	
ECM: None	
Fail Case 1 Transition 1	One Trip
Internal Mode Switch (IMS) P182E Internal Mode Switch - Invalid Range Current range = (bit state Range 1110)	
$\frac{Previous range}{Previous range} \neq \frac{Previous range}{Previous range}$	
Previous range \neq RNDL_Drive4 RNDL_Drive4 RNDL_Drive4	
Range Shift State = Completed ENUM	
Ausonate Attained Gear <= 50 Tpm	
Attained Gear >= First	
Throttle Position Available = TRUE	
Output Based >= 200 rpm	
Engine Torque >= 50 Nm	
Engine Torque <= 8191.75 Nm	
If the above conditions are met the a lacroment Fail Timer	Seconds
If Fail Timer has Expired then	
Increment Fail Counter	Counts
Fail Case 2 Output Speed <= 70 rpm	
events occur in this exact order:	
PRNDL state = Drive 6 (bit state 0110) Range	

Component/	Fault	Monitor Strategy	Malfunction		Three	shold	Secondary		Enable			Tim	ie incel	Mil
System	Code	Description	Criteria		va	lue	Mailunction		Conditions		┝───	Requ	irea	mum.
Control Market (TOM)	D0/24	Transmission Electro-Hydraulic	Fall Case I		14/ 00/075						1	F		One Trip
ransmission Control Module (TCM)	P0634		Substrate Temperature	>=	140.290875	÷ل					>=	5	Fail Time (Sec)	
		100 High	PPNDL state - Drive 6 for		1	Soc					1			
					Transition 8	500					1		l	
			PRNDL state	=	(bit state	Range					1		l	
					0111)	rungo					1		l	
					Drive 6 (bit	Danas					1		l	
			PRNDL State	=	state 0110)	Range					1		l	
					Transition 1						1		l	
			PRNDL state	=	(bit state	Range								
					1110)						1		l	
			Above sequencing occurs in	<=	1	Sec					1		l	
			If all conditions above are mail	=	Inactive						1		l	
			In all conditions above are me											
			If the below two conditions are me											
			Increment Fail Timer								>=	3	Fail Seconds	
			delay timer	>=	1	Sec								
			Input Speed	>=	400	Sec					1		l	
			If Fail Timer has Expired then									2	Eail Counts	
			Increment Fail Counter								>=	2	Fail Courits	
			Fail Case 3		Transition 13	5		,	CeTRGR_					
			Current range	=	(bit state	Range	Previous range	≠	e_PRNDL					
					0010)				_Drive4					
			Engine Torque	\	_8102	Nm	Previous range	±	PRNDI		1		l	
			Engine rorque		0172		r tevious runge	,	Drive1					
			Engine Torque	=>	8191.75	Nm	IMS is 7 position configuration	=	0	Boolean	1			
							If the "IMS 7 Position config" =				1		l	
			If the above conditions are me				1 then the "previous range"							
			then. Increment Fail Timer				criteria above must also be				>=	0.225	Seconds	
							satsified when the "current							
			If Epil Timor bac Expired ther				range = transition 13							
			Increment Fail Counter								>=	15	Fail Counts	
			Fail Case 4		T 111 0							-		-
			Current renge		I ransition 8	Danaa	Disable Fail Case 4 if last							
			Current range	=	(DIL SIALE 0111)	Range	current range is transition 8							
					0111)		current range is transition o							
							Set inhibit bit true if PRNDL =				1		l	
			Inhibit bit (can definition)		FALSE		1100 (rev) or 0100 (Rev-Neu transition 11)				1		l	
				=	FALSE		Set inhibit hit false if PRNDL =							
							1001 (park)				1			
			Steady State Engine Torque	=<	100	Nm								
			Steady State Engine Torque	<=	8191.75	Nm								
			If the above conditions are me	t							>=	0 225	Seconds	
			then Increment Fail Timer	1							1	5.220	0000100	
			If the above Condtions have been									1F	Eail Counte	
			met, Increment Fail Counter								>=	10	raii Counts	
			Fail Case 5 Throttle Position Available	=	TRUE	Boolean								1
			The following PRNDL sequence		-						1			
			events occur in this exact order								1			
			PRNDL State	=	Reverse (bit	Range					1			
		I		1	state 1100)		1				1			I

Component/	Fault	Monitor Strategy		Malfunction	Threshold	Secondary Malfunction		Enable			Tin	1e ired	Mil
System	Code	Description	Fail Case 1	Criteria	value	Manufiction		Conditions			Requ	irea	Ono Trin
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	rall Case I	Substrate Temperature	>= 146.296875 °C					>=	5	Fail Time (Sec)	One mp
		Too High											
		-			Transition 11								
				PRNDL State	= (bit state Range								
					0100)								
				PRNDL State	= Neutral (bit state 0101) Range								
					Transition 11								
				PRNDL State	= (bit state Range								
					0100)								
				Above sequencing occurs in	<= 1 Sec								
				Then delay timer increments									
				Delay timer	>= 5 Sec								
				Range Shift State	= Complete								
				Absolute Attained Gear Slip	<= 50 rpm								
				Attained Gear	<= Sixth								
				Attained Gear	>= First								
				Throttle Position	>= 8.000183105 pct								
				Output Speed	>= 200 rpm								
				If the above conditions are met						>=	20	Seconds	
			Fail Casa (Increment Fail Timer	Illegel (hit	A Open Circuit Definition (flag							
			Fall Case o	Current range	= state 0000 or	set false if the following							
				Guirent range	1000 or 0001)	conditions are met):							
					···· ,			Transition					
				and		Current Range	¥	11 (hit					
				dia		ounent Runge	,	state 0100)					
				A Open Circuit (See Definition)	- FALSE Boolean	or							
				A Open Circuit (See Delinition)	- TAESE DOOICAIT	01							
						Last positive state	≠	Neutral (bit					
								state 0101)					
						or							
						Devices here Were shake	-1	Transition					
						Previous transition state	Ŧ	8 (DIT STATE 0111)					
						Fail case 5 delay timer	=	0	sec				
				If the above Condtions are met							()5	Coordo	
				then, Increment Fail timer						>=	0.20	Seconds	
			Fail Case 7	Current PRNDL State	= PRNDL circuit Range								
				and	ABCP = 1101								
				anu	PRNDL circuit								
				Previous PRNDL state	= ABCP =1111 Range								
				Input Speed	>= 150 RPM								
				Reverse Trans Ratio	<= 2.678344727 ratio								
				Reverse Trans Ratio	>= 3.081542969 ratio								
				IT The above Conditions are met						>=	6.25	Seconds	
				uren, increment nan timer									
					1								

Component/	Fault	Monitor Strategy	Malfunction	Γ	Three	shold	Secondary		Enable			Tin	ie	Mil
System	Code	Description	Criteria	_	Val	ue	Malfunction		Conditions			Requ	ired	Illum.
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Fail Case T Substrate Temperature	>=	146.296875	°C					>=	5	Fail Time (Sec)	One Trip
			P182E will report test fail when any of the above 7 fail cases are met											
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996094 31.990234	Volts Volts				
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
							allowable limits for Engine Torque Signal Valid	>= =	5 TRUE	Sec Boolean				
						Disabla	MIL not Illuminated for		D0717 D0722	D0722				
						Conditions:	DTC's:	P07C0, P07	BF, P077C, P07	77D				
								ECM: P010 P0107, P010 P0175, P020	1, P0102, P010)8, P0171, P017)1, P0202, P020	3, P0106, 72, P0174, 03, P0204,				
								P0205, P020 P0301, P030 P0306, P030	06, P0207, P020 02, P0303, P030 07, P0308, P040)8, P0300,)4, P0305,)1, P042E				
		Pressure Control (PC) Solenoid D	Primary Offgoing Clutch is exhausted (See Table 13 in											One Trip
Variable Bleed Solenoid (VBS)	P2715	Stuck On [CB26] (Dynamic)	Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Preceive Compand Status	=	Maximum	Boolean								
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command	t								
			Range Shift Status	¥	Initial Clutch Control									
			Attained Gear Slip	<=	40	RPM								
			increment appropriate Fail 1 Timers Below:											
			fail timer 1 (2-1 shifting with throttle) fail timer 1	>=	0.5	Fail Time (Sec)								
			(2-1 shifting without throttle) fail timer 1	>=	0.5	Fail Time (Sec)								
			(2-3 shifting with throttle) fail timer 1 (2-3 shifting without throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (2-4 shifting with throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (2-4 shifting without throttle)	>=	0.5	Fail Time (Sec)								
			tail timer 1 (6-4 shifting with throttle) fail timer 1	>=	0.5	Fail Time (Sec)								
			(6-4 shifting without throttle)	>=	0.5	Fail Time (Sec)								

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil
System	Code	Transmission Electro-Hydraulic	Eail Case 1	Value	Manufiction	Conditions	Required	One Trin
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	e >= 146.296875 °C			>= 5 Fail Time (Sec))
		i oo nign	fail timer 1 (6-5 shifting with throttle) fail timer 1 (6-5 shifting without throttle)	>= 0.5 Fail Time (Sec) >= 0.5 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 sec Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fai counter	h 1 1			Full Question	
			2nd gear fail counter	r			>= 3 Fail Counter From 2nd Gear OR	r
			6th gear fail counter	r			>= 3 Fail Counter From 6th Gear OR	
			total fail counter	r			>= 5 Total Fail Counter	
					TUT Enable temperature Input Speed Sensor faul Output Speed Sensor faul Command / Attained Gea High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaultee IMS Fault Pending Service Fast Learn Mode HSD Enabled	$\begin{array}{rcl} & >= & -6.65625 & ^{\circ}\mathrm{C} \\ & = & FALSE & Boolean \\ & = & FALSE & Boolean \\ & = & TRUE & Boolean \\ & = & TRUE & Boolean \\ & >= & 100 & RPM \\ & >= & 200 & RPM \\ & >= & FALSE & Boolean \\ & = & FALSE & Boolean \\ & = & FALSE & Boolean \\ & = & TRUE & Boolean \\ & = & TRUE & Boolean \end{array}$		
				Disable Conditions	MIL not Illuminated for DTC's	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1 Case: Steady State 1st Attained Gear slip	t >= 400 RPM				One Trip

Component/	Fault	Monitor Strategy		Malfunction	Threshold	Secondary	Enable		T	ime	Mil
System	Code	Description	E-11 O 1	Criteria	value	Maitunction	Conditions		Req	uired	IIIum.
Transmission Control Madula (TCM)	D0/24	Transmission Electro-Hydraulic	Fall Case T	Cubatrata Tamparatura	14/ 20/ 075 00				F		One Trip
Transmission Control Module (TCM)	P0634			Substrate Temperature	>= 146.296875 °C			>=	5	Fall Time (Sec)	
					Table Recod						
					Time Diased						
					Defer to Table Enable Time						
				If the Above is True for Time	>= (in (Sec)						
					supporting						
					documents						
				Intrusive test:	documents						
				(CBR1 clutch exhausted)							
				Gear Ratio	<= 3.015991211						
				Gear Ratio	>= 2.728027344						
				If the above parameters are true							
									1 1	Fail Times (Cas)	
								>=	1.1	Fail Timer (Sec)	
									F	Fail Count in	
								>=	э	1st Gear	
										or	
								>-	5	Total Fail	
								~-	5	Counts	
			Fail Case 2	Case: Steady State 3rd Gear							
					Table Based						
					value Please						
				Max Delta Output Speed	>= Refer to Table rpm/sec						
				Hysteresis	22 in						
					supporting						
					documents Table Decod						
					Table Based						
				Min Dolta Output Spood	Value Please Defer to Table						
				Will Della Output Speed	>= Refer to Table rpm/sec						
				Hysielesis	23 III						
					documonto						
					Table Pased						
					Time Please						
					Refer to Table						
				If the Above is True for Time	>= 17 in Sec						
					supporting						
					documents						
				Intrusive test:							
				(C35R clutch exhausted)							
				Gear Ratio	<= 3.015991211						
				Gear Ratio	>= 2.728027344						
				If the above parameters are true							
								×-	1 1	Eail Timor (Soc)	
								>=	1.1	Fail Filler (Sec)	
								>-	3	Fail Count in	
									3	3rd Gear	
										or	
								>=	5	Total Fail	
			F-11 0 2							Counts	
			Fail Case 3	Case: Steady State 4rd Gear	Table Decod						
					Lable Based						
				May Dalka Outward Correct	Value Please						
				Max Deita Output Speed	>= Relef to Table rpm/sec						
				Hysteresis	22 III						
					documents						
		1	1		uocuments	1	I	1			I

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable			Time	Mil
System	Code	Description	Criteria	value	Malfunction	Conditions	┝───	Re	equirea	IIIum.
Transmission Control Madula (TCM)	D0424	Control Modulo Internal Temperatura	Fall Case 1 Substrate Temperature	144 204075 90			Ι.	F	Fail Time (See)	One mp
	P0034		Substrate remperature	>= 140.290075 °C			>=	5	Fall Fille (Sec)	
		100 High		Table Based						
				value Please						
			Min Delta Output Speer	Refer to Table						
			Hysteresis	>= 23 in rpm/sec						
			Trystores.	supporting			1			
				documents						
				Table Based						
				Time Please						
			If the Alexandra Transford The	Refer to Table			1			
			If the Above is True for Time	e >= 17 in Sec			1			
				supporting						
				documents						
			Intrusive test							
			(C1234 clutch exhausted				1			
			Gear Ratio	<= 0.779052734			1			
			Gear Ratio	>= 0.704956055						
			If the above parameters are true							
							>=	1.1	Fail Timer (Sec)	
							>=	3	Fail Count in	
									4th Gear	
							1		Or Tatal Fall	
							>=	5	I Otal Fall	
			Fail Case 4 Case Steady State Eth Cas				 		Counts	
			<u>Fail Case 4</u> Case. Steady State Still Gea	Table Based						
				value Diase						
			Max Delta Output Speer	Refer to Table			1			
			Hysteresis	>= 22 in rpm/sec						
			Trystores.	supporting						
				documents						
				Table Based						
				value Please						
			Min Delta Output Speed	Refer to Table			1			
			Hysteresis	>= 23 in rpm/sec						
			-	supporting			1			
				documents						
				Table Based						
				Time Please			1			
			If the Above is True for Time	Refer to Table Sec			1			
				17 in			1			
				supporting			1			
				documents			1			
		1	Intrusive test				1			
		1	(C35R clutch exhausted	0.770050724			1			
			Gear Ratio	<= 0.7/9052734			1			
			Gear Railo	>= 0.704900000			1			
			ii tile above parameters die tide				1			
							>=	1.1	Fail Timer (Sec)	
							1		Fail Count in	
		1					>=	3	5th Gear	
							1		Or	
		1					1	-	Total Fail	
		1					>=	5	Counts	
		1			PRNDL State defaulted	= FALSE Boolean	1			

Component/	Fault	Monitor Strategy	Malfunction	Thresh	hold	Secondary		Enable			Time		Mil
System	Code	Transmission Electro Hydraulic	Griteria Eail Caso 1	valu	ie	Walturiction		Conditions			Required		Ono Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.296875	°C					>=	5 Fail T	'ime (Sec)	one mp
		Too High				inhihit RVT	_	FAI SF	Boolean				
						IMS fault pending indication	=	FALSE	Boolean				
						output speed	>=	0	RPM				
						TPS validity flag	=	TRUE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
						Hydraulic_System_Pressurize	=	TRUE	Boolean				
						A OR B							
						(A) Output speed enable	>=	36	Nm				
						(B) Accelerator Pedal enable	>=	0.5004883	Nm				
						Ignition Voltage Lo	>=	8.5996094	Volts				
						Ignition Voltage Hi	<=	31.990234	Volts				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed is within the	<=	7500	KE IVI				
						allowable limits for	>=	5	Sec				
						if Attained Gear=1st FW		F 00000F0	Det				
						Accelerator Pedal enable	>=	5.0003052	PCt				
						if Attained Gear=1st FW	>-	20	Nm				
						Engine Torque Enable	/-	20	TNITT.				
						if Attained Gear=1st FW	<=	8191.875	Nm				
						Engine Torque Enable							
						Transmission Fluid	>=	-6.65625	°C				
						Input Speed Sensor fault	=	FALSE	Boolean				
						Output Speed Sensor fault	=	FALSE	Boolean				
						Default Gear Option is not		TOUE					
						present	=	TRUE					
					Disable	MIL not Illuminated for	TCM: P0/16	o, P0/17, P0/22	, P0/23,				
					Conditions:	DICS:	P 182E						
							FCM: P0101	. P0102. P010.	. P0106.				
							P0107, P010	08, P0171, P01	72, P0174,				
							P0175, P020	01, P0202, P02)3, P0204,				
							P0205, P020	06, P0207, P02	08, P0300,				
							P0301, P030	02, P0303, P03	04, P0305,				
							P0306, P030)7, P0308, P04	01, P042E				
			Drimony Offgoing Clutch is										Ono Trin
		Pressure Control (PC) Solenoid F	exhausted (See Table 10 in										One mp
Variable Bleed Solenoid (VBS)	P2724	Stuck On (Dynamic)	Supporting Documents for	= TRUE	Boolean								
			Exhaust Delay Timers)										
1			Primary Oncoming Clutch	Maximum									
			Pressure Command Status	 pressurized 									
			Primary Offgoing Clutch Pressure	Clutch exhaust									
			Command Status	= command									
				Initial Clutch									
			Range Shift Status	≠ Control									
			Attained Gear Slip	<= 40	RPM								

Component/	Fault	Monitor Strategy	Malfunction		Thre	eshold	Secondary		Enable			Tin	ne	Mil
System	Code	Description	Criteria	┝───	V	alue	Maifunction		Conditions			Requ	ired	ilium.
renemiesion Control Medule (TCM)	D0/24	Transmission Electro-Hydraulic	Fall Case I		14/ 20/075							F		One Trip
ransmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>=	140.290870) °C					>=	5	Fail Time (Sec)	
			If the above conditions are true											
			in the above conditions are the											
			Timore Polow:											
			fail timer 1											
			(2.6 chifting with throttle)	>=	0.5	sec								
			(2-0 Shinting with throttie)											
			(2.6 shifting without throttle)	>=	0.5	sec								
			(2-0 shinting without throttic) fail timer 1											
			(3-5 shifting with throttle)	>=	0.5	Sec								
			fail timer 1											
			(3-5 shifting without throttle)	>=	0.5	Sec								
			fail timer 1		0.5									
			(4-5 shifting with throttle)	>=	0.5	Sec								
			fail timer 1		0.5									
			(4-5 shifting without throttle)	>=	0.5	sec								
			fail timer 1	×	0.5	500								
			(4-6 shifting with throttle)	>=	0.5	SEL								
			fail timer 1	~-	0.5	ser								
			(4-6 shifting without throttle)		0.5	300								
											Tot	tal Fail Tim	0	
											= (Fail 1 + Fa	il	
											2)	See Enable	e	
											/ Tin	ners for Fa	il	
			If Attained Gear Slip is Less than								>= Ti	mer 1. and	sec	
			Above Cal Increment Fail Timers								F	Reference		
											5	Supporting		
											Т	able 15 for		
											F	ail Timer 2		
			If fail timer is greater than											
			threshold increment corresponding											
			gear fail counter and total fail											
			Counter										Fail Countar	
			2nd gear fail counter								>=	3	Fall Courter	
													FIUIT ZITU Gear	
													Eail Counter	
			3rd gear fail counter								>=	3	From 3rd Gear	
													From Sid Ocar	
													Fail Counter	
			4th gear fail counter								>=	3	From 4th Gear	
												-	Total Fail	
			total fail counter								>=	5	Counter	
							TUT Enable temperature	>=	-6.65625	°C				
				1			Input Speed Sensor faul	=	FALSE	Boolean				
				1			Output Speed Sensor fault	=	FALSE	Boolean				
				1			Command / Attained Gear	≠	1st	Boolean				
				1			High Side Driver ON	=	TRUE	Boolean				
				1			output speed limit for TUT	>=	100	RPM				
				1			input speed limit for TUT	>=	200	RPM				
				1			PRNDL state defaulted	=	FALSE	Boolean				
				1			IMS Fault Pending	=	FALSE	Boolean				
				1			Service Fast Learn Mode	=	FALSE	Boolean				
				1			HSD Enabled	=	TRUE	Boolean				
	l		I	1			I	1						I.

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable		Ti	ime wired	Mil Illum
System	Code	Transmission Electro-Hydraulic	Fail Case 1	Value		Conditions		nee	uncu	One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature Too High	Substrate Temperature	e >= 146.296875 °C			>=	5	Fail Time (Sec)	
				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)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gea							One Trip
		Suck on (Sleady State)	Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time	Table Based value Please 22 in supporting documents Table Based value Please table Based value Please zable Based value Please value Please value Please zable Based Table Based Time Please table Based						
			Intrusive test (C35R clutch exhausted) Gear Ratic Gear Ratic If the above parameters are true	supporting documents <= 1.484985352 >= 1.343017578			~=	11	Fail Timer (Sec	
								2	Fail Count in	,
							>=	3	5th Gear OR Total Fail Counts	
			<u>Fail Case 2</u> Case: 6th Gea Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table 22 in supporting documents						

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable			т	ime	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions			Ree	quired	Illum.
		Transmission Electro-Hydraulic	Fail Case 1									One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.296875 °C					>=	5	Fail Time (Sec)	
		Too High										
				Table Based								
				value Please								
			Min Delta Output Speed	Refer to Table								
			Hysteresis	23 in 1911/3ec								
				supporting								
				documents								
				Table Based								
				Time Please								
			If the Above is True for Time	Refer to Table Sec								
				17 in 0000								
				supporting								
				documents								
			Intrusive test:									
			(CB26 clutch exhausted)									
			Gear Ratio	<= 1.484985352								
			Gear Ratio	>= 1.343017578								
			If the above parameters are true									
									>=	11	Fail Timer (Sec))
									-			ĺ
									>=	3	Fail Count in	
									-	5	6th Gear	
											OR	
									>=	3	Total Fail	
										0	Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurize	=	TRUE	Boolean				
					d A OD D							
					A OR B		24	New				
					(A) Output speed enable	>=	30	NM				
				1	(B) Accelerator Pedal enable	>=	0.5004883	INM Valta				1
				1	ignition voltage Lo	>=	8.5996094	Volts				1
				1	Ignition Voltage Hi	<=	31.990234	VOIts				1
				1	Engine Speed Lo	>=	400	KPM DDM				1
				1	Engine Speed HI	<=	/500	KPIVI				1
				1	Engine Speed is within the allowable limits for	>=	5	Sec				1
				1	if Attained Coar_1ct FM							1
					II Alldilleu Gedi=ISLEW	>=	5.0003052	Pct				
					if Attained Coar_1et EW							
					Engine Torque Enable	>=	20	Nm				
				1	if Attained Gear-1st FW							1
					Engine Torque Enable	<=	8191.875	Nm				
				1	Transmission Fluid							1
				1	Tomporature	>=	-6.65625	°C				1
				1	Innut Sneed Sensor fault	_	FALSE	Boolean				1
				1	Output Speed Sensor fault	_	FALSE	Boolean				1
					Default Gear Ontion is not	_	TALSE	DUDICALI				
				1	nrecent	=	TRUE					1
					present							
	1	1	1	1	1							1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		Tir	ne	Mil
System	Code	Transmission Electro-Hydraulic	Fail Case 1	Value	Manufiction	Conditions		Keqi	uireu	One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.296875 °C			>=	5	Fail Time (Sec)
		Too High		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/ System	Fault Code	Monitor Strategy Description	Malfunction	- Th	reshold Value	Secondary Malfunction		Enable Conditions			Tin Regu	ne lired	Mil Illum.
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck	l ateral accleration magnitude	<= 3.85	a's			Contaitorio			itoqe		Special
		at a high magnitude in range	l ateral accleration magnitude	>= 0.53	a's								No MIL
			Lateral accleration magnitude is	. 120	93 500								
			within the range above for	>= 120	Sec								
						Lateral accleration magnitude	<=	3 85	a's				
						Lateral accleration magnitude	>=	0.53	g's				
						Lateral accleration magnitude	>=	90	Sec				
						is within the range above for Diagnostic shifting override							
						command	=	FALSE	Boolean				
								1st through					
						Attained Gear State	=	6th					
						Attained Gear Slip	<=	100	RPM				
								Clutch to					
						Transmission Type	=	Clutch					
								ON					
						High Side Driver 1 Or	=	TRUE	Boolean				
						Vehicle Speed	>=	15	kph				
						range diagnostic enable	=	TRUE	Boolean				
						Battery Voltage	<=	31.999023	Volts				
						Battery Voltage	>=	9	Volts				
						allowable limits for	>=	0.1	Sec				
						Ignition Voltage	<=	31.999023	Volts				
						Ignition Voltage	>=	9	Volts				
						Service Fast Learn (SFL)	=	FALSE	Boolean				
						Ignition voltage and SFL	>-	0.1	Sec				
						conditions met for	/	0.1	266				
					Disable	MIL not Illuminated for	TCM: If cali	brated to illumina	ate the MIL				
					Conditions:	DTC's	(P0716, P0	717, P0721, P07	22, P0723,				
							P076F, P07 P215C, U00	со, Ролль, Рол)73)	7C, PU//D,				
								,					
							ECM: None						
		Transmission Electro-Hydraulic	Fail Case 1										One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.2968	75 °C					>=	5	Fail Time (Sec)	
		Too High											
			Fail Case 2 Substrate Temperature	>= 50	оС					>=	2	Fail Time (Sec)	
			Ignition Voltage	>= 18	Volts								
			Note: either fail case can set the DTC										
						Ignition Voltage Lo	>=	8.5996094	Volts				
						Ignition Voltage H	<=	31.990234	Volts				
						Substrate Temp Lo Substrate Temp H	>= <=	0 170	°C ℃				
						Substrate Temp Between		0.25	Soc				
		1	1			Temp Range for Time	>=	0.20	Ser				

	1												
Component/	Fault	Monitor Strategy	Criteria		reshold /alue	Malfunction		Enable			Reg	me uired	Mii Illum
						P0634 Status is	, ≠	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None						
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Senso Drop:	s= 1350	RPM					>=	0.8	Fail Time (Sec)	One Trip
						Engine Torque is Engine Torque is Engine Speec Engine Speed is within the allowable limits for Vehicle Speed is Throttle Position is Transmission Input Speed is The previous requirement has been satisfied for The change (loop to loop) in transmission input speed is The previous requirement has been satisfied for The change (loop to loop) in transmission input speed is The previous requirement has been satisfied for Throttle Position Signal Valic Engine Torque Signal Valic Ignition Voltage Ignition Voltage	>= <pre>>= <= >= >= >= >= >= >= = = = = = = = = = = = = =</pre>	0 8191.875 400 7500 5 10 0 0 0 8191.875 0 TRUE TRUE 8.5996094 31.990234 Test Failed This Key On or Eault	N*m N*m RPM RPM Sec Kph Pct RPM Sec RPM/Loop Sec Boolean Boolean Volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's	TCM: P0717 ECM: P0101 P0122, P012	Active 7, P0752, P0973 1, P0102, P0103	8, P0974 8, P0121,				
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1 Transmission Input Speed is	5 < 33	RPM					>=	4.5	Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	n < 1000	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
						Engine Torque is Engine Torque is Vehicle Speec Engine Torque Signal Valic Ignition Voltage	>= <= >= = >=	50 8191.875 16 TRUE 8.5996094	N*m N*m Kph Boolean Volts				

Component/	Fault	Monitor Strategy	Malfunction		- Thr	eshold		Secondary		Enable		Ι	Т	ime	Mil
System	Code	Description	Criteria		V	alue		Ignition Voltage	<=	31 990234	Volts		Req	uirea	ilium.
								Engine Speed	>=	400	RPM				
								Engine Speed	<=	7500	RPM				
								Engine Speed is within the	>=	5	Sec				
								allowable limits for							
										Test Failed					
								P0717 Status is not	=	I his Key On or Fault					
										Active					
							Disable	MIL not Illuminated for	TCM: P0722	2, P0723					
						C	onditions:	DTC's:							
									ECM: P0101	I, P0102, P0103					
Transmission Output Speed Sensor		Output Speed Sensor Circuit Low	Transmission Output Speed												One Tri
(TOSS)	P0722	Voltage	Sensor Raw Speed	<=	35	RPM						>=	3.75	Fail Time (Se	ec) one m
		-								Test Failed					
								D0700 Chalue is and		This Key					
								PU/22 Status is not	=	On or Fault					
										Active					
								Transmission Input Speed	_	TRUE	Boolean				
								Check	_	TDUE	Doolcan				
								Engine Torque Check	=	I RUE	Boolean				
								Transmission Fluid	>=	0.0001031	FUI				
								Temperature	>=	-40	°C				
								Disable this DTC if the PTO is	_	1	Boolean				
								active	_	TOUL	Doolcan				
								Engine Torque Signal Valid	=	TRUE	Boolean				
								Ignition Voltage is	>=	8.5996094	Volts				
								Ignition Voltage is	<=	31.990234	Volts				
								Engine Speed is	>=	400	RPM				
								Engine Speed is	<=	7500	RPM				
								Engine Speed is within the allowable limits for	>=	5	Sec				
								Enable_Flags Defined Below							
								The Engine Terry Check is							
								TRUE if either of the two							
								following conditions are TRUE							
								Engine Torque Condition 1		Damas					
								Range Shift Status	¥	shift	FNUM				
								Range Shint Status	-	completed	LINOW				
1								OR		'					
1								Transmission Range is	=	Park or					
1								Engine Terrere le		Neutral	N*m				
1								Engine Torque is	>= <=	8191.75	N*m				
1															
								Engine Torque Condition 2							
								Engine Torque is	>=	35	N*m				
I	I .	I	I					Engine Lorque is	<=	8191./5	N°m	I			

Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold	Secondary Malfunction		Enable			Ti	ne	Mil
System	Code	Description	Chiena	v	aiue			Conditions			Keq	uirea	mum.
						The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE							
						TIS Check Condition 1 Transmission Input Speed is Transmission Input Speed is	>= <=	1000 8191	RPM RPM				
						TIS Check Condition 2 Engine Speed without the brake applied is Engine Speed with the brake	>=	3200	RPM				
						applied is Engine Speed is Controller uses a single power	>= <= =	3200 8191 1	RPM RPM Boolean				
						Powertrain Brake Pedal is Valid	=	TRUE	Boolean				
					Disable Conditions	MIL not Illuminated for DTC's:	TCM: P0710 ECM: P010 P0122, P01	6, P0717, P0723 1, P0102, P0103 23	, P0121,				
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed	>= 105	RPM					>=	0.2	Enable Time (Sec)	One Trip
			Output Speed Delta	<= 8191	RPM					>=	0	Enable Time (Sec) Output Speed	
			Output Speed Drop	> 650	RPM					>=	1.5	Drop Recovery Fail Time (Sec)	
			AND Transmission Range is	= Driven rang (R,D)	e								
						Range_Disable	=	FALSE	See Below				
						Neutral_Range_Enable And Neutral_Speed_Enable	=	TRUE TRUE	See Below See Below				
						Transmission_Range_Enable	=	TRUE	See Below				-
						Transmission_Input_Speed_E nable No Change in Transfer Case	=	TRUE	See Below				
						Range (High <-> Low) for	>=	5 Test Failed	Seconds				
						P0723 Status is not	=	This Key On or Fault Active					
						Disable this DTC if the PTO is active	=	1	Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	-	Enable		Time	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions	17.11	Required	illum.
					Ignition Voltage is	>=	8.5996094	Volts		
					Ignition Voltage is	<=	31.990234	Volts		
					Engine Speed is	>=	400	RPM		
					Engine Speed is	<=	7500	RPIVI		
					allowable limits for	>=	5	Sec		
					Enable Flags Defined Below					
					Enable_ridgs benned below					
					Transmission Input Speed E					
					nable is TRUE when either TIS					
					Condition 1 or TIS Condition 2					
					is TRUE:					
					TIS Condition 1 is TRUE when			Enable Time		
					both of the following conditions	>=	0	(Sec)		
					are satsified for		1005	DDM		
					Input Speed Delta	<=	4095	RPM		
					Raw Input Speed	>=	500	RPM		
					TIS Condition 2 is TRUE when					
					ALL of the next two conditions					
					are satisfied					
					Input Speed	=	0	RPM		
					A Single Power Supply is used		-			
					for all speed sensors	=	TRUE	Boolean		
					Neutral_Range_Enable is					
					TRUE when any of the next 3					
					conditions are TRUE					
					Transmission Range is	=	Neutral	ENUM		
					Treese le clea Denne le		Reverse/N	ENU INA		
					Transmission Range is	=	Transitonal	ENUM		
							Neutral/Dri			
							Ve			
					Transmission Range is	=	Transitiona	ENUM		
							I.			
					And when a drop occurs					
					Loop to Loop Drop of					
					Transmission Output Speed is	>	650	RPM		
					Dongo Dicoblo ic TDUE when					
					any of the next three					
					conditions are TRUE					
					Transmission Range is	=	Park	FNUM		
							Park/Rever			
					Transmission Range is	=	se	ENUM		
					3		Transitonal			
					Input Clutch is not	_	ON (Fully	ENHM		
					input Glutoff 13 flut	-	Applied)	LINOW		
					Nuder Control Control					
					Neutral_Speed_Enable is					
					TRUE when All of the next	>	1.5	Seconds		
					for					
					Transmission Output Speed	>	130	RPM		
	I I			I		· ·			· ·	

16 OBDG05 TCM Summary Tables Unique Equinox/Terrain LFX FWD 6 Spo

			· · · · · · · · · · · · · · · · · · ·							-			
Component/ System	Fault	Monitor Strategy Description	Malfunction	Three	eshold alue	Secondary Malfunction		Enable			Tir Regi	ne Jired	Mil Illum.
						The loop to loop change of the Transmission Output Speed is	<	20	RPM				
						The loop to loop change of the Transmission Output Speed is 	>	-10	RPM				
						Transmission_Range_Enable is TRUE when one of the next six conditions is TRUE Transmission Range is	=	Neutral Reverse/N	ENUM				
						Transmission Range is	=	eutral Transitiona I	ENUM				
						Transmission Range is	=	Neutral/Dri ve Transitiona I	ENUM				
						Time since a driven range (R,D) has been selected	>=	Table Based Time Please Refer to Table 21 in supporting documents	Sec				
						Transmission Output Speed Sensor Raw Speed Output Speed when a fault was detected	>= >=	500 500	RPM RPM				
					Disable Conditions	MIL not Illuminated for DTC's:	TCM: P097: ECM: P010 P0122, P01	3, P0974, P0976 1, P0102, P0103 23	, P0977 , P0121,				
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met	>= 750	Кра					>=	2	Enable Time (Sec)	Two Trips
			(A) TCC Slip Error @ TCC On Mode	>= 1 in Supporting	RPM					>=	5	Fail Time (Sec)	
			(B) TCC Slip @ Lock On Mode If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	>= 130	RPM					>= >=	5 2	Fail Time (Sec) TCC Stuck Off Fail Counter	
						TCC Mode Ignition Voltage Lo Ignition Voltage Hi Engine Speed Engine Speed	= >= >= <=	On or Lock 8.5996094 31.990234 400 7500	Volts Volts RPM RPM				

|--|

-		10 022 000		Tablee	•••••										
Component/	Fault	Monitor Strategy	Malfunction			Thres	hold	Secondary		Enable			Ti	me	Mil
System	Code	Description	Criteria			vait	le	Engine Speed is within the		Conditions			Req	uirea	mum.
								allowable limits for	>=	5	Sec				
								Engine Torque Lo	>=	50	N*m				
								Engine Torque Hi	<=	8191.875	N*m				
								Throttle Position Lo	>=	8.0001831	Pct				
								Throttle Position Hi	<=	99.998474	Pct				
								2nd Gear Ratio Lo	>=	2.6710205	Ratio				
								2nd Gear Ratio High	<=	3.072998	Ratio				
								3rd Gear Ratio Lo	>=	1.7130127	Ratio				
								3rd Gear Ratio High	<=	1.9709473	Ratio				
								4th Gear Ratio Lo	>=	1.3100030	Ralio				
								5th Gear Ratio Lo	<=	0.0300537	Ratio				
								5th Gear Ratio Hi	<=	1.0699463	Ratio				
								6th Gear Ratio Lo	>=	0.6900635	Ratio				
								6th Gear Ratio High	<=	0.7939453	Ratio				
								Transmission Fluid	<u>></u> _	6 661062	°C				
								Temperature Lo	>=	-0.004003	·C				
								Transmission Fluid	/-	130	°C				
								Temperature Hi	~=	150					
								PTO Not Active	=	TRUE	Boolean				
								Engine Torque Signal Valid	=	TRUE	Boolean				
								I nrottle Position Signal Valid	=	ENISE	Boolean				
								Dynamic would	=	FALSE	DUDIEGI				
										Test Failed					
								P0741 Status is	≠	This Key					
									,	On or Fault					
										Active					
							Disable	MIL not Illuminated for	TCM: P0716	, P0717, P0722	2, P0723,				
							Conditions:	DTC's:	P0742, P276	3, P2764					
										D0400 D040	0. 00404				
									ECM: P010	I, P0102, P010	3, P0106,				
									PUIU/, PUIU	8, PUT/T, PUT	/2, PU1/4,				
									P0175, P020	1, PU2U2, PU20 6 D0207 D020	03, P0204, Ng D0300				
									P0203, P020	2 P0303 P030	06, F0300, 04 P0305				
									P0306, P030	7. P0308. P040	01, P042F				
										.,					
Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON		TCC Slip Speed	>=	-50	RPM								One Trip
		5		TCC Slip Speed	<=	13	RPM								
												>=	2	Fail Time (Sec))
			If Above Cond	itions Have been											
			Met, and Fa	ail Timer Expired,								>=	6	Fail Counter	
			Incren	nent Fail Counter				TOOM		011					_
								TCC Mode	=	Off					
								Enable test if Cmnd Gear =	=	1	Boolean				
								Fnable test if Cmnd Gear -							
								2nd and value true	=	0	Boolean				
								Engine Speed Hi	<=	6000	RPM				
								Engine Speed Lo	>=	500	RPM				
								Vehicle Speed HI	<=	511	KPH				
								Vehicle Speed Lo	>=	1	KPH				
								Engine Torque Hi	<=	8191.875	Nm				
								Engine Torque Lo	>=	80	Nm				
1	1				1			Current Range	≠	Neutral	Range	1			1

TO OBDOUS TOW Summary Tables Unique Equinox/Terrain LFX FWD 0 Speed 14	16 (OBDG05 TCM	Summary T	ables Uniqu	e Equinox/Terrain	LFX FWD 6 S	Speed T43
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					•								
Component/	Fault	Monitor Strategy	Malfunction	Thres	shold	Secondary		Enable			Tim	e .	Mil
System	Code	Description	Criteria	Val	ue	Malfunction		Conditions			Requi	red	illum.
						Current Range	≠	Reverse	Range				
						Transmission Sump	<=	130	°C				
						Temperature		100	0				
						Transmission Sump	>=	18	°C				
						Temperature	>=	10	C				
						Throttle Position Hyst High	>=	5.0003052	Pct				
						AND							
						Max Vehicle Speed to Meet							
						Throttle Enable	<=	8	KPH				
						Once Hyst High has been met							
						the onable will remain while	N-	2 000 4272	Det				
						The enable will remain write	>=	2.0004272	FUI				
						Disable for Throthe Position		75	Det				
						Disable for I hrottle Position	>=	/5	PCI				
						Disable if PTO active and	=	1	Boolean				
						value true			Doologii				
						Disable if in D1 and value true	=	1	Boolean				
						Disable if in D2 and value true	=	1	Boolean				
						Disable if in D3 and value true	=	1	Boolean				
						Disable if in D4 and value true	=	1	Boolean				
						Disable if in D5 and value true	=	1	Boolean				
						Disable if in MUMD and value							
						true	=	1	Boolean				
						Disable if in TLITD and value							
						Disable II III TOTD and value	=	1	Boolean				
						1 Wheel Drive Levy Astive		FALCE	Deeleen				
						4 wheel Drive Low Active	=	FALSE	Booleau				
						Disable if Air Purge active and	=	0	Boolean				
						value false		-					
						RVT Diagnostic Active	=	FALSE	Boolean				
						Ignition Voltage	>=	8.5996094	V				
						Ignition Voltage	<=	31.990234	V				
						Vehicle Speed	<=	511	KPH				
						Engine Speed	>=	400	RPM				
						Engine Speed	<=	7500	RPM				
						Engine Speed is within the							
						allowable limits for	>=	5	Sec				
						Engine Torque Signal Valid	_	TDUE	Pooloan				
						Throttle Desition Signal Valid	-	TDUE	Boolean				
						Throttle Position Signal Valid	=	IRUE	DUDIEGI				
								Test Failed					
								This Key					
						P0742 Status is	≠	On or Fault					
								Active					
								/ telive					
					Disable	MIL not Illuminated for	TCM: P071	6, P0717, P0722	, P0723,				
					Conditions:	DTC's	P0741, P27	63. P2764					
							ECM: P010	01 P0102 P010	3 P0106				
							P0107 P01	08 P0171 P01	72 P0174				
							D0175 D01		2,10174,				
							D0205 D02		JS, FUZU4,				
							FU2U3, FU2		JO, FU300,				
							P0301, P03	102, P0303, P030	J4, PU3U5,				
1	1	1					P0306, P03	iu7, P0308, P040	л, P042E				1
L	 		Į							I			<u> </u>
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slin	>= 400	RPM								Two Trips
inclusion and and			Commanded Oddi Ship	100									
1	1	1	Commanded Gear	= 1st Lock	rpm								
1	1	1	Gear Ratio	<= 1.484985352						>=	0.3	Fail Tmr	
1		1	Gear Ratio	>= 1.343017578						=	5	Fail Counts	

TO ODDOUS TOW Summary Tables Unique Equinol/Terrain Er A T WD 0 Speed 14	16 OBDG05 TCM Summar	y Tables Unique E	guinox/Terrain LF	X FWD 6 Speed T43
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										-			
Component/	Fault	Monitor Strategy	Malfunction	TI	reshold	Secondary		Enable			Tim	ne	Mil
System	Code	Description	Criteria		value	Wairunction		Conditions			Requ	ired	illum.
			If the above parameters are true										
										±	0	Neutral Timer	
										7	0	(Sec)	
											0.2		
										>=	0.3	Fail Timer (Sec)	
										>=	8	Counts	
						Ignition Voltage L) >-	8 500600/	Volts		-		
						Ignition Voltage H	i	31 000234	Volts				
							-	31.990234	VUILS				
						Engine Speed Lo) >=	400	RPIVI				
						Engine Speed H	i <=	7500	RPM				
						Engine Speed is within the	2	Б	Soc				
						allowable limits for	r	5	Jec				
						Transmission Fluid	1						
						Temperature	>=	-6.65625	°C				
						Temperature	,						
								Range					
						Range Shift State		Shift	FNUM				
						Runge entre etate	í l	Completed	Litoin				
								Completed					
						TPS	>=	0.5004883	%				
						OF Output Space	2	27	DDM				
						Output Speed	1 >=	30	RPIVI				
						Infottie Position Signal Valid	=	TRUE	Boolean				
						from ECN	1						
						Engine Torque Signal Valio	i						
						from ECM, High side driver is	5 =	TRUE	Boolean				
						enabler	4						
						Llinh Cide Driver is Enchlor		TDUE	Deeleen				
						High-Side Driver is Enabled	1 =	TRUE	Boolean				
						Input Speed Sensor faul	t =	FALSE	Boolean				
						Output Speed Sensor faul	t =	FALSE	Boolean				
						Default Gear Option is no	t	TDUE					
						presen	t =	TRUE					
						proson							
					Disable	MIL not Illuminated for	r TCM: P071	6, P0717, P0722	2, P0723,				
					Conditions:	DTC's	: P182E						
							ECM: D010	1 D0102 D010	D0106				
							D0107 D01	00 00171 001	70 00174				
							P0107, P01	06, PUI/I, PUI	/Z, PU1/4,				
							P0175, P02	01, P0202, P02)3, P0204,				
							P0205, P02	06, P0207, P02)8, P0300,				
							P0301, P03	02, P0303, P03	04, P0305,				
							P0306, P03	07. P0308. P04)1. P042E				
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>= 400	RPM	1							One Trip
	1						1						
			Commanded Gear	= 3rd	Gear		1			1			
			Commanded Coar bas Ashieved	- 310	Juli		1			1			
							1			1			
	1		1st Locked OR 1st Free-Wheel	= TRUF	Boolean	1	1			1			
			OR 2nd with Mode 2 Sol.		20010411		1			1			
	1		Commanded On			1	1			1			
			If the above parameters are true				1			1			
	1					1	1			PL	ease Refer		
							1			to	Table 14 in	Noutral Timor	
	1		1			1	1			>= 10			
							1			5	supporting	(Sec)	
	1		1			1	1			D	ocuments		
	1	1	Command 4th Gear once Output	~= 000	DDM		1			1			
	1	1	Shaft Speed	~= 000	INF IVI		1						

																-
Component/	Fault	Monitor Strategy		Malfunction		Three	shold		Secondary		Enable			Tim	ie .	Mil
System	Code	Description		Criteria	-	Val	lue		Mairunction		Conditions			Requ	ired	illum.
				If Gear Ratio	>=	4.259765625										
				And Gear Ratio	<=	4.708251953										
														15	Fail Timor (Soc	
													/-	1.5		1
													>=	5	Counts	
									Ignition Voltage Lo	>=	8.5996094	Volts				1
									Ignition Voltage Hi	<=	31,990234	Volts				
									Engine Speed Lo	>=	400	RPM				
									Engine Speed Ed		7500	DDM				
									Engine Speed in within the	~-	7500					
									Engine Speed is within the	>=	5	Sec				
									allowable limits for							
									High-Side Driver is Enabled	=	TRUE	Boolean				
									Throttle Position Signal Valid	=	TRUE	Boolean				
									from ECM		INCE	Doolean				
									Output Speed	>=	36	RPM				
									OR							
									TPS	>=	0.5004883	%				
											Range					
									Range Shift State	=	Shift	ENUM				
											Completed					
									Transmission Fluid							
									Transmission Fluid	>=	-6.65625	°C				
									Temperature							
									Input Speed Sensor fault	=	FALSE	Boolean				
									Output Speed Sensor fault	=	FALSE	Boolean				
									Default Gear Option is not	_	TDUE					
									present	=	IRUE					
								Disable	MIL not Illuminated for	TCM· P07	16 P0717 P0722	P0723				
							C	onditions.	DTC's	D182E	10,10717,10722	,10720,				
							0	onunions.	5103.	TUZE						
										ECM: P010	JI, P0102, P0103	, P0106,				
										P0107, P0	108, P0171, P017	2, P0174,				
										P0175, P0	201, P0202, P020)3, P0204,				
										P0205, P0	206, P0207, P020	08, P0300,				
										P0301, P0	302, P0303, P030	04, P0305,				
										P0306, P0	307, P0308, P040)1, P042E				
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1	Commanded Gear	=	1st Locked			İ	1			1			One Tri
	1 5700		2	Sommanded Odd	1								P	lease Refer		
	1		1		1								+/	n Tahlo 5 in	Neutral Timor	1
				Gear Box Slip	>=	400	RPM						>= "	Supporting	(Soc)	
														Supporting	(Sec)	
1	1		1	Interative Object on a	1								I 1	JUCUMENTS		1
				Intrusive Shift to 2nd			~									
1	1		1	Commanded Gear Previous	=	1st Locked	Gear						1			1
				Gear Ratio	<=	3.015991211										
				Gear Ratio	>=	2.728027344										
				If the above parameters are true												
													>=	1	sec	
					1								>=	3	counts	
1	1		 		1				Ignition Voltage Lo	>=	8 5996094	Volts	1			1
1	1		1		1				Ignition Voltage Hi	-	31 000224	Volte	1			1
1	1		1		1				Engino Spood Lo		100	DDM	1			1
	1		1		1				Engine Speed LU	>=	400	DDM	1			1
1	1		1		1				Engine Speed II	<=	7500	INF IVI	1			1
1	1		1		1				Engine Speed is within the	>=	5	Sec	1			1
1	1		1		1				allowable limits for				1			1
1	1	1	1						Output Speed	>=	36	RPM	1			1

16 OBDG05 TCM Summar	y Tables Unique I	Equinox/Terrain LF)	K FWD 6 Speed T43
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Component/	Fault	Monitor Strategy		Malfunction	- Thre Va	shold	Secondary Malfunction		Enable			Tim	e red	Mil
Component/ System	P0776	Monitor Strategy Description	Fail Case 1	Malfunction Criteria Case: Steady State 3rd Gear Commanded Gear Gearbox Slip Command 4th Gear once Output Shaft Speed If Gear Ratio And Gear Ratio	= 3rd >= 400 <= 800 >= 1.343261719 <= 1.484741211	shold Jue Disable Conditions: Gear RPM RPM	Secondary Malfunction OR TPS Range Shift State Transmission Fluid Temperature High-Side Driver is Enabled Throttle Position Signal Valid from ECM Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present MIL not Illuminated for DTC's:	>= = = = = = = TCM: P0716 P182E ECM: P0101 P0107, P010 P0107, P010 P0107, P020 P0205, P020 P0301, P030 P0306, P030	Enable Conditions 0.5004883 Range Shift Completed -6.65625 TRUE TRUE FALSE FALSE TRUE , P0717, P0722 , P0717, P0722 , P0717, P0722 06, P0207, P027 06, P0207, P027 06, P0207, P027 07, P0308, P040	% ENUM °C Boolean Boolean Boolean Boolean , P0723, , P0723, , P0106, (2, P0174, 13, P0204, 18, P0300, 14, P0305, 11, P042E	F >= tc >= >=	Tim Requi	a ed Pail Timer (Sec) Fail Timer (Sec) 3rd Gear Fail Counts	Mii Illum.
				And Gear Ratio And Gear Ratio It the above condiations are true, Increment 3rd gear fail counter	<= 1.484741211						>= >=	3 3	Fail Timer (Sec) 3rd Gear Fail Counts or 3-5R Clutch Fail	
			<u>Fail Case 2</u>	and C35R Fail counter Case: Steady State 5th Gear Commanded Gear	= 5th	Gear					>=	14 Please Refer	Counts	
				Gearbox Slip Intrusive Test: Command 6th Gear	>= 400	Rpm					>= t	o Table 5 in Supporting Documents	Neutral Timer (Sec)	

O-manual (Eault	Manitan Stratamu	Malformation	Therefored	Concendant.	E a la constante de la constan	Time	Mai
Component/	Fault	Monitor Strategy	Critoria	Value	Malfunction	Conditions	i ime Required	IVIII
System	Code	Description	Criteria	value	Wallunction	Conditions	Required	mum.
			If attained Gear=6th gear Time	<pre>Please refer to Table 3 in supporting documento </pre>				
			It the above condiations are true, Increment 5th gear fail counter	aocuments			>= 3 5th Gear F Counts	ail
			and C35R Fail counter				>= 14 3-5R Clutch Counts	Fail
					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	>= 36 RPM		
					A OR B			
					(A) Output speed enable	>= 36 RPM		
					(B) Accelerator Pedal enable	>= 0.5004883 Pct		
					Common Enable Criteria			
					Ignition Voltage Lo	>= 8.5996094 Volts		
					Ignition Voltage H	<= 31.990234 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	A 45425 °C		
					Temperature	>= -0.05025 C		
					Input Speed Sensor fault	= FALSE Boolean		
					Output Speed Sensor fault	= FALSE Boolean		
					Default Gear Option is not	_ TDUE		
					present	- 1102		
				Disable Conditions	e 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		
		Droccure Central (DC) Selinaid D	Foil Core 1					Ono Trin
Variable Bleed Solenoid (VBS)	P0777	Stuck On [C35R] (Steady State)	Case: Steady State 1st	t				One mp
	1		Attained Gear slip	>= 400 RPM				
				Table Based				
				Time Please				
			If the Above is True for Time	Refer to Table Enable Time				
				4 in (Sec)				
	1			supporting				
	1			documents		1		
	1		Intrusive test					
	1		(CBR1 clutch exhausted)			1		
	1		Gear Ratio	<= 1.933959961				
1	1	1	Gear Ratio	>= 1.75	1	1	1	

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable		Ti	me	Mil Illum
System	Coue	Description	If the above parameters are true	Value	Manufiction	Conditions		Neq	uireu	marn.
								1 1		
							>=	1.1	Fail Timer (Sec)	
							>=	2	Fail Count in	
									Tst Gear	
									Total Fail	
							>=	3	Counts	
			Fail Case 2 Case: Steady State 2nd gear							
				Table Based						
			Max Dalta Output Speed	value Please						
			iviax Deita Output Speeu Hysteresis	>= 22 in rpm/sec						
			1900000	supporting						
				documents						
				Table Based						
			Min Dolto Output Speed	value Please						
			Min Deita Output Speed Hystoresis	>= Refer to Table 23 in rpm/sec						
			Trystoresis	supporting						
				documents						
				Table Based						
				Time Please						
			If the Above is True for Time	>= Refer to Table 17 in Sec						
				supporting						
				documents						
			Intrusive test:							
			(CB26 clutch exhausted)	1 0220500/1						
			Gear Ratio	<= 1.933959961						
			If the above parameters are true	- 1.75						
							×-	11	Eail Timor (Soc)	
							>=	1.1		
							>=	3	Fail Count in	
									2nd Gear	
								2	Total Fail	
							>=	3	Counts	
			Fail Case 3 Case: Steady State 4th gear	T.I. D						
				Lable Based						
			Max Delta Output Speed	Refer to Table						
			Hysteresis	>= 22 in rpm/sec						
			2	supporting						
				documents						
				Lable Based						
			Min Delta Output Speed	Refer to Table						
			Hysteresis	>= 23 in rpm/sec						
			,	supporting						
				documents						
				Lable Based						
				Refer to Table						
			If the Above is True for Time	>= 17 in Sec						
				supporting						
				documents						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction	Threshold Value	Secondary Malfunction	-	Enable Conditions			Ti Rea	me uired	Mil Illum.
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 1.050048828 >= 0.949951172								
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 4th Gear	
									>=	3	or Total Fail Counts	
			Fail Case 4 Case: Steady State 6th gear	Table Based								
			Max Delta Output Speed Hysteresis	value Please Refer to Table 22 in supporting documents Table Based								
			Min Delta Output Speed Hysteresis	value Please Refer to Table 23 in supporting documents Table Based								
			If the Above is True for Time	Time Please Refer to Table 17 in Supporting documents								
			Intrusive test: (CB26 clutch exhausted)									
			Gear Ratio	<= 1.050048828					>=	1.1	Fail Timer (Sec)	
			Gear Ratio If the above parameters are true	>= 0.949951172					>=	3	counts	
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 6th Gear	
									>=	3	Total Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication output speed TPS validity flag HSD Enabled Hydraulic_System_Pressurize d (A) Output speed enable (B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Lo Engine Speed Lio Engine Speed Lio	= = >= = >= >= >= >= >= >= >= <=	FALSE FALSE FALSE FALSE TRUE TRUE TRUE 36 0.5004883 8.5996094 31.990234 400 7500	Boolean Boolean RPM Boolean Boolean Boolean Nm Nm Volts Volts Volts RPM RPM				

0tl	Fault	Manitan Otastanu	M-lformation	The	a a la a la l	Concentration of the second		Fachle		Time	5411
System	Code	Description	Criteria	10	esnolu /alue	Malfunction		Conditions		i ime Required	Illum
System	Coue	Description	Gillena		alue	Engine Speed is within the		Conditions		Required	interni.
						ellowable limits for	>=	5	Sec		
						dilowable inflits for					
						II Attained Gear=1st FW	>=	5.0003052	Pct		
						Accelerator Pedal enable					
						if Attained Gear=1st FW	>=	20	Nm		
						Engine Torque Enable	~ -	20			
						if Attained Gear=1st FW		0101 075	Nime		
						Engine Torque Enable	<=	0191.070	INITI		
						Transmission Fluid					
						Temperature	>=	-6.65625	°C		
						Input Speed Sensor fault	_	FALSE	Boolean		
						Output Speed Sensor fault	_	FALSE	Doolean		
						Output Speed Sensor Taul	=	FALSE	DUDIEGI		
					D : 11						
					Disable	MIL not Illuminated for	TCM: P071	6, P0717, P0722	2, P0723,		
					Conditions:	DTC's	P182E				
										1	1
							FCM: P010	1. P0102 P0103	3. P0106	1	
							D0107 D01	08 D0171 D01	72 D0174		
							D0175 D02		72,10174,		
							P0175, P02	01, P0202, P020	J3, PU2U4,		
							P0205, P02	206, P0207, P020	08, P0300,		
							P0301, P03	02, P0303, P030	04, P0305,		
							P0306, P03	07, P0308, P040	01, P042E		
			Primary Offgoing Clutch is								One Trip
		Pressure Control (PC) Solenoid B	exhausted (See Table 12 in								one mp
Variable Bleed Solenoid (VBS)	P0777	StuckOn [C35P] (Dymanic)	Supporting Documents for	= TRUE	Boolean						
		StuckOff [C35K] (Dyffianic)	Supporting Documents for								
			Exhaust Delay Timers)								
			Primary Oncoming Clutch	Maximum							
			Pressure Command Status	 pressurize 	d						
			Drimony Offgoing Clutch Processo	Clutch ovho	uct.						
			Philliary Oligonity Clutch Plessure	=	121						
			Command Status	command							
				Initial Clute	h						
			Range Shift Status	≠ Control							
			Attained Coar Slin	. 10	DDM						
			Attaineu Gear Siip	<= 40	RPIVI						
			If the above conditions are true run								
			appropriate Fail 1 Timers Below:								
			appropriate r air r rimers below.								
			fail timer 1	0.5							
			(3-1 shifting with Closed Throttle)	>= 0.5	Fall Time (Sec)						
			fail timer 1								
			(3-2 shifting with Throttle)	>= 0.5	Fail Time (Sec)						
			(3-2 shining with throtic)								
			(2.2 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)						
			(3-2 Shinting with Closed Throtte)								
			fail timer 1	>= 0.5	Fail Time (Sec)						
			(3-4 shifting with Throttle)		1 dii 1 iiio (000)						
			fail timer 1	>= 0.5	Fail Time (Sec)						
			(3-4shifting with Closed Throttle)	- 0.0	i all fille (Sec)						
			fail timer 1	0.5	Fail Time (C)					1	
			(3-5 shifting with Throttle)	>= 0.5	Fail Lime (Sec)					1	
			fail timer 1							1	
			(3-5 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)						
			fail timer 1							1	
			(E. 2 shifting with Thesetta)	>= 0.5	Fail Time (Sec)					1	
			(5-3 Shirting With Throttle)		. ,					1	
			tail timer 1	>= 0.5	Fail Time (Sec)					1	
1	I	1	(5-3 shifting with Closed Throttle)	0.0		l	I			1	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			fail time 1 (5-4 shifting with Throttle) fail time 1	1 2) >= 0.5 Fail Time (Sec) 1 >= 0.5 Fail Time (Sec)				
			(5-4 shifting with Closed Throttle) fail timer 1 (5-6 shifting with Throttle)	$\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ 1 \\ \end{array} \\ \end{array} >= 0.5 \\ \end{array} \\ \begin{array}{c} \end{array} \\ \begin{array}{c} \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} $				
			fail timer 1 (5-6 shifting with Closed Throttle)	$\frac{1}{2}$ >= 0.5 Fail Time (Sec)				
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers	n S			Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and sec Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fai counter	n g ill f				
			3rd gear fail counter	r			>= 3 3rd gear fail counts OR	
			5th gear fail counter	9F			>= 5 5th gear fail counts OR	
			Total fail counter	er	TUT Enable temperature	>= -6.65625 °C	>= 5 total fail counts	<u> </u>
					Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled Default Gear Option is not present	= FALSE Boolean = FALSE Boolean ≠ 1st Boolean >= TRUE Boolean >= 100 RPM >= 200 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear	ır				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditions		Time Required			Mil Illum.	
eyotolii	0.040	Decemption								F	Please See		
			Gear slip	>=	400 RPM					>= T	able 5 For eutral Time	Neutral Timer	
										11	Cal	(000)	
			Intrusive test: commanded 5th gear										
			contributed our gear	Pl	ease refer to								
			If attained Gear ≠5th for time	>=	Table 3 in Supporting Shift Time (Sec)								
				[Documents								
			if the above conditions have been										
			Increment 4th Gear Fail Counter							>-	3	4th Gear Fail	
										/-	5	Count	
			and C456 Fail Counters							>-	1/	C456 Fail	
			Eail Case 2 Case: Steady State 5th Gear							/-	17	Counts	
			Tan Sabe 2 Gase. Steady State Still Geal							F	lease See		
			Gear slip	>=	400 RPM					>= T	able 5 For	Neutral Timer (Sec)	
											Cal	(000)	
			Intrusive test: commanded 6th gear										
			contributed our gear	Р	lease Refer								
			If attained Gear ≠ 6th for time	>= to	o Table 3 in Supporting Shift Time (Sec)								
				[Documents								
			if the above conditions have been met										
			Increment 5th Gear Fail Counter							>=	3	5th Gear Fail	
										-	5	Count OR	
			and C456 Fail Counters							>=	14	C456 Fail	
			Fail Case 3 Case: Steady State 6th Gear							-		Counts	
										F	Please See		
			Gear slip	>=	400 RPM					>= T	able 5 For eutral Time	Neutral Timer (Sec)	
											Cal	(000)	
			Intrusive test: commanded 5th gear										
				Pl	ease refer to								
			If attained Gear \neq 5th for time	>=	Table 3 in Supporting Shift Time (Sec)								
				[Documents								
			if the above conditions have been met										
			Increment 6th Gear Fail Counter							>=	3	6th Gear Fail	
			and C456 Fail Counter								-	Count OR	
			and C456 Fail Counter							>=	14	C456 Fail	
						PRNDL State defaulted	=	FALSE	Boolean			Counts	
						inhibit RVT	=	FALSE	Boolean				
						IMS fault pending indication TPS validity flag	=	FALSE TRUE	Boolean Boolean				
						Hydraulic System Pressurized	=	TRUE	Boolean				

16 OBDG05 TCM Summary	Tables Unique E	quinox/Terrain LFX	FWD 6 Speed T43
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		1	, ,							
Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable		Ti	ime wired	Mil
System	Coue	Description	Griteria	Value	Minimum output speed fo	r	+	Req	uneu	intarin.
					RV	T >= 36 RPM				
					A OR E	В				
					(A) Output speed enable	e >= 36 RPM				
					(B) Accelerator Pedal enable	e >= 0.5004883 Pct				
					Common Enable Criteria	a soorroot with				
					Ignition Voltage Lo	0 >= 8.5996094 Volts				
					Engine Speed L	11 <= 51.990234 VOILS				
					Engine Speed H	ti <= 7500 RPM				
					Engine Speed is within the	e E Car				
					allowable limits fo	>= 5 Sec				
					Throttle Position Signal valid	d = TRUE Boolean				
					HSD Enable	d = TRUE Boolean				
					Transmission Fluid	d >= -6.65625 °C				
					Input Speed Sensor faul	e It – EALSE Boolean				
					OutputSpeed Sensor faul	t = FALSE Boolean				
					Default Gear Option is no	t TOUL				
					presen	t = IRUE				
						TOM DOTA / DOTAT DOTOD DOTOD				
				Disable	MIL not Illuminated fo	r TCM: P0/16, P0/17, P0/22, P0/23,				
				Conditions	DICS	S. PIOZE				
						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				
	1	Pressure Control (PC) Solenoid C	Fail Case 1				+			One Trip
Variable Bleed Solenoid (VBS)	P0797	Stuck On [C456] (Steady State)	Case: Steady State 1:	st						one mp
			Attained Gear sli	p >= 400 RPM						
				Table Based						
				Time Please						
			If the Above is True for Tim	e >= Refer to Table Enable Time						
				4 In (Sec)						
				documents						
			Intrusive tes	t documents						
			(CBR1 clutch exhausted	D						
			Gear Rati	0 <= 1.484985352						
			Gear Rati	0 >= 1.343017578						
			If the above parameters are tru	е						
	1			1			>=	1.1	Fail Timer (Sec)
									Fail Count in	
	1						>=	2	1st Gear	1
									or	1
	1						~-	2	Total Fail	1
	1							J	Counts	4
1	1	1	Fail Case 2 Case Steady State 2n	d	1	1	1			1

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable		Time Require	d	Mil Illum.				
oystem.	ooue	Description		Table Based				lindano						
				value Please										
			Max Delta Output Speed Hysteresis	>= Refer to Table 22 in rpm/sec										
				supporting										
				documents										
				Table Based										
			Min Delta Output Speed	Refer to Table										
			Hysteresis	>= 23 in rpm/sec										
				supporting										
				Table Based										
				Time Please										
			If the Above is True for Time	>= Refer to Table Sec										
				supporting										
				documents										
			Intrusive test: (CB26 clutch expansion)											
			Gear Ratio	<= 1.484985352										
			Gear Ratio	>= 1.343017578										
			If the above parameters are true											
							>=	1.1 F	Fail Timer (Sec)					
							>=	3	Fail Count in					
									2nd Gear or					
							>=	3]	Total fail counts					
								0						
			Fail Case 3 Case Steady State 3rd											
				Table Based										
			Max Delta Output Speed	Refer to Table										
			Hysteresis	>= 22 in rpm/sec										
				supporting										
				Table Based										
				value Please										
			Min Delta Output Speed	>= Refer to Table 23 in rpm/sec										
			- Hjatoloala	supporting										
				documents										
				Time Please										
			If the Above is True for Time	Refer to Table Sec										
				17 in										
				documents										
			Intrusive test:											
			(C35R clutch exhausted)	<- 1 <u>/8/08535</u> 2										
			Gear Ratio	>= 1.343017578										
			If the above parameters are true											
							>=	1.1 F	Fail Timer (Sec)					
							>=	3	Fail Count in					
	I		I			1		-	3rd Gear					
Object Notice Reading Multication Proceeding Reading Reading <th>-</th> <th></th>	-													
--	-------------------------------	---------	----------------------------------	----------------------------------	----------------	------------	----------------------------------	------------	------------------	------------	-----	---------	-------------	----------
Bytem Code Description Others Wate Multerion Constitions Important in the second sec	Component/	Fault	Monitor Strategy	Malfunction	Thre	shold	Secondary		Enable			Time	1	Mil
Image: control (C) State of the image:	System	Code	Description	Criteria	Va	lue	Malfunction		Conditions			Require	ed	Illum.
Note: Note: <th< td=""><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td>OR</td><td></td><td>1</td></th<>		1						1				OR		1
Note Note Note Note Note Note Note Webs Base Sciend (MD) Prove Prove State State - FASS Bodem - - 3 General Webs Base Sciend (MD) - FASS Bodem - - 3 General Webs Base Sciend (MD) - FASS Bodem - - 1000 Webs Base Sciend (MD) - FASS Bodem - - 1000 Webs Base Sciend (MD) - TAUE Bodem - - 1000 Webs Base Sciend (MD) - - 2000 - 2000 - - 1000 Webs Base Sciend (MD) - - 2000 - - 2000 - - 1000 - - 1000 - - - 1000 - - 1000 - - 1000 - - 1000 - - 1000 - -<												OR	Table Fall	
Image: Control (RC) Prove Control Statute (RC) Prove Control (RC)											>=	3	l otal Fail	
Notes Beed Second (VS) Prove Control (PC) Second (D) Pressy Control (PC) Second (D)											· -	0	Counts	
Visited Block Science (VRS) Prove Prove Output (VRS) Science (VRS) Science (VRS) Prove							PRNDL State defaulted	=	FALSE	Boolean				
Water Best Second (VES) Prov Prove Order (PC) Second (PC)							inhihit D)/T		FALCE	Deeleen				
Wrate field Salvaid (MS) F107 Possar Calul (PO Salvaid Const 117) - Possar Calul (PO Salvaid Const 117) - Possar Calul (PO Salvaid Const 117) - F107 Roden Wrate field Salvaid (MS) F107 Possar Calul (PO Salvaid Const 117) - 1002 Roden - 1002 Roden Wrate field Salvaid (MS) F107 Possar Calul (PO Salvaid Const 117) - 1002 Roden - 1002 Roden Wrate field Salvaid (MS) F107 Possar Calul (PO Salvaid Const 117) - 1002 Roden -							INNUL RV I	=	FALSE	Booleau				
Market Bleed Sormed (VFS) Provin Credit (PC) Sormet C Market Bleed Sormed (VFS) Provin Credit (PC) Sormet C Province Sortenation Province Sortenation <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>IMS fault pending indication</td> <td>=</td> <td>FALSE</td> <td>Boolean</td> <td></td> <td></td> <td></td> <td></td>							IMS fault pending indication	=	FALSE	Boolean				
Virkele Black Seland (VPS) Prover Cantel (PC) Somet C Prover Cantel (PC) Somet C <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>output speed</td><td>>=</td><td>0</td><td>RPM</td><td></td><td></td><td></td><td></td></td<>							output speed	>=	0	RPM				
Viritelitie Bied Science (V65) P077 Porter Carlor (C1) Science C Primary Officing Cubic 5 FTRUE Bisse in (F1) FTRUE Porter FTRUE									TDUE	Deeleen				
Value Bood Saleval (MB) Port Person Control PC) Saleval C Support Section Final C Provide Saleval (MB) Port Person Control PC) Saleval C Support Section Final C Provide Saleval (MB) Port Person Control PC) Saleval C Provide Saleval (MB) Port Person Provide Saleval (P) Provide Saleval (MB) Port Person Provide Saleval (P) Provide Saleval (MB) Port Person Provide Saleval (P) Provide Saleval (MB) Port Person Provide PPR / Provide Saleval (P) Provide Saleval (MB) Port Person Provide PPR /							TPS validity hag	=	TRUE	Booleau				
whate Bast Solend (VES) Row Pressee Commt PC) Stematic Support PC, Stematic Su							HSD Enabled	=	TRUE	Boolean				
Windle Reed Stanuid (MIS) Party Process Company Process Processor A R B A R A /ul>							Hydraulic System Pressurize							
Wrate Bood Sciened (NDS) PNTP7 Pressure Control (PC) Sciencid C Scienced (NDS) PNTP7							Tryuruune_bystem_i ressurize	=	TRUE	Boolean				
Virate Bied Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod (MIS) PDVP Pressee Control (PC) Saterod C Saterod C Performed Saterod S							d							
Writede Bleed Scienced (VRS) POTP Instanta Concent (CP) Scienced C Phinary Officyang Oddith is Concentration Science Status							A OR B							
Writeshe Bood Salenda (MS) P0777 Pressure Control (PC) Solena C Sales Dig (Salena C Control Salena							(A) Output speed enable	>=	36	Nm				
Vertable Riled Scienced (MIS) Party Presure Central PC, Stormed C, Barray C							(P) Assalaratar Dadal anabla		0 500 4000	Nim				
Versiste Bood Selenci (VIIS) PD97 Peosine Cathad (PC) Solendd C enthance (Selenci) (VIIS) P197 Peosine Cathad (PC) Solendd C enthance (Selenci) (VIIS) P197 Peosine Cathad (PC) Solendd C enthance (Selenci) (VIIS) P197 Peosine Cathad (PC) Solendd C enthance (Selenci) (Versiste Bood Selenci) (VIIS) P1977 Peosine Cathad (PC) Solendd C enthance (Selenci) (VIIS) P1977 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>(B) Accelerator Pedal enable</td><td>>=</td><td>0.5004883</td><td>INITI</td><td></td><td></td><td></td><td></td></t<>							(B) Accelerator Pedal enable	>=	0.5004883	INITI				
Value Reed Scenal (MIS) PUT7 PESSINC Contin (PC) Soleroid C PHTARY Oliging Cubit IN a contact limit in the rest of the rest of the contact limit in the rest of the							Ignition Voltage Lo	>=	8.5996094	Volts				
Variable Bled Schrodd (VRS) Payr Pressne Contra (PC) Sciencial C Subject (PC) Pressne Contra (PC) Sciencial C							Ignition Voltage Hi	<=	31 990234	Volts				
Variable Bleed Solerood (VRS) Port Pressure Control (PC) Solirood C Support Primary Ofiging Locatch Mar Support Fille Boonant Control Status Fille Boonant Control Status Primary Ofiging Locatch Mar Support Fille Boonant Control Status Fille Boonant Control Status Fille							En sine Canadada	~	400	DDM				
Variable Bield Sciencid (VRS) P077 Pinsare Control (PC) Sciencid C Primary Ofgoing Claich is enhanded (See Table 119) enhanced (See Table 11							Engine Speed Lo	>=	400	RPM				
Variable Bleed Soleneld (VBS) P0797							Engine Speed Hi	<=	7500	RPM				
Variable Bleed Solenod (VRS) P0yP Pressure Cantrol (PC) Solenod C Pressure Cantrol (PC) So							Engine Speed is within the							
Matche Bited Solendi (VES) P077 Pressue Control (PC) Solendi C Primary Offspin Quich is grant							Eligine opecerio warm ale	>=	5	Sec				
Image: Second (VBS) P077 Persone Control (PC) Saleed of Control (PC) Saleed							allowable limits for							
Variable Bleed Solenoid (VBS) P079 Persure Control (PO) Solenoid Chi File Super Control (PO) Solen							if Attained Gear=1st FW		F 00000F0	Det				
Variable Beed Solenaid (VES) POP77 Pressure Control (PC) Solenaid C Primary Offiging Clubch in Solenaid Control (PC) Solenaid C Primary Offiging Clubch in Solenaid Control (PC) Solenaid Control (Accelerator Pedal enable	>=	5.0003052	PCI				
Variable Bleed Selenaid (VBS) Porzy Pressure Control (PC) Solenoid C Plinary Offguing Clubch B - TRUE Boolean - FAISE Boolean Porzy Porzy Perssure Control (PC) Solenoid C Plinary Offguing Clubch B - - TRUE Boolean Porzy Porzy Porzy Perssure Control (PC) Solenoid C Plinary Offguing Clubch B - - TRUE Boolean Porzy							Accelerator F coar Crabic							
Variable Bleed Solenoid (VRS) P077 Pressure Control (PC) Solenoid C Supporting Documents for Former Diffusion (Cardinal Difference) Former Diffusion (Cardinal Difference) Former Difference) Former Difference Former Former Difference) P077 Pressure Control (PC) Solenoid C Support Difference Former Former Former Difference Former Former Former Former Form							If Attained Gear=1st FW	>-	20	Nm				
Variable Bield Solenoid (VBS) PDYP Pressure Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C TRUE Bookean Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super Control (PC) Salenoid C Permary Oligoing Cluich he Super							Engine Torgue Enable	/-	20	i viti				
Variable Bioed Solenoid (VBS) P079 Pressure Control (PC) Solenoid C Primery Offiging Clutch is in Supporting Documents for a support specific s							if Attained Cear-1st FW							
Variable Bleed Solenoid (VIS) P077 Pressure Control (PC) Solenoid C Supporting Oligoing Olidich is pressure Organical Cardio Dealy Transmission Flag -<							In Attained Geal=13(1)W	<=	8191.875	Nm				
Variable Bieed Salenoid (VBS) P077 Pressure Control (PC) Solenoid C Primary Offgoing Clutch is command TRUE Bolean Clutch abaustie (See Table 11) FRUE Bolean Port TRUE <							Engine Torque Enable							
Variable Bleed Solenoid (VBS) POTYP Pressure Control (PC) Solenoid C LABAUSLIC (Dynamic) Primary Offgoing Clutch is exhausted (See Table) Impute Solenoid Clutch Default Gear Quint Solenoid Default Gear Quint Solenoid DTGSS MIL not Illuminated for TOUS, P0102, P0103, P0103, P0106, P0107, P0102, P0103, P0104, P0102, P01017, P0102, P0103, P0104, P0102, P0107, P0102, P0102,							Transmission Fluid							
Variable Bleed Solenoid (VBS) P077 Pressure Control (PC) Solenoid C Subort Officianis (Cade) (Oynamic) P1100000000000000000000000000000000000							Temperature	>=	-6.65625	°C				
Implifying Speed Series Namily = FALSE Boolean Output Speed Series Namily = FALSE Boolean Disable Disable ML not Illuminated for TCM: P0716, P0717, P0722, P0723, D0758; P182E TRUE Disable Disable Disable ECM: P0101, P0102, P0103, P0106, P0107, P0102, P0103, P0106, P0107, P0102, P0103, P0106, P0107, P0107									ENLOF					
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Supporting Documents for Control Decimand Status Primary Offgoing Clutch is EALSE Boolean • FALSE Boolean • FALSE Boolean Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Supporting Documents for EALSE Boolean • FALSE Boolean • FALSE Boolean Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Support Primary Offgoing Clutch is EALSE Boolean • TRUE Boolean • FALSE Boolean • FALSE Boolean Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Support Primary Offgoing Clutch is EALISE Documents for EALISE Boolean • TRUE Boolean • TRUE Boolean Primary Offgoing Clutch is EALISE Command Status Primary Offgoing Clutch Pressure Command Status # • TRUE Boolean • TRUE Boolean • TRUE Boolean Primary Offgoing Clutch is EALISE Documents for EALISE Documents for Command Status # • TRUE Boolean • TRUE Boolean • TRUE Boolean Primary Offgoing Clutch Pressure Command Status # • TRUE Boolean • TRUE Boolean • TRUE Boolean • TRUE Boolean Primary Offgoing Clutch Pressure Command Status # • TRUE Boolean • TRUE Boolean • TRUE Boolean • TRUE Boolean							Input Speed Sensor fault	=	FALSE	Boolean				
Variable Bleed Solenoid (VBS) P0797 Pessure Control (PC) Solenoid C Suck On (C456) (Dynamic) P17997 Pessure Control (PC) Solenoid C Primary Offgoing Dictor is for Extrast Description = TRUE Disable MIL not Illuminated for TCM: P0716, P0717, P0722, P0723, DTCS (P182E) P0707 Pessure Control (PC) Solenoid C P0107, P0030,							Output Speed Sensor fault	=	FALSE	Boolean				
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic) Primary Offgoing Clutch Possare Primary Offgoing P							Default Cear Ontion is not							
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Susk on [C456] (Dynamic) Primary Offgoing Clutch is exhausted (See Table 11 in Susporting Doursements for Exhaust Delay Times) maximum my ressure 2 EMIL not Illuminated for TCM: P0716, P0717, P0722, P0723, P0757, P0201, P0202, P0203, P0204, P0203, P0203, P0203, P0204, P0205, P0206, P0207, P0202, P0202, P0204, P0206, P0207, P0202, P02020, P0204, P0206, P0207, P0202, P0204, P0205, P0206, P0207, P0202, P0204, P0205, P0206, P0207, P0202, P0206, P0207, P0202, P0204, P0206, P0207, P0202, P0206, P0207, P0202, P0204, P0206, P0207, P0202, P0204, P0205, P0206, P0207, P0202, P0204, P0205, P0206, P0207, P0202, P0204, P0205, P0206, P0207, P0202, P0204, P0205, P0206, P0207, P0202, P0204, P0205, P0207, P0202, P0207, P0202, P0204, P0207, P0202, P0207, P0207, P0202, P0207, P0207, P0202, P0207, P0207, P0207, P0207, P0207, P0207, P0207, P0207, P0207, P0202, P0207, P0207							Deradit Gear Option is not	=	TRUE					
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic) Primary Offgoing Clutch is Exhaust Delay Timers) TRUE Boolean Boolean Free Primary Offgoing Clutch is exhaust Delay Timers) TRUE Primary Offgoing Clutch is exhaust Delay Timers) TRUE Primary Offgoing Clutch is exhaust Delay Timers) Image Shift Status exhaust Delay Timers) TRUE Primary Offgoing Clutch is exhaust Delay Timers) TRUE Primary Offgoing Clutch Pressure Command Status e Clutch exhaust command Boolean Free Shore Command Status e Clutch exhaust command Status Free Shore Command Status e Clutch exhaust command Status Primary Offgoing Clutch Pressure command Primary Offgoing Clutch Pressure command Primary Offgoing Clutch Pressure command Status Primary Offgoing Clutch Pressure command Status Primary Offgoing Clutch Pressure command Primary Offgoing Clutch Pressure command Status Primary Offgoing Clutch Pressure command Status Primary Offgoing Clutch Pressure command Primary Offgoing Clutch Pressure command Status Primary Offgoing Clutch							present							
Image: Solution Ports Pressure Control (PC) Solenoid C Primary Offgoing Clutch Pressure Command Status TULE Boolean Formand Pressure Control (PC) Solenoid C Ports Pressure Control (PC) Solenoid C Primary Offgoing Clutch Pressure Command Status TULE Boolean Formand Pressure Control (PC) Solenoid C Ports Pressure Control (PC) Solenoid C Primary Offgoing Clutch Pressure Command Status Full Clutch Primary Offgoing Clutch Pressure Primary Offgoing Clutch Pressure Command Status Full Clutch Primary Offgoing Clutch Pressure Command Status Full Clutch Primary Offgoing Clutch Pressure Primary Offgoing Clutch Pressure Primary Offgoing Clutch Pressure Command Status Full Pressure Primary Offgoing Clutch Pressure Primary Offgoing Clutch Pressure Command Status Full Clutch Primary Offgoing Clutch Pressure Primary Primary														
Variable Bleed Solenoid (VBS)P077Pressure Control (PC) Solenoid C Suck On (C456) (Dynamic)Primary Offgoing Clutch Is Exhausted (See Table 11 in Supporting Clutch Pressure Command Status Primary Offgoing Clutch Pressure Primary Offg														
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Suck On [C456] (Dynamic) Primary Offgoing Clutch is exhaust Delay Timers) Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status = TRUE Boolean Pressure Command Status Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status = TRUE Boolean Pressure Command Status Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status = TRUE Boolean Pressure Command Status Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status = Clutch exhaust Command Status Primary Offgoing Clutch Pressure Command Status = Clutch exhaust Command Status = Clutch exhaust Primary Offgoing Clutch Pressure Command Status = Clutch exhaust Command Status						Dissibili	Million at Illion to at all fair	TOLL DOT	(DOTAT DOTO	D0700				
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Suck On [C456] (Dynamic) Primary Offgoing Clutch is exhaust Clear The Supporting Documents for Exhaust Command Status Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Command						Disable	MIL not Illuminated for	TCM: P0/1	6, P0/17, P0/22	2, P0723,				
Image: Normal StatesImage: Normal States						Conditions	DTC's:	P182E						
Image: Solenoid (VBS) Por977 Pressure Control (PC) Solenoid C Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Clutch Pressure Command Status exhausted (See Table 11 in Supporting Clutch Pressure Command Status exhausted (See Table 11 in Supporting Clutch Pressure Command Status exhausted (See Table 11 in Clutch Command Status exhausted (See Table 11 in Supporting Clutch Pressure Command Status exhausted (See Table 11 in Supporting Clutch Pressure Command Status exhausted (See Table 11 in Supporting Clutch Pressure Command Status exhausted (See Table 11 in See Table 11 in														
Image: series of the series														
Image: Section of CPC Solenoid C Solenoid C Supporting Documents for Exhausted (See Table 11 in Stuck On [C456] (Dynamic) Primary Offgoing Clutch is exhausted (See Table 11 in Stuck On [C456] (Dynamic) TULE Boolean Maximum pressurized Primary Offgoing Clutch is exhausted (See Table 11 in Stuck On [C456] (Dynamic) Cultch exhaust Command Status Maximum pressurized Clutch exhaust Command Status Clutch exhaust Control Maximum pressurized Maximum pressurized Maximum pressurized Clutch exhaust Control Clutch exhaust Control Maximum pressurized Clutch exhaust Control Clutch exhaust Control Control Clutch exhaust Control Cont														
Image: Section of CVBS P077 Pressure Control (PC) Solenoid C Suck On [C456] (Dynamic) Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Times) Image: TRUE Boolean								ECM: P010	1. P0102, P0103	3. P0106.				
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 E khaust Delay Timers) = TRUE Boolean Maximum Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic) One Tri Primary Offgoing Clutch Stuck On [C456] (Dynamic) Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for E khaust Delay Timers) = TRUE Boolean Maximum Pressure Control Pressure Command Status Maximum = Clutch exhaust Command Status Maximum = Clutch exhaust Command Status = Clutch exhaust Control Maximum = Clutch exhaust Control = Clutch exhaust Control = 40 RPM								D0107 D01	IN8 D0171 D01	72 D0174				
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 Maximum One Tri Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic) Range Shift Status et haltale Clutch Command Status TRUE Boolean Maximum Maximum Pressured One Tri								D0107, 10		2,10174,				
Image: 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 Maximum Maximum Maximum Maximum Maximum Image Shift Status = Clutch exhaust Command Status = Clutch exhaust exhausted Geer Slip Image Shift Status = Image Shift Status = Maximum Image Shift Status = M								P0175, P02	201, P0202, P020	J3, P0204,				
Image: Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C Suck On [C456] (Dynamic) Primary Offgoing Clutch is exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) = TRUE Boolean Maximum pressurized One Tri Maximum pressurized Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status = Clutch exhaust Maximum pressurized Image Shift Status = Clutch exhaust Image Shift Status = Clutch exhaust Image Shift Status = Clutch exhaust =								P0205, P02	206, P0207, P020	08, P0300,				
Image: Norman Sector (VBS) P077 Pressure Control (PC) Solenoid C Suck On [C456] (Dynamic) Primary Offgoing Clutch exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) Primary Offgoing Clutch Pressure Primary Offgoing Clutch Pressure Command Status TRUE Boolean Variable Bieed Solenoid (VBS) P077 Pressure Control (PC) Solenoid C Suck On [C456] (Dynamic) Primary Offgoing Clutch Primary Offgoing Clutch Primary Offgoing Clutch Primary Offgoing Clutch Pressure Command Status Image: Note: Not: Not: Not: Not: Not: Not: Not: Not		1					1	P0301 P03	302 P0303 P030	14 P0305	1			1
Image: Subscription of the state of the		1					1	D020/ D02		1 00405	1			1
Image: Control (VBS)P0797Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)Primary Offgoing Clutch is exhausted (See Table 11 in Exhaust Delay Timers) Primary Oncoming Clutch Pressure command StatusTRUE BooleanBooleanOne Tri Maximum pressurizedOne Tri Primary Official bit tri CommandOne Tri Primary Official bit tri CommandOne Tri Primary Official bit tri CommandOne Tri Primary Official bit tri CommandOne		1					1	PU306, P03	307, PU308, PO40	л, P042E	1			1
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 Primary Offgoing Clutch Primary Offgoing Clutch Pressure Command Status Maximum pressurized		1					1				1			1
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) = TRUE Boolean Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C exhausted (See Table 11 in Supporting Documents for Exhaust Delay Timers) = TRUE Boolean Primary Offgoing Clutch Pressure Command Status Pressure Command Status = Clutch exhaust = Clutch exhaust Range Shift Status # Initial Clutch Control = 40 RPM RPM RPM		1		Primary Officing Clutch is				1			1			One Trin
Variable Bleed Solenoid (VBS) P0797 P1essure Control (PC) Solenoid C Generative (See Table 11 in F) = TRUE Boolean Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status = Maximum pressurized Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status = Clutch exhaust command Status Range Shift Status # Initial Clutch Control e 40		1	Drocouro Control (DC) Calanaid C	a minary Origonity Oldor 13			1				1			I one mp
The second duction (FBS) Stuck On [C456] (Dynamic) Supporting Documents for Exhaust Delay Timers) Maximum Primary Oncoming Clutch Pressure Command Status Pressure Command Status Clutch exhaust Primary Offgoing Clutch Pressure Command Status Clutch exhaust Clutch exhaust Range Shift Status Initial Clutch Initial Clutch Attained Gear Slip 40 RPM	Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solehold C	exnausted (See Lable 11 in	= TRUF	Boolean	1	1			1			1
Exhaust Delay Timers) Maximum Primary Oncoming Clutch = Maximum Pressure Command Status = Clutch exhaust Command Status = Clutch exhaust Command Status = Initial Clutch Control <		1 37 77	Stuck On [C456] (Dynamic)	Supporting Documents for	INUL	Doologii	1				1			1
Primary Oncoming Clutch Pressurized Primary Offgoing Clutch Pressure Clutch exhaust Command Status Clutch exhaust Range Shift Status Initial Clutch Attained Gear Slip <=		1		Exhaust Delay Timers)			1	1			1			1
Primary Offconting Clutch Pressure Command Status = Clutch exhaust command Primary Offgoing Clutch Pressure Command Status = Clutch exhaust command Range Shift Status ≠ Initial Clutch Control Attained Gear Slip <=		1		Delman Oncomine Obtes	Maulmur		1				1			1
Pressure Command Status - pressurized Primary Offgoing Clutch Pressure Command Status = Clutch exhaust command Range Shift Status ≠ Initial Clutch Control Attained Gear Slip <=		1		Primary Uncoming Clutch	= Iviaximum		1							1
Primary Offgoing Clutch Pressure Command Status = Clutch exhaust command Range Shift Status # Initial Clutch Control Attained Gear Slip <=		1		Pressure Command Status	pressurized		1				1			1
Primary Offgoing Clutch Pressure Command Status = Clutch exhaust command Range Shift Status # Initial Clutch Control Attained Gear Slip <=		1					1				1			1
Command Status = command Range Shift Status # Initial Clutch Control Attained Gear Slip Attained Gear Slip <= 40 RPM				Primary Offgoing Clutch Pressure	Clutch exhaus	st								
Range Shift Status ≠ Initial Clutch Control Attained Gear Slip <=		1		Command Status	= command		1							1
Range Shift Status # Initial Clutch Control Attained Gear Slip <=		1		command oldida	2.511110110		1	1			1			1
Range Shift Status≠InterventionAttained Gear Slip<=		1			Initial Clutch		1				1			1
Attained Gear Slip <= 40 RPM		1		Range Shift Status	≠ Control		1							1
Attained Gear Slip <= 40 RPM					CUIIIIO		1							1
		1	1	Attained Gear Slip	<= 40	RPM	1				1			1
			1				1				1			1

Component/	Fault	Monitor Strategy	Malfunction	1	Threshold	Secondary Malfunction		Enable			Tim	e rod	Mil
System	Code	Description	If the above conditions are true		value	Manufiction		Conditions			Kequi	ieu	murn.
			increment appropriate Fail 1										
			Timers Below:										
			(4-1 shifting with throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1	>= 0.5	Fail Time (Sec)								
			(4-1 shifting without throttle)	>= 0.5	Tair Time (Sec)								
			(4-2 shifting with throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1	>= 0.5	Fail Time (Sec)								
			(4-2 shifting without throttle)		()								
			(4-3 shifting with throttle)	>= 0.5	Fail Time (Sec)								
			(4-3 shifting without throttle)	>= 0.5	Fail Time (Sec)								
			(5-3 shifting with throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (5-3 shifting without throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (6-2 shifting with throttle)	>= 0.5	Fail Time (Sec)								
			fail timer 1 (6-2 shifting without throttle)	>= 0.5	Fail Time (Sec)								
										To	tal Fail Time	2	
										= (See Enable		
			If Attained Gear Slin is Less than							Tir	ners for Fail		
			Above Cal Increment Fail Timers							>= Ti	.mer 1, and	Sec	
										5	Supporting		
										T	able 15 for		
										F F	all Timer 2		
			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	
												OR	
			6th gear fail counter							>=	3	Fail Counter	
			_									OR	
			Total fail counter							>=	5	Total Fail	
						TUT Enable temperature	>=	-6.65625	°C			Counter	
						Input Speed Sensor fault	=	FALSE	Boolean				
						Output Speed Sensor fault	= +	FALSE 1ct	Boolean				
						High Side Driver ON	/ =	TRUE	Boolean				
						output speed limit for TUT	>=	100	RPM				
						input speed limit for TUT PRNDL state defaulted	>=	200 FALSE	RPM Boolean				
						IMS Fault Pending	=	FALSE	Boolean				
						Service Fast Learn Mode	=	FALSE	Boolean				
	I	I	l I			HSD Enabled	=	IRUE	Roolean	I			

Component/ System	Fault Code	Monitor Strategy Description		Malfunction Criteria		Thre Va	shold	Secondary Malfunction	Enable Conditions		Tim Regu	ne ired	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				
Tap Up Tap Down Switch (TUTD)	P0815	Upshift Switch Circuit	Fail Case 1	Tap Up Switch Stuck in the Up Position in Range 1 Enabled	=	0	Boolean						Special No MIL
				Tap Up Switch Stuck in the Up Position in Range 2 Enabled	=	0	Boolean						
				Tap Up Switch Stuck in the Up Position in Range 3 Enabled	=	0	Boolean						
				Position in Range 4 Enabled Tap Up Switch Stuck in the Up	=	0	Boolean						
				Position in Range 5 Enabled Tap Up Switch Stuck in the Up	-	0	Boolean						
				Position in Range 6 Enabled Tap Up Switch Stuck in the Up	=	1	Boolean						
				Tap Up Switch Stuck in the Up Position in Park Enabled	=	1	Boolean						
				Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean						
				Tap Up Switch ON	=	TRUE	Boolean			>=	1	Fail Time (Sec)	
			Fail Case 2	Tap Up Switch Stuck in the Up Position in Range 1 Enabled	=	1	Boolean						
				Position in Range 2 Enabled	=	1	Boolean						
				Position in Range 3 Enabled Tap Up Switch Stuck in the Up	=	1	Boolean						
				Position in Range 4 Enabled Tap Up Switch Stuck in the Up	=	1	Boolean						
				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						
				Tap Up Switch Stuck in the Up Position in Reverse Enabled	=	0	Boolean						
				NOTE: Both Failcase1 and Failcase 2 Must Be Met	=	IKUE	DUDIGALI			>=	600	Fail Time (Sec)	
				- anodo 2 maji bo mot									
	1		1		1				1				

Component/	Fault	Monitor Strategy	Malfunction	Т	- Thre	eshold	Secondary	· ·	Enable			Time		Mil
System	Code	Description	Criteria	_	Va	alue	Malfunction		Conditions			Required		Illum.
							Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Hi Engine Speed is within the allowable limits for	>= >= <= >= >=	1 8.5996094 31.990234 400 7500 5 Test Failed This Key	Enable Time (Sec) Volts Volts RPM RPM Sec				
						Disable	P0815 Status is	≠ TCM: P081	On or Fault Active 6, P0826, P182	E, P1876,				
						Conditions:	DTC's:	P1877, P19	915, P1761					
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case 1 Tap Down Switch Stuck in th Down Position in Range 1 Enable	ne ed =	0	Boolean		LCM. NOR	-					Special No MIL
			Tap Down Switch Stuck in t Down Position in Range 2 Enable	ed =	0	Boolean								
			Tap Down Switch Stuck in t Down Position in Range 3 Enabl	ed =	0	Boolean								
			Tap Down Switch Stuck in ti Down Position in Range 4 Enable	ed =	0	Boolean								
			Tap Down Switch Stuck in to Down Position in Range 5 Enable	ed =	0	Boolean								
			Tap Down Switch Stuck in t Down Position in Range 6 Enable Tap Down Switch Stuck in t	ed =	0	Boolean								
			Down Position in Range Neut Enabl Tap Down Switch Stuck in t	al = ed	1	Boolean								
			Down Position in Range Pa Enabl Tap Down Switch Stuck in t	rk = ed	1	Boolean								
			Down Position in Range Rever Enabl Tap Down Switch C	se = ed	0 TRUF	Boolean Boolean					>=	1	Sec	
			Fail Case 2 Tap Down Switch Stuck in th	ne =	1	Boolean								
	I	I	Down Fosition in Range T Effabli	au a				l						I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre	eshold alue	Secondary Malfunction		Enable Conditions			Time Required		Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Neutral Enabled Tap Down Switch Stuck in the	=	0	Boolean								
			Down Position in Park Enabled Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	0	Boolean								
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase1 and	=	TRUE	Boolean					>=	600	sec	
			rdiitase 2 Must de Met											
							Time Since Last Range Change Ignition Voltage Lo	>= >=	1 8.5996094	Enable Time (Sec) Volts				
							Insition Voltage Li		21 000224	Volto				
							ignition voltage ni	<=	31.990234	VUIIS				
							Engine Speed Lo Engine Speed Hi Engine Speed is within the	>= <=	400 7500	RPM RPM				
							allowable limits for	>=	5 Test Failed	Sec				
							P0816 Status is	¥	This Key On or Fault Active					

Component/	Fault	Monitor Strategy	Malfunction		Thre	eshold	Secondary		Enable			T	ime	Mil
System	Code	Description	Criteria	╞	v	Disable Conditions:	MiL not Illuminated for DTC's	TCM: P0815 P1877, P191	5, P0826, P182E	, P1876,		Kec	uirea	mum.
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid	=	TRUE	Boolean		ECM: None			>=	60	Fail Time (Sec)	Special
	10020		Voltage	3			Ignition Voltage Lc Ignition Voltage H Engine Speed Lc Engine Speed H Engine Speed is within the allowable limits for P0826 Status is	>= <= >= = >=	8.5996094 31.990234 400 7500 5 Test Failed This Key On or Fault Active	Volts Volts RPM RPM Sec				/ No MIL
						Disable Conditions:	MIL not Illuminated for DTC's	TCM: P1761 ECM: None						
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal circuit (rolling count)	Rolling count value received from BCM does not match expected value	5 J =	TRUE	Boolean					>=	3 10	Fail Counter Sample Timer	Special No MIL
							Tap Up Tap Down Message Health Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits for	= >= <= >=	TRUE 400 7500 5	Boolean RPM RPM Sec			(Sec)	
						Disable Conditions:	MIL not Illuminated for DTC's	TCM: None ECM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	è =	Transition 1 (bit state 1110)	Range								One Trip
			Previous range	e ≠	CeTRGR_e_ RNDL_Drive	P Range								
			Range Shift State Absolute Attained Gear Slip Attained Gear Attained Gea Throttle Position Available Throttle Position Output Speec Engine Torruce	<pre></pre>	RNDL_Drive Range Shift Completed 50 Sixth First TRUE 8.00018310 200 50	4 Kange ENUM rpm 5 pct rpm Nm								

Component/	Fault	Monitor Strategy	Malfunction		Thres	shold	Secondary Malfunction	-	Enable			Tim	ired	Mil
System	Code	Description	If the above conditions are met	-	Vai	uc	manuncuon		Conditions			Nequ	iicu	mum.
			then Increment Fail Timer								>=	1	Fail Seconds	
			If Fail Timer has Expired then											
			Increment Fail Counter								>=	5	Fail Counts	
			Fail Case 2 Output Speed	<=	70	rpm								
			The following PRNDL sequence											
			events occur in this exact order:											
					Drive 6 (bit	Donno								
			PRNDL State	=	state 0110)	Range								
			PRNDL state = Drive 6 for	>=	1	Sec								
					Transition 8									
			PRNDL state	=	(bit state	Range								
					0111)									
			PRNDL state	=	Drive 6 (bit	Range								
					State UTTU)	0								
			DDNDL state		(hit state	Danga								
			PRINDL SIdle	=	(DIL SIALE 1110)	Range								
			Above sequencing occurs in	<i>/-</i>	1	Sec								
			Neutral Idle Mode	=	Inactive	300								
			If all conditions above are met											
			Increment delay Timer											
			If the below two conditions are met									2	Fail Seconds	
			Increment Fail Timer								>=	3	Fall Seconds	
			delay timer	>=	1	Sec								
			Input Speed	>=	400	Sec								
			If Fail Timer has Expired then								>=	2	Fail Counts	
			Increment Fail Counter		Transition 10				CATROR					
			Fall Case 3		(bit state	Dango	Drovious rango	4						
			Current range	-	0010)	Range	i tevious talige	7	Drive4					
					0010)				CeTRGR					
			Engine Torque	>=	-8192	Nm	Previous range	¥	e PRNDL					
			5 1				ÿ		_Drive1					
			Engine Torque	<=	8191.75	Nm	IMS is 7 position configuration	=	0	Boolean				
							If the "IMS 7 Position config" =							
			If the above conditions are met				1 then the "previous range"							
			then. Increment Fail Timer				criteria above must also be				>=	0.225	Seconds	
							satsified when the "current							
			If Eall Times has Evaluated the				range" = "Transition 13"							
			II Fall Filler has Expired then								>=	15	Fail Counts	
			Fail Case 4											
			<u>- a. 5455 -</u>		Transition 8	Daway	Disable Fail Case 4 if last							
			Current range	=	(bit state	Range	positive range was Drive 6 and							
					UTTT)		current range is transition 8							
							Set inhibit bit true if PRNDL =							
							1100 (rev) or 0100 (Rev-Neu							
			Inhibit bit (see definition)	=	FALSE		transition 11)							
				1			Set inhibit bit false if PRNDL =							
			Clearly Clair Frain Trans		100	New	1001 (park)							
			Steady State Engine Torque	>=	100 9101 75	Nm								
			If the above conditions are met	<=	0171./3	INIT								
			then Increment Fail Timer								>=	0.225	Seconds	
			If the above Conditions have been								>=	15	Fail Counts	
			met, Increment Fail Counter											
			Fail Case 5 Throttle Position Available	=	TRUE	Boolean								

Component/	Fault	Monitor Strategy	Malfunction		Threshold	Secondary	-	Enable			Tim	e	Mil
System	Code	Description	Criteria		Value	Malfunction		Conditions			Requi	red	Illum.
			The following PRNDL sequence										
			events occur in this exact order:										
			PRNDL State	=	Reverse (bit Range								
					state 1100)								
			DDNDL Ciele		Iransition 11								
			PRINDL State	=	(bit state Range								
					U I UU) Noutral (bit								
			PRNDL State	=	state 0101) Range								
				1	Transition 11								
			PRNDI State	-	(bit state Range								
			111152 0100		0100)								
			Above sequencing occurs in	<=	1 Sec								
			Then delay timer increments										
			Delay timer	>=	5 sec								
			Danga Shift State		Range Shift								
			Range Shin State	=	Complete								
			Absolute Attained Gear Slip	<=	50 rpm								
			Attained Gear	<=	Sixth								
					F 1 1								
			Attained Gear	>=	First								
			Output Speed	>= 6	200 rpm								
			If the above conditions are met	>=	200 ipili								
										>=	20	Seconds	
			Fail Case 6		Illegal (bit	A Open Circuit Definition (flag							
			Current range	= 5	state 0000 or	set false if the following							
				1	1000 or 0001)	conditions are met):							
					,	,		Treeselation					
			hao			Current Denne	4	11 (64					
			anu			Current Range	7	LT (DIL state 0100)					
								State 0100)					
			A Open Circuit (See Definition)	=	FALSE Boolean	or							
								Neutral (hit					
						Last positive state	≠	state 0101)					
								2.0.0 0.01)					
						or		Tron - W-					
						Drouious transition state	4	I ransition					
						Previous transition state	7	0 (DIL SIZIO 0111)					
						Fail case 5 delay timer	_	0111)	SPC				
			If the above Condtions are met			i all case 5 delay tiller	-	0	366				
			then. Increment Fail timer							>=	6.25	Seconds	
			Fail Case 7	P	PRNDL circuit								
			Current PRNDL State	= A	ABCP = 1101 Range								
			and										
				_ P	PRNDL circuit Range								
			FIEVIOUS FRINDL SIDIE	- A	ABCP =1111								
			Input Speed	>=	150 RPM								
			Reverse Trans Ratio	<= 2	2.678344727 ratio								
			Reverse Trans Ratio	>= 3	3.081542969 ratio								
			II the above Conditions are met							>=	6.25	Seconds	
			uten, increment Fair umer										

Componentl	Ecult	Monitor Strategy	Molfunction	1	Th	shold	Secondary	<u> </u>	Enable		Time	841
System	Codo	Description	Criteria		Va	lue	Malfunction		Conditions		Pequired	Illum
System	Code	Description	D102E will report toot foil when		Va	lue	Manufiction		Conditions	•	Required	mann.
			P182E will report test fail when									
			any of the above 7 fail cases are									
			met									
							Ignition Voltage Lo	>=	8.5996094	Volts		
							Ignition Voltage Hi	<=	31.990234	Volts		
							Engine Speed Lo	>=	400	RPM		
							Engine Speed Hi	<=	7500	RPM		
							Engine Speed is within the		,,,,,,			
							allowable limits for	>=	5	Sec		
							Engine Tergue Cignel Velid		TDUE	Deeleen		
							Engine Torque Signal Valid	=	IRUE	DUDIEGI		
						Disable	MIL not Illuminated for	TCM: P07	16, P0717, P072	22, P0723,		
						Conditions:	DTC's:	P07C0, P0	7BF, P077C, P)77D		
								ECM: P01	01, P0102, P01	03, P0106,		
								P0107, P0	108, P0171, P0	172. P0174.		
								P0175 P0	201 P0202 P0	203 P0204		
								P0205 P0	206 P0207 P0	208 P0300		
								D0203, F0	200,10207,10	200, 1 0300,		
								F0301, F0	302, F0303, F0 207 D0200 D0	101 D042E		
								P0300, P0	307, P0306, P0	401, P042E		
				-								
			Primary Offgoing Clutch is									One Trip
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D	exhausted (See Table 13 in	- I	TRUE	Boolean						
Valiable Dieca Solehola (VDS)	12/13	Stuck On [CB26] (Dynamic)	Supporting Documents for	· -	INCL	Doolean						
			Exhaust Delay Timers)									
			Primary Oncoming Clutch		Maximum							
			Pressure Command Status	=	pressurized							
			Primary Offgoing Clutch Pressure	=	Clutch exhaus	t						
			Command Status		command							
					Initial Clutch							
			Range Shift Status	≠	Control							
			Attained Coor Clin		CONTION	DDM						
			Attained Gear Silp) <=	40	RPIVI						
			If above coditons are true,									
			increment appropriate Fail 1									
			Timers Below:									
			fail timer 1		0.5	Fail Time (See)						
			(2-1 shifting with throttle)	>=	0.5	Fall Time (Sec)						
			fail timer 1		0.5	Fail Time (Cae)						
			(2-1 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			fail timer 1									
			(2-3 shifting with throttle)	>=	0.5	Fail Time (Sec)						
			(2 0 ormanig mar director) fail timer 1									
			(2.2 shifting without throttle)	>=	0.5	Fail Time (Sec)						
			(2-3 Shirting Without Unotte)	1								
			Tall timer 1	>=	0.5	Fail Time (Sec)						
			(2-4 shifting with throttle)									
			fail timer 1	>-	0.5	Fail Time (Sec)						
	1	1	(2-4 shifting without throttle)	1	0.0							
	1	1	fail timer 1		0.5	Fail Time (Sec)						
			(6-4 shifting with throttle)	>=	0.5							
	1	1	fail timer 1	1.	0.5							
			(6-4 shifting without throttle)	>=	0.5	Fail Time (Sec)						
	1	1	fail timer 1	1								
	1	1	(6-5 shifting with throttle)	>=	0.5	Fail Time (Sec)						
	1	1	foll times 1	1								
	1	1	iali timer i	>=	0.5	Fail Time (Sec)					1	
1	1	I	(6-5 Shirting without throttle)				I				1	

0 11	1		M K d					
Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	If Attained Gear Slip is Less than	value	manuficuor	Conditions	Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and sec	
			Above Cal Increment Fail Timers If fail timer is greater than				Reference Supporting Table 15 for Fail Timer 2	
			gear fail counter and total fail				2 Fail Counter	
			6th dear fail counter				From 2nd Gear OR Fail Counter	r
			total fail counter				From 6th Gear OR >= 5 Counter	
					TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault	>= -6.65625 °C = FALSE Boolean = FALSE Boolean	Counter	=
					Command / Attained Gear High Side Driver ON output speed limit for TUT	≠ 1st Boolean = TRUE Boolean >= 100 RPM		
					PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	= FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean		
				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1 Case: Steady State 1st					One Trip
			Attained Gear slip	>= 400 RPM Table Based Time Please Refer to Table Enable Time				
			If the Above is True for Time	>= 4 in (Sec) supporting documents				
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio	<= 3.015991211 >= 2.728027344				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable		Ti	me	Mil
System	Code	Description	If the above parameters are true	Value	Manufiction	Conditions		Key	uireu	mann.
								1 1		
							>=	1.1	Fall filler (Sec)	
							>=	5	Fail Count in	
									Ist Gear	
									Total Fail	
							>=	5	Counts	
			Fail Case 2 Case: Steady State 3rd Gear							
				Table Based						
			Max Delta Output Speed	Refer to Table						
			Hysteresis	>= 22 in rpm/sec						
			-	supporting						
				documents						
				Lable Based						
			Min Delta Output Speed	Refer to Table						
			Hysteresis	>= 23 in rpm/sec						
				supporting						
				documents						
				Time Please						
			If the Above is True for Time	Refer to Table						
			If the Above is true for time	>= 17 in Sec						
				supporting						
			Intrusivo tost	documents						
			(C35R clutch exhausted)							
			Gear Ratio	<= 3.015991211						
			Gear Ratio	>= 2.728027344						
			If the above parameters are true							
							>=	1.1	Fail Timer (Sec)	
								2	Fail Count in	
							>=	3	3rd Gear	
									Or Total Fail	
							>=	5	Counts	
			Fail Case 3 Case: Steady State 4rd Gear						oouno	
				Table Based						
			Max Dolta Output Spood	value Please						
			Hysteresis	>= 22 in rpm/sec						
				supporting						
				documents						
				Table Based						
			Min Delta Output Sneed	Refer to Table						
			Hysteresis	>= 23 in rpm/sec						
				supporting						
				documents Table Pased						
				Time Please						
			If the Above is True for Time	Refer to Table						
			II the Above is True for Time	>= 17 in Sec						
				supporting						
	1	l		aocuments			l		ļ	I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	-	Enable Conditions			Ti Rea	me uired	Mil Illum.
			Intrusive test: (C1234 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 0.779052734 >= 0.704956055								
									>= >=	1.1 3	Fail Timer (Sec) Fail Count in 4th Gear	
									>=	5	or Total Fail Counts	
			Fail Case 4 Case: Steady State 5th Gear	Table Based value Please								
			Max Delta Output Speed Hysteresis	>= Refer to Table 22 in rpm/sec supporting documents Table Based								
			Min Delta Output Speed Hysteresis	value Please Refer to Table 23 in supporting								
			If the Above is True for Time	documents Table Based Time Please >= Refer to Table 17 in Sec								
			Intrusive test: (C358 clutch exhausted)	supporting documents								
			Gear Ratio Gear Ratio If the above parameters are true	<= 0.779052734 >= 0.704956055								
									>=	1.1 3	Fail Timer (Sec) Fail Count in 5th Gear	
					DDNDL State defaulted		EALSE	Pooloan	>=	5	or Total Fail Counts	
					IMS fault pending indication output speed TPS validity flag	= = >= =	FALSE FALSE 0 TRUE	Boolean Boolean RPM Boolean				
					HSD Enabled Hydraulic_System_Pressurize d A OR B	=	TRUE	Boolean Boolean				
					(A) Output speed enable (B) Accelerator Pedal enable Ignition Voltage Lo Ignition Voltage Hi	>= >= >= <=	36 0.5004883 8.5996094 31.990234	Nm Nm Volts Volts				
					Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				

Component/	Fault	Monitor Strategy	Malfunction		Thresh	hold	Secondary	· ·	Enable		Time	Mil
System	Code	Description	Criteria		Valu	ie	Malfunction		Conditions		Required	Illum.
	1						Engine Speed is within the		F	Soc		
							allowable limits for	>=	5	Sec		
							if Attained Gear=1st FW		F 00020F2	Det		
							Accelerator Pedal enable	>=	5.0003052	PCI		
							if Attained Gear=1st FW		20	Nm		
							Engine Torque Enable	>=	20	INITI		
							if Attained Gear=1st FW		0101 075	Nime		
							Engine Torque Enable	<=	8191.875	INITI		
							Transmission Fluid		((5 () 5	00		
							Temperature	>=	-0.05025	Ĵ		
							Input Speed Sensor fault	=	FALSE	Boolean		
							Output Speed Sensor fault	=	FALSE	Boolean		
							Default Gear Option is not	_	TDUE			
							present	-	TRUE			
						Disable	MIL not Illuminated for	TCM: P071	6, P0717, P072	2, P0723,		
						Conditions:	DTC's:	P182E				
								ECM: P010	1, P0102, P010	3, P0106,		
								P0107, P01	08, P0171, P01	72, P0174,		
								P0175, P02	201, P0202, P02	03, P0204,		
								P0205, P02	206, P0207, P02	08, P0300,		
								P0301, P03	802, P0303, P03	04, P0305,		
								P0306, P03	307, P0308, P04	01, P042E		
			Primary Offgoing Clutch is									One Trip
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E	exhausted (See Table 10 in	=	TRUF	Boolean						
		Stuck On (Dynamic)	Supporting Documents for									
			Exhaust Delay Timers)									
			Primary Oncoming Clutch	-	Maximum							
			Pressure Command Status		pressurized							
			Primary Offgoing Clutch Pressure		Clutch exhaust							
			Command Status	=	command							
			Range Shift Status	¥	Initial Clutch							
					Control							
			Attained Gear Slip	<=	40	RPM						
			If the above conditions are true									
			Increment appropriate Fall I									
			I Imers Below:									
			Tall timer 1	>=	0.5	sec						1
			(2-0 Shirung with Infolde) fail timor 1									1
			(2-6 shifting without throttle)	>=	0.5	sec						1
			fail timer 1									
			(3-5 shifting with throttle)	>=	0.5	sec						
			fail timer 1									1
			(3-5 shifting without throttle)	>=	0.5	sec						1
			fail timer 1		0.5	600						
			(4-5 shifting with throttle)	>=	0.5	Sec						1
			fail timer 1		0.5	500						1
			(4-5 shifting without throttle)	>=	0.0	356						1
			fail timer 1	>-	0.5	sec						
			(4-6 shifting with throttle)	/=	0.0	300						
			fail timer 1	>=	0.5	sec						
1	1	1	(4-6 shifting without throttle)	Í.	0.0			l			1	1

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Fnable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and sec Reference Supporting Table 15 for Fail Timer 2	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 2nd gear fail counter				>= 3 Fail Counter From 2nd Gez	ar.
			3rd gear fail counter	r			>= 3 Fail Counter From 3rd Gea	ır
			4th gear fail counter	r			>= 3 Fail Counter From 4th Gea	ır
			total fail counter	r			>= 5 Total Fail Counter	_
					TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	>= -6.65625 °C = FALSE Boolean ≠ ALSE Boolean ≠ 1st Boolean >= TRUE Boolean >= 200 RPM >= FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean		
				Disable Conditions	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table 22 in supporting documents				One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	-	Enable Conditions			Tir Reau	ne Jired	Mil Illum.
System	Lode	Description	Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio	<pre>value Table Based value Please Paper Table Based value Please 23 in supporting documents Table Based Time Please Refer to Table 17 in supporting documents </pre>	manuncuon		contantions			ĸeqt	ined <u></u>	
			If the above parameters are true						>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in	
									>=	3	Sth Gear OR Total Fail Counts	
			Fail Case 2 Case: 6th Gear Max Delta Output Speed Hysteresis Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	Table Based value Please Refer to Table 22 in supporting documents rpm/sec Table Based value Please rpm/sec >= Refer to Table 23 in supporting documents rpm/sec Table Based 23 in supporting documents rpm/sec Table Based 17 in supporting documents sec >= Refer to Table 17 in supporting documents <= 1.484985352 >= 1.343017578								
									>= >= >=	1.1 3 3	Fail Timer (Sec) Fail Count in 6th Gear OR Total Fail Counts	
					PRNDL State defaulted inhibit RVT IMS fault pending indication output speed	= = = >=	FALSE FALSE FALSE 0	Boolean Boolean Boolean RPM				

To Obdgus TCM Summary Tables Unique Equinox/Terrain LFX FWD 6 Speed 14	16 OBDG05 TCM Summar	y Tables Unique	Equinox/Terrain L	FX FWD 6 Speed T43
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
					TPS validity flag	=	TRUE	Boolean		
					HSD Enabled	=	TRUE	Boolean		
					Hydraulic_System_Pressurize			Deeleen		
					d	-	TRUE	DUDIEdi		
					A OR B					
					(A) Output speed enable	>=	36	Nm		
					(B) Accelerator Pedal enable	>=	0.5004883	Nm		
					Ignition Voltage Lo	>=	8.5996094	Volts		
					Ignition Voltage Hi	<=	31.990234	Volts		
					Engine Speed Lo	>=	400	RPM		
					Engine Speed Hi	<=	7500	RPM		
					Engine Speed is within the	>=	5	Sec		
					allowable limits for	-	5	000		
					if Attained Gear=1st FW	>=	5 0003052	Pct		
					Accelerator Pedal enable		0.0000002	1.01		
					if Attained Gear=1st FW	>=	20	Nm		
					Engine Torque Enable					
					if Attained Gear=1st FW	<=	8191.875	Nm		
					Engine Torque Enable					
					Transmission Fluid	>=	-6.65625	°C		
					Temperature					
					Input Speed Sensor fault	=	FALSE	Boolean		
					Output Speed Sensor fault	=	FALSE	Boolean		
					Default Gear Option is not	=	TRUE			
					present					
				S. 11		TO14 0074	. 00747 00700	D0700		
				Disable	MIL not Illuminated for	TCM: P0/1	6, P0/17, P0/22	, P0723,		
				Conditions:	DIC'S:	P182E				
						FOLL DOLL	4 00400 00400	Doto		
						ECM: P010	1, P0102, P0103	, P0106,		
						PUIU/, PUI	U8, PUI/I, PUI/	2, PU1/4,		
						P01/5, P02		13, PU2U4,		
						PU205, PU2	100, PUZU7, PUZU	18, PU300,		
						PU301, PU3	102, PU3U3, PU3U	14, PU3U3,		
						PU300, PU3	01, 20308, 2040	11, PU42E		

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction		Enable Conditions			Tiı Requ	ne uired	Mil Illum.
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck	Lateral accleration magnitude	<= 3.8	5 q's						•		Special
		at a nigh magnitude in range	Lateral accleration magnitude	>= 0.53	3 q's								INO IVITE
			Lateral accleration magnitude is	>= 120) Sec								
			within the range above for										-
						Lateral accleration magnitud	e <=	3.85	g's				
						Lateral accleration magnitud	e >=	0.53	g's				
						is within the range above for	e >=	90	Sec				
						Diagnostic shifting overrid	е	ENISE	Boolean				
						comman	d –	TALUE	Doolcan				
						Attained Gear Stat	e =	1st through					
								6th					
						Attained Gear Sli	p <=	100 Clutch to	RPM				
						Transmission Tra		Clutch					
						transmission typ	е =	Transmissi					
						High Side Driver 1.0	n –	ON TRUE	Boolean				
						Vehicle Spee	d >=	15	kph				
						Lateral acceleration stuck i	n _	TRUE	Boolean				
						range diagnostic enabl Battery Voltag	e e <=	31 999023	Volts				
						Battery Voltag	e >=	9	Volts				
						Battery voltage is within th	e >=	0.1	Sec				
						allowable limits fo	r e <=	31 999023	Volts				
						Ignition Voltag	e >=	9	Volts				
						Service Fast Learn (SFL	.) =	FALSE	Boolean				
						Ignition voltage and SF	e L						
						conditions met fo	>=	0.1	Sec				
					Disa	ble MIL not Illuminated fo	r TCM: If calib	rated to illumin	ate the MIL				
					Conditio	ns: DTC's	: (P0716, P07	17, P0721, P07	22, P0723,				
							P07BF, P07	CO, P077B, P07 73)	77C, P077D,				
							12130,000	13)					
							ECM: None						
		Transmission Electro-Hydraulic	Fail Case 1										One Trip
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	Substrate Temperature	>= 146.29	6875 °C					>=	5	Fail Time (Sec)	one mp
		Too High											
			Fail Case 2 Substrate Temperature	>= 50	°C					>=	2	Fail Time (Sec)	-
			Ignition Voltage	>= 18	Volts						_		
			Note: either fail case can set the										
						Ignition Voltage L	0 >=	8.5996094	Volts				-
						Ignition Voltage H	i <=	31.990234	Volts				
						Substrate Temp L	0 >= li ~-	0 170	°C °C				
						Substrate Temp Betwee	n .	0.25	5.cc				
			I			Temp Range for Tim	e >=	U.25	Sec				

Component/	Fault	Monitor Strategy	Malfunction	Thresh	nold	Secondary Malfunction		Enable			Tir	ne	Mil
					-	P0634 Status is	¥	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance	Transmission Input Speed Senso Drop	r s >= 1350	RPM					>=	0.8	Fail Time (Sec)	One Trip
						Engine Torque is Engine Speed Engine Speed Engine Speed is within the allowable limits for Vehicle Speed is Throttle Position is The previous requirement has been satisfied for The change (loop to loop) in transmission input speed is The previous requirement has been satisfied for The change (loop to loop) in transmission input speed is The previous requirement has been satisfied for Throttle Position Signal Valid Engine Torque Signal Valid Ignition Voltage Ignition Voltage		0 8191.875 400 7500 5 10 0 0 0 8191.875 0 TRUE TRUE 8.5996094 31.990234 Test Failed This Key On or Fault Active	N°m N°m RPM Sec Kph Pct RPM Sec RPM/Loop Sec Boolean Boolean Volts Volts				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0717 ECM: P0101 P0122, P012	, P0752, P0973 , P0102, P0103 3	8, P0974 8, P0121,				
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1 Transmission Input Speed i	s < 33	RPM					>=	4.5	Fail Time (Sec)	One Trip
			Fail Case 2 When P0722 DTC Status equal t Test Failed and Transmissio Input Speed i	p n < 1000 s	RPM	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	>= <= >= = >=	50 8191.875 16 TRUE 8.5996094	N*m N*m Kph Boolean Volts				

Component/	Fault	Monitor Strategy	Malfunction	Thre	shold	Secondary Malfunction		Enable			Tir	me	Mil Illum.
Jysten	Code	Description	Cinena	, va	nue	Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for	<= >= <= >=	31.990234 400 7500 5	Volts RPM RPM Sec			uneu	
						P0717 Status is not	=	Test Failed This Key On or Fault Active					
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0722 ECM: P0101	2, P0723 I, P0102, P0103					
Transmission Output Speed Sensor (TOSS)	P0722	Output Speed Sensor Circuit Low Voltage	Transmission Output Speed Sensor Raw Speed	<= 35	RPM					>=	3.75	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 Throttle Position	= >=	TRUE 8.0001831	Boolean Pct				
						Transmission Fluid Temperature	>=	-40	°C				
						Disable this DTC if the PTO is active	=	1	Boolean				
						Engine Torque Signal Valid Throttle Position Signal Valid	=	TRUE TRUF	Boolean Boolean				
						Ignition Voltage is	>=	8.5996094	Volts				
						Engine Speed is	>=	400	RPM				
						Engine Speed is within the	<=	7500	RPM Sec				
						allowable limits for							
						Enable_Flags Defined Below							
						The Engine Torque Check is TRUE, if either of the two following conditions are TRUE							
						Engine Torque Condition 1		Daway					
						Range Shift Status	≠	shift completed	ENUM				
						Transmission Range is	=	Park or					
						Engine Torque is Engine Torque is	>= <=	Neutral 8191.75 8191.75	N*m N*m				
						Engine Torque Condition 2							
						Engine Torque is Engine Torque is	>= <=	35 8191.75	N*m N*m				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	shold lue	Secondary Malfunction		Enable Conditions			Tiı Requ	ne Jired	Mil Illum.
							The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE							
							TIS Check Condition 1 Transmission Input Speed is Transmission Input Speed is	>= <=	1000 8191	RPM RPM				
							TIS Check Condition 2 Engine Speed without the brake applied is Engine Speed with the brake applied is	>= >=	3200 3200	RPM RPM				
							Engine Speed is Controller uses a single power supply for the speed sensors Powertrain Brake Pedal is	<= = =	8191 1 TRUE	RPM Boolean Boolean				
						Disable Conditions	MIL not Illuminated for DTC's:	TCM: P0716 ECM: P0101 P0122, P012	o, P0717, P0723 I, P0102, P0103 23	8 8, P0121,				-
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed Output Speed Delta	>=	105 8191	RPM					>=	0.2	Enable Time (Sec) Enable Time	One Trip
			Output Speed Drop	>	650	RPM					>=	1.5	(Sec) Output Speed Drop Recovery Fail Time (Sec)	
			Transmission Range is	=	Driven range (R,D)									-
							Range_Disable OR	=	FALSE	See Below				
							Neutral_Range_Enable And Neutral_Speed_Enable are TRUE concurrently	=	TRUE TRUE	See Below See Below				
							Transmission_Range_Enable Transmission_Input_Speed_E	=	TRUE	See Below				-
							nable No Change in Transfer Case Range (High <-> Low) for	=	5	See Below Seconds				
							P0723 Status is not	=	Test Failed This Key On or Fault Active					
							Disable this DTC if the PTO is active	=	1	Boolean				

16 OBDG05 TCM Summary Tables Unique SRX LFX FWD 6 Speed T43

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions		Time Required	Mil Illum.
eyelem	0.040	2000. Ipriori			Ignition Voltage is	>=	8 5996094	Volts		
					Ignition Voltage is	<=	31 990234	Volts		
					Engine Speed is	>-	400	RPM		
					Engine Speed is		7500	RPM		
					Engine Speed is within the	<-	7300	IXI IVI		
					allowable limits for	>=	5	Sec		
					Enable Elags Defined Below					
					Ellable_Llags Delilled Delow					
					Transmission Input Speed F					
					nable is TRUE when either TIS					
					Condition 1 or TIS Condition 2					
					is TRUE:					
					10 111021					
					TIS Condition 1 is TRUE when					
					both of the following conditions	>=	0	Enable Time		
					are satsified for		0	(Sec)		
					Input Speed Delta	<=	4095	RPM		
					Raw Input Speed	>=	500	RPM		
					rtaw input opecu	~ -	000			
					TIS Condition 2 is TRUE when					
					ALL of the next two conditions					
					are satisfied					
					Innut Snood	_	0	RPM		
					A Single Power Supply is used	-	0	IXI IVI		
					for all speed sensors	=	TRUE	Boolean		
					Neutral Range Enable is					
					TRUE when any of the next 3					
					conditions are TRUE					
					Transmission Range is	=	Neutral	FNUM		
					Hunsmission Range is		Reverse/N	ENOM		
					Transmission Range is	=	eutral	FNUM		
					Hunsmission Range is		Transitonal	ENOM		
							Neutral/Dri			
							ve			
					Transmission Range is	=	Transitiona	ENUM		
					And when a drop occurs					
					Loop to Loop Drop of					
					Transmission Output Speed is	>	650	RPM		
					Range_Disable is TRUE when					
					any of the next three					
					conditions are TRUE					
					Transmission Range is	=	Park	ENUM		
					, j		Park/Rever			
					Transmission Range is	=	se	ENUM		
							Transitonal			
					Input Clutch is not	_	ON (Fully	ENILIM		
					input ciutori is not	=	Applied)	LINUIVI		
					Neutral_Speed_Enable is					
					TRUE when All of the next	~	15	Seconds		
					three conditions are satsified		1.5	3000103		
					for					
					Transmission Output Speed	>	130	RPM		
					The loop to loop change of the					
					Transmission Output Speed is	<	20	RPM		
I	l	1		l						I

16 OBDG05 TCM Summary Tables Unique SRX LFX FWD 6 Speed T43

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
					The loop to loop change of the Transmission Output Speed is	> -10 RPM		
					Transmission_Range_Enable is TRUE when one of the next six conditions is TRUE Transmission Range is	= Neutral ENUM		
					Transmission Range is	Reverse/N eutral ENUM Transitiona		
					Transmission Range is	I Neutral/Dri = Ve ENUM Transitiona I		
					Time since a driven range (R,D) has been selected	Table Based Time Please Sec Refer to Table 21 in supporting documents		
					Transmission Output Speed Sensor Raw Speed Output Speed when a fault	>= 500 RPM		
				Disabl Conditions	e MIL not Illuminated for DTC's:	TCM: P0973, P0974, P0976, P0977 ECM: P0101, P0102, P0103, P0121, P0122, P0123		
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure Either Condition (A) or (B) Must be Met	>= 750 Kpa Refer to Table			>= 2 Enable Tin (Sec)	e Two Trips
			(A) TCC Slip Error @ TCC On Mode	>= 1 in RPM Supporting Documents			>= 5 Fail Time (S	ec)
			(B) TCC Slip @ Lock On Mode If Above Conditions Have been Met, and Fail Timer Expired,	>= 130 RPM			>= 5 Fail Time (S >= 2 TCC Stuck Fail Count	ec) Off Pr
			Increment Fail Counter		TCC Mode	e = On or Lock		
					Ignition Voltage Lo Ignition Voltage Hi Engine Speed Engine Speed	>= 8.5996094 Volts <= 31.990234 Volts >= 400 RPM <= 7500 RPM		
					allowable limits for Engine Torque Lo	>= 5 Sec >= 50 N*m		

16 OBDG05 TCM Summa	y Tables Unique SRX	LFX FWD 6 Speed T43
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Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres	shold lue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
	ooue	Description					Engine Torque Hi	<=	8191.875	N*m		1104		
							Throttle Position Lo	>=	8.0001831	Pct				
							I NFOTTIE POSITION HI	<=	99.998474 2.6710205	PCI Patio				
							2110 Gedi Ratio Lu 2nd Coar Patio High	>=	2.0710205	Rallo				
							3rd Gear Ratio Lo	>=	1 7130127	Ratio				
							3rd Gear Ratio High	<=	1 9709473	Ratio				
							4th Gear Ratio Lo	>=	1.3150635	Ratio				
							4th Gear Ratio High	<=	1.5129395	Ratio				
							5th Gear Ratio Lo	>=	0.9300537	Ratio				
							5th Gear Ratio Hi	<=	1.0699463	Ratio				
							6th Gear Ratio Lo	>=	0.6900635	Ratio				
							6th Gear Ratio High	<=	0.7939453	Ratio				
							Transmission Fluid	>=	-6 664063	°C				
							Temperature Lo	-	0.001000	0				
							I ransmission Fluid	<=	130	°C				
							Temperature Hi		TDUE	Dealara				
							PTU NOT ACTIVE	=	TRUE	Boolean				
							The Torque Signal Valid	=		Doolean				
							Dynamic Mode	=	FALSE	Boolean				
							Dynamic would	-	TALSE	Doolean				
									Test Failed					
							P07/11 Status is	±	This Key					
							1 0741 51010315	7	On or Fault					
									Active					
						Disable	MIL not Illuminated for	TCM: P0716	6, P0717, P0722	, P0723,				
						Conditions:	DTC's:	P0742, P27	63, P2764					
								ECM: P010	1, P0102, P0103	3, P0106,				
								P0107, P01	08, P0171, P017	2, P0174,				
								P0175, P02	01, P0202, P020	3, P0204,				
								P0205, P02	06, P0207, P020	18, P0300,				
								P0301, P03	02, P0303, P030	14, P0305,				
								P0306, P03	07, P0308, P040	1, P042E				
Termus Converter Clutch (TCC)	D0740	TCC Custom Church ON	TCC Clip Croad		50	DDM								One Trip
Torque Converter Clutch (TCC)	P0/42	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPIVI								One mp
			TCC Slip Speed	<=	15	RPIVI					>=	2	Fail Time (Sec)	
			If Above Conditions Have been								/-	2		
			Met and Fail Timer Expired								>=	6	Fail Counter	
			Increment Fail Counter								-	U		
							TCC Mode	=	Off					
							Enable test if Cmnd Gear =		1	Deeleen				
							1stFW and value true	=	I	Booleau				
							Enable test if Cmnd Gear =	_	0	Boolean				
							2nd and value true	-	0	Doolcan				
	1						Engine Speed Hi	<=	6000	RPM				
							Engine Speed Lo	>=	500	RPM				
							Vehicle Speed HI	<=	511	KPH				
							Vehicle Speed Lo	>=]	KPH Nor				
	1						Engine Torque Hi	<=	8191.875	INM Nm				
							Engine Torque Lo	>= +	80 Neutral	INM Dango				
							Current Papage	≁ ≠	Reverse	Range				
								Ť	Reveise	Range				
							Temperatura	<=	130	°C				
	1	1	I	1			remperature				1			I I

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		г	ime	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions		Re	Juired	Illum.
					Transmission Sump	>= 18 °C				
					Throttle Position Hyst High	- 5.0003052 Pct				
					AND	3.0003032 101				
					Max Vehicle Speed to Meet	t o kou				
					Throttle Enable	<= 8 KPH				
					Once Hyst High has been met	,				
					the enable will remain while	e >= 2.0004272 Pct				
					Throttle Position					
					Disable for Throttle Position	>= /5 Pct				
					value true	= 1 Boolear				
					Disable if in D1 and value true	= 1 Boolear				
					Disable if in D2 and value true	e = 1 Boolear				
					Disable if in D3 and value true	e = 1 Boolear				
					Disable if in D4 and value true	e = 1 Boolear				
					Disable if in D5 and value true	e = 1 Boolear				
					Disable if in MUMD and value	= 1 Boolear				
					True Disable if in TUTD and value	2				
						= 1 Boolear				
					4 Wheel Drive Low Active	e = FALSE Boolear				
					Disable if Air Purge active and					
					value false	= 0 Booleau				
					RVT Diagnostic Active	e = FALSE Boolear				
					Ignition Voltage	>= 8.5996094 V				
					Ignition Voltage	e <= 31.990234 V 511 KDU				
					Venicie Speed	1 <= 511 KPH				
					Engine Speed	<pre>1 >= 400 RPM</pre>				
					Engine Speed is within the					
					allowable limits for	>= 5 Sec				
					Engine Torque Signal Valid	i = TRUE Boolean				
					Throttle Position Signal Valid	i = TRUE Boolear				
						Test Failed				
					D0742 Statuc is	This Key				
					F0742 Status is	On or Fault				
						Active				
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,				
				Conditions:	DTC's	: P0741, P2763, P2764				
						ECM: D0101 D0102 D0102 D0106				
						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				
										Two Trips
Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 400 RPM						1 no mps
			Commanded Gear	= 1st Lock rpm						
			Gear Ratio	<= 1.484985352			>=	0.3	Fail Tmr	
			Gear Ratio	>= 1.34301/5/8			=	5	Fail Counts	
			ii trie above parameters are true						Neutral Timer	
							<i>≠</i>	0	(Sec)	

16 OBDG05 TCM Summary Tables Unique SRX LFX FWD 6 Speed T43

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val	shold lue	Secondary Malfunction		Enable Conditions			Tin Reau	ne ired	Mil Illum.
											>=	0.3	Fail Timer (Sec))
											>=	8	Counts	
							Ignition Voltage Lo	>=	8.5996094	Volts				1
							Ignition Voltage Hi Engine Speed Lo	<=	31.990234 400	Volts RPM				
							Engine Speed H	<=	7500	RPM				
							Engine Speed is within the	>=	5	Sec				
							Transmission Fluid							
							Temperature	>=	-6.65625	°C				
									Range					
							Range Shift State	=	Shift	ENUM				
									Completed					
							TPS	>=	0 5004883	%				
							OR							
							Output Speed	>=	36	RPM				
							from ECM	=	TRUE	Boolean				
							Engine Torque Signal Valid		TDUE					
							from ECM, High side driver is enabled	=	IRUE	Boolean				
							High-Side Driver is Enabled	=	TRUE	Boolean				
							Input Speed Sensor fault	=	FALSE	Boolean				
							Default Gear Option is not	=	TALSE	DUUIEdI I				
							present	=	IRUE					
						Disable	MIL not Illuminated for	TCM: P071	6, P0717, P0722	, P0723,				
						Conditions:	DTC's:	P182E						
								ECM: P010	1, P0102, P0103	, P0106,				
								P0107, P01	08, P0171, P017	2, P0174,				
								P0205, P02	06, P0207, P020	08, P0300,				
								P0301, P03	02, P0303, P030	04, P0305,				
								P0306, P03	07, P0308, P040)1, P042E				
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>=	400	RPM								One Trip
			Commanded Gear	_	3rd	Goar								
			Commanded Gear has Achieved	-	JIU	Geal								
			1st Locked OR 1st Free-Wheel	= T	RUE	Boolean								
			OR 2nd with Mode 2 Sol. Commanded On											
			If the above parameters are true											
											P	Please Refer	Noutral Timor	
											>= 10	Supporting	(Sec)	
			Comment the Comment of the									Documents		
			Command 4th Gear once Output Shaft Speed	<=	800	RPM								
			If Gear Ratio	>= 4.259	9765625									
1	I	l	And Gear Ratio	<= 4.708	8251953		l	I			I			1

16 OBDG05 TCM Summary Tables Unique SRX LFX FWD 6 Speed T43

Component/ System	Fault Code	Monitor Strategy Description	Mali	function riteria	Thres Val	shold ue	Secondary Malfunction		Enable Conditions			Tim Requi	ie ired	Mil Illum.
· · · ·											>=	1.5	Fail Timer (Sec)	
											>=	5	Counts	
							Ignition Voltage Lo	>=	8.5996094	Volts				
							Engine Speed Lo) >=	31.990234 400	RPM				
							Engine Speed H	i <=	7500	RPM				
							Engine Speed is within the allowable limits for	>=	5	Sec				
							High-Side Driver is Enabled	=	TRUE	Boolean				
							Throttle Position Signal Valid	=	TRUE	Boolean				
							Output Speed	>=	36	RPM				
							OR		0 500 400 2	0/				
							IPS	>=	0.5004883	%				
							Range Shift State	. =	Shift	ENUM				
							5		Completed					
							Transmission Fluid	>=	-6 65625	°C				
							Temperature Input Speed Sensor fault	=	FALSE	Boolean				
							Output Speed Sensor fault	=	FALSE	Boolean				
							Default Gear Option is not	=	TRUE					
							present							
						Dicabla	MIL not Illuminated for	TCM- D0714	00717 00700	00700				
						Conditions:	DTC's	P182E	, FU/17, FU/22	, FU723,				
								ECM: P0101	, P0102, P0103	8, P0106,				
								P0107, P010	8, P0171, P017	72, P0174,				
								P0175, P020 P0205, P020	1, P0202, P020 16, P0207, P020	03, P0204, 08, P0300,				
								P0301, P030	2, P0303, P030	04, P0305,				
								P0306, P030	17, P0308, P040)1, P042E				
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1	Commanded Gear	= 1st Locked									One Trip
											F I	lease Refer	Neutral Timer	
				Gear Box Slip	>= 400	RPM					>= .	Supporting	(Sec)	
				Intrusive Shift to 2nd								Documents		
			C	Commanded Gear Previous	= 1st Locked	Gear								
				Gear Ratio	<= 3.015991211									
			If the	above parameters are true	>= 2.720027344									
											>=	1	Sec	
							Ignition Voltage Lo) >=	8.5996094	Volts	>=	3	COUNTS	-
							Ignition Voltage H	<=	31.990234	Volts				
							Engine Speed LC Engine Speed H	>= i <=	7500	RPM				
							Engine Speed is within the	>=	5	Sec				
							allowable limits for Output Speed	>=	36	RPM				
							OR	2	0 500 100	<u>.</u>				
1	1	I	I				TPS	>=	0.5004883	%	I			I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Disable Conditions:	Range Shift State Transmission Fluic Temperature High-Side Driver is Enabled Throttle Position Signal Valic from ECN Input Speed Sensor faul Output Speed Sensor faul Default Gear Option is no presen MIL not Illuminated for DTC's	Range = Shift ENUM Completed Completed >= -6.65625 °C = TRUE Boolean = TRUE Boolean = FALSE Boolean = FALSE Boolean = TRUE TCM: P0716, P0717, P0722, P0723, P182E		
						ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B Stuck Off [C35R]	Fail Case 1 Case: Steady State 3rd Gear Commanded Gear Gearbox Slip Command 4th Gear once Output Shaft Speed If Gear Ratio And Gear Ratio	= 3rd Gear >= 400 RPM <= 800 RPM >= 1.343261719 <= 1.484741211			Please Refer to Table 16 in Neutral Timer Supporting (Sec) Documents	One Trip
			It the above condiations are true, Increment 3rd gear fail counter and C35R Fail counter				>= 3 Fail Timer (Sec) >= 3 3rd Gear Fail Counts or >= 14 Counts)
			Fail Case 2 Case: Steady State 5th Gear Commanded Gear Gearbox Slip Intrusive Test: Command 6th Gear If attained Gear=6th gear Time	= 5th Gear >= 400 Rpm Please refer to Table 3 in Shift Time (Sec)			Please Refer to Table 5 in Neutral Timer >= Supporting (Sec) Documents	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		T Rec	ime quired	Mil Illum.
			It the above condiations are true, Increment 5th gear fail counter				>=	3	5th Gear Fail Counts	
			and C35R Fail counter				>=	14	or 3-5R Clutch Fai	il
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR B (A) Output speed enable (B) Accelerator Pedal enable Commo Enable Criteria Ignition Voltage Lo Ignition Voltage Hi Engine Speed H Engine Speed H Engine Speed H Engine Speed Hi Engine Speed Hi Engine Speed Hi Engine Speed Hi Engine Speed Hi Engine Speed Hi Engine Speed Is within the allowable limits for	= FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE Boolean >= 36 RPM >= 36 RPM >= 0.5004883 Pct >= 8.5996094 Volts <=			Counts	-
				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 = TRUE Boolean >= -6.65625 °C = FALSE Boolean = FALSE Boolean = TRUE				
						P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B Stuck On [C35R] (Steady State)	Fall Case 1 Case: Steady State 1st Attained Gear slip	>= 400 RPM Table Based						One Trip
			If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	Time Please Refer to Table Enable Time 4 in (Sec) supporting documents <= 1.933959961 >= 1.75			>=	1.1	Fail Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Ti Req	me uired	Mil Illum.
							>=	2	Fail Count in	
									or	
							>=	3	Total Fail Counts	
			Fail Case 2 Case: Steady State 2nd gea	ſ					oounts	-
				Table Based value Please						
			Max Delta Output Speed	Refer to Table						
			Hysteresis	22 in supporting						
				documents						
				Table Based						
			Min Delta Output Speed	Refer to Table rpm/sec						
			Hysteresis	23 in supporting						
				documents						
				Table Based Time Please						
			If the Above is True for Time	Refer to Table Sec						
				17 in supporting						
				documents						
			Intrusive test (CB26 clutch exhausted)							
			Gear Ratio	<= 1.933959961						
			If the above parameters are true) >= 1.75						
							>=	1.1	Fail Timer (Sec)	
								2	Fail Count in	
							>=	3	2nd Gear	
							>-	3	Total Fail	
			Fail Case 3 Case: Steady State 4th gea	r				5	Counts	-
			<u></u>	Table Based						
			Max Delta Output Speed	value Please Refer to Table						
			Hysteresis	s >= 22 in rpm/sec						
				documents						
				Table Based						
			Min Delta Output Speed	Refer to Table						
			Hysteresis	>= 23 in Ipin/sec						
				documents						
				Table Based			1			
			If the Above is True for Time	Refer to Table Sec			1			
				17 in supporting			1			
				documents			1			
			Intrusive test (C1234 clutch exhausted)				1			
			Gear Ratio	0 <= 1.050048828			1			
	I	I	Gear Ratio	>= 0.949951172	I	l	l –			I

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	c	Enable onditions			Ti Rea	me uired	Mil Illum.
.,			If the above parameters are true									
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in	
										0	4th Gear or	
									~-	3	Total Fail	
			Eail Caso 4 Caso: Stoady State 6th goar						/-	J	Counts	-
			Tail Case 4 Case. Steady State offi gear	Table Based								
			May Dalta Output Speed	value Please								
			Hysteresis	>= 22 in rpm/sec								
				supporting								
				Table Based								
			Min Dalta Output Chand	value Please								
			Hysteresis	>= 23 in rpm/sec								
				supporting								
				Table Based								
				Time Please								
			If the Above is True for Time	$>=$ $\frac{\text{Refer to Table}}{17 \text{ in}}$ Sec								
				supporting								
			Intrusive test:	documents								
			(CB26 clutch exhausted)									
			Gear Ratio	<= 1.050048828					>=	1.1	Fail Timer (Sec)	
			Gear Ratio	>= 0.949951172					>=	3	counts	
			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	=	FALSE	Boolean				1
					inhibit RVT IMS fault pending indication	=	FALSE	Boolean Boolean				
					output speed	>=	0	RPM				
					TPS validity flag HSD Enabled	=	TRUE TRUE	Boolean Boolean				
					Hydraulic_System_Pressurize	=	TRUE	Boolean				
					d A OR B			200000				
					(A) Output speed enable	>=	36	Nm				
					(B) Accelerator Pedal enable	>= ().5004883 3.5996094	Nm Volts				
					Ignition Voltage Hi	<=	31.990234	Volts				
					Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
					Engine Speed is within the	>=	5	Sec				
					allowable limits for if Attained Gear-1st EW		5	300				
					Accelerator Pedal enable	>= 5	5.0003052	Pct				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	d	Secondary Malfunction		Enable Conditions	;	Time Required	Mil Illum.
						Disable Conditions:	if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault MIL not Illuminated for DTC's:	>= <= = = TCM: P0716 P182E ECM: P0101 P0107, P010 P0107, P010 P0105, P020 P0205, P020 P0301, P030 P0306, P030	20 8191.875 -6.65625 FALSE FALSE 9, P0717, P072 1, P0102, P010 18, P0171, P0 10, P0202, P01 10, P0202, P01 10, P0202, P01 10, P0303, P01 10, P0308, P00 10, P0308	Nm Nm °C Boolean Boolean 22, P0723, 22, P0723, 03, P0106, 172, P0174, 203, P0204, 208, P0300, 304, P0305, 401, P042E		
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B StuckOn [C35R] (Dymanic)	Primary Offgoing Clutch is exhausted (See Table 12 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Attained Gear Slip If the above conditions are true run appropriate Fail 1 Timers Below: fail timer 1 (3-1 shifting with Closed Throttle) fail timer 1 (3-2 shifting with Closed Throttle) fail timer 1 (3-2 shifting with Closed Throttle) fail timer 1 (3-4 shifting with Closed Throttle) fail timer 1 (3-5 shifting with Closed Throttle) fail timer 1 (3-5 shifting with Closed Throttle) fail timer 1 (3-5 shifting with Closed Throttle) fail timer 1 (5-3 shifting with Closed Throttle) fail timer 1 (5-3 shifting with Closed Throttle) fail timer 1 (5-4 shifting with Closed Throttle) fail timer 1 (5-4 shifting with Closed Throttle) fail timer 1	= TI = pres = Clutch < lnitia << >= () >= () = () = () = () = () = () = () = () = () = ()	TRUE Boo aximum ssurized hexhaust mmand al al Clutch control 40 RP 0.5 Fai 0.5 Fai 0.5 Fai 0.5 Fai 0.5 Fai 0.5 Fai 0.5 Fai 0.5 Fai 0.5 Fai 0.5 Fai	olean M I Time (Sec) I Time (Sec)						One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre V	eshold alue	Secondary Malfunction	Enable Conditions	Time Required		Mil Illum.
			fail timer 1 (5-6 shifting with Throttle) fail timer 1 (5.6 shifting with Closed Throttle)) >=	0.5 0.5	Fail Time (Sec) Fail Time (Sec)					
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers	1					Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and Reference Supporting Table 15 for Fail Timor 2	Sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 3rd gear fail counter	ı J I r					>= 3 3	rd gear fail	
			5th gear fail counter	r					>= 5 51	Counts OR th gear fail counts OR	
			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 Default Gear Option is not present	>= -6.65625 °C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean >= TRUE Boolean >= 200 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean = TRUE	>= 5 tota	al fail counts	
						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)	P0796	Pressure Control (PC) Solenoid C Stuck Off [C456] (Steady State)	Fail Case 1 Case: Steady State 4th Gear	r							One Trip
		Steen on Lorsey (Steary State)	Gear slip Intrusive test:) >=	400	RPM			>= Please See Table 5 For Ne Neutral Time Cal	eutral Timer (Sec)	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Γ	Threshold Value		Secondary Malfunction		Enable Conditions			Time Requir	ed	Mil Illum.
			If attained Gear ≠5th for tim	e >=	Please refer to Table 3 in Supporting Documents	Гime (Sec)								
			me Increment 4th Gear Fail Counte	et er							>=	3	4th Gear Fail Count	
			and C456 Fail Counter	s							>=	14	OR C456 Fail Counts	
			Fail Case 2 Case: Steady State Stri Gea	р >=	400 RPM						>=	Please See Table 5 For Veutral Time	Neutral Timer (Sec)	
			Intrusive tes commanded 6th gea	t: Ir	Please Refer							Cal		
			If attained Gear ≠ 6th for tim if the above conditions have bee	e >=	to Table 3 in Supporting Documents	Γime (Sec)								
			me Increment 5th Gear Fail Counte	er							>=	3	5th Gear Fail Count	
			and C456 Fail Counter	s							>=	14	C456 Fail Counts	
			<u>rail Case 3</u> Case. Steady State on Gea Gear sli	p >=	400 RPM						>= 1	Please See Table 5 For Neutral Time	Neutral Timer (Sec)	
			Intrusive tes commanded 5th gea	t: ir	Please refer to							Cai		
			If attained Gear ≠ 5th for tim if the above conditions have bee	e >=	Supporting Shift 1 Documents	Гіте (Sec)								
			me Increment 6th Gear Fail Counte and C456 Fail Counte	et er er							>=	3	6th Gear Fail Count OR	
			and C456 Fail Counte	r			DDNDL State defaulted		FALCE	Declass	>=	14	C456 Fail Counts	
							PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for	= = = = >=	FALSE FALSE FALSE TRUE TRUE 36	Boolean Boolean Boolean Boolean Boolean RPM				
							(A) Output speed enable (A) Output speed enable (B) Accelerator Pedal enable Common Enable Criteria Ignition Voltage Lo	>= >= >=	36 0.5004883 8.5996094	RPM Pct Volts				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value		Secondary Malfunction		Enable Conditions			Ti Rea	me uired	Mil Illum.
						Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed is within the allowable limits for Throttle Position Signal valid HSD Enabled Transmission Fluid Temperature Input Speed Sensor faul OutputSpeed Sensor faul Default Gear Option is no presen	<pre><= >= </pre>	31.990234 400 7500 5 TRUE TRUE -6.65625 FALSE FALSE TRUE	Volts RPM RPM Sec Boolean Boolean C Boolean Boolean				
				Cor	Disable ditions:	MIL not Illuminated for DTC's:	TCM: P0716, I P182E ECM: P0101, I P0107, P0108 P0175, P0201 P0205, P0206 P0301, P0302 P0306, P0307	P0717, P072: P0102, P010 P0171, P01 P0202, P02 P0207, P02 P0303, P03 P0308, P04	2, P0723, 3, P0106, 72, P0174, 03, P0204, 08, P0300, 04, P0305, 01, P042E				
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State)	Fail Case 1 Case: Steady Stat Attained Gea If the Above is True for If the Above is True for Intrusive (CBR1 clutch exhau Gear Gear If the above parameters are If the above parameters are Case Steady State Max Delta Output IS Nax Delta Output IS	1st slip >= 400 RPM Table Based Time Please ime >= Refer to Table Enable T 4 in (Sec) supporting documents est: edd ied) = 1.484985352 atio >= 1.343017578 rue Table Based value Please eed action >=	ime					>= >= >=	1.1 2 3	Fail Timer (Sec) Fail Count in 1st Gear or Total Fail Counts	One Trip

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 If the Above is True for Time	Table Based value Please >= Refer to Table 23 in supporting documents Table Based Time Please >= Refer to Table 17 in	manuncuon	conations			Kequii	eu	incini.
			Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	supporting documents <= 1.484985352 >= 1.343017578				>=	1.1	Fail Timer (Sec)	
								>=	3 3	Fail Count in 2nd Gear or Total fail counts	
			Fail Case 3 Case Steady State 3rd Max Delta Output Speed Hysteresis	Table Based value Please 22 in supporting documents Table Based value Please							
			Min Delta Output Speed Hysteresis If the Above is True for Time	>= Refer to Table 23 in supporting documents Table Based Time Please >= Refer to Table 17 in							
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	supporting documents <= 1.484985352 >= 1.343017578					11	Fail Timer (See)	
					PRNDL State defaulted	= FALSE	Boolean	>= >= >=	3 OR 3	Fail Count in 3rd Gear Total Fail Counts	
					inhibit RVT IMS fault pending indication output speed	= FALSE = FALSE >= 0	Boolean Boolean RPM				

Jeen TPS validity flag = TUE Boolean HSD Enabled = TRUE Boolean Hydraulic_System_Pressure = 36 Nm Garderable >= 36 Nm Hydraulic_System_Pressure >= 0.5004883 Nm Ightion Voltage Hi >= 0.5004883 Nm Ightion Voltage Hi <= 31.900234 Volts Engine Speed Lo >= 400 RPM Engine Speed Hi <= 7500 RPM Engine Speed II >= 5 Sec If Attained Gear-1s1 FW >= 5.0003052 Pct If Attained Gear-1s1 FW >= 20 Nm If Attained Gear-1s1 FW >= 20 Nm Engine Torque Enable <= 8191.875											
HSD Enabled = TRUE Boolean Hydraulic_System_Persurize = TRUE Boolean Hydraulic_System_Persurize = TRUE Boolean A OR B - - - - (A) OLoutput speed enable >= 0.5004883 Nm (B) Accelerator Pedal enable >= 0.5004883 Nm Ignition Voltage Lo >= 8.5996044 Volts Ignition Voltage Lo >= 400 RPM Engine Speed Lo >= 400 RPM Engine Speed Hi <=											
Hydraulic_System_Pressure d A OR B (A) Output speed enable (B) Accelerator Pedal enable (B) Accelerator Pedal enable (B) Accelerator Pedal enable (C)											
A OR B (A) Output speed enable >= 36 Nm (B) Accelerator Pedal enable >= 0.5094883 Nm Igtini No Voltage Lo >= 8.5094094 Volts Igtini No Voltage Lo >= 400 RPM Engine Speed Lo >= 400 RPM Engine Speed Li <=											
(A) Output speed enable >= 36 Nm (B) Accelerator Pedal enable >= 0.5004883 Nm (B) Accelerator Pedal enable >= 0.5004883 Nm Ignition Voltage Hi <=											
(B) Accelerator Pedal enable >= 0.5004883 Nm Ignition Voltage Lo >= 8.5996094 Volts Ignition Voltage Li <=											
Image: Section of the section of th											
Engine Speed Lo >= 400 RPM Engine Speed Hi <=											
Engine Speed Hi <=											
Engine Speed is within the set of the 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 Engi											
if Attained Gear=1st FW >= 5.0003052 Pct if Attained Gear=1st FW >= 20 Nm if Attained Gear=1st FW >= 20 Nm if Attained Gear=1st FW >= 8191.875 Nm											
Accelerator Pedal enable if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Suburgation Suburgation Suburgation br>Suburgation Subur											
if Attained Gear=1st FW >= 20 Nm Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable <= 8191.875 Nm											
if Attained Gear=1st FW Engine Torque Enable <= 8191.875 Nm											
Engine Torque Enable <= 8191.875 Nm											
Transmission Fluid >= -6.65625 °C	1										
Temperature											
Output Speed Sensor fault = FALSE Boolean											
Default Gear Option is not											
present											
Disable MIL not Illuminated for TCM: P0716, P0717, P0722, P0723,											
Conditions. DTCS. PTO2E											
ECM: P0101, P0102, P0103, P0106,											
P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204,											
P0205, P0206, P0207, P0208, P0300,											
P0301, P0302, P0303, P0304, P0305,											
P0306, P0307, P0308, P0401, P042E											
Primary Offgoing Clutch is	One Trip										
Variable Bleed Solenoid (VBS) P0797 Pressure Control (PC) Solenoid C exhausted (See Table 11 in Stuck Op IC (F64 (Duragic)) = TRUE Boolean											
Exhaust Delay Timers)											
Primary Oncoming Clutch _ Maximum											
Pressure Command Status pressurized											
Primary Offgoing Clutch Pressure Clutch exhaust											
Command Status command											
Range Shift Status ≠ Initial Clutch											
Attained Gear Slip <= 40 RPM											
If the above conditions are true increment appropriate Fail 1											
Timers Below:											
fail timer 1 ≥ 0.5 Fail Time (Sec)											
(4-1 shifting with throttle)											
(4-1 shifting without throttle) >= 0.5 Fail Time (Sec)											
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	Enable Conditio	ns	Re	Time auired	Mil Illum.
----------------------	---------------	---------------------------------	---	--------	--------------------	--	--	---	---	--	---------------
			fail timer 1 (4-2 shifting with throttle)	>= 0.	5 Fail Time (Sec)			-			
			fail timer 1 (4-2 shifting without throttle)	>= 0.	5 Fail Time (Sec)						
			fail timer 1 (4-3 shifting with throttle)	>= 0.	5 Fail Time (Sec)						
			fail timer 1 (4-3 shifting without throttle)	>= 0.	5 Fail Time (Sec)						
			fail timer 1 (5-3 shifting with throttle)	>= 0.	5 Fail Time (Sec)						
			(5-3 shifting without throttle)	>= 0.	5 Fail Time (Sec)						
			(6-2 shifting with throttle)	>= 0.	5 Fail Time (Sec)						
			(6-2 shifting without throttle)	>= 0.1	5 Fail Time (Sec)						
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers						Total Fail 1 = (Fail 1 + 2) See En. Timers for >= Timer 1, a Reference Supportin Table 15 Fail Time	ime Fail bable Fail nd sec se for for	
			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	
						TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	 >= -6.6562 = FALSI = FALSI ≠ TRUE = TRUE >= 100 >= 200 >= FALSI = FALSI = FALSI = TRUE 	5 °C Boolean Boolean Boolean RPM RPM Boolean Boolean Boolean Boolean			

Component/	Fault	Monitor Strategy	Malfunction	Thi	eshold /alue	Secondary Malfunction	Enable	Re	Time quired	Mil Illum.
Jystein	Coue	Description	Griteria	````	Disable	MIL not Illuminated for	TCM: P0716 P0717 P0722 P0723	itte	quilea	
					Conditions:	DTC's	P182F			
							ECM: P0101, P0102, P0103, P0106,			
							P0107, P0108, P0171, P0172, P0174,			
							P0175, P0201, P0202, P0203, P0204,			
							P0205, P0206, P0207, P0206, P0300, P0301 P0302 P0303 P0304 P0305			
							P0306 P0307 P0308 P0401 P042F			
Tan Un Tan Down Switch (TUTD)	P0815	Linshift Switch Circuit	Fail Case 1 Tap Up Switch Stuck in the Up	- 1	Boolean					Special
Tap op Tap Down Switch (TOTD)	1 0013	opsinit Switch Circuit	Position in Range 1 Enabled		Doolean					No MIL
			Tap Up Switch Stuck in the Up	= 1	Boolean					
			Position in Range 2 Enabled Tap Up Switch Stuck in the Ur							
			Position in Range 3 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up	1	Dealers					
			Position in Range 4 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up	= 1	Boolean					
			Position in Range 5 Enabled		Booloan					
			I ap Up Switch Stuck in the Up Position in Pange 6 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up							
			Position in Neutral Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up	_ 1	Pooloan					
			Position in Park Enabled	= 1	Buulean					
			Tap Up Switch Stuck in the Up	= 1	Boolean					
			Position in Reverse Enabled		Pooloan			N= 1	Eail Time (See)	
			Tap op Switch OK	= IKUL	Buulean			>= 1	Fall Fille (Sec)	,
			Fail Case 2 Tap Up Switch Stuck in the Up	1	Deeleen					-
			Position in Range 1 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up	= 1	Boolean					
			Position in Range 2 Enabled							
			Position in Range 3 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up							
			Position in Range 4 Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up	- 1	Boolean					
			Position in Range 5 Enabled		Doolean					
			Tap Up Switch Stuck in the Up	= 1	Boolean					
			Tap Up Switch Stuck in the Up							
			Position in Neutral Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up	1	Dooloop					
			Position in Park Enabled	= 1	Boolean					
			Tap Up Switch Stuck in the Up	= 1	Boolean					
			Position in Reverse Enabled	триг	Dooloon					
			NOTE: Both Failcase1 and	= IKUE	DUUIEdII					
			Failcase 2 Must Be Met					>= 600	Fail Time (Sec))
	1									1
	1									
	1							1		
	1							1		

Component/ System	Fault Code	Monitor Strategy Description		Malfunction Criteria		Thre Va	eshold alue	Secondary Malfunction		Enable Conditions			Time Required		Mil Illum.
								Time Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed is within the allowable limits for P0815 Status is	>= <= >= >= ≠	1 8.5996094 31.990234 400 7500 5 Test Failed This Key On or Fault	Enable Time (Sec) Volts Volts RPM RPM Sec				
			5 10 1				Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0816 P1877, P19 ECM: None	Active 6, P0826, P182E 15, P1761	, P1876,				
Tap Up Tap Down Switch (TUTD)	P0816	Downshift Switch Circuit	Fail Case T	Tap Down Switch Stuck in the Down Position in Range 1 Enabled	=	1	Boolean								No MIL
				Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean								
				Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean								
				Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean								
				Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean								
				Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean								
				Tap Down Switch Stuck in the Down Position in Range Neutral Enabled	=	1	Boolean								
				Tap Down Switch Stuck in the Down Position in Range Park Enabled	=	1	Boolean								
				Tap Down Switch Stuck in the Down Position in Range Reverse Enabled Tap Down Switch ONI	=	1 TRUF	Boolean					>=	1	sec	
			Fail Case 2	Tap Down Switch Stuck in the	=	1	Boolean						•		
				Tap Down Switch Stuck in the Down Position in Range 2 Enabled	=	1	Boolean								

System C	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thre Va	shold lue	Secondary Malfunction		Enable Conditions			Time Required		Mil Illum.
			Tap Down Switch Stuck in the Down Position in Range 3 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 4 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 5 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Range 6 Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Neutral Enabled Tap Down Switch Stuck in the	=	1	Boolean								
			Down Position in Park Enabled	=	1	Boolean								
			Tap Down Switch Stuck in the Down Position in Reverse Enabled	=	1	Boolean								
			Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met	=	TRUE	Boolean					>=	600	Sec	
														_
							Time Since Last Range Change	>=	1	(Sec)				
							Ignition Voltage Lo Ignition Voltage Hi	>= <=	8.5996094 31.990234	Volts Volts				
							Engine Speed Lo Engine Speed Hi	>= <=	400 7500	RPM RPM				
							Engine Speed is within the	>=	5	Sec				
							allowable ilffills for		Test Failed					
							P0816 Status is	¥	This Key On or Fault					
									Active					
						Disable	MIL not Illuminated for	TCM: P0815	5, P0826, P182E	, P1876,				
						Conditions.	0103.	FCM: None	13, 1 1701					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thr V	reshold /alue	Secondary Malfunction		Enable Conditions			Ti Req	me uired	Mil Illum.
Tap Up Tap Down Switch (TUTD)	P0826	Up and Down Shift Switch Circuit	TUTD Circuit Reads Invalid	= TRUE	Boolean					>=	60	Fail Time (Sec) Specia
			Voidy			Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for	>= <= >= <= >=	8.5996094 31.990234 400 7500 5 Test Failed	Volts Volts RPM RPM Sec				
					Disable Conditions	P0826 Status is MIL not Illuminated for DTC's:	≠ TCM: P1761 ECM: None	On or Fault Active					
Tap Up Tap Down Switch (TUTD)	P1761	Tap Up and Down switch signal	Rolling count value received from BCM does not match expected	= TRUE	Boolean					>=	3	Fail Counter	Specia No MIL
			value							>	10	Sample Timer	
						Tap Up Tap Down Message	=	TRUE	Boolean			(Sec)	-
						Engine Speed Lo	>=	400	RPM				
						Engine Speed H Engine Speed is within the allowable limits for	<=	5	RPM Sec				
					Disable Conditions	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	= (bit state 1110)	1 Range								One Tri
			Previous range	≠ CeTRGR_e RNDL_Drive	_P e6 Range								
			Previous range	≠ CeTRGR_e RNDL_Drive	_P e5 Range								
			Range Shift State	= Range Shit Completed	^{ft} ENUM d								
			Absolute Attained Gear Slip Attained Gear Attained Gear	<= 50 <= Sixth >= First	rpm								
			Throttle Position Available	= TRUE									
			Throttle Position Output Speec Engine Torque Engine Torque If the above conditions are met then Increment Fail Time	>= 8.00018310 >= 200 >= 50 <= 8191.75	05 pct rpm Nm Nm					>=	1	Fail Seconds	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val	shold ue	Secondary Malfunction		Enable Conditions			Tin Requ	ne ired	Mil Illum.
			If Fail Timer has Expired the	n r							>=	5	Fail Counts	
			Fail Case 2 The following PRNDL sequence events occur in this exact order	d <= e	70	rpm								
			PRNDL state	e =	Drive 6 (bit	Range								
			PRNDL state = Drive 6 for	r >=	state 0110) 1	Sec								
			DDNDL stat	-	Transition 8	Pango								
				-	0111)	Range								
			PRNDL stat	e =	Drive 6 (bit state 0110) Transition 1	Range								
			PRNDL stat	e =	(bit state 1110)	Range								
			Above sequencing occurs in	n <=	1 Inactivo	Sec								
			If all conditions above are me	e =	mactive									
			Increment delay Time	r										
			Increment Fail Time	r. r							>=	3	Fail Seconds	
			delay time	۲ >= ط >_	1	Sec								
			If Fail Timer has Expired the	n	400	Jec					>-	2	Fail Counts	
			Increment Fail Counte	r	Transition 13				CATRGR		>=	Z	T all Counts	
			Current range	e =	(bit state 0010)	Range	Previous range	¥	e_PRNDL _Drive5					
			Engine Torqu	e >=	-8192	Nm	Previous range	≠	e_PRNDL _Drive5					
			Engine Torqu	e <=	8191.75	Nm	IMS is 7 position configuration If the "IMS 7 Position config" =	=	0	Boolean				
			If the above conditions are me then, Increment Fail Time	et er			1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13"				>=	0.225	Seconds	
			If Fail Timer has Expired the Increment Fail Counte	n r			5				>=	15	Fail Counts	
			Fail Case 4 Current rang	e =	Transition 8 (bit state 0111)	Range	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 (nark)							
			Steady State Engine Torque Steady State Engine Torque If the above conditions are me then Increment Fail Time	e >= e <= et	30 8191.75	Nm Nm	TOUT (Park)				>=	0.225	Seconds	
			If the above Condtions have been met, Increment Fail Counte	n r							>=	15	Fail Counts	
			Fail Case 5 Throttle Position Available The following PRNDL sequence events occur in this exact order	e = e	TRUE	Boolean								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	E Cor	nable nditions		T Rec	ime quired	Mil Illum.
*			PRNDL State	e = Reverse (bit state 1100) Range							
				Transition 11							
			PRNDL State	e = (bit state Range							
				Neutral (bit							
			PRNDL State	e = state 0101) Range							
			PRNDI State	Transition 11 = (bit state Range							
				0100)							
			Above sequencing occurs in Then delay timer increments	1 <= 1 Sec							
			Delay timer	r >= 5 sec							
			Range Shift State	e = Range Shift							
			Absolute Attained Gear Slip	complete o <= 50 rpm							
			Attained Gear	<= Sixth							
			Throttle Position	>= First >= 8.000183105 pct							
			Output Speed	>= 200 rpm							
			If the above conditions are met Increment Fail Timer					>=	= 20	Seconds	
			Fail Case 6	Illegal (bit	A Open Circuit Definition (flag						
			Current range	e = state 0000 or 1000 or 0001)	conditions are met):						
						Tr	ransition				
			and		Current Range	¥	11 (bit				
						sta	ate 0100)				
			A Open Circuit (See Definition)	= FALSE Boolean	or						
					Last positive state	≠ Ne	eutral (bit ate 0101)				
					or	510					
					01	Ti	ransition				
					Previous transition state	≠ 8((bit state				
					Fail case 5 delay timer	=	0 sec	2			
			If the above Condtions are met	l	-			>=	= 6.25	Seconds	
			Fail Case 7	PRNDL circuit							
			Current PRNDL State	ABCP = 1101 Kange							
			and	PRNDL circuit							
			Previous PRNDL state	ABCP =1111 Range							
			Input Speed Reverse Trans Ratio	1 >= 150 RPM <= 2.678344727 ratio							
			Reverse Trans Ratio	>= 3.081542969 ratio							
			If the above Conditions are met then Increment Fail timer					>=	= 6.25	Seconds	
			P182E will report test fail when	1							
			any of the above 7 fail cases are	2							
			mer								
					Ignition Voltage Lo	>= 8.8	5996094 Vol	ts			
		I	l	I	Ignition Voltage Hi	<= 31	.990234 Vol	IS			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
				Diab	Engine Speed Lu Engine Speed H Engine Speed is within the allowable limits fo Engine Torque Signal Valk	>= 400 RPM i <=		
				Condition	s: DTC's	ECM: P0710, P0717, P0722, P0723, P07C0, P07BF, P077C, P077D ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		
Tap Up Tap Down Switch (TUTD)	P1876	Tap Up and Down Enable Switch Circuit	Current range	Park or = Reverse or Range State Neutral				Special No MIL
			TUTD Enable Switch is Active	e = TRUE Boolean			>= 3 Fail Time (Sec) >= 5 Fail Counts	1
					Ignition Voltage La Ignition Voltage H Vehicle Speed La Engine Speed H Engine Speed is within th allowable limits fo	>= 8.5996094 Volts i <=		
					P1876 Status i	This Key On or Fault Active		
				Disab Condition:	le MIL not Illuminated fo s: DTC's	TCM: P0815, P0816, P0826, P1761, P1825, P1877, P1915, U0100		
						ECM: None		
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status	s r = TRUE Boolean) Maximum s = pressurized				One Trip
			Primary Offgoing Clutch Pressure Command Status	e Clutch exhaust command				
			Range Shift Status Attained Gear Slip	s ≠ Initial Clutch Control <= 40 RPM				
			If above coditons are true, increment appropriate Fail 1 Timers Below:					

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr	eshold /alue	Secondary Malfunction		Enable Conditions			Ti Rea	me uired	Mil Illum.
		Decemption	fail timer 1	>=	0.5	Fail Time (Sec)								
			(2-1 shifting with throttle)		0.0									
			(2-1 shifting without throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (2-3 shifting with throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1	>=	0.5	Fail Time (Sec)								
			(2-3 shirting without throtte) fail timer 1	\	0.5	Fail Time (Sec)								
			(2-4 shifting with throttle) fail timer 1	/-	0.5									
			(2-4 shifting without throttle)	>=	0.5	Fail Time (Sec)								
			(6-4 shifting with throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (6-4 shifting without throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1	>=	0.5	Fail Time (Sec)								
			fail timer 1	>=	0.5	Fail Time (Sec)								
			(6-5 shifting without throttle)											
											Т	otal Fail Tir	ne	
											= 2	(Fail 1 + Fail) See Enab	ail Ie	
			If Attained Gear Slip is Less than								Т	imers for F	ail	
			Above Cal Increment Fail Timers								>=	Reference	d sec	
												Supporting	l r	
												Fail Timer 2	2	
			If fail timer is greater than											
			gear fail counter and total fail											
			counter										Eail Countor	
			2nd gear fail counter								>=	3	From 2nd Gear	
			(4), man 6, 11 an an 14									2	OR Fail Counter	
			oth gear fail counter								>=	3	From 6th Gear	
			total fail counter								>=	5	Total Fail	
				<u> </u>			TUT Enable temperature	>=	-6.65625	°C		-	Counter	-
							Input Speed Sensor fault	=	FALSE	Boolean				
							Command / Attained Gear	_ ≠	1st	Boolean				
							High Side Driver ON output speed limit for TUT	= >=	TRUE 100	Boolean RPM				
							input speed limit for TUT	>=	200	RPM				
							IMS Fault Pending	=	FALSE	Boolean Boolean				
							Service Fast Learn Mode	=	FALSE	Boolean				
							HOD ENADIED	=	IKUE	DOOLGGU				
				1										

Component/	Fault Code	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable		T Rer	ime nuired	Mil Illum.
Jystem	coue	Description	onena	Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,		1100	lanca	
				Conditions:	DTC's:	P182E				
						ECM: P0101, P0102, P0103, P0106,				
						P0107, P0108, P0171, P0172, P0174,				
						P0175, P0201, P0202, P0203, P0204,				
						P0301, P0302, P0303, P0304, P0305,				
						P0306, P0307, P0308, P0401, P042E				
		Pressure Control (PC) Solenoid D	Fail Case 1							One Trip
Variable Bleed Solenoid (VBS)	P2715	Stuck On [CB26] (Steady State)	Case: Steady State 1s	t						
			Attained Gear slip	0 >= 400 RPM Table Based						
				Time Please						
			If the Above is True for Time	Refer to Table Enable Time						
				4 In (Sec) supporting						
				documents						
			Intrusive test (CBR1 clutch expansed	:						
			Gear Ratio	o <= 3.015991211						
			Gear Ratio	o >= 2.728027344						
			If the above parameters are true	5						
							>=	1.1	Fail Timer (Sec))
							>=	5	Fail Count in	
									or	
							>=	5	Total Fail	
			Fail Case 2 Case: Steady State 3rd Gea	r					Counts	-
				Table Based						
			Max Delta Output Speer	value Please Refer to Table						
			Hysteresis	rpm/sec 22 in						
				supporting						
				Table Based						
				value Please						
			Min Delta Output Speed Hysteresi	A Refer to Table rpm/sec						
			- Hysteresi	supporting						
				documents						
				Time Please						
			If the Above is True for Time	Refer to Table Sec						
				17 in						
				documents						
			Intrusive test							
			(C35R clutch exhausted Gear Ratio) c <= 3.015991211						
			Gear Ratio	o >= 2.728027344						
			If the above parameters are true	e						
							>=	1.1	Fail Timer (Sec))
							>=	3	Fail Count in	
1	1	I	1	1	I	1		5	3rd Gear	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
							Or Total Fail	
							>= 5 Counts	
			Fail Case 3 Case: Steady State 4rd Gear	Table Based				
				value Please				
			Max Deita Output Speed Hysteresis	$>=$ $\begin{array}{c} \text{Refer to Table} \\ 22 \text{ in} \end{array}$ rpm/sec				
				supporting				
				Table Based				
			Min Delta Output Speed	value Please Refer to Table				
			Hysteresis	>= 23 in rpm/sec				
				documents				
				Table Based				
			If the Above is True for Time	Refer to Table Sec				
				supporting				
			teat avisurtal	documents				
			(C1234 clutch exhausted)					
			Gear Ratio Gear Ratio	<= 0.7/9052734 >= 0.704956055				
			If the above parameters are true					
							>= 1.1 Fail Timer (Sec	:)
							>= 3 Fail Count in 4th Gear	
							or Total Fail	
							>= 5 Counts	
			Fail Case 4 Case: Steady State 5th Gear	Table Based				
			Max Delta Output Speed	value Please Refer to Table				
			Hysteresis	>= 22 in				
				documents				
				Table Based				
			Min Delta Output Speed	Refer to Table				
			Hysteresis	s 23 in supporting				
				documents Table Based				
				Time Please				
			If the Above is True for Time	e >= Refer to Table 17 in Sec				
				supporting				
			Intrusive test:					
			(C35R clutch exhausted) Gear Ratio	<= 0.779052734				
			Gear Ratio	>= 0.704956055				
I	1	I	II the above parameters are true	1	I	I	I	I .

Component/ System	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction		Enable			T	ime quired	Mil Illum.
- Cystem	ooue	Description		, Tuluo					>=	1.1	Fail Timer (Sec))
									>=	3	Fail Count in 5th Gear	
									>=	5	or Total Fail Counts	
					PRNDL State defaulte	d =	FALSE	Boolean			Counts	
					inhibit RV	T =	FALSE	Boolean				
					INIS TAULT pending Indication	n = d >-	FALSE	Boolean RDM				
					TPS validity fla	q =	TRUE	Boolean				
					HSD Enable	d =	TRUE	Boolean				
					Hydraulic_System_Pressuriz	e =	TRUE	Boolean				
					A OR	d B						
					(A) Output speed enabl	e >=	36	Nm				
					(B) Accelerator Pedal enabl	e >=	0.5004883	Nm				
					Ignition Voltage L	0 >=	8.5996094	Volts				
					Ignition Voltage F	li <=	31.990234	Volts				
					Engine Speed E	0 >= li <=	400 7500	RPM				
					Engine Speed is within th	e	, 000	C				
					allowable limits for	>=	5	Sec				
					if Attained Gear=1st FV	V >=	5.0003052	Pct				
					Accelerator Pedal enable	e M						
					Engine Torque Enabl	e >=	20	Nm				
					if Attained Gear=1st FV	V	8101 875	Nm				
					Engine Torque Enabl	e	0171.075	INITI				
					Transmission Flui	d >=	-6.65625	°C				
					Input Speed Sensor fail	e It =	FALSE	Boolean				
					Output Speed Sensor fau	lt =	FALSE	Boolean				
					Default Gear Option is no	et =	TRUF					
					preser	nt	HIGE					
					icobla MIL pot Illuminated fr	TOM D071	(00717 0070)	0.00700				
				Condi	tions: DTC's	5: P182E	3, PU/17, PU/22	., PU/23,				
						ECM: P010	1, P0102, P0103	3, P0106,				
						P0107, P01 P0175_P02	01 P0202 P020	72, P0174, 03 P0204				
						P0205, P02	.06, P0207, P020	08, P0300,				
						P0301, P03	02, P0303, P030	J4, P0305,				
						P0306, P03	07, P0308, P040)1, P042E				
			Primary Offgoing Clutch is									One Trip
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Dynamic)	exhausted (See Table T0 in Supporting Documents for	= TRUE Boolean								
		Stack on (Dynamic)	Exhaust Delay Timers)									
			Primary Oncoming Clutch	Maximum								
			Pressure Command Status	= pressurized								
			Primary Offgoing Clutch Pressure	_ Clutch exhaust								
			Command Status	- command								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Th	reshold Value	Secondary Malfunction		Enable Conditions			Tiı Regi	me uired	Mil Illum.
Gystein	oouc	Description	Dange Chift Clotus		Initial Clut	ch			oonantono					
			Range Shirt Status	, <i>≠</i>	Control									
			Attained Gear Slip) <=	40	RPM								
			If the above conditions are true	1										
			Timers Below:	~										
			fail timer 1	i -	0.5									
			(2-6 shifting with throttle)) >=	0.5	Sec								
			fail timer 1	>=	0.5	Sec								
			(2-6 Shifting Without throttle)	1										
			(3-5 shifting with throttle)) >=	0.5	Sec								
			fail timer 1	1	0.5	202								
			(3-5 shifting without throttle))	0.5	300								
			fail timer 1 (4.5 shifting with throttle)	>=	0.5	sec								
			fail timer 1	r L										
			(4-5 shifting without throttle)) >=	0.5	SEC								
			fail timer 1	>=	0.5	Sec								
			(4-6 shifting with throttle))										
			(4-6 shifting without throttle)	>=	0.5	sec								
											т.	tel Feil Tim		
											-	itai Fali Tin (Fail 1 → Fa	ne ail	
											2)	See Enab	le	
			If Attained Gear Slin is Less than								Ti	mers for Fa	ail	
			Above Cal Increment Fail Timers	5							>= T	imer 1, and	d sec	
												Reference		
											1	able 15 fo	r	
											F	ail Timer 2	2	
			If fail timer is greater than	,										
			threshold increment corresponding	J										
			gear fail counter and total fail	l.										
			counter	í.									F # O .	
			2nd gear fail counter	t –							>=	3	Fail Counter From 2nd Gear	
			3rd goar fail counter	r								3	Fail Counter	
			Siù gear ian counter								/-	5	From 3rd Gear	
													Fail Counter	
			4th gear fail counter	í.							>=	3	From 4th Gear	
			total fail counter	r							>=	5	Total Fail	
							TUT Enable temperature		4 45405	00		-	Counter	4
							Input Speed Sensor fault	>=	-0.05025 FALSE	Boolean				
							Output Speed Sensor fault	=	FALSE	Boolean				
				1			Command / Attained Gear	≠	1st	Boolean				
				1			High Side Driver ON	=	TRUE	Boolean				
				1			input speed limit for TUT	>=	200	RPM				
				1			PRNDL state defaulted	=	FALSE	Boolean				
				1			IMS Fault Pending	=	FALSE	Boolean				
				1			Service Fast Learn Mode	=	FALSE	Boolean				
				1			HSD Enabled	=	IRUE	Roolean				
	1						1				1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Tin Requ	ne Jired	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)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gear Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table 22 in supporting documents						One Trip
			Min Delta Output Speed Hysteresis	Table Based value Please Refer to Table 23 in supporting documents Table Based Time Please						
			If the Above is True for Time Intrusive test: (C35R clutch exhausted) Gear Ratio Coar Patio	<pre>>> Refer to Table 17 in supporting documents</pre>						
			If the above parameters are true	1.5+5017570			>=	1.1	Fail Timer (Sec))
							>=	3	Fail Count in 5th Gear OR Total Fail Counts	
			Fail Case 2 Case: 6th Gear Max Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table 22 in supporting						
			Min Delta Output Speed Hysteresis	cocuments Table Based value Please >= Refer to Table 23 in supporting documents						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Rec	ime Juired	Mil Illum.
	0000	Description		Table Based Time Please			2 official of 10					
			li the Above is True for Time	Refer to Table								
			II the Above is thue for time	>= Sec 5ec							ļ	
				supporting							ļ	
			Intructive test	documents								
			(CB26 clutch exhausted)									
			Gear Ratio	<= 1.484985352								
			Gear Ratio	>= 1.343017578								
			If the above parameters are true								ļ	
									>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in	
										0	6th Gear	
											Total Fail	
									>=	3	Counts	
					PRNDL State defaulted	=	FALSE	Boolean				1
					inhibit RVT	=	FALSE	Boolean			ļ	
					IMS fault pending indication	=	FALSE	Boolean			ļ	
					TPS validity flag	=	TRUF	Boolean			ļ	
					HSD Enabled	=	TRUE	Boolean			ļ	
					Hydraulic_System_Pressurize	=	TRUF	Boolean				
											ļ	
					(A) Output speed enable	>=	36	Nm			ļ	
					(B) Accelerator Pedal enable	>=	0.5004883	Nm			ļ	
					Ignition Voltage Lo	>=	8.5996094	Volts			ļ	
					Ignition Voltage Hi	<=	31.990234	Volts			ļ	
					Engine Speed Lo	>=	400	RPM			ļ	
					Engine Speed is within the	<=	7500				ļ	
					allowable limits for	>=	5	Sec			ļ	
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003052	Pct				
					if Attained Gear=1st FW	>=	20	Nm				
					if Attained Gear=1st FW	<=	8191 875	Nm				
					Engine Torque Enable Transmission Fluid		((5 () 5					
					Temperature	>=	-0.00025	۳U -				
					Input Speed Sensor fault	=	FALSE	Boolean				
					Default Gear Ontion is not	=	FALSE	Realore				
					present	=	TRUE					
											l	
									1		ļ	I

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,		
				Conditions:	DTC's:	P182E		
						ECM: P0101, P0102, P0103, P0106,		
						P0107, P0108, P0171, P0172, P0174,		
						P0175, P0201, P0202, P0203, P0204,		
						P0205, P0206, P0207, P0208, P0300,		
						P0301, P0302, P0303, P0304, P0305,		
						P0306, P0307, P0308, P0401, P042E		

Component/	Fault	Monitor Strategy		Malfunction		Thre	eshold alue	Secondary Malfunction		Enable			T	Time quired	Mil
System	Code	Transmission Electro-Hydraulic	Fail Case 1	Gillena	+	V	aiue	Manufiction		Conditions			Ke	quireu	One Trin
Transmission Control Module (TCM)	P0634	Control Module Internal Temperature	l di odbo i	Substrate Temperature) >=	142.1016	°C					>=	5	Fail Time (Sec	:)
		Too High													
															_
			Fail Case 2	Substrate Temperature	e >=	50	°C					>=	2	Fail Time (Sec	:)
				Ignition voitage)) >=	18	VOItS								-
				Note: entrer fail case call set the											
								Ignition Voltage Lo	>=	8.59961	Volts				
								Institut Valuan II		21 00002	Valta				
								Ignition voitage n	<=	31.999UZ	VUILS				
								Substrate Temp Lo	>=	0	°C				
								Substrate Temp H	<=	170	°C				
								Substrate Temp Between	>=	0.25	Sec				
								remp range for time							
										Test Failed					
								P0634 Status is	≠	On or Fault					
										Active					
							Disable	MIL not Illuminated for	TCM: None						
							Conditions	: DTC's							
									ECM: None						
				Transmission Innut Speed Sensor	r										One Trin
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance		Drops	>=	900	RPM					>=	0.8	Fail Time (Sec	;) One mp
				.1.											
															_
								Engine Torque is	>=	0	N*m				
								Engine Torque is	<=	400	RPM				
								Engine Speed	<=	7500	RPM				
								Engine Speed is within the		5	Sec				
								allowable limits for		5	500				
								Vehicle Speed is	>=	10	Kph				
									>=	0	PU				
								Transmission Input Speed is	>=	0	RPM				
								The previous requirement has	<u> </u>	0	Soc				
								been satisfied for	>=	0	Sec				
								The change (lean to lean) in							
								transmission input speed is	<	8191.88	RPM/Loop				
								The previous requirement has		0	0				
								been satisfied for	>=	0	Sec				
								Throttle Position Signal Valid	=	TRUE	Boolean				
					1			Engine Torque Signal Valid	=	TRUE	Boolean				1
								Ignition Voltage	>= <=	8.09901 31 99902	Volts				
1	1	1	1		1			ignition voltage	1 1	J1.7770Z	v UILO	1			1

Option Code Description Contrat Value management Code of the service Required Management Image: Service Chical Low Image: Service Chical Low <td< th=""></td<>
Image: bit in the construction of the const
Image: series control Image: series con
Image: series of the part series of the
Image: conditions Difference Differ
Image: constraint of the speed Sensor (TTSS) P071 Pupul Speed Sensor Clouid Low, Voltage Eal Case 1 Transmission Input Speed Sensor (TTSS) P071 Pupul Speed Sensor Clouid Low, Fail Case 2 Minut Speed Sensor Clouid Low, Fail Case 2 Minut Speed Sensor (TTSS) P071 Pupul Speed Sensor Clouid Low, Fail Case 2 Minut Speed Sensor (TTSS) P071 Speed Sensor Clouid Low, Fail Case 2 Minut Speed Sensor (TTSS) P071 Speed Sensor (TTSS) P071 Speed Sensor Clouid Low, Fail Case 2 Minut Speed Sensor (TTSS) Controller uses a single power supply for the speed sensors input Speed Sensor (TTSS) Imput Speed Sensor (TTSS) P071 Speed Sensor (TTSS) P0717 Speed Sensor (TTSS) P071 P071 P071 P071 P071 P071 P071 P071 </td
Transmission Input Speed Sensor (TISS) P0717 Imput Speed Sensor (TISS) P0717 Impu Speed Sensor (TISS) P0717 Impu Speed Sensor (
Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission < 653.13
Input Speed is Input Speed is Suppry for the speed sensors Imput Speed is
Engine Torque is in the image of the image.
Engine Torque Signal Valid = TRUE Boolean lignition Voltage (a) 100 Voltage = TRUE Boolean Volts Ignition Voltage >= 4.00 RPM Engine Speed >= 4.00 RPM Engine Speed >= 5 Sec P0717 Status is not Test Failed This Key On or Fault Active Test Failed This Key Conditions: This Key On or Fault Active Sec Transmission Output Speed Sensor Circuit Low Transmission Output Speed 25 DM Sec On or Trip
Image: speed service Image: speed service <td< td=""></td<>
Engine Speed >= 400 RPM Engine Speed <=
Engine Speed is within the allowable limits for Conditions: >= 5 Sec Disable Conditions: Disable Conditions: MIL not Illuminated for DTC's: TCM: P0722, P0723 Transmission Output Speed Sensor Doutput Speed Sensor Transmission Output Speed Sec Test Failed Transmission Output Speed Sensor P0722, P0723 DUI Conditions: DIC's ECM: P0101, P0102, P0103
Image: Construint Status is not Test Failed P0717 Status is not Test Failed Disable MIL not Illuminated for Conditions: Disable Conditions: TCM: P0722, P0723 ECM: P0101, P0102, P0103 Transmission Output Speed Sensor Circuit Low
Image: Point Speed Sensor Point Speed Sensor Circuit Low Transmission Output Speed Transmission Output Speed Point Spee
Image: Sensor portage Output Speed Sensor Circuit Low Transmission Output Speed Transmission Output Speed Sensor Sensor <t< td=""></t<>
Disable Conditions: Disable Conditions: MIL not Illuminated for DTC's: TCM: P0722, P0723 ECM: P0101, P0102, P0103 Description Descrinteracin description Descrindescriptio
Image: Conditions DTC's: ECM: P0101, P0102, P0103 Transmission Output Speed Sensor Drasmission Output Speed Sensor Circuit Low Transmission Output Speed
Transmission Output Speed Sensor Circuit Low Transmission Output Speed Log Down Circuit Low Circuit Low Transmission Output Speed Log Down Circuit Low Circuit Low Transmission Output Speed Log Down Circuit Low Circuit Low Transmission Output Speed Log Down Circuit Low Circuit Low Circuit Low Transmission Output Speed Log Down Circuit Low Circu
/TOCC) FU/22 V-Hanna Country Country (= 30 RPM) >= 4.0 Fdil Hille (Seu)
(TOSS) Voliage Sensor Raw Speed Test Failed
P0722 Status is not = This Key On or Fault
Active Active
TRUE Boolean
Engine Torque Check = TRUE Boolean Throttle Position >= 8.0002 Pct
Transmission Fluid Temperature >= -40 °C
Disable this DTC if the PTO is active = 1 Boolean
Engine Torque Signal Valid = TRUE Boolean
Ignition Voltage is >= 8.59961 Volts
Ignition Voltage is <= 31.99902 Volts Engine Speed is >= 400 RPM

			5										
Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold	Secondary Malfunction		Enable			Tir	me	Mil
System	Code	Description	Chiena	v	alue	Engine Speed is	<=	7500	RPM	<u> </u>	Kequ	uirea	murn.
						Engine Speed is within the	-	,000	C				
						allowable limits for	>=	5	Sec				
						Eachla Eleve Defined Deleve				<u> </u>			-
						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	≠	shift	ENUM				
								completed					
						OR		Dark or					
						Transmission Range is	=	Neutral					
						Engine Torque is	>=	8191.75	N*m				
						Engine Torque is	<=	8191.75	N*m				
						Engine Torque Condition 2							
						Engine Torque Condition 2 Engine Torque is	>=	50	N*m				
						Engine Torque is	<=	8191.75	N*m				
										<u> </u>			-
						(TIS) Check is TPLIE if either							
						of the two following conditions							
						are TRUE							
						TIS Check Condition 1 Transmission Input Speed is		653 13	DDM				
						Transmission Input Speed is	<=	5350	RPM				
						TIS Check Condition 2							
						Engine Speed without the	>=	3200	RPM				
						Engine Speed with the brake							
						applied is	>=	3200	RPM				
						Engine Speed is	<=	8191.88	RPM				
						Controller uses a single power	=	1	Boolean				
						Powertrain Brake Pedal is							
						Valid	=	TRUE	Boolean				
					Disable	MIL not Illuminated for	TCM: P071	6, P0717, P0723	3				
					Conditions	DTC's:							
							ECM: P010	1, P0102, P0103	3, P0121,				
							P0122, P01	23					
Transmission Output Speed Sensor	00700	Output Speed Sensor Circuit	Transmission Output Speed	>10E	DDM							Enable Time	One Trip
(TOSS)	P0/25	Intermittent	Sensor Raw Speed	>= 105	KPIVI					>=	0	(Sec)	
			Output Speed Delta	<= 8192	RPM					>=	0	Enable Time	
										1		Output Speed	1
			Output Speed Drop	> 650	RPM					>=	1.5	Drop Recovery	
										1		Fail Time (Sec)	
	1	1	AND			1	1			1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
			Transmission Range is	= Driven range (R D)					
				(17,0)	Dischla	FALCE	C Dalam		
					Range_Disable OR	= FALSE	See Relow		
					Neutral Range Enable	= TRUF	See Below		
					And	TRUE	Cas Dalam		
					are TRUE concurrently	= IRUE	266 Relow		
					Transmission_Range_Enable	= TRUE	See Below		
					nable	= TRUE	See Below		
					No Change in Transfer Case Range (High <-> Low) for	>= 5	Seconds		
						Test Failed This Key			
					P0723 Status is not	= On or Fault			
					Disable this DTC if the PTO is	Active			
					active	= 1	Boolean		
					Ignition Voltage is Ignition Voltage is	>= 8.59961 <= 31.99902	Volts Volts		
					Engine Speed is	>= 400	RPM		
					Engine Speed is Engine Speed is within the	<= /500	RPM		
					allowable limits for	>= 5	Sec		
					Enable_Flags Delined Below				
					Transmission_Input_Speed_E				
					Condition 1 or TIS Condition 2				
					is TRUE:				
					TIS Condition 1 is TRUE when	0	Enable Time		
					are satsified for	>= 0	(Sec)		
					Input Speed Delta	<= 4095.88	RPM		
					Raw Input Speed	>= 500	KPIVI		
					TIS Condition 2 is TRUE when				
					are satisfied				
					Input Speed	= 0	RPM		
					for all speed sensors	= TRUE	Boolean		
					Neutral_Range_Enable is				
					TRUE when any of the next 3				
					Transmission Range is	= Neutral	ENUM		
					Transmission Range is	= eutral	ENUM		
					J	Transitonal			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	_	Enable		Time	Mil
System	Code	Description	Griteria	value	manuffction		Noutral/Dri		κειμιτέα	mann.
					Transmit I D		veutrai/Dfl ve	ENU:		
					Transmission Range is	=	Transitiona	ENUM		
					And when a drop occurs		I			
					Loop to Loop Drop of					
					Transmission Output Speed is	>	650	RPM		
					Denne Dischle is TDUE : 1					
					any of the next three					
					conditions are TRUE					
					Transmission Range is	=	Park	ENUM		
					Transmission Dango is	_	Park/Rever	ENILIM		
					Tanamiaalon Kanye Is	_	Transitonal	LINOIN		
					Input Clutch is not	=	ON (Fully	FNUM		
					put oluton is not	_	Applied)	2		
					Neutral Speed Enable is					
					TRUE when All of the next		1 5	Sacando		
					three conditions are satsified	>	1.0	SECOLIDS		
					for Transmission Output Speed	>	130	RPM		
							150			
					Transmission Output Speed is	<	20	RPM		
					The loop to loop change of the	>	-10	RPM		
					transmission Output Speed is					
					Transmission Dango Englia					
					is TRUE when one of the next					
					six conditions is TRUE					
					Transmission Range is	=	Neutral	ENUM		
							eutral			
					Transmission Range is	=	Transitiona	ENUM		
							 Neutral/D=!			
							Neutral/Dri			
					Transmission Range is	=	Transitiona	ENUM		
							l			
							Table			
							Based			
							Time			
					Time since a driven range	>=	Please Refer to	Sec		
					(rr, u) has been selected		Table 21 in			
							supporting			
							documents			
					Transmission Output Speed			0.000		
					Sensor Raw Speed	>=	500	RPM		
					Output Speed when a fault	>=	500	RPM		
					was uerected					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary		Enable			Ti	me	Mil
System	Code	Description	Criteria	Value	Mill not Illuminated for	TCM: P097	3 P0974 P0976	P0977		Req	uired	mum.
				Conditions	DTC's:	1011.1077	5,10774,10770	10///				
						ECM: P010	1, P0102, P0103	P0121,				
						P0122, P01	23					
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>= 750 Kpa					>=	2	Enable Time	Two Trips
		-	Either Condition (A) or (B) Must be								(Sec)	
			Entrier Condition (A) or (B) Must be									
				Refer to Table								
			(A) TCC Slip Error @ TCC On	1 in ppM					N -	Б	Eail Time (Sec)	
			Mode	Supporting Supporting					>=	э	rali fille (Sec)	
				Documents						_		
			(B) TCC Slip @ Lock On Mode	>= 130 RPM					>=	5	Fail Time (Sec)	
			If Above Conditions Have been Mot, and Fail Timor Expired						N -	2	TCC Stuck Off	
			Increment Fail Counter						>=	2	Fail Counter	
					TOONL		0 1 1					
					ICC Mode	=	On or Lock					
					Ignition Voltage Lo	>=	8.59961	Volts				
					Ignition Voltage Hi	<=	31.99902	Volts				
					Engine Speed	>=	400	RPM				
					Engine Speed	<=	7500	RPIN				
					allowable limits for	>=	5	Sec				
					Engine Torque Lo	>=	50	N*m				
					Engine Torque Hi	<=	8191.88	N*m				
					Throttle Position Lo	>=	8.0002	Pct				
					Throttle Position Hi	<=	99.9985	Pct				
					2nd Gear Ratio Lo	>=	2.19482	Ratio				
					2nd Gear Ratio High	<=	2.52515	Ratio				
					3rd Gear Ratio Lu	>=	1.42200	Ratio				
					4th Gear Ratio Lo	>=	1.06946	Ratio				
					4th Gear Ratio High	<=	1.23047	Ratio				
					5th Gear Ratio Lo	>=	0.79053	Ratio				
					5th Gear Ratio Hi	<=	0.90955	Ratio				
					6th Gear Ratio Lo	>=	0.62305	Ratio				
					6th Gear Ratio High	<=	0.71692	Ratio				
					Temperature Lo	>=	-6.6563	°C				
					Transmission Fluid							
					Temperature Hi	<=	130	°C				
					PTO Not Active	=	TRUE	Boolean				
					Engine Torque Signal Valid	=	TRUE	Boolean				
					Throttle Position Signal Valid	=	TRUE	Boolean				
					Dynamic Mode	=	FALSE	Boolean				
							Test Failed					
					P0741 Status is	≠	This Key					
					1 07 11 5 (2103 13	Í	On or Fault					
							Active					
1		1			1							

Deck Date (pairs) Deck (pairs) Magnetics <	Component/	Fault	Monitor Strategy	Malfunction		Thre	eshold		Secondary Malfunction		Enable			Pa	lime	Mil
Image: Construct Cubit: Info: 100 PEAP Constitues Constitues Constitues PEAP	System	Code	Description	Criteria		V	alue	Dicabla	Mill not Illuminated for	TCM- D071		2 00722		Re	quirea	mum.
Teges Growers Dash (TG) PEN2 TCC System State, POS TCC System State, POS <thtc pos<="" state,="" th=""> TCC State, POS</thtc>							Con	DISable	MIL NOT HIUMINATED TO	TCIVI: PU/ I	0, PU/17, PU/2	Z, PU723,				
Imper Generare Clash (1C2) POLY TOS System Start DK							COL	iuitions:	DIC S.	P0742, P27	03, P2704					
Image: Converter Cubit (10CO) PMT2 TCC System Stark, DVI. Description PMT2 PMT2 Fail There (Soc) PMT2 PMT2 Fail There (Soc) PMT2 PMT2 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>CCM. DO1</td> <td>1 00102 0010</td> <td>02 00104</td> <td></td> <td></td> <td></td> <td></td>										CCM. DO1	1 00102 0010	02 00104				
Image: Construct Clash (ICO) RVEC ICC Stapson Start, ON ICC S										ECIVI: PUT	JI, PUIUZ, PUIU	J3, PU106,				
Image Converter CMark (TCQ) PDV TIC: System Studi, DN TIC: Sy										P0107, P01	08, P0171, P01	72, P0174,				
Properting (CD) PROP CC System Stat. 08 TCC System 2 80 BPM Properting (CD) PROP										P0175, P02	01, P0202, P02	03, P0204,				
Image: Converter Club, ITCC) PR702 ICC System State, DV ITCC System State, DV <thitcc dv<="" state,="" system="" th=""> ITCC System State, DV ITCC S</thitcc>										P0205, P02	206, P0207, P02	08, P0300,				
Image Converte Cubit (FCC) TVP1 CCC Space Space OF										P0301, P03	02, P0303, P03	04, P0305,				
Image Converte Catch (FICC) FUV2 FIC 5 years 3ue. ON TO 5 is page 4 -6 is 100 -2 is 6 is 11 mode 5 is 0 is 0 mode 7 mo										P0306, P03	07, P0308, P04	01, P042E				
Target Coverine Dutity (ICC) PD/02 TCC Sig Speed PCC IS PP/04 PCC PCC IS PCI S IS Fail Tree Speed PC																
Image: Control Support - 13 RBM Image: Control Support - 0 Image: Control Support - 0 Tot Control Support Image: Control Support Image: Control Support - 0 Image: Control Support - 10 Image: Co	Torque Converter Clutch (TCC)	P0742	TCC System Stuck ON	TCC Slip Speed	>=	-50	RPM									One Trip
Image: Condition: How been marked in the Speed marked in the Sp				TCC Slip Speed	<=	13	RPM									
Image: Description between the boot between the bo													>=	1.5	Fail Time (Sec	:)
Mode, and all times Project. Improvement Fail Counter Imp				If Above Conditions Have been												
Increment Fail Contrie TCO Mate = Off Enable still Conti Gare 1 Boolean EVA and value the = 0 Boolean Evalue still Conti Gare = 1 Boolean Control Roop = 1 Boolean Control Roop = 1 Boolean Transmissin Surp = 1 Boolean Threat Pastion Hyst Hyst = 1 Boolean				Met, and Fail Timer Expired,									>=	6	Fail Counter	
Image: Control of the set o				Increment Fail Counter												
Beneficients Beneficients - 1 Benderin 1 Franciscients - 0 Benderin 1 KPH Franciscients - 0 Benderin 1 KPH Benderin - 1 KPH 1 Franciscients - 1 Bederin 1 Franciscients - 1 Be									TCC Mode	=	Off					
13FW and yoke true - 1 Booken 12FW and yoke true - 0 Booken 12FW and yoke true - 0000 FMM 12FW and yoke true - 0000 FMM 12FW and yoke true - 0000 FMM 12FW and yoke true - 11 FMH 12FW and yoke true - 11<		1							Enable test if Cmnd Gear =		4	Declara	1			
Coole Coole			1						1stFW and value true	=	Т	Roolean	1			1
201 and value has = 0 Boolean Explose Specif Lo >> 600 PPM Explose Specif Lo >> 501 CPH Vehick Specif Lo >> 501 CPH Vehick Specif Lo >> 81918 BB Nm Provide Specif Ho >> 81918 BB Nm Explose Torgen Trave Lo >> 800 Nm Carreet Range # Nexter Range Carreet Range # Nexter Range Carreet Range * Nexter Nexter Torster State Nexter * Nexter <td< td=""><td></td><td></td><td>1</td><td> </td><td> </td><td></td><td></td><td></td><td>Enable test if Cmnd Gear =</td><td></td><td>-</td><td></td><td>1</td><td></td><td></td><td>1</td></td<>			1						Enable test if Cmnd Gear =		-		1			1
Image: Specified in the second sec									2nd and value true	=	0	Boolean	1			1
Engine Second Lo >> 500 RPM Vehich Speed Lo >> 1 KPH Vehich Speed Lo >> 1 KPH Vehich Speed Lo >> 80 Mm Engine Torque Lo > 80 Mm Engine Torque Lo > 80 Mm Current Range # Newfail Range Current Range # Reverse Range Current Range # Reverse Range Current Range = 130 C Transmission Sumu >= 18 C Max Vehick Speed to Meet <									Engine Speed Hi	<=	6000	RPM				
Verbics Spool HI <									Engine Speed Lo	>=	500	RPM				
Which Speed La									Vehicle Speed H	<=	511	KPH				
Image: Signer Darges H									Vehicle Speed I o	>=	1	KPH				
Big									Engine Torque Hi	-	8101 88	Nm				
Concent Range F Noutral Range Concent Range F Noutral Range Concent Range F Noutral Range Concent Range F Noutral Secure Range Transmission Sum									Engine Torque Lo	>-	80	Nm				
Image: Construction of the sector of the									Current Pange	+	Neutral	Pango				
Image: Control of the state of the stat									Current Range	+ +	Dovorso	Bango				
Internet and solution									Transmission Sump	7	IVE A CL 2C	Range				
Image: State in the state									Tomporatura	<=	130	°C				
International properture Trioritle Position Hyst High >=									Transmission Sump							
Image: Control in the control in th										>=	18	°C				
Initial Position Pry Prijit >= \$0.003 Pct AND Max Vehicle Speed to Meet <=									Throttle Decition Unot Link		F 0002	Det				
AND AND AND AND Max Vehicle Speed to Meet Trottile Enable - 8 KPH Once Hyst High has been met. - 1 2.0004 Pct Throttile Position - 75 Pct Disable for Throttile Position - 1 Boolean Obsable if PTO active and value true 1 Boolean Disable if in D 1 and value true 1 Boolean Disable if in D 2 and value true 1 Boolean Disable if in D 3 and value true 1 Boolean Disable if in D 3 and value true 1 Boolean Disable if in D 3 and value true 1 Boolean Disable if in VUMD and value true 1 Boolean Disable if in VUMD and value true 1 Boolean Disable if in VUMD and value true 1 Boolean Disable if in VUMD and value true 1 Boolean Disable if in VUMD and value true 1 Boolean Disable if in VUMD and value true 1 Boolean Disable if in VUTD and value true 1 Boolean Disable if in VUTD and									Infollie Position Hyst High	>=	5.0003	PCI				
Max Venice speed to Meet Throttle Franke be enable will remain while Throttle Position Throttle Position Throttle Position Disable if PTO active and output the and Disable if in D1 and value true = 11 Boolean Disable if in D2 and value true = 11 Boolean Disable if in D3 and value true = 11 Boolean Disable if in D3 and value true = 11 Boolean Disable if in D3 and value true = 11 Boolean Disable if in D4 and value true 1 Boolean Disable if in D4 and value 1 Boolean Disable if in D1 and value 1 Boolean Disable if in TUTD and value 1 Boolean 1 Boolean									AND							
$\left \begin{array}{c c c c c } c c c c c } c c c c c c c $									Max venicle Speed to Meet	<=	8	KPH				
Image: Control Hyst High has been met, the enable Position >> 2.0004 Pct Image: Control Hyst High has been met, the enable Position >> 75 Pct Disable if PTO active and Value true = 1 Boolean Disable if In D1 and value true = 1 Boolean Disable if In D2 and value true = 1 Boolean Disable if In D2 and value true = 1 Boolean Disable if In D4 and value true = 1 Boolean Disable if In D4 and value true = 1 Boolean Disable if In D4 and value true = 1 Boolean Disable if In D4 and value true = 1 Boolean Disable if In TUTO and value true = 1 Boolean Disable if In TUTO and value = 1 Boolean Disable if In TUTO and value = 1 Boolean Utue 1 Boolean 1 Boolean Disable if In TUTO and value = 1 Boolean Utue 1 Boolean 1 Boolean Utu									I nrottie Enable							
Image: Construction of the enable will remain while imain while while imain while while imain while imain while imain while while imain while while imain w									Once Hyst High has been met,							
Introdue Position Disable if PTO active and value true Disable if PTO active and value true Disable if in D1 and value true Disable if in D2 and value true Disable if in D2 and value true Disable if in D3 and value true Disable if in TUTD and value true Disable if in TUTD and value trueInternet true DInternet true DInternet true DDisable if in TUTD and value true Value faiseInternet true DInternet true DInternet true DInternet true DInternet true DDisable if Air Purge active and value faise Disable if Air Purge active and Value faiseInternet true DInternet true DInternet true DDisable if Air Purge active and value faiseInternet true DInternet true DInternet true DDisable if Air Purge active and value faiseInternet true DInternet true DInternet true DDisable if Air Purge active and value faiseInternet true DInternet true DInternet true <b< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>the enable will remain while</td><td>>=</td><td>2.0004</td><td>Pct</td><td></td><td></td><td></td><td></td></b<>									the enable will remain while	>=	2.0004	Pct				
Image: Second									I hrottle Position							
Image: Stable if PTO active and value true = 1 Boolean Disable if in D1 and value true = 1 Boolean Disable if in D2 and value true = 1 Boolean Disable if in D3 and value true = 1 Boolean Disable if in D3 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in TUTD and value true = 1 Boolean Disable if in TUTD and value true = 1 Boolean Disable if in TUTD and value = 1 Boolean Disable if in TUTD and value = 1 Boolean Visable if in TUTD and value = 1 Boolean Usable if Air Purge active and Value faise = 0 Boolean RVT Diapostic Active = FALSE Boolean Ignition Voltage >= 8.59961 V Ignition Voltage <=									Disable for Throttle Position	>=	75	Pct				
value true value true 1 Boolean Disable if in D1 and value true 1 Boolean Disable if in D2 and value true 1 Boolean Disable if in D3 and value true 1 Boolean Disable if in D3 and value true 1 Boolean Disable if in D4 and value true 1 Boolean Disable if in TUTD and value 1 Boolean Usue fails 1 Boolean Value fails 1 Boolean Value fails 1 Boolean Value fails 1 Boolean Ignition Voltage > 8.59961 V Vignition Voltage > 8.59961 Velicition Voltage <									Disable if PTO active and	=	1	Boolean				
Disable if in D1 and value true = 1 Boolean Disable if in D2 and value true = 1 Boolean Disable if in D2 and value true = 1 Boolean Disable if in D3 and value true = 1 Boolean Disable if in D3 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in D1 and value true = 1 Boolean Disable if in TUTD and value true = 1 Boolean Disable if in TUTD and value true = 1 Boolean Usable if in TUTD and value true = 1 Boolean Usable if in TUTD and value = 1 Boolean Usable if in TUTD and value = 1 Boolean Usable if Air Purge active and = 0 Boolean Value faite = 0 Boolean Nature = 0 Boolean Ignition Voltage >= 8.59961 V Ignition Voltage <=									value true	_		-	1			1
Disable if in D2 and value true = 1 Boolean Disable if in D4 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in MUMD and value = 1 Boolean Disable if in TUT and value = 1 Boolean Disable if in TUT bard value = 1 Boolean Usable if in TUT bard value = 1 Boolean Disable if in TUT bard value = 1 Boolean Usable if Air Purg active and = 0 Boolean Varied faise = 0 Boolean Quitto faise = 0 Boolean Quitto Voltage >= 8.59961 V Quittion Voltage >= 5.59961 V Quittion Voltage <=			1						Disable if in D1 and value true	=	1	Boolean	1			1
Disable if in D3 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in D5 and value = 1 Boolean Disable if in MUMD and value = 1 Boolean true = 1 Boolean Disable if in TUTD and value = 1 Boolean Usable if Air Purge active and = FALSE Boolean Value false 0 Boolean Boolean Value false = FALSE Boolean Ignition Voltage >= 8.59961 V Upition Voltage >= 8.59961 V Upition Voltage <=									Disable if in D2 and value true	=	1	Boolean	1			1
Disable if in D4 and value true = 1 Boolean Disable if in D5 and value true = 1 Boolean Disable if in MUMD value = 1 Boolean Disable if in TUTD and value = 1 Boolean Disable if in TUTD and value = 1 Boolean Usable if in TUTD and value = 1 Boolean Value faits True = 1 Boolean Value faits FALSE Boolean Boolean Value faits = 0 Boolean Ignition Voltage >= 8.59961 V Ignition Voltage <=									Disable if in D3 and value true	=	1	Boolean	1			
Disable if in D5 and value true = 1 Boolean Disable if in MUMD and value = 1 Boolean true true = 1 Boolean Disable if in TUTD and value = 1 Boolean Value faise = 1 Boolean Value faise = 0 Boolean Value faise = FALSE Boolean Ignition Voltage >= 8.59961 V Vehicle Spreed <									Disable if in D4 and value true	=	1	Boolean	1			1
Disable if in MUMD and value true = 1 Boolean Disable if in TUTD and value true = 1 Boolean Disable if in TUTD and value true = 1 Boolean 4 Wheel Drive Low Active Disable if Air Purge active and value false = 0 Boolean RVT Diagnostic Active Ignition Voltage Voltage = FALSE Boolean Value false Voltage >= 8.59961 V Voltagition Voltage Voltage <=									Disable if in D5 and value true	=	1	Boolean	1			1
Image: state of the state									Disable if in MUMD and value	_	1	Boolean	1			
Disable if in TUTD and value true = 1 Boolean 4 Wheel Drive Low Active = FALSE Boolean Disable if Air Purge active and value false = 0 Boolean RVT Diagnostic Active = FALSE Boolean Ignition Voltage >= 8.59961 V Vehicle Speed <=									true	_	'	DODICALI	1			1
Image: state of the state o									Disable if in TUTD and value	_	1	Booloan	1			1
4 Wheel Drive Low Active = FALSE Boolean Disable if Air Purge active and value false = 0 Boolean RVT Diagnostic Active = FALSE Boolean Ignition Voltage >= 8.59961 V Vehicle Sneed <=			1						true	=	I	DUUICALI	1			1
Disable if Air Purge active and value false = 0 Boolean RVT Diagnostic Active = FALSE Boolean Ignition Voltage >= 8.59961 V Vghition Voltage <=									4 Wheel Drive Low Active	=	FALSE	Boolean	1			
value false = 0 Boulean RVT Diagnostic Active = FALSE Boolean Ignition Voltage >= 8.59961 V Ignition Voltage <=									Disable if Air Purge active and		0	Poeleen	1			1
RVT Diagnostic Active = FALSE Boolean Ignition Voltage >= 8.59961 V Ignition Voltage <=									value false	=	U	DUUIEd[]	1			
Ignition Voltage >= 8.59961 V Ignition Voltage <= 31.99902 V Vehicle Speed <= 511 KPH									RVT Diagnostic Active	=	FALSE	Boolean	1			1
Ignition Voltage <= 31.99902 V Vehicle Speed <= 511 KPH		1							Ignition Voltage	>=	8.59961	V	1			
Vehicle Speed <= 511 KPH									Ignition Voltage	<=	31.99902	V	1			1
			1						Vehicle Speed	<=	511	KPH	1			1

Output Output<	Component/	Fault Code	Monitor Strategy	Malfunction Criteria		Thres Val	hold	Secondary Malfunction		Enable Conditions			Ti Reg	ime wired	Mil Illum.
Noi: 2 Major Value Noi: 0 / 100	- Oystem	ooue	Description					Engine Speed	=< 1	400	RPM			unou	
Mode 2 Margine Value Image: Point Section Value A Soci OF Command Gen Point Point Point Point Section Value A Soci OF Margine Value Value								Engine Speed	=> 1	7500	RPM				
Image:								allowable limits for	r >=	5	Sec				
Index router sources of the second value A Size Office Index r								Engine Torque Signal Vali	= t	TRUE	Boolean				
Image: Participant set in the second set in								I nrottle Position Signal Valio	1 =	IRUE	Boolean				
Inde 2 Multiples Veloc PR31 Stati Selecul Value A Studio Image:										Lest Failed This Key					
Indee 2 Multiples Value Form Automation								P0742 Status is	5 ≠	On or Fault					
Image: Section in the section in th										Active					
$ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$															
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $							Disa	le MIL not Illuminated fo	r TCM: P071	6, P0717, P072	2, P0723,				
Image: biology of the second value A Study Off Command Ger Sta Solution Solution Command Ger Sta Solution Point Protect Protect Nation, Protect Nation, Protect Nation, Protect Nation, Protect P							Condition	s: DTC's	: P0741, P27	63, P2764					
Image: biol:									ECM: P010	01, P0102, P010	03, P0106,				
Intel 2 Multiplex Value RVI 50 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Gear Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF Command Site of 1005 SNIE Soleroid Value A. Stack OFF									P0107, P01	08, P0171, P01	72, P0174,				
Image 2 Multiplex Value P075 Sait Soleraid Value A Stuck Off Commande Gear Sip >= 400 RPM RPM -= 0.2 Fal Torrison Sign Pools, Pools									P0175, P02 P0205, P02	01, P0202, P02 06, P0207, P02	03, P0204, 08, P0300,				
Image Image <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>P0301, P03</td><td>02, P0303, P03</td><td>04, P0305,</td><td></td><td></td><td></td><td></td></th<>									P0301, P03	02, P0303, P03	04, P0305,				
Model 2 Multiplex Valve P0751 Shift Saleraid Valve A Stack Off Commaned Gar Sipp Commaned Gar Sipp Gene Ratio 1 10456 >= 400 RPM >= 0.2 Fall Time Fall Timer Gene Ratio >= 0.3 Fall Timer Fall Timer Fall Timer Fall Timer Fall Fall Fall Fall Timer Fall Fall Timer Fall Fall Fall Fall Timer Fall Fall Fall Timer Fall Fall Fall Fall Fall Timer Fall Fall Fall Fall Fall Fall Fall Fall Fall Fall Fall Timer Fall Fall Fall Fall									P0300, P03	07, P0306, P04	01, P042E				
$\left[\left[\left$	Mode 2 Multiplex Valve	P0751	Shift Solenoid Valve A Stuck Off	Commaned Gear Slip	>= 4	00	RPM								Two Trips
$\left \begin{array}{c c c c c } & & & & & & & & & & & & & & & & & & &$				Commanded Gear	= 1st	Lock	rpm								
Coda Ratio If the above parameters are inte If the above parameters are inter If the above parameter If the above parameters If the above paramete				Gear Ratio	<= 1.2	0959						>=	0.2	Fail Tmr	
Image: Speed is within the store of the speed is within the speed is				If the above parameters are true	>= 1.0	9430						=	5	Fall Couries	
Image: Speed Line Content in the speed												¥	0	Neutral Timer (Sec)	
$\left \begin{array}{c c c c c c } \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ $												>=	0.3	Fail Timer (Sec))
Image: Speed Is in the image: Speed Is in the image: Speed Is in the image: Speed Is within the Engine Speed Is within the Engine Speed Is within the allowable limits for Transmission Fuld Temperature >= 4.00 RPM Image: Speed Is within the Engine Speed Is within the Engine Speed Is within the allowable limits for Transmission Fuld Temperature >= 5 Sec Image: Speed Is within the Engine Speed Is within the Engine Speed Is within the Engine Speed Is within the allowable limits for Transmission Fuld Temperature >= -6.656.3 "C" Image: Speed Is within the Engine Speed Is within the Image:												>=	8	Counts	
Image: Speed Lip Speed Lip Speed Higher Speed Lip Speed Higher Speed Lip Speed Sp								Ignition Voltage Lo) >= i <=	8.59961 31.99902	Volts				
Image: Speed Hill <=								Engine Speed Lo) >=	400	RPM				
Image: Section of Sectio								Engine Speed H Engine Speed is within the) <=	/500	RPM				
Image: Shift State >= -6.6563 °C Range: Shift State = Range Shift ENUM Completed TPS >= 0.5005 % Output Speed >= 67 RPM Throttle Position Signal Valid from ECM, High Side driver is enabled = TRUE Boolean High-Side Driver is Enabled = FALSE Boolean								allowable limits fo	>=	5	Sec				
Image: Shift State Image: Sh								Transmission Fluie Temperature) 2	-6.6563	°C				
Range Snitt State = Shitt ENUM Completed - - - TPS >= 0.5005 % Output Speed >= 67 RPM Output Speed >= 67 RPM Engine Torque Side driver is = TRUE Boolean enabled - - - High-Side Driver is Enabled = TRUE Boolean Input Speed Sensor fault = FALSE Boolean										Range					
TPS >= 0.5005 % OR OR 0 Output Speed >= 67 RPM Throttle Position Signal Valid = TRUE Boolean Engine Torque Signal Valid = TRUE Boolean from ECM, High side driver is = TRUE Boolean enabled - - - High-Side Driver is Enabled = TRUE Boolean Output Speed Sensor fault = FALSE Boolean								Range Shift State	9 =	Completed	ENUM				
Image: Second															
Output Speed >= 67 RPM Throttle Position Signal Valid = TRUE Boolean from ECM Engine Torque Signal Valid = TRUE Boolean from ECM, High side driver is = TRUE Boolean enabled - - - - High-Side Driver is Enabled = TRUE Boolean Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean								TPS	S >=	0.5005	%				
Throttle Position Signal Valid from ECM = TRUE Boolean Engine Torque Signal Valid from ECM, High side driver is enabled = TRUE Boolean High-Side Driver is Enabled = TRUE Boolean Output Speed Sensor fault = FALSE Boolean								Output Speed	=< b	67	RPM				
Engine Torque Signal Valid from ECM, High side driver is = TRUE Boolean enabled High-Side Driver is Enabled = TRUE Boolean Input Speed Sensor fault = FALSE Boolean Outbut Speed Sensor fault = FALSE Boolean								I hrottle Position Signal Valio	=	TRUE	Boolean				
from ECM, High side driver is = TRUE Boolean enabled High-Side Driver is Enabled = TRUE Boolean Input Speed Sensor fault = FALSE Boolean Outbut Speed Sensor fault = FALSE Boolean								Engine Torque Signal Vali	1						
High-Side Driver is Enabled = TRUE Boolean Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean								from ECM, High side driver is enabled	= 26 t	TRUE	Boolean				
Input Speed Sensor fault = FALSE Boolean Output Speed Sensor fault = FALSE Boolean								High-Side Driver is Enabled	= t	TRUE	Boolean				
								Input Speed Sensor fau Output Speed Sensor fau	t = t =	FALSE	Boolean Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr V	eshold /alue	Secondary Malfunction		Enable Conditions			Tin Regu	ne ired	Mil Illum.
							Default Gear Option is not present	=	TRUE					
						Disabl Conditions	e MIL not Illuminated for :: DTC's:	TCM: P0716 P182E	o, P0717, P072	2, P0723,				
								P0107, P010 P0107, P010 P0175, P020 P0205, P020 P0301, P030 P0306, P030	1, P0102, P010. 08, P0171, P01 01, P0202, P02 06, P0207, P02 02, P0303, P03 07, P0308, P04	s, P0106, 72, P0174, 03, P0204, 08, P0300, 04, P0305, 01, P042E				
Mode 2 Multiplex Valve	P0752	Shift Solenoid Valve A Stuck On	Gear Box Slip	>=	400	RPM								One Trip
			Commanded Gear	=	3rd	Gear								
			1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded On If the above parameters are true	=	TRUE	Boolean								
											>= t	Please Refer to Table 16 in Supporting Documents	n Neutral Timer (Sec)	
			Command 4th Gear once Output Shaft Speed If Gear Ratio And Gear Ratio	<pre>< <= </pre>	400 3.82568 4.22839	RPM								
											>=	1.5 5	Fail Timer (Sec	:)
							Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for High-Side Driver is Enabled Throttle Position Signal Valid from ECM Output Speed OR TPS Range Shift State Transmission Fluid Temperature Input Speed Sensor faull Output Speed Sensor faull Default Gear Option is not present		8.59961 31.99902 400 7500 5 TRUE TRUE 67 0.5005 Range Shift Completed -6.6563 FALSE FALSE TRUE	Volts Volts RPM RPM Sec Boolean RPM % ENUM ©C Boolean Boolean	>=	5	Counts	
							present		moe					

Component/	Fault	Monitor Strategy	Malfunction	Т	- Thre	shold		Secondary	I	Enable			Tim	e	Mil
System	Code	Description	Criteria		Va	lue		Malfunction		Conditions			Requi	red	Illum.
						Co	Disable nditions:	MIL not Illuminated for DTC's:	TCM: P07 P182E	16, P0717, P0722	, P0723,				
									ECM: P01 P0107, P0 P0175, P0 P0205, P0 P0301, P0 P0306, P0	01, P0102, P0103 108, P0171, P017 201, P0202, P020 206, P0207, P020 302, P0303, P030 307, P0308, P040	, P0106, 2, P0174, 3, P0204, 8, P0300, 4, P0305, 1, P042E				
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gea	r =	1st Locked								Please Refer		One Trip
			Gear Box Sli) >=	400	RPM						>=	to Table 5 in Supporting Documents	Neutral Timer (Sec)	
			Intrusive Shift to 2n Commanded Gear Previou Gear Rati Gear Rati	d s = 0 <= 0 >=	1st Locked 2.48218 2.24585	Gear									
			If the above parameters are tru	9								>=	1	sec	
								Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Output Speed OR TPS Range Shift State Transmission Fluid Temperature High-Side Driver is Enabled Throttle Position Signal Valid from ECM Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not	>= <= <	8.59961 31.99902 400 7500 5 67 0.5005 Range Shift Completed -6.6563 TRUE TRUE FALSE FALSE FALSE TRUE	Volts Volts RPM RPM Sec RPM % ENUM C Boolean Boolean Boolean Boolean	>=	3	counts	
						Co	Disable nditions:	MIL not Illuminated for DTC's:	TCM: P07 P182E ECM: P01 P0107, P0 P0175, P0 P0205, P0 P0301, P0	16, P0717, P0722 01, P0102, P0103 108, P0171, P017 201, P0202, P020 206, P0207, P020 302, P0303, P030	, P0723, , P0106, 2, P0174, 3, P0204, 8, P0300, 4, P0305,				
									P0306, P0	307, P0308, P040	1, P042E				

Component/	Fault	Monitor Strategy	Malfunction		Thres	shold	Secondary		Enable			Tim	1e inc d	Mil
System	Code	Description	Criteria	+	vai	ue	Manufiction		Conditions			Requ	Irea	Ono Trin
Variable Bleed Solenoid (VBS)	P0776	Stuck Off [C35P]	Case: Steady State 3rd Gea	r										One mp
			Commanded Gea	r =	3rd	Gear								
			Gearbox Sli) >=	400	RPM								
					100							Please Refer		
											t	to Table 16 ir	Neutral Timer	
											>=	Supporting	(Sec)	
												Documents		
			Command 4th Gear once Output	t	400	DDM								
			Shaft Spee	=> t	400	REIVI								
			If Gear Rati) >=	1.09436									
			And Gear Ration) <=	1.20959									
											>=	3	Fail Timer (Sec)	
			that has a barrier of a strategy of the second strategy of the secon										2-d C 5-1	
			In the above conditions are true								>=	3	3rd Gear Fall	
			increment sid gear fail counte	'									counts	
													3-5R Clutch Fail	
			and C35R Fail counter	r							>=	14	Counts	
			Fail Case 2 Case: Steady State 5th Gea	r								-		-
			Commanded Gea	r =	5th	Gear								
												Please Refer		
			Gearbox Sli) >=	400	Rnm					>=	to Table 5 in	Neutral Timer	
				5	100	reprin					-	Supporting	(Sec)	
												Documents		
			Intrusive Test: Command 6th Gea	r										
					Diagon refer to									
					Table 3 in									
			If attained Gear=6th gear Time	9 >=	supporting	Shift Time (Sec)								
					documents									
			It the above condiations are true	5								0	5th Gear Fail	
			Increment 5th gear fail counter	r							>=	3	Counts	
													or	
			and C35R Fail counte	r							>=	14	3-5R Clutch Fail	
											-		Counts	
			1				PRNDL State defaulted	=	FALSE	Boolean				
			1				INIS foult ponding indication	=	FALSE	Boolean				
							TDS validity flog	=	TRUE	Boolean				
			1				Hydraulic System Pressurized	_	TRUE	Boolean				
			1				Minimum output speed for	-		Dooloun				
			1				RVT	>=	67	RPM				
			1				A OR B							
			1				(A) Output speed enable	>=	67	RPM				
							(B) Accelerator Pedal enable	>=	0.5005	Pct				
			1				Common Enable Criteria							
			1				Ignition Voltage Lo	>=	8.59961	Volts				
			1				Ignition Voltage Hi	<=	31.99902	Volts				
			1				Engine Speed L0	>=	400 7500					
			1				Engine Speed is within the	<=	7300	IX F'IVI				
							allowable limits for	>=	5	Sec				
							Throttle Position Signal valid	=	TRUE	Boolean				
							HSD Enabled	=	TRUE	Boolean				
			1				Transmission Fluid		4 (5/2	00				
			1				Temperature	>=	-0.0003	°L				
I	I		I	1			Input Speed Sensor fault	=	FALSE	Boolean	l			

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	ed	Mil Illum.
Jystem	Coue	Description	onena	Value	Output Speed Sensor fault	t = FALSE Boolean	Require		
					Default Gear Option is not	= TRUE			
					presen				
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,			
				Conditions	. Dics.	FIOZE			
						ECM: P0101, P0102, P0103, P0106,			
						P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204			
						P0205, P0206, P0207, P0208, P0300,			
						P0301, P0302, P0303, P0304, P0305,			
						P0306, P0307, P0308, P0401, P042E			
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solinoid B	Fail Case 1 Case: Steady State	lst					One Trip
Valiable bleed oblehold (Vbo)	1 0///	Stuck On [C35R] (Steady State)	Attained Gear	lin >- 400 RPM					
				Table Based					
				Time Please					
			If the Above is True for Ti	$me >= \frac{\text{Refer to Table Enable Time}}{4 \text{ in (Sec)}}$					
				supporting					
			Intrucivo t	documents					
			(CBR1 clutch exhaust	ed)					
			Gear R	tio <= 1.60864					
			Gear Rain If the above parameters are t	tio >= 1.45544					
			in the above parameters are t				N= 11	Fail Timor (Soc)	
							2- 1.1	Eail Count in	
							>= 2	1st Gear	
								or	
							>= 3	Lotal Fail Counts	
			Fail Case 2 Case: Steady State 2nd g	ear					
				Table Based					
			Max Delta Output Spe	ed Refer to Table					
			Hystere	sis >= 22 in rpm/sec					
				supporting					
				Table Based					
			Min Dolto Outrut Cru	value Please					
			Min Deita Output Spe Hystere	rpm/sec					
			,,	supporting					
				documents Table Pased					
				Time Please					
			If the Above is True for Ti	me >= Refer to Table Sec					
				17 in supporting					
				documents					
			Intrusive to	st:					
			Gear R	tio <= 1.60864					
			Gear R	tio >= 1.45544			1		

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable		Tir Regi	ne uired	Mil Illum.
oystem	oouc	Description	If the above parameters are true	, and		CONTRACTOR		noqu		
							>=	1.1	Fail Timer (Sec)	
								2	Fail Count in	
							>=	3	2nd Gear	
									Or Total Fail	
							>=	3	Counts	
			Fail Case 3 Case: Steady State 4th gear	Table Deced						
				value Please						
			Max Delta Output Speed	>= Refer to Table rpm/sec						
			Hysteresis	22 in						
				documents						
				Table Based						
			Min Delta Output Speed	Refer to Table						
			Hysteresis	>= 23 in rpm/sec						
				supporting documents						
				Table Based						
				Time Please						
			If the Above is True for Time	>= Refer to Table Sec						
				supporting						
			Intrusive test.	documents						
			(C1234 clutch exhausted)							
			Gear Ratio	<= 0.89465						
			If the above parameters are true	>= 0.00943						
							>=	1.1	Fail Timer (Sec)	
							>-	3	Fail Count in	
							/-	5	4th Gear	
								2	Total Fail	
							>=	3	Counts	
			Fall Case 4 Case: Steady State 6th gear	Table Based						
				value Please						
			Max Delta Output Speed	>= Refer to Table 22 in rpm/sec						
			Trystorosis	supporting						
				documents						
				value Please						
			Min Delta Output Speed	>= Refer to Table rpm/sec						
			Hysteresis	23 in supporting						
				documents						
				Table Based						
			lf the About is True for The	Refer to Table						
			II the Above is True for Time	>= 5ec						
				supporting documents						
		1		adduments	1		I			I I

Component/	Fault	Monitor Strategy	Malfunction		Three	shold	Secondary		Enable			Ti	me	Mil
System	Code	Description	Intrusive test:		vai	ue	Walturiction		Conditions			Req	uired	mum.
			(CB26 clutch exhausted)											
			Gear Ratio) <=	0.89465						>=	1.1	Fail Timer (Sec)	
			Gear Ratio	>-	0.809/15						>-	2	counts	
			If the above parameters are true		0.00745						/-	J	counts	
											>-	11	Fail Timer (Sec)	
											-		Fail Count in	
											>=	3	6th Gear	
													or	
											>=	3	Total Fail	
							DDNDL State defaulted	_	EVICE	Boolean		-	Counts	-
							inhibit RVT	=	FALSE	Boolean				
							IMS fault pending indication	=	FALSE	Boolean				
							output speed	>=	0	RPM				
							HSD Enabled	=	TRUE	Boolean				
							Hydraulic_System_Pressurize		TDUE	Deeleen				
							d	=	IRUE	Booleau				
							A OR B	<u> </u>	67	Nm				
							(B) Accelerator Pedal enable	>=	0.5005	Nm				
							Ignition Voltage Lo	>=	8.59961	Volts				
							Ignition Voltage Hi	<=	31.99902	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed is within the	<=	7500					
							allowable limits for	>=	5	Sec				
							if Attained Gear=1st FW	>=	5.0003	Pct				
							Accelerator Pedal enable							
							Engine Torgue Enable	>=	5	Nm				
							if Attained Gear=1st FW	/-	8101 88	Nm				
							Engine Torque Enable	~=	0171.00	NIT!				
							Transmission Fluid	>=	-6.6563	°C				
							Input Speed Sensor fault	=	FALSE	Boolean				
							Output Speed Sensor fault	=	FALSE	Boolean				
						Disable	MIL not Illuminated for	TCM: P0716	5. P0717. P0722	P. P0723.				
						Conditions:	DTC's:	P182E		-, ,				
								ECM: 00101	D0102 D0103	2 D0106				
								P0107, P010	08, P0171, P01	72, P0174,				
								P0175, P020	01, P0202, P020	03, P0204,				
								P0205, P020	06, P0207, P020	08, P0300,				
								P0306 P030	JZ, PU3U3, PU3U)7. P0308 P040	04, P0305, 01. P042F				
			<u> </u>	L										
			Primary Offgoing Clutch is											One Trip
Variable Bleed Solenoid (VBS)	P0777	Pressure Control (PC) Solenoid B	exhausted (See Table 12 in Supporting Documents for	=	TRUE	Boolean								
		Stuckon [C33K] (Dynidnic)	Fxhaust Delay Timers)											
			Primary Oncoming Clutch		Maximum									
	1		Pressure Command Status	=	pressurized									

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Thre Va	eshold alue	Secondary Malfunction	Enable Condition	ıs	Time Required	Mil Illum.
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaus	st					
			Range Shift Status	≠ Initial Clutch Control	I					
			Attained Gear Slip	<= 40	RPM					
			If the above conditions are true run appropriate Fail 1 Timers Below:							
			fail timer 1 (3-1 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)					
			(3-2 shifting with Throttle) fail timer 1	>= 0.2998	Fail Time (Sec)					
			(3-2 shifting with Closed Throttle) fail timer 1	>= 0.5	Fail Time (Sec)					
			(3-4 shifting with Throttle) fail timer 1	>= 0.2998	Fall Time (Sec)					
			(3-4shifting with Closed Throttle) fail timer 1	>= 0.5	Fail Time (Sec)					
			(3-5 shifting with Throttle) fail timer 1	>= 0.5	Fail Time (Sec)					
			(3-5 shifting with Closed Throttle) fail timer 1 (5-2 shifting with Throttle)	>= 0.2998	Fail Time (Sec)					
			(5-3 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)					
			fail timer 1 (5-4 shifting with Throttle)	>= 0.2998	Fail Time (Sec)					
			fail timer 1 (5-4 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)					
			fail timer 1 (5-6 shifting with Throttle)	>= 0.2998	Fail Time (Sec)					
			(5-6 shifting with Closed Throttle)	>= 0.5	Fail Time (Sec)					
									Total Fail Time = (Fail 1 + Fail 2) See Enable	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers						>= Timer 1, and sec Reference	
									Supporting 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	iail
									OR 5th gear	fail
			5th gear fail counter						>= 3 counts OR	
			Total fail counter			TUT Enable temperature	>= -6.6563	°C	>= 5 total fail co	unts
						Input Speed Sensor fault	= FALSE	Boolean		

Component/	Fault	Monitor Strategy	Malfunction	- Th	reshold	Secondary	· ·	Enable		T	Time	<u>,</u>	Mil
System	Code	Description	Criteria		/alue	Malfunction		Conditions			Requir	, red	Illum.
						Output Speed Sensor faul	=	FALSE	Boolean	1			
						Command / Attained Gear	≠	1st	Boolean				
						High Side Driver ON	=	TRUF	Boolean				
						output speed limit for TUT	>=	100	RPM				
						input speed limit for TUT	>=	150	RPM				
						PRNDL state defaulted	=	FALSE	Boolean				
						IMS Fault Pending	=	FALSE	Boolean				
						Service Fast Learn Mode	=	FALSE	Boolean				
						HSD Enabled	=	TRUE	Boolean				
						Default Gear Option is not		TDUE					
						present	=	TRUE					
					Disable	MIL not Illuminated for	TCM: P0716,	P0717, P072	2, P0723,				
					Conditions:	DTC's	P182E						
							ECM: P0101,	P0102, P010	3, P0106,				
							P0107, P0108	3, P0171, P01	72, P0174,				
							P0175, P020	I, P0202, P02	03, P0204,				
							P0205, P0206	5, P0207, P02	08, P0300,				
							P0301, P0302	2, PU3U3, PU3	04, P0305, 01, D0425				
							PU300, PU30	/, PU306, PU4	01, P042E				
		Pressure Control (PC) Solenoid C	Fail Case 1							<u> </u>			One Trin
Variable Bleed Solenoid (VBS)	P0796	Stuck Off [C456] (Steady State)	Case: Steady State 4th Ge	ar									one mp
											Please See		
			C		DDM						Table 5 For	Neutral Timer	
			Gears	p >= 400	RPM					>=	Neutral Time	(Sec)	
											Cal		
			Intrusive te	t:									
			commanded 5th ge	ar									
				Please refer	to								
			If attained Gear. ≠5th for tir	Table 3 ir	Shift Time (Sec)								
				Supporting	g								
				Document	S								
			if the above conditions have be	n									
			m	et									
			Increment 4th Gear Fail Count	er						>=	3	4th Gear Fail	
												Count	
												C456 Fail	
			and C456 Fail Counter	S						>=	14	Counts	
			Fail Case 2 Case: Steady State 5th Ge	ar						-		oounto	-
											Please See		
				100	0014						Table 5 For	Neutral Timer	
			Gears	p >= 400	RPM					>=	Neutral Time	(Sec)	
1											Cal		
			Intrusive te	t:									
			commanded 6th ge	ar									
1				Please Ref	er					1			
			If attained Gear. ≠ 6th for tir	e >= to Table 3	in Shift Time (Sec)								
1				Supporting	g					1			
				Document	S					1			
			if the above conditions have be	n									
			m m	et						1		Eth Coor E-"	
			Increment 5th Gear Fail Count	er						>=	3	oun Gear Fall	
										1			
1	1	1	1	1		1	1			1		UK	1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			and C456 Fail Counters				>= 14 C456 F	il
			Fail Case 3 Case: Steady State 6th Gear Gear slip	>= 400 RPM			Please See Table 5 For Neutral Ti >= Neutral Time (Sec) Cal	ner
			Intrusive test: commanded 5th gear If attained Gear ≠ 5th for time if the above conditions have been	Please refer to Table 3 in Supporting Documents				
			Increment 6th Gear Fail Counter and C456 Fail Counter and C456 Fail Counter				>= 3 6th Gear Count OR >= 14 C456 F	ā ail
					PRNDL State defaulted inhibit RVT IMS fault pending indication TPS validity flag Hydraulic System Pressurized Minimum output speed for RVT A OR E (A) Output speed enable Common Enable Criteria Ignition Voltage LC Ignition Voltage LC Engine Speed Speed LC Transmission Fluic Temperature Input Speed Sensor faul OutputSpeed Sensor faul Default Gear Option is noi present	= FALSE Boolean $= FALSE Boolean$ $= FALSE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$ $>= 67 RPM$ $>= 67 RPM$ $>= 0.5005 Pct$ $>= 8.59961 Volts$ $<= 31.99902 Volts$ $>= 400 RPM$ $<= 7500 RPM$ $>= 5 Sec$ $= TRUE Boolean$ $= TRUE Boolean$ $= FALSE Boolean$ $= FALSE Boolean$ $= TRUE Boolean$ $= TRUE Boolean$		
				Disable Conditions	MIL not Illuminated for DTC's	TCM: P0716, P0717, P0722, P0723, P182E ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E		

Component/	Fault	Monitor Strategy		Malfunction	Threshold	Secondary Malfunction	Enable		Tir	me	Mil
System	Code	Pressure Control (PC) Solenoid C	Fail Case 1	Criteria	value	Manufiction	Conditions		Keqi	uirea	One Trip
Variable Bleed Solenoid (VBS)	P0797	Stuck On [C456] (Steady State)	Tun ouse I	Case: Steady State 1st							ono mp
				Attained Gear slip	>= 400 RPM						
					Table Based						
					Time Please						
				If the Above is True for Time	>= Keter to Table Enable Time						
					4 III (Sec)						
					documents						
				Intrusive test:							
				(CBR1 clutch exhausted)							
				Gear Ratio	<= 1.20959						
				Gear Ratio	>= 1.09436						
				ii the above parameters are true							
								>=	1.1	Fail Timer (Sec)	
								<u>>-</u>	2	Fail Count in	
								>=	2	1st Gear	
										or	
								>=	3	Lotal Fail	
			Fail Case 2	Case Steady State 2nd						Counts	
			T dill Oddo L	oubo otodaj otato Ena	Table Based						
					value Please						
				Max Delta Output Speed	>= Refer to Table rpm/sec						
				Hysteresis	22 in Ipinioco						
					supporting						
					Table Based						
					value Please						
				Min Delta Output Speed	Refer to Table						
				Hysteresis	>= 23 in TpTI/Sec						
					supporting						
					documents						
					Time Please						
					Refer to Table						
				If the Above is True for Time	>= 17 in Sec						
					supporting						
					documents						
				(CB26 clutch ovboucted)							
				Gear Ratio	<= 1 20959						
				Gear Ratio	>= 1.09436						
				If the above parameters are true							
								>=	1.1	Fail Timer (Sec)	
										Fail Count in	
								>=	3	2nd Gear	
										Or	
								>=	3	Total fail counts	
				-							
			Fail Case 3	Case Steady State 3rd	Table David						
					Table Based						
				Max Delta Output Speed	Refer to Table						
				Hysteresis	>= 22 in rpm/sec						
				,	supporting						
			I		documents		l				

Component/	Fault	Monitor Strategy	Malfunction Criteria	Threshold	Secondary Malfunction	Enable			Tim	ie ired	Mil
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria Min Delta Output Speed Hysteresis If the Above is True for Time Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	Threshold Value Table Based value Please 23 in supporting documents Table Based Time Please >= Refer to Table 17 in supporting documents supporting documents >= Refer to Table 1.09436 >= 1.09436	Secondary Malfunction PRNDL State defaulted inhibit RVT IMS fault pending indication output speed TPS validity flag HSD Enabled Hydraulic_System_Pressurize d A OR B (A) Output speed enable Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable if Attained Gear=1st FW Engine Torque Enable Transmission Fluid Temperature	Enable Conditions = FALSE = FALSE = FALSE = FALSE = TRUE = TRUE = TRUE = TRUE = TRUE = TRUE = TRUE = 5 >= 67 >= 0.5005 >= 8.59961 <= 31.99902 >= 400 <= 7500 >= 5 >= 5.0003 >= 5 <= 8191.88 >= -6.6563	Boolean Boolean Boolean RPM Boolean Bo	>= >= >=	Tim Requi	Fail Timer (Sec) Fail Count in 3rd Gear Total Fail Counts	Mil Illum.
					if Attained Gear=1st FW Engine Torque Enable Transmission Fluid	<= 8191.88	Nm °C				
					Temperature Input Speed Sensor fault Output Speed Sensor fault	= FALSE = FALSE	Boolean Boolean				
					Default Gear Option is not present	= TRUE					

Component/	Fault	Monitor Strategy	Malfunction Criteria		Thres	shold	Secondary Malfunction	Enable	Time Required	Mil Illum.
	Code	Description	Onena		V u	Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E	requireu	1
								ECM: P0101, P0102, P0103, P0106,		
								P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0204		
								P0205, P0206, P0207, P0208, P0300,		
								P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042F		
								10300, 10307, 10300, 10401, 1042		
		Pressure Control (PC) Solenoid C	Primary Offgoing Clutch is exhausted (See Table 11 in							One Trip
Variable Bleed Solenoid (VBS)	P0797	Stuck On [C456] (Dynamic)	Supporting Documents for	=	TRUE	Boolean				
			Exhaust Delay Timers) Primary Oncoming Clutch		Maximum					
			Pressure Command Status	=	pressurized					
			Primary Offgoing Clutch Pressure	= (Clutch exhaus	t				
			Command Status		command					
			Dange Shift Status		Initial Clutch					
			Range on a status	<i></i>	Control					
			Attained Gear Slip	<=	40	RPM				
			If the above conditions are true	2						
			increment appropriate Fail 1							
			fail timer 1		0.0000					
			(4-1 shifting with throttle)	>=	0.2998	Fall Time (Sec)				
			(4-1 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1 (4-2 shifting with throttle)	>=	0.2998	Fail Time (Sec)				
			fail timer 1	>=	0.5	Fail Time (Sec)				
			(4-2 shifting without throttle) fail timer 1	ſ	0.0					
			(4-3 shifting with throttle)	>=	0.2998	Fail Time (Sec)				
			fail timer 1 (4-3 shifting without throttle)	>=	0.5	Fail Time (Sec)				
			fail timer 1	>=	0.2998	Fail Time (Sec)				
			(3-3 shirting with throttle) fail timer 1	<u> </u>	0.5	Fail Time (Sec)				
			(5-3 shifting without throttle)	/-	0.0					
			(6-2 shifting with throttle)	>=	0.2998	Fail Time (Sec)				
			fail timer 1 (6-2 shifting without throttle)	>=	0.5	Fail Time (Sec)				
Γ	Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	- Threshold Value	Secondary Malfunction	Enable Conditions	Time Requir	ed	Mil Illum.
------	-------------------------	---------------	--------------------------------------	--	---	--	--	---	---	---------------
				If Attained Gear Slip is Less than Above Cal Increment Fail Timers				Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and Reference Supporting Table 15 for Fail Timer 2	sec	
				If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter 4th gear fail counter				>= 3	Fail Counter	
				5th gear fail counter				>= 3	OR Fail Counter From 5th Gear OR	
				6th gear fail counter				>= 3	Fail Counter From 6th Gear	
				Total fail counter		TUT Epoble temperature		>= 5	OR Total Fail Counter	-
						Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	 >= -6.0003 -C = FALSE Boolean = FALSE Boolean ≠ 1st Boolean = TRUE Boolean >= 100 RPM >= 150 RPM = FALSE Boolean = FALSE Boolean = FALSE Boolean = FALSE Boolean = TRUE Boolean 			
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P0717, P0722, P0723, P182E			
							ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E			
Inte	ernal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	Transition 1 = (bit state Range 1110)					One Trip
				Previous range Previous range	<pre></pre>					

Component/ System	Fault	Monitor Strategy Description	Malfunction Criteria		Three	shold ue	Secondary Malfunction		Enable Conditions		Time Required I		Mil Illum.	
oyatem	Joue	Description			Range Shift	ENUM			Conditions			nequ		
			Range Shift State	=	Completed	ENUM								
			Absolute Attained Gear Slip	<=	50	rpm								
			Attained Gear	<=	Sixth									
			Attained Gear	>=	First									
			Throttle Position Available	=	TRUE									
			I hrottle Position	>=	8.0002	pct								
			Engine Torque	>=	200	Nm								
			Engine Torque	<=	8191 75	Nm								
			If the above conditions are met	-	0171.70									
			then Increment Fail Timer								>=	1	Fail Seconds	
			If Fail Timer has Expired then								>=	5	Fail Counts	
			Increment Fail Counter								>=	0	Fail Counts	
			Fail Case 2 Output Speed	<=	70	rpm								
			The following PRNDL sequence											
			events occur in this exact order:		Drivo 4 (bit									
			PRNDL state	=	state 0110	Range								
			PRNDL state = Drive 6 for	>=	1	Sec								
			- HADE SIDE - DIVE UTO		Transition 8	200								
			PRNDL state	=	(bit state	Range								
					0111)	-								
			PRNDI state	_	Drive 6 (bit	Range								
			T KNDE State	-	state 0110)	Range								
					Transition 1	5								
			PRNDL state	=	(bit state	Range								
			Above sequencing occurs in	/-	1110)	Soc								
			Neutral Idle Mode	=	Inactive	Jec								
			If all conditions above are met		maonro									
			Increment delay Timer											
			If the below two conditions are met								<u>></u> _	2	Eail Soconds	
			Increment Fail Timer								>=	3	Fall Seconds	
			delay timer	>=	1	Sec								
			Input Speed	>=	400	Sec								
			If Fail Timer has Expired then								>=	2	Fail Counts	
			Fail Case 3		Transition 12				CATROR					
			Current range	=	(bit state	Range	Previous range	≠	e PRNDI					
					0010)				_Drive5					
									CeTRGR_					
			Engine Torque	>=	-8192	Nm	Previous range	¥	e_PRNDL					
									_Drive5					
			Engine Torque	<=	8191.75	Nm	IMS is 7 position configuration	=	0	Boolean				
							If the TMS / Position config" =							
			If the above conditions are met				criteria above must also be				>-	0 225	Seconds	
			then, Increment Fail Timer				satsified when the "current				/=	0.220	JECUTIUS	
							range" = "Transition 13"							
			If Fail Timer has Expired then				J				Ι.	15	Foil Counts	
			Increment Fail Counter								>=	15	Fail Counts	
			Fail Case 4		Transition 8		Disable Fail Case 4 if last							
			Current range	=	(bit state	Range	positive range was Drive 6 and							
					0111)	5	current range is transition 8							
	l	l l		I	,		3				I			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres	shold ue	Secondary Malfunction		Enable Conditions			Tim Requi	e red	Mil Illum.
			Inhibit bit (see definition)	=	FALSE		Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)							
			Steady State Engine Torque Steady State Engine Torque If the above conditions are met then Increment Fail Timer	>= <=	100 8191.75	Nm Nm					>=	0.225	Seconds	
			If the above Condtions have been met, Increment Fail Counter								>=	15	Fail Counts	
			Fail Case 5 Throttle Position Available The following PRNDL sequence events occur in this exact order:	=	TRUE	Boolean								
			PRNDL State	=	Reverse (bit state 1100)	Range								
			PRNDL State	=	(bit state 0100)	Range								
			PRNDL State	=	state 0101) Transition 11	Range								
			PRNDL State	=	(bit state 0100) 1	Range								
			Then delay timer increments Delay timer	>=	5	sec								
			Range Shift State Absolute Attained Gear Slip	= <=	Range Shift Complete 50	rom								
			Attained Gear Attained Gear Thrattle Decition	<= >=	Sixth First	net								
			If the above conditions are met	>=	200	rpm					>=	20	Seconds	
			Fail Case 6 Current range	=	Illegal (bit state 0000 or		A Open Circuit Definition (flag set false if the following							
					1000 or 0001)		conditions are met):		Transition					
			and				Current Range	¥	11 (bit state 0100)					
			A Open Circuit (See Definition)	=	FALSE	Boolean	or	-1	Neutral (bit					
							Last positive state	Ŧ	state 0101)					
							Previous transition state	¥	Transition 8 (bit state 0111)					
			If the above Conditions are met				Fail case 5 delay timer	=	0	Sec	>=	6.25	Seconds	
			Fail Case 7 Current PRNDL State	=	PRNDL circuit ABCP = 1101	Range								
			and	I			I I				I			

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val	hold ue	Secondary Malfunction		Enable Conditions			Tin Requ	ne ired	Mil Illum.
			Previous PRNDL state Input Speed Reverse Trans Ratio Reverse Trans Ratio If the above Condtions are met then, Increment Fail time	= >= <= >=	PRNDL circuit ABCP =1111 150 2.97595 3.42395	Range RPM ratio ratio					>=	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 limits for Engine Torque Signal Valid	>= <= >= >= =	8.59961 31.99902 400 7500 5 TRUE	Volts Volts RPM RPM Sec Boolean				
						Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0716, P07C0, P07B	P0717, P0722 F, P077C, P07	, P0723, 7D				
								ECM: P0101 P0107, P0108 P0175, P0207 P0205, P0206 P0301, P0302	, P0102, P0103 3, P0171, P017 1, P0202, P020 5, P0207, P020 2, P0303, P030 7, P0303, P030	3, P0106, 72, P0174,)3, P0204,)8, P0300,)4, P0305,)1, P0425				
								PU306, PU30	7, PU308, P040	JI, PU42E				
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status	=	TRUE Maximum pressurized	Boolean								One Trip
			Primary Offgoing Clutch Pressure Command Status	=	Clutch exhaust command									
			Range Shift Status Attained Gear Slin	≠	Initial Clutch Control 40	RPM								
			If above coditons are true, increment appropriate Fail 1 Timers Below:		10									
			fail timer 1 (2-1 shifting with throttle)	>=	0.2998	Fail Time (Sec)								
			fail timer 1 (2-1 shifting without throttle) fail timer 1	>=	0.5	Fail Time (Sec)								
			(2-3 shifting with throttle) fail timer 1	>=	0.2998 0.5									
			(2-3 shifting without throttle) fail timer 1 (2-4 shifting with throttle)	>=	0.5	Fail Time (Sec)								

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thr V	eshold ′alue	Secondary Malfunction	Enable Conditions		Re	Time quired	Mil Illum.
			fail timer 1 (2-4 shifting without throttle)	1) >=	0.5	Fail Time (Sec)						
			fail timer 1) >=	0.2998	Fail Time (Sec)						
			fail time 1	1 >=	0.5	Fail Time (Sec)						
			(6-4 shiring without through) 1 >=	0.2998	Fail Time (Sec)						
			(6-5 shifting with throttle) fail timer 1)	0.5	Epil Time (Sec)						
			(6-5 shifting without throttle)) >=	0.5	Fail fille (Sec)						
									T	Гоtal Fail T = (Fail 1 +	īme Fail	
										2) See Ena Timers for	able Fail	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers	n S					>=	Timer 1, a	and sec	
										Supportir Table 15	ng for	
			If fail timer is greater that							Fail Timer	r 2	
			threshold increment corresponding gear fail counter and total fai)) 								
			counter	r					>-	3	Fail Counter	
			2nd gear fair counter						/-	5	From 2nd Gea OR	ır
			6th gear fail counter	r					>=	3	Fail Counter From 6th Gea OR	r
			total fail counter	r					>=	5	Total Fail Counter	
							TUT Enable temperature	>= -6.6563 °C = FALSE Boolean				1
							Output Speed Sensor fault	= FALSE Boolean				
							High Side Driver ON	= TRUE Boolean				
							output speed limit for TUT input speed limit for TUT	>= 100 RPM >= 150 RPM				
							PRNDL state defaulted	= FALSE Boolean				
							Service Fast Learn Mode	= FALSE Boolean				
							HSD Enabled	= TRUE Boolean				
						Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,				
						Conditions:	DTC's:	P182E				
								ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174				
								P0175, P0201, P0202, P0203, P0204,				
								P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305,				
								P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Steady State)	Fail Case 1 Case: Steady State 1s	t								One Trip
			Attained Gear slip) >=	400	RPM			1			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Ti Req	me uired	Mil Illum.
5,1111			If the Above is True for Time Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio	Table Based Time Please Refer to Table Enable Time 4 in (Sec) supporting documents <= 2.48218 >= 2.24585						
			If the above parameters are true				>=	11	Fail Timer (Sec)	
							>=	5	Fail Count in	
							>=	5	or Total Fail	
			Fail Case 2 Case: Steady State 3rd Gear						Counts	
			Max Delta Output Speed Hysteresis	Table Based value Please Refer to Table 22 in supporting documents						
			Min Delta Output Speed Hysteresis	Table Based value Please >= Refer to Table 23 in supporting documents Table Based						
			If the Above is True for Time	Time Please Refer to Table 17 in Supporting						
			Intrusive test: (C35R clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	documents <= 2.48218 >= 2.24585						
							>=	1.1	Fail Timer (Sec)	
							>=	3	3rd Gear	
			Fail Case 2 Cases Standy State 1-1 Case				>=	5	Total Fail Counts	
			ran case 3 Case: Steary State 4rd Gear Max Delta Output Speed Hysteresis	Table Based value Please Refer to Table 22 in supporting documents						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	c	Enable Conditions			Ti Req	me uired	Mil Illum.
				Table Based								
			Min Delta Output Speed	value Please Refer to Table								
			Hysteresis	>= 23 in rpm/sec								
				supporting								
				Table Based								
				Time Please								
			If the Above is True for Time	>= Refer to Table Sec								
				supporting								
			late of a look	documents								
			(C1234 clutch exhausted)									
			Gear Ratio	<= 0.70032								
			Gear Ratio	>= 0.63367								
									>=	11	Fail Timer (Sec)	
									-	1.1	Eail Count in	
									>=	3	4th Gear	
											Or Tatal Fall	
									>=	5	Counts	
			Fail Case 4 Case: Steady State 5th Gear									
				Table Based								
			Max Delta Output Speed	Refer to Table								
			Hysteresis	22 in supporting								
				documents								
				Table Based								
			Min Delta Output Speed	value Please Refer to Table								
			Hysteresis	>= 23 in rpm/sec								
				supporting								
				Table Based								
				Time Please								
			If the Above is True for Time	>= Refer to Table Sec								
				supporting								
			Intrusive test.	documents								
			(C35R clutch exhausted)									
			Gear Ratio	<= 0.70032								
			If the above parameters are true	>= 0.03307								
									>=	1.1	Fail Timer (Sec)	
											Fail Count in	
									>=	3	5th Gear	
											or Total Fail	
									>=	5	Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				

Component/	Fault	Monitor Strategy	Malfunction	- Threshold Value	Secondary Malfunction	Enable	Time	Mil Illum.
System	Code	Description	Ciliena	Value	TPS validity flag	= TRUE Boolean	Required	inciri.
					HSD Enabled	d = TRUE Boolean		
					Hydraulic_System_Pressurize	= TRUE Boolean		
					A OR F	3		
					(A) Output speed enable	e >= 67 Nm		
					(B) Accelerator Pedal enable	e >= 0.5005 Nm		
					Ignition Voltage Lo	>= 8.59961 Volts		
					Ignition Voltage H	i <= 31.99902 Volts		
					Engine Speed L	i <= 7500 RPM		
					Engine Speed is within the			
					allowable limits fo	r >= 5 Sec		
					if Attained Gear=1st FW	>= 5.0003 Pct		
					if Attained Gear-1st EW	2		
					Engine Torgue Enable	>= 5 Nm		
					if Attained Gear=1st FW	/		
					Engine Torque Enable			
					Transmission Fluid	>= -6.6563 °C		
					Input Speed Sensor faul	t = EALSE Boolean		
					Output Speed Sensor faul	t = FALSE Boolean		
					Default Gear Option is no			
					presen	t – noe		
				Dis	ble MIL not Illuminated fo	r TCM: P0716, P0717, P0722, P0723,		
				Conditio	ns: DTC's	: P182E		
						ECM: P0101 P0102 P0103 P0106		
						P0107, P0108, P0171, P0172, P0174,		
						P0175, P0201, P0202, P0203, P0204,		
						P0205, P0206, P0207, P0208, P0300,		
						P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042F		
						1 0300, 1 0307, 1 0300, 1 0401, 1 042E		
			Primary Offgoing Clutch is					One Trip
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E	exhausted (See Table 10 in	= TRUE Boolean				
		Stuck On (Dynamic)	Supporting Documents for Exhaust Dolay Timore)					
			Primary Oncoming Clutch	Maximum				
			Pressure Command Status	= pressurized				
			Primary Offgoing Clutch Pressure	Clutch exhaust				
			Command Status	= command				
				. Initial Clutch				
			Range Shift Status	✓ Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true					
			increment appropriate Fail 1					
			fail timer 1	0.0000				
			(2-6 shifting with throttle)	>= 0.2998 sec				
			fail timer 1	>= 0.5 sec				
I	1	I	(2-6 shifting without throttle)	. 0.0 300		I	1	I

Component/	Fault	Monitor Strategy	Malfunction		Thre	eshold	Secondary Malfunction		Enable			Tin	ie irod	Mil
System	Code	Description	fail timer 1		Va	alue	Manufiction		Conditions			Kequ	Irea	mum.
			(3-5 shifting with throttle)	>=	0.2998	Sec								
			fail timer 1	>=	0.5	sec								
			(3-5 Shifting Without throttle))										
			(4-5 shifting with throttle)	>=	0.2998	sec								
			fail timer 1	>=	0.5	SPC								
			(4-5 shifting without throttle))	0.0	500								
			(4-6 shifting with throttle)	>=	0.2998	Sec								
			fail timer 1		0.5	202								
			(4-6 shifting without throttle))	0.5	360								
											To	tal Fail Tim	e	
											= ((Fail 1 + Fa		
											2) Tir	See Enable ners for Fa	9	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers	1							>= Ti	imer 1, and	Sec	
			Above Cal Increment Pair Timers	,								Reference		
											Т	supporting able 15 for		
											F	ail Timer 2		
			If fail timer is greater than											
			threshold increment corresponding	1										
			gear fail counter and total fail	I										
			counter	r									Fail Counter	
			2nd gear fail counter	r							>=	3	From 2nd Gear	
			3rd gear fail counter	r							>=	3	Fail Counter	
													TIOIT JIU OCU	
			4th gear fail counter	r							>=	3	Fail Counter	
											· -	5	From 4th Gear	
												_	Total Fail	
			total fail counter	r							>=	5	Counter	
							TUT Enable temperature	>=	-6.6563	°C				
							Output Speed Sensor fault	=	FALSE	Boolean				
							Command / Attained Gear	¥	1st	Boolean				
							High Side Driver ON	=	TRUE	Boolean				
							input speed limit for TUT	>= >=	100	RPM				
							PRNDL state defaulted	=	FALSE	Boolean				
							IMS Fault Pending	=	FALSE	Boolean				
							Service Fast Learn Mode HSD Enabled	=	TRUE	Boolean				
										Boologii				
1	1	1	1	1			1				I			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,			
				Conditions:	DIC'S	P182E			
						ECM: P0101, P0102, P0103, P0106,			
						P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204,			
						P0205, P0206, P0207, P0208, P0300,			
						P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042F			
						1 0300,1 0307,1 0300,1 0401,1 0421			
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E	Fail Case 1 Case: 5th Gea	r					One Trip
		Stuck On (Steady State)		Table Based					
				value Please					
			Max Delta Output Speed	d >= Refer to Table >= 22 in rpm/sec					
				supporting					
				documents					
				value Please					
			Min Delta Output Speed	Refer to Table					
			Hysteresi	s 23 in supporting					
				documents					
				Table Based					
			If the Above is True for Time	Refer to Table Sec					
				17 in supporting					
				documents					
			Intrusive test	:					
			Gear Ratio) c <= 1.20959					
			Gear Ratio	0 >= 1.09436					
			If the above parameters are true	5					
							>= 1.1	1 Fail Timer (Sec	:)
							>= 3	Fail Count in 5th Gear	
								OR	
							>= 3	Total Fail	
			Fail Case 2 Case: 6th Gea	r				Counts	-
				Table Based					
			Max Delta Output Speer	value Please Refer to Table					
			Hysteresi	s >= 22 in rpm/sec					
				supporting					
				Table Based					
			Min Dolta Output Spoor	value Please					
			Hysteresi:	>= 23 in rpm/sec					
			,	supporting					
1	I	I	I	documents	I	I	I		I

Component/ System	Fault	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable			Ti	ime nuired	Mil Illum.
- Oyatem	Goue	Description	Gittella	Table Based			Conditions			neu	1	
				Time Please		1						
			If the Above is True for Time	Refer to Table Soc		1						
			IT THE ADOVE IS THE FOR THIS	17 in		1						
				supporting		1						
				documents		1						
			Intrusive test:			1						
			(CB26 clutch exhausted)			1						
			Gear Ratio	<= 1.20959		1						
			Gear Ratio	>= 1.09436		1						
			If the above parameters are true			1						
									>=	1.1	Fail Timer (Sec)	
						1			>=	3	Fail Count in	
						1			-	5	6th Gear	
						1					OR Tatal Fall	
									>=	3	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	=	IRUE	Boolean				
					Hydraulic_System_Pressurize	=	TRUE	Boolean				
					A OR B	1						
					(A) Output speed enable	>=	67	Nm				
					(B) Accelerator Pedal enable	>=	0.5005	Nm				
					Ignition Voltage Lo	>=	8.59961	Volts				
					Ignition Voltage Hi	<=	31.99902	Volts				
					Engine Speed Lo	>=	400	RPM				
	1				Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the	>=	5	Sec				
					if Attained Cear-1st FW	1						
					Accelerator Pedal enable	>=	5.0003	Pct				
					if Attained Gear=1st FW	1						
	1				Engine Torque Enable	>=	5	Nm				
	1				if Attained Gear=1st FW		0101 00	Nex				
	1				Engine Torque Enable	<=	0141.00	INITI				
					Transmission Fluid	>=	-6.6563	°C				
					I emperature	_	EALSE	Boolean				
	1				Output Speed Sensor fault	=	FALSE	Boolean				
	1				Default Gear Option is not	l	TRUE	Dooroan				
					present	=	IRUE					
	1					l						
	1		1			l						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
- Oyucun		2000 pilon		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		

16 OBDG05 2D Summary Tables TCM LFX Colorado/Canyon 6 Speed T43

Table 1										
	Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
	Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00 RPM
		· · ·	•	•				•	•	
Table 2										
	Axis	-6.67	-6.66	40.00°C	2					
	Curve	409.59	2.00	2.00 S	ec					
	_									
Table 3										
	Axis	-6.67	-6.66	40 00 °C						
	Curve	409 59	4.00	4.00 \$						
		403.00	4.00	4.00	00					
Table 1										
Table 4	Avia	6.67	6.66	40.00.00	`					
	AXIS Curve	-0.07	-0.00	2.00	, 					
	Curve	409.59	2.00	2.00 5	ec					
-										
Table 5		0.07	0.00	10.00						
	Axis	-6.67	-6.66	40.00	;					
	Curve	409.59	3.00	3.00 S	ec					
Table 6	_									
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C	2			
	Curve	409.00	3.60	1.60	1.40	1.40 S	ec			
Table 7										
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C	2			
	Curve	409.00	3.40	1.40	1.30	1.20 S	ec			
Table 8										
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C	2			
	Curve	409.00	3.60	1.60	1.50	1.40 S	ec			
						-				

Table 9	_						
	Axis	-6.67	-6.66	40.00	80.00	120.00	°C
	Curve	409.00	3.30	1.30	1.20	1.10	Sec
	•						
Table 10							
	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	3.03	1.86	1.00	0.75	0.58	Sec
Table 11							
	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	1.72	1.11	0.60	0.36	0.22	Sec
Table 12							
	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	2.12	1.39	0.84	0.64	0.33	Sec
	•						
Table 13							
	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	2.51	0.95	0.50	0.29	0.13	Sec
	•						
Table 14	_						
	Axis	-40.00	-20.00	0.00	30.00	110.00	°C
	Curve	2.97	0.82	0.47	0.20	0.13	Sec
	-						
Table 15	_						
	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00
	Curve	0.00	0.00	0.00	0.00	0.00	0.00
	-						

Та	bl	е	1	6

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

20.00

0.00

30.00

0.00

40.00 °C

0.00 Sec

Table 17

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

<u>Table 18</u>

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

<u>Table 19</u>

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

<u> Table 20</u>

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

Table 21

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

Table 22

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

<u>Table 23</u>

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

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions	Required	Illum.
Transmission Control Module (TCM)	C1251	The lateral accleration signal is stuck	Lateral accleration magnitude	e <= 3.85 g's				Special No MII
		at a high magnitude in range	Lateral accleration magnitude	>= 0.53 d's				NONIL
			Lateral accleration magnitude is	100				
			within the range above for	>= 120 Sec				_
					Lateral accloration magnitude	2.85 d's		
					Lateral accleration magnitude	= 0.53 gs		
					Lateral accleration magnitude	y - 0.00 go		
					is within the range above for	>= 90 Sec		
					Diagnostic shifting override	EALCE Declear		
					command	= FALSE DOOIEdIT		
						1st through		
					Attained Gear State	e = 6th		
					Attained Gear Slin	<= 100 RPM		
					r italiiou oour oiip	Clutch to		
					Transmission Tune	Clutch		
					Transmission Type	Transmissi		
						on		
					High Side Driver 1 On	= TRUE Boolean		
					Venicie Speed	1 >= 15 Kpn		
					range diagnostic enable	= TRUE Boolean		
					Battery Voltage	e <= 31.999023 Volts		
					Battery Voltage	e >= 9 Volts		
					Battery voltage is within the	>= 0.1 Sec		
					allowable limits for	21.000022		
					Ignition Voltage	e <= 31.999023 VOIIS		
					Service Fast Learn (SEL)	- 7 Volis		
					Mode	= FALSE Boolean		
					Ignition voltage and SFL	>= 0.1 Sec		
					conditions met for	0.1 000		
				Disable	MIL not Illuminated for	TCM: If calibrated to illuminate the MIL		
				Conditions:	DTC's:	: (P0716, P0717, P0721, P0722, P0723,		
						P0/BF, P0/C0, P0//B, P0//C, P0//D, P215C, U0072)		
						1 2130, 00073)		
						ECM: None		
Transmission Control Modulo (TCM)	D0424	Transmission Electro-Hydraulic	Fail Case 1 Substrate Temperature	>_ 142 1015625 °C			S Fail Time (See	One Trip
Transmission Control Module (TCM)	P0634	Too High	Substrate remperature	>= 142.1013025 °C			>= 5 Fail Time (Sec,)
		i oo nign						
			Fail Case 2 Substrate Temperature	>= 50 °C			>= 2 Fail Time (Sec))
			Ignition Voltage	>= 18 Volts				
			Note: either fail case can set the					
			DIC	,	Ignition Voltage La	>= 8,5006004 Volto		-
					Ignition Voltage H	i <= 31 999023 \/olts		
	1				Substrate Temp Lo	>= 0 °C		
	1				Substrate Temp H	i <= 170 °C		
	1				Substrate Temp Between			
	1	1		1	Temp Range for Time	3 3.20 3.20	1	1

	-								- opoo			1			
Component/	Fault	Monitor Strategy		Malfunction		Thre	shold	Secondary Malfunction		Enable			Tii Regi	me	Mil
Gystein	Code	Description		Unitina				P0634 Status is	; ≠	Test Failed This Key On or Fault Active			noq	and the second se	
							Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None						
Transmission Input Speed Sensor (TISS)	P0716	Input Speed Sensor Performance		Transmission Input Speed Sensor Drops	>=	900	RPM					>=	0.8	Fail Time (Sec)	One Trip
								Engine Torque is Engine Torque is Engine Speed Engine Speed is within the allowable limits for Vehicle Speed is Throttle Position is	>= <= >= <= >= >= >= >=	0 8191.875 400 7500 5 10 0	N*m N*m RPM RPM Sec Kph Pct				
								Transmission Input Speed is The previous requirement has been satisfied for	>=	0	RPM Sec				
								The change (loop to loop) ir transmission input speed is The previous requirement has been satisfied for Thrattle Desitions Finand Volit	< >=	8191.875 0	RPM/Loop Sec				
								Engine Torque Signal Valid Engine Torque Signal Valid Ignition Voltage	= = ? >= ? <=	TRUE TRUE 8.5996094 31.999023	Boolean Volts Volts				
								P0716 Status is not	t =	This Key On or Fault Active					
							Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0717 ECM: P0101 P0122, P012	7, P0752, P0973 1, P0102, P0103 23	3, P0974 3, P0121,				
Transmission Input Speed Sensor (TISS)	P0717	Input Speed Sensor Circuit Low Voltage	Fail Case 1	Transmission Input Speed is	<	33	RPM					>=	4.5	Fail Time (Sec)	One Trip
			Fail Case 2	When P0722 DTC Status equal to Test Failed and Transmission Input Speed is	<	653.125	RPM	Controller uses a single power supply for the speed sensors	=	1	Boolean				
								Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valic Ignition Voltage	>= <= >= = >=	100 8191.875 12 TRUE 8.5996094	N*m N*m Kph Boolean Volts				

Component/	Fault	Monitor Strategy	Malfunction	I	Thr	eshold	Secondary		Enable			Ti	me	Mil
System	Code	Description	Criteria		V	alue	Malfunction		Conditions	\/_lt-		Req	uired	Illum.
							Ignition Voltage	<=	31.999023	VOIts				
							Engine Speed	>=	7500	RPM				
							Engine Speed is within the	~-	-					
							allowable limits for	>=	5	Sec				
									Tost Failed					
									This Key					
							P0717 Status is not	=	On or Fault					
									Active					
						Disable	MIL not Illuminated for	TCM: P0722,	P0723					
						Conditions:	DTC's:							
								ECM: P0101,	P0102, P0103					
				-										Special
Mode Switch	P071D	Transmission Mode Switch B Circuit	Sport Mode Switch state	=	TRUE	Boolean					>=	600	Fail Time (Sec)	No MIL
							Ignition Voltage Lo	>=	8.5996094	Volts				1
							Ignition Voltage Hi	<=	31.999023	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi	<=	7500	RPM				
							Engine Speed is within the	>=	5	Sec				
							allowable limits for							
						Disable	MIL not Illuminated for	TCM: P1762						
						Conditions:	DTC's:							
								ECM: None						
Transmission Output Speed Sensor		Output Speed Sensor Circuit Low	Transmission Output Speed										/	One Trip
(TOSS)	P0722	Voltage	Sensor Raw Speed	<=	35	RPM					>=	4.5	Fail Time (Sec)	ono mp
									Test Failed					
							D0700 Chabas la sat		This Key					
							P0/22 Status is not	=	On or Fault					
									Active					
							Transmission Input Speed	_	TRUE	Boolean				
							Check		TOUS	Doolean				
							Engine Torque Check	=	1RUE 0.0001021	Boolean				
							Transmission Fluid	>-	0.0001031	T CL				
							Temperature	>=	-40	°C				
							Disable this DTC if the PTO is	_	1	Boolean				
							active		TDUE	Dealaan				
							Engine Torque Signal Valid	=	TRUE	Boolean				
							Initial Voltage is	=	8 500600/	Volts				
							Ignition Voltage is	<=	31,999023	Volts				
							Engine Speed is	>=	400	RPM				
1							Engine Speed is	<=	7500	RPM				
							Engine Speed is within the	>=	5	Sec				
							allowable limits for	-	0	000				
				-			Enable Flags Defined Below							1
							The Engine Torque Check is							
1							I RUE, it either of the two							
I	1	I	I	1			ronowing conditions are TRUE	I			I			I

|--|

Component/	Fault	Monitor Strategy	Malfunction	Three	shold	Secondary		Enable			Tim	ie	Mil
System	Code	Description	Criteria	Va	lue	Malfunction		Conditions			Requ	ired	Illum.
						Engine Torque Condition 1 Range Shift Status	¥	Range shift completed	ENUM				
						OR Transmission Range is Engine Torque is Engine Torque is	= >= <=	Park or Neutral 8191.75 8191.75	N*m N*m				
						Engine Torque Condition 2 Engine Torque Condition 2 Engine Torque is Engine Torque is	>= <=	50 8191.75	N*m N*m				
						The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE							
						TIS Check Condition 1 Transmission Input Speed is Transmission Input Speed is	>= <=	653.125 5350	RPM RPM				
						Engine Speed without the brake applied is Engine Speed with the brake	>=	3200	RPM				
						applied is	>=	3200	RPIVI				
						Controller uses a single power	<=	8191.8/5	RPIVI				
						supply for the speed sensors	=	I	Boolean				
						Valid	=	TRUE	Boolean				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P0710 ECM: P010 P0122, P01	5, P0717, P072 I, P0102, P010 23	3 3, P0121,				0
Transmission Output Speed Sensor (TOSS)	P0723	Output Speed Sensor Circuit Intermittent	Transmission Output Speed Sensor Raw Speed	>= 105	RPM					>=	0	Enable Time (Sec)	One Trip
			Output Speed Delta	<= 8192	RPM					>=	0	Enable Time (Sec) Output Speed	
			Output Speed Drop	> 650	RPM					>=	1.5	Drop Recovery	
			AND									1 4.1 1.110 (000)	
			Transmission Range is	= Driven range (R,D)									
						Range_Disable OR	=	FALSE	See Below				
						Neutral_Range_Enable	=	TRUE	See Below				
						Neutral_Speed_Enable	=	TRUE	See Below				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
					are TRUE concurrently			·	
					Transmission Range Enable	- TRUE S	See Below		
					Transmission_Input_Speed_E		Coo Dolow		
					nable	= IKUE SI	See Delow		
					No Change in Transfer Case Range (High <-> Low) for	>= 5 5	Seconds		
					Runge (right v zow) for	Tost Failed			
					D0700 Otatus is used	This Key			
					P0723 Status is not	On or Fault			
						Active			
					Disable this DTC if the PTO is	= 1 [Boolean		
					Ignition Voltage is	>= 8.5996094	Volts		
					Ignition Voltage is	<= 31.999023	Volts		
					Engine Speed is	>= 400	RPM		
					Engine Speed is within the	<= /500	KPIVI		
		-			allowable limits for	>= 5	Sec		
					Enable_Flags Defined Below				
					Transmission_Input_Speed_E				
					nable is TRUE when either TIS				
					Condition 1 or TIS Condition 2 is TRUE:				
					10 11021				
					TIS Condition 1 is TRUE when	En	nable Time		
					are satsified for	>= 0	(Sec)		
					Input Speed Delta	<= 4095.875	RPM		
					Raw Input Speed	>= 500	RPM		
					TIS Condition 2 is TRUE when				
					ALL of the next two conditions				
					are satisfied	- 0	RPM		
					A Single Power Supply is used		Deeleen		
					for all speed sensors	= IKUE I	DUUIEdI I		
					Neutral Range Enable is				
					TRUE when any of the next 3				
					conditions are TRUE	- Noutral	ENILIM		
					Transmission Range Is	Reverse/N			
					Transmission Range is	= eutral	ENUM		
						l ransitonal Neutral/Dri			
					Transmission Dango is	Ve	ENILIM		
					riansinission range is	- Transitiona			
					And when a drop occurs	1			
					Loop to Loop Drop of				
					Transmission Output Speed is	> 650	RPM		
					Range_Disable is TRUE when				
					any of the next three				
	I I	I	1				I		I I

Component/	Fault	Monitor Strategy	Malfunction	Thr	eshold	Secondary		Enable		<u> </u>	Time	e d	Mil
System	Code	Description	Cinteria	v	alue	Transmission Range is	=	Park	ENUM	<u> </u>	Kequii	eu	inum.
						Transmission Range is	=	Park/Rever	FNUM				
						inanoniooion nango io		Transitonal	Litom				
						Input Clutch is not	=	ON (Fully Applied)	ENUM				
										<u> </u>			
						Neutral_Speed_Enable is TRUE when All of the next							
						three conditions are satsified	>	1.5	Seconds				
						Tor Transmission Output Speed	>	130	RPM				
						The loop to loop change of the		20	DDM				
						Transmission Output Speed is	<	20	RPM				
						The loop to loop change of the		10	DDM				
						Transmission Output Speed is	>	-10	KPIVI				
						Transmission Dango Enable				<u> </u>			
						is TRUE when one of the next							
						six conditions is TRUE	_	Noutral	ENILIM				
						Transmission Range is	_	Reverse/N	LINOW				
						Transmission Range is	=	eutral Transitiona	ENUM				
								Neutral/Dri					
						Transmission Range is	=	Transitiona	ENUM				
								I					
								Table					
								Based					
						Time since a driven range	~-	Please	Soc				
						(R,D) has been selected	-	Refer to Table 21 in	300				
								supporting					
								documents					
						Transmission Output Speed	~-	500	DDM				
						Sensor Raw Speed Output Speed, when a fault		500					
						was detected	>=	500	RPM				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: P097	3, P0974, P0976	o, P0977				
							ECM: P010	1, P0102, P0103	8, P0121,				
							P0122, P01	23					
Torque Converter Clutch (TCC)	P0741	TCC System Stuck OFF	TCC Pressure	>= 750	Кра					>=	2	Enable Time	Two Trips
			Either Condition (A) or (B) Must be									(Sec)	
			Met							1			

Component/	Fault	Monitor Strategy	Malfunction	Threshold Value	Secondary Malfunction	Enable		T	ime wired	Mil Illum.
Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria (A) TCC Slip Error @ TCC On Mode (B) TCC Slip @ Lock On Mode If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter	Threshold Value Refer to Table 1 in >= Supporting Documents >= 130 RPM	Secondary Malfunction TCC Mode Ignition Voltage Lo Ignition Voltage Lo Ignition Voltage Hi Engine Speed Engine Speed is within the allowable limits for Engine Speed is within the allowable limits for Engine Torque Hi Throttle Position Lo Engine Torque Hi Throttle Position Lo Throttle Position Hi 2nd Gear Ratio Lo 2nd Gear Ratio Lo 3rd Gear Ratio High 4th Gear Ratio Lo 5th Gear Ratio Io 5th Gear Ratio Lo 5th Gear Ratio Lo	Enable Conditions = On or Lock >= 8.5996094 Volts <=	>= >= >=	т Req 5 2	ime juired Fail Time (Sec) Fail Time (Sec) TCC Stuck Off Fail Counter	Mil Illum.
					Temperature Hi PTO Not Active Engine Torque Signal Valid Throttle Position Signal Valid Dynamic Mode P0741 Status is	<= 130 °C = TRUE Boolean = TRUE Boolean = TRUE Boolean = FALSE Boolean Test Failed ≠ This Key On or Fault Active				
				Disable Conditions:	MIL not Illuminated for DTC's:	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	>= -50 RPM <= 13 RPM			>=	1.5	Fail Time (Sec)	One Trip

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	•	Enable			Time	e	Mil
System	Code	Description	Criteria	Value	Malfunction		Conditions			Requir	red	Illum.
			If Above Conditions Have been									
			Met, and Fail Timer Expired,						>=	6	Fail Counter	
			Increment Fail Counter									
					TCC Mode	=	Off					
					Enable test if Cmnd Gear =		1	Destau				
					1stFW and value true	=	I	Boolean				
					Enable test if Cmnd Gear =							
					2nd and value true	=	0	Boolean				
					Engine Speed Hi	<i>/-</i>	6000	RPM				
					Engine Speed Lo	~-	500	DDM				
					Vobiolo Speed EU	-	500 E11					
					Vehicle Speed Hi	<=	211	KPH				
					Venicie Speed Lo	>=		KPH				
					Engine Lorque Hi	<=	8191.875	Nm				
					Engine Torque Lo	>=	80	Nm				
					Current Range	¥	Neutral	Range				
					Current Range	¥	Reverse	Range				
					Transmission Sump		100	00				
					Temperature	<=	130	-U				1
					Transmission Sump							1
					Temperature	>=	18	°C				
					Throttle Position Hyst High	\-	5 0003052	Prt				1
						/-	3.0003032	T CL				
					AND May Vahiala Speed to Most							
					Wax vehicle Speed to Weet	<=	8	KPH				
					I nrottie Enable							
					Once Hyst High has been met,			_				
					the enable will remain while	>=	2.0004272	Pct				
					Throttle Position							
					Disable for Throttle Position	>=	75	Pct				
					Disable if PTO active and		1	Booloon				
					value true	=	I	Booleau				
					Disable if in D1 and value true	=	1	Boolean				
					Disable if in D2 and value true	=	1	Boolean				
					Disable if in D3 and value true	=	1	Boolean				
					Disable if in D4 and value true	_	1	Boolean				
					Disable if in D5 and value true		1	Boolean				
					Disable if in MUMD and value	-	1	Doolean				
					Disable II III WOWD and Value	=	1	Boolean				
					true							
					Disable if in TUTD and value	=	1	Boolean				
					true							1
					4 Wheel Drive Low Active	=	FALSE	Boolean				1
					Disable if Air Purge active and	_	0	Boolean				1
					value false	=	U	DUDICALI				1
					RVT Diagnostic Active	=	FALSE	Boolean				
					Ignition Voltage	>=	8.5996094	V				1
					Ignition Voltage	<=	31,999023	V				1
					Vehicle Speed	<=	511	KPH				1
					Engine Speed	>=	400	RPM				1
					Engine Speed	-	7500	RDM				1
					Engine Speed is within the	<=	7300	IXI. IVI				1
					Engine speed is within the	>=	5	Sec				1
					anowable limits for		TOUE	Deed				1
					Engine Torque Signal Valid	=	TRUE	Boolean				1
					I hrottle Position Signal Valid	=	TRUE	Boolean				
							Test Failed					1
							The Ver					1
					P0742 Status is	≠	On or Fourth					
							Un or Fault					1
							Active					1
					1							
	1 1			1	1				I			1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		T Ree	'ime quired	Mil Illum.
				Disabl Conditions	e 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 Commanded Gear Gear Ratio Gear Ratio If the above parameters are true	>= 400 RPM = 1st Lock rpm <= 1.209594727 >= 1.094360352	Ignition Voltage Lo Ignition Voltage H Engine Speed Lo Engine Speed H Engine Speed Is within the allowable limits for Transmission Fluid Temperature Range Shift State Range Shift State Throttle Position Signal Valid from ECM, High side driver is enabled High-Side Driver is Enabled Input Speed Sensor faull Output Speed Sensor faull Default Gear Option is not present	$\begin{array}{c} >= & 8.5996094 \\ <= & 31.999023 \\ >> & 400 \\ RPM \\ <= & 7500 \\ RPM \\ >= & 5 \\ >= & -6.65625 \\ >= & -6.65625 \\ ^{\circ}C \\ = & Range \\ Shift \\ Completed \\ P \\ = & Shift \\ Completed \\ P \\ = & 0.5004883 \\ \% \\ >= & 67 \\ RPM \\ = & TRUE \\ Boolean \\ = & TRUE \\ Boolean \\ = & FALSE \\ Boolean \\ = & TRUE \\ \end{array}$	>= = >= >=	0.2 5 0.3 8	Fail Tmr Fail Counts Neutral Timer (Sec) Fail Timer (Sec) Counts	Two Trips

Component/ Fault Monitor Strategy System Code 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		
Made 2 Multipley Value D0752 Chill Calencid Value & Study On	Coor Day Clin					One Trin
Mode 2 Multiplex Valve P0752 Shift Solenoid Valve A Stuck On	Gear Box Slip Commanded Gear As Achieved Ist Locked OR 1st Free-Whee OR 2nd with Mode 2 Sol Commanded Or If the above parameters are true Command 4th Gear once Outpu Shaft Speec If Gear Ratic And Gear Ratic	 >= 400 RPM = 3rd Gear = TRUE Boolean <= 400 RPM >= 3.825683594 <= 4.228393555 	Ignition Voltage Lo Ignition Voltage H Ignition Voltage H Engine Speed Lo Engine Speed Lo Engine Speed is within the allowable limits for High-Side Driver is Enabled Throttle Position Signal Valid from ECM Output Speed OR TPS Range Shift State Transmission Fluid Temperature Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Please Refer >= to Table 16 in Neutral Timer Supporting (Sec) Documents (Sec) >= 1.5 Fail Timer (Sec) >= 5 Counts	One Trip

Component/	Fault	Monitor Strategy	Malfunction	Three	shold	Secondary Malfunction		Enable			Tim	e	Mil
System	Code	Description	Criteria	Va	Disable	Mill not Illuminated for	TCM: P0716	P0717 P0722	P0723	-	Requi	rea	mum.
					Conditions:	DTC's:	P182E	10/17,10/22	10123				
							ECM: P0101,	P0102, P0103	, P0106,				
							P0107, P0108	, P0171, P017	2, P0174,				
							P0175, P0201	, P0202, P020	3, P0204,				
							P0205, P0206	, P0207, P020	18, P0300,				
							P0301, P0302	, PU3U3, PU3U	14, PU3U5,				
							1 0300, 1 0307	,10300,1040	/1,1042L				
Mode 2 Multiplex Valve	P0756	Shift Solenoid Valve B Stuck Off	Fail Case 1 Commanded Gear	= 1st Locked									One Trip
											Please Refer		
			Gear Box Slin	>= 400	RPM					>=	to Table 5 in	Neutral Timer	
				100						-	Supporting	(Sec)	
											Documents		
			Intrusive Shift to 2nd	1-1-1-1-1	C								
			Commanded Gear Previous	= ISI LOCKED	Gear								
			Gear Ratio	<= 2.402177734									
			If the above parameters are true	2.243047007									
			in the above parameters are true							>=	1	Sec	
										>=	3	counts	
						Ignition Voltage Lo	>=	8.5996094	Volts				
						Ignition Voltage Hi	<=	31.999023	Volts				
						Engine Speed Lo	>=	400	RPM				
						Engine Speed Hi	<=	7500	RPM				
						Engine Speed is within the	>=	5	Sec				
						allowable limits for		- (7	DDM				
						Output Speed	>=	67	RPIM				
						TPS	>-	0 500/883	%				
						113	~-	0.0004000	70				
								Range	E 1 1 1 1				
						Range Shift State	=	Shift	ENUM				
								Completed					
						Transmission Fluid	>-	-6 65625	°C				
						Temperature		0.03023	0				
						High-Side Driver is Enabled	=	TRUE	Boolean				
						I nrottle Position Signal Valid	=	TRUE	Boolean	1			
						IFOM ECM		ENICE	Pooloon				
						Output Speed Sensor fault	=	FALSE FALSE	Boolean				
						Default Gear Option is not	_	TALUL	Doolcan				
						present	=	TRUE					
					Disable	MIL not Illuminated for	TCM: P0716, I	P0717, P0722	, P0723,				
					Conditions:	DTC's:	P182E						
							FCM· P0101	P0102 P0103	P0106				
							P0107, P0108	, P0171, P017	2, P0174,				
							P0175, P0201	, P0202, P020	3, P0204,				
							P0205, P0206	, P0207, P020	8, P0300,	1			
							P0301, P0302	, P0303, P030	04, P0305,				
							P0306, P0307	, P0308, P040	1, P042E				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Val	shold ue	Secondary Malfunction		Enable Conditions			Tim Requ	ie ired	Mil Illum.
Variable Bleed Solenoid (VBS)	P0776	Pressure Control (PC) Solenoid B	Fail Case 1 Case: Steady State 3rd Gea	r										One Trip
		STUCK OTT [C35R]	Commanded Gea	r =	3rd	Gear								
			Gearbox Sli) >=	400	RPM						Diagon Dofor		
											1	to Table 16 in	Neutral Timer	
												Supporting	(Sec)	
			Command 4th Gear once Output	t <=	400	RPM						Documents		
			Shaft Spee If Gear Rati	- E	1 094360352									
			And Gear Ratio) <=	1.209594727									
											>=	3	Fail Timer (Sec)	
			It the above condiations are true	4							>=	3	3rd Gear Fail	
			Increment 3rd gear fail counte	r									or	
			and C35R Fail counter	r							>=	14	3-5R Clutch Fail	
			Fail Case 2 Case: Steady State 5th Gea	r									Counts	
			Commanded Gea	r =	5th	Gear								
												Please Refer		
			Gearbox Sli) >=	400	Rpm					>=	to Table 5 in Supporting	Neutral Timer (Sec)	
												Documents	(000)	
			Intrusive Test: Command 6th Gea	r										
				F	Please refer to									
			If attained Gear=6th gear Time	9 >=	supporting	Shift Time (Sec)								
			It the above condictions are true		documents								Eth Coor Foil	
			Increment 5th gear fail counter	r							>=	3	Counts	
													Or 3 5P Clutch Fail	
			and C35R Fail counte	r							>=	14	Counts	-
							PRNDL State defaulted inhibit RVT	=	FALSE FALSE	Boolean Boolean				
							IMS fault pending indication	=	FALSE	Boolean				
							IPS validity flag Hydraulic System Pressurized	=	TRUE	Boolean Boolean				
							Minimum output speed for	>=	67	RPM				
				1			A OR B							
							(A) Output speed enable	>=	67	RPM Det				
							Common Enable Criteria	/-	0.3004003	T Ct				
				1			Ignition Voltage Lo	>=	8.5996094 31.999023	Volts Volts				
				1			Engine Speed Lo	>=	400	RPM				
							Engine Speed Hi Engine Speed is within the	<=	7500	RPM				
							allowable limits for	>=	5	Sec				
				1			I nrottle Position Signal valid HSD Enabled	=	TRUE	Boolean Boolean				
				1			Transmission Fluid	>=	-6.65625	°C				
							Input Speed Sensor fault	=	FALSE	Boolean				

Optimie Data Montany				1				-		<u> </u>			
Dyset Data Description Description <thdescription< th=""> Description <thdescript< th=""><th>Component/</th><th>Fault</th><th>Monitor Strategy</th><th></th><th>Malfunction</th><th>Thre</th><th>shold</th><th>Secondary</th><th>Enable</th><th></th><th>T</th><th>ime</th><th>Mil</th></thdescript<></thdescription<>	Component/	Fault	Monitor Strategy		Malfunction	Thre	shold	Secondary	Enable		T	ime	Mil
Vanishe fixed Statewide (VDS) PAT Protocol Counter (PS) Settisted IIII (PS) Protocol Counter (PS) Protocol	System	Code	Description		Chieria	Va	liue		Collditions	+	Ret	lairea	mum.
Image: Second (VS3) VII Process Control (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER All Gala Case 30 and your second (VD Self) CER								Output Speed Sensor fault	= FALSE Boolean				
Note: Note: <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Default Gear Option is not</td><td>= TRUE</td><td></td><td></td><td></td><td></td></th<>								Default Gear Option is not	= TRUE				
Bit Interfluence Interflue								present					
Image: Second (MS) Image:													
Image: Solution (VIS) Picture Control (VIS)													
Image: Constraints Constraints <thconstraints< th=""></thconstraints<>							Disable	 MIL not Illuminated for 	TCM: P0716, P0717, P0722, P0723,				
Image: Bield Schered (VS) Image: Come Control (PC) Schered (PC) Scher							Conditions:	DTC's:	P182E				
Image: Solution (VIS) Image: Control (VIS) Image: C													
virue based Solored (r65) P177 Pressure Cately (P1; Sainsatt) Eff.Case 1 Case: Stady Statu 2: Find Find </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ECM: P0101 P0102 P0103 P0106</td> <td></td> <td></td> <td></td> <td></td>									ECM: P0101 P0102 P0103 P0106				
Image: series of the									D0107 D0108 D0171 D0172 D0174				
weisen fined Salenva (NIS) N 1 Presawe Control [PC] School B 201 (PC] School B 201 (PC) (PC) PC) PEIRS, POOT, POOR, PORS, PEIRS, PEIR									D0175 D0201 D0202 D0202 D0204				
Image: constraint (NSS) P377 Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) Eal Case: Starky Stark In Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) Eal Case: Starky Stark In Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) Eal Case: Starky Stark In Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) P377 Partice Cases Starky Stark In Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) Eal Case: The Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) P377 Partice Cases Starky Stark In Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) Eal Cases Starky Stark In Process Constraint (PC) Splitted B Suck On (CSSR) (Starky Stark) P377 Partice Cases Starky Stark In Transformed (CSR) Cases Starky Stark In Transformed (SSR) (Starky Starky Stark In Transformed (SSR) (Starky Stark In Transformed									P0175, P0201, P0202, P0203, P0204,				
Image: second (PC) Second									P0205, P0206, P0207, P0208, P0300,				
Image: Decision of QMD, Strong DMD, Strong									P0301, P0302, P0303, P0304, P0305,				
Valuate Riend Sciencial (PC) Solinid (R) Pair Date 1 Case: Standy State Inte State Basici Inte Read Pair Date Field Case: The State Inte State Int									P0306, P0307, P0308, P0401, P042E				
vaneable Bood Solenoid (VBS) PN77 Pressue Control (PC) Solinoid B skx Ch (2381) [Soky State) Eat Case: Stoky State base Attached Care base (CDP Lauxer estate data) Case: Stoky State base (CDP Lauxer e													
valuate device solution (vEs) (VD) Stack Ch (2356) (Sinody State) Attained Gene sign >= 400 RPM Table Based (CRE) Could Finance (CRE) Finance	Variable Blood Salapaid (VBS)	D0777	Pressure Control (PC) Solinoid B	Fail Case 1	Casa, Staady Stata 1a								One Trip
Atlahed Gar sip >> 40 RPM Take Baod Time Please suppring documents (CBH 1 data centualed (CBH 1 data centualed CGP Refs >= 1 40942578 CGP Refs >= 1 40944578 CGP	Valiable bleed Solehold (VBS)	P0///	Stuck On [C35R] (Steady State)		Case. Sleady Sidle IS								
Image last of the Above is True for Time Table Board Rolf to Table Data (Sec) Sec) Sec) <td></td> <td></td> <td></td> <td></td> <td>Attained Gear slin</td> <td>>= 400</td> <td>RPM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>					Attained Gear slin	>= 400	RPM						
Imperation Imperation <td></td> <td></td> <td></td> <td></td> <td></td> <td>Table Based</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						Table Based							
Image: Internet of the Above is Tote for Time of the Above is Tot						Time Please							
Image: Information of the Above Strue for Time > > Image: Im						Defer to Tabl	- Enable Time						
Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store parameters are true Image: construction of the store pa					If the Above is True for Time	>= 1 in							
Fall Case 2 Case: Stady Stale 2nd gas If the above parameters are too Table Based refer to 120 refer						4 111	(Sec)						
$\left \begin{array}{c c c c c c c c c c c c c c c c c c c $						supporting							
Image introduce test: CGR1 dute headsong can Ratio 1 40544573 Ger Ratio 1 45544336 If the above parameters are true						documents							
Image: Construction of the above parameters are true Image: Construe Image: Const					Intrusive test								
Image: Constraint of the above parameters are true 145544336 Image: Constraint of the above parameters are true 145544336 Image: Constraint of the above parameters are true Image: Constraint of the above parameters are true<					(CBR1 clutch exhausted)								
Image: Sector of the sector parameters are law of the sector paramet					Gear Ratio	<= 1.608642578							
If the above parameters are frue If the above parameters are frue 1.1 Fall Timer, Social Fall Timer, Social Fall Timer, Social Fall 2 Fall Courtin 3 Courtis Fall Case 2 Case: Steady State 2nd goar Table Based -					Gear Ratio	>= 1.455444336	1						
Fail Case 2 Case: Steady State 2nd gear Table Based					If the above parameters are true								
Fail Case 2 Case: Steady State 2nd gear or or Value Please Table Based Value Please Refer to 30 Hysteresis Table Based Value Please Refer to 30 Hysteresis Table Based Value Please Refer to 30 Paile 1n Table 1n Table Based Value Please Refer to 30 Paile Sec 17 in Supporting documents Image: Sec Paile 1n Paile 1n Plane Please Paile 1n Plane Pla													
Fail Case 2 Case: Steady State 2nd gear Toble Based water Please With Deta Output Speed Plysteress Table Based water Please Vertice Plant Case 1 to Provide Case Steady State 2nd gear Table Based water Please Vertice Please Vertice Plant Case 1 to Provide Case Steady State 2nd gear Plant Case 1 to Provide Case Steady State 2nd gear Plant Case 1 to Provide Case Steady State 2nd gear Plant Case 1 to Provide Case Steady State 2nd gear Plant Case 1 to Provide Case Steady State 2nd gear Plant Case 1 to Provide Case Steady State 2nd gear Plant Case 1 to Provide Case Steady State 2nd gear Plant Case 1 to Provide Case Plant Case 1 to Pla										>=	1.1	Fail Timer (Se	c)
Fall Case 2 Case: Steady State 2nd gear or Table Based value Please Max Deta Output Speed Hysteresis Table Based value Please Refer to 3D Table 2 in provisec supporting documents Fall Case 2 Case: Steady State 2nd gear value Please Refer to 3D Table 2 in provisec supporting documents Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please If the Above is True for Time (CB26 cluch exhausted) Image: Steady State 2nd gear value Please If the Above is True for Time (CB26 cluch exhausted) Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please If the Above is True for Time (CB26 cluch exhausted) Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please If the Above is True for Time (CB26 cluch exhausted) Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please If the Above is True for Time (CB26 cluch exhausted) Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value Please If the Above is True for Time (CB26 cluch exhausted) Image: Steady State 2nd gear value Please Image: Steady State 2nd gear value												Foil Count in	
Fail Case 2 Case: Steady State 2nd gear Table Based value Please										>=	2	Tall Couril III	
Fail Case 2 Case: Steady Stale 2nd gear Hysteres Table Based value Pease Refer to 3D rpm/sec Table Based value Pease Refer to Table Pease Pease Refer to Table Pease												ISI Gear	
Fail Case 2 Case: Steady State 2nd gear Table Based value Please Counts Max Delta Output Speed Hysteresis Page Refer to 3D rpm/sec value Please Prefer to 3D rpm/sec value Please Min Delta Output Speed Hysteresis Page Refer to 3D rpm/sec value Please Prefer to 3D rpm/sec value Please If the Above is True for Time Value Please If the Above is True for Time Value Please Value Value Please Value Value Please Value Valu												or	
Fail Case 2 Case: Steady State 2nd gear Table Based Table Based Counts Max Della Output Speed										>=	3	Total Fail	
Fail Case 2 Case: Steady State 2nd gear Table Based Table Pased Max Delta Output Speed Max Delta Output Speed Refer to 3D rpm/sec Hysterests Refer to 3D rpm/sec rpm/sec Table Based rpm/sec rpm/sec rpm/sec Supporting documents rpm/sec rpm/sec Table Based rpm/sec rpm/sec rpm/sec Supporting rpm/sec rpm/sec rpm/sec Value Please rpm/sec rpm/sec rpm/sec										× -	0	Counts	
Image: Second				Fail Case 2	Case: Steady State 2nd gear								
$\left \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ $						Table Based							
Max Delta Output Speed >= Refer to 3D supporting documents rpm/sec Table 1 m rpm/sec Table 2 m rpm/sec Table Based rpm/sec Supporting documents Gocuments supporting Gocuments rpm/sec Supporting rpm/sec <						value Please							
i i					Max Delta Output Speed	Refer to 3D	,						
supporting documents value Please Hysteresis Fable 2 in supporting documents table Based value Please supporting documents table Based Time Please Table 2 in supporting documents table Based Time Please Feffer to Table Sec 17 in supporting documents table Based Time Please Feffer to Table Gear Ratio Cear Ratio Cear Ratio Sec 1.45544336					Hysteresis	>= Table 1 in	rpm/sec						
Min Delta Output Speed Hysteresis Adocumentis Table Based Nin Delta Output Speed Hysteresis Refer to 3D Table 2 in Supporting documents If the Above is True for Time If the Above is True for Time Intrusive test: > Refer to Table Sec 17 in Supporting documents Intrusive test: (CB26 clutch exhausted) Gear Ratio Sec Ratio > 10.08642578 Sec Intrusive test: 1.086642578 Sec					· · · · · · ·	supporting							
Min Delta Output Speed Hysteresis If the Above is True for Time If the Above is True for T						documents							
Indue based radie based Min Delta Output Speed > Hysteresis > Refer to 3D rpm/sec Supporting documents Table Based Table Based Table Based rpm/sec Supporting documents Table Based rpm/sec Table Based rpm/sec Supporting documents Table Based rpm/sec Refer to Table sec 17 in supporting documents supporting documents rpm/sec Supporting rpm/sec Gear Ratio sec Gear Ratio sec Sec 1.455444336						Table Deces							
Value Please Min Delta Output Speed > Hystersis > Refer to 3D rpm/sec Supporting documents Table Based Time Please If the Above is True for Time > Refer to Table Sec 17 in Sec 17 in output Sec 17 in Supporting occuments Supporting occuments Supporting occuments Supporting occuments Supporting occuments Gear Ratio > 1.455444336 >	1					Table Based		1	1				1
Min Delta Output Speed Hysteresis Supporting documents Table Based Time Please Refer to Table Sec 1 f the Above is True for Time Refer to Table Sec 1 f the Above is True for Time CB26 clutch exhausted) Gear Ratio Gear Ratio Sec 1 / 1 / n Supporting documents Sec 1 / 1 / n Supporting documents Sec 1 / 1 / n Supporting documents Sec 1 / 1 / n Supporting Sec 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 /	1					value Please		1	1				1
Hysteresis Table 2 in Finance supporting documents supporting rime Please documents Table Based Time Please Fefer to Table 17 in supporting documents Sec Intrusive test: (CB26 clutch exhausted) Gear Ratio = 1.408642578 Gear Ratio = 1.455444336	1				Min Delta Output Speed	>= Refer to 3D	rpm/sec	1	1				1
supporting documents Table Based Time Please Refer to Table Sec 17 in Supporting documents					Hysteresis	Table 2 in	1911/0000						
If the Above is True for Time >= documents Table Based Time Please Time Please To Table Sec To in supporting documents (CB26 clutch exhausted) Gear Ratio Sec To in Sec To Sec Sec TO Sec Sec TO Sec						supporting							
If the Above is True for Time $ \begin{array}{c} Fale Based \\ Time Please \\ Refer to Table \\ supporting \\ documents \\ (CB26 clutch exhausted) \\ Gear Ratio \\ Gear Ratio \\ S= 1.455444336 \end{array} $	1					documents			1				1
If the Above is True for Time >= Time Please Refer to Table 17 in supporting documents Intrusive test:	1					Table Based		1	1				1
If the Above is True for Time >= Refer to Table 17 in supporting documents Intrusive test:	1					Time Please		1	1				1
If the Above is True for Time If the Above is True for Time supporting documents (CB26 clutch exhausted) Gear Ratio Gear Ratio 1.455444336	1					Refer to Tabl	2		1				1
Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio Search Ratio	1				If the Above is True for Time	>= 17 in	Sec	1	1				1
Supporting documents (CB26 clutch exhausted) Gear Ratio Gear Ratio >= 1.455444336													
documents Intrusive test: (CB26 clutch exhausted) Gear Ratio <= 1.608642578 Gear Ratio >= 1.455444336	1					supporting		1	1				1
Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio Sear Ratio Sear Ratio Sear Ratio	1					documents		1	1				1
(CB26 clutch exhausted) Gear Ratio Gear Ratio Sear Ratio 1.455444336					Intrusive test								
Gear Ratio <= 1.608642578 Gear Ratio >= 1.455444336					(CB26 clutch exhausted)								
Gear Ratio >= 1.455444336	1				Gear Ratio	<= 1.608642578		1	1				1
	1				Gear Ratio	>= 1.455444336		1	1				1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required		
- ,			If the above parameters are true							
							>=	1.1	Fail Timer (Sec)	
								0	Fail Count in	
							>=	3	2nd Gear	
									Or Total Fail	
							>=	3	Counts	
			Fail Case 3 Case: Steady State 4th gear							
				Lable Based						
			Max Delta Output Speed	Refer to 3D						
			Hysteresis	Table 1 in						
				documents						
				Table Based						
			Min Dolto Output Spood	value Please						
			Hysteresis	>= Table 2 in rpm/sec						
				supporting						
				documents Table Based						
				Time Please						
			If the Above is True for Time	>= Refer to Table Sec						
				supporting						
				documents						
			Intrusive test: (C1234 clutch exhausted)							
			Gear Ratio	<= 0.89465332						
			Gear Ratio	>= 0.809448242						
			If the above parameters are true							
							>=	1.1	Fail Timer (Sec)	
							>=	3	Fail Count in	
									or	
							>=	3	Total Fail	
			Fail Case 4 Case: Steady State 6th gear						Counts	
				Table Based						
			May Dalta Output Spood	value Please Refer to 3D						
			Hysteresis	>= Table 1 in rpm/sec						
				supporting						
				documents Table Based						
				value Please						
			Min Delta Output Speed	>= Refer to 3D rpm/sec						
			Hysteresis	supporting						
				documents						
				Table Based						
			If the About is True for The	Refer to Table						
			II the Adove is True for Time	>= 17 in Sec						
				supporting documents						
I				accumento	I		1		I	ı I

			<u> </u>											
Component/	Fault	Monitor Strategy	Malfunction		Threshold		Secondary		Enable			Т	ime	Mil
System	Code	Description	Criteria		Value		Malfunction		Conditions			Req	quired	Illum.
			Intrusive test:	:										
			(CB26 clutch exhausted))										
			(OBEO Olatori Oshladotod)	1										
			Gear Ratio) <=	0.89465332						>=	1.1	Fail Timer (Sec)	
													· · · ·	
			Gear Ratio) >=	0.809448242						>=	3	counts	
			If the above parameters are true	2										
			in the above parameters are trac	-										
											>=	1.1	Fail Timer (Sec)	
											-		1 dii 1 illioi (0000)	
													Fail Count in	
											>=	3	6th Coar	
													Ulli Geal	
													OF	
												2	Total Fail	
											>=	3	Counts	
							DDNDL State defaulted		LVICE	Deeleen			oodinto	
							PRINDL State defaulted	=	FALSE	DUDIEdi				
							inhibit RVI	=	FALSE	Boolean				
							IMS fault pending indication	=	FALSE	Boolean				
							output speed	>=	0	RPM				
							TDC violidity floa	-	TDUE	Deeleen				
							TPS validity flag	=	TRUE	Boolean				
							HSD Enabled	=	TRUE	Boolean				
							Hydraulic System Pressurize							
							d	=	TRUE	Boolean				
							u Long							
							A OR B							
							(A) Output speed enable	>=	67	Nm				
							(B) Accelerator Pedal enable	>-	0 500/883	Nm				
							(b) Accelerator redar chable		0.5004003	Velte				
							ignition voltage Lo	>=	8.5996094	VOILS				
							Ignition Voltage Hi	<=	31.999023	Volts				
							Engine Speed Lo	>=	400	RPM				
							Engine Speed Li	-	7500	DDM				
							Englite Speed Hi	<=	7500	ICE IVI				
							Engine Speed is within the	>=	Б	Soc				
							allowable limits for	/-	J	Jec				
							if Attained Gear=1st FW							
							Association Dedal association	>=	5.0003052	Pct				
							Accelerator Pedal enable							
							if Attained Gear=1st FW		-	Mare				
							Engine Torque Enable	>=	5	INITI				
							if Attained Coar-1st EW							
							II Attained Geal = 1st FW	<=	8191.875	Nm				
							Engine Torque Enable							
							Transmission Fluid							
							Temperature	>=	-6.65625	°C				
							Input Speed Sopcor fault		LVICE	Dooloon				
							Input Speed Sensor Iduit	=	FALSE	DUDIEdi				
							Output Speed Sensor fault	=	FALSE	Boolean				
							Million and till souther all of an	TOM DOT	00717 00700	00700				
					L	isable	MIL not illuminated for	TCM: P071	5, P0/17, P0/22	., P0723,				
					Cond	itions:	DTC's:	P182E						
								FOLL DOLL		Dodo				
								ECM: P010	I, P0102, P0103	5, P0106,				
								P0107, P01	08, P0171, P017	2, P0174,				
								P0175 P02	01 P0202 P020	13 P0204				
								D0205 D02	01,10202,1020	0, 00200,				
								P0205, P02	06, P0207, P020	J8, PU300,				
								P0301, P03	02, P0303, P030)4, P0305,				
								P0306, P03	07. P0308. P040)1. P042F				
									0.111 0000011 010					
				_										0 T .
			Primary Offgoing Clutch is	S										One Trip
Mariahla Dia di Calanald (MDC)	D0777	Pressure Control (PC) Solenoid B	exhausted (See Table 12 in	n	TDUE									
variable Bleed Solenoid (VBS)	PU///	StuckOn [C35R] (Dymanic)	Supporting Documents for	r =	I RUE Boolean		1				1			1
	1	classical [obold] (DJindino)	Exhaust Dolou Timere)				1				1			1
			Exildust Deldy Tillers)	/										
			Primary Oncoming Clutch	ן ר	Maximum									
	1		Pressure Command Status	s –	pressurized		1							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command				
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true run appropriate Fail 1 Timers Below:					
			fail timer 1 (3-1 shifting with Closed Throttle) fail timer 1	>= 0.5 Fail Time (Sec)				
			(3-2 shifting with Throttle)	>= 0.299804688 Fail Time (Sec)				
			(3-2 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			(3-4 shifting with Throttle)	>= 0.299804688 Fail Time (Sec)				
			(3-4shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
			(3-5 shifting with Throttle) fail timer 1	>= 0.299804688 Fail Time (Sec)				
			(3-5 shifting with Closed Throttle) fail timer 1	>= 0.5 Fail Time (Sec)				
			(5-3 shifting with Throttle) fail timer 1	>= 0.299804688 Fail Time (Sec)				
			(5-3 shifting with Closed Throttle) fail timer 1	>= 0.5 Fail Time (Sec)				
			(5-4 shifting with Throttle) fail timer 1	>= 0.299804688 Fail Time (Sec)				
			(5-4 shifting with Closed Throttle) fail timer 1	>= 0.5 Fail Time (Sec)				
			(5-6 shifting with Throttle) fail timer 1	>= 0.299804688 Fail Time (Sec)				
			(5-6 shifting with Closed Throttle)	>= 0.5 Fail Time (Sec)				
							Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				>= Timer 1, and sec	
							Supporting Table 15 for	
			If fail timer is greater than				Fail Limer 2	
			threshold increment corresponding gear fail counter and total fail					
			counter 3rd gear fail counter				>= 3 3rd gear fail	
			-				OR	
			5th gear fail counter				>= 3 counts	
			Total fail counter		TUT Englis tomporature	N- 665405 00	>= 5 total fail counts	
					Input Speed Sensor fault	= FALSE Boolean		

Compon	ent/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time		Mil
Syster	n	Code	Description	Criteria	Value	Malfunction	Conditions	Required		Illum.
						Output Speed Sensor fau	t = EALSE Boolean			
						Command / Attained Gea	r ≠ 1st Boolean			
						High Side Driver Of	TOTIC TOTIC			
						autout apood limit for TU				
						input speed limit for TU	1 >= 100 RFW			
						input speed limit for 10	1 >= 150 RPM			
						PRINDL state defaulte	a = FALSE Boolean			
						IMS Fault Pendin	g = FALSE Boolean			
						Service Fast Learn Mode	e = FALSE Boolean			
						HSD Enable	d = TRUE Boolean			
						Default Gear Option is no	t – TRUE			
						presen	t			
					Disab	Ie MIL not Illuminated fo	r TCM: P0716, P0717, P0722, P0723,			
					Condition	s: DTC's	: P182E			
							ECM: P0101 P0102 P0103 P0106			
							P0107 P0108 P0171 P0172 P0174			
							P0175 P0201 P0202 P0203 P0204			
							D0205 D0206 D0207 D0208 D0300			
							P0203, P0200, P0207, P0206, P0300,			
							P0301, P0302, P0303, P0304, P0305,			
							P0306, P0307, P0308, P0401, P042E			
Variable Bleed Solenoid	l (VBS)	P0796	Pressure Control (PC) Solenoid C	Fail Case 1 Case: Steady State 4th Gear						One Trip
			Stuck Off [C456] (Steady State)							
								Please See		
				Gear slin	>= 400 RPM			Table 5 For No	eutral Timer	
				oddi siip	100 1011			Neutral Time	(Sec)	
								Cal		
				Intrusive test:						
				commanded 5th gear						
				-	Please refer to					
					Table 3 in					
				If attained Gear ≠5th for time	>= Supporting Shift Lime (Sec)				
					Documents					
				if the above conditions have been						
				mei						
				mo				/1	th Gear Fail	
				Increment 4th Gear Fail Counter				>= 3	Count	
									C 456 Eail	
				and C456 Fail Counters				>= 14	Counts	
				Epil Caso 2 Caso: Stoady State Eth Coar					Counts	
			1	Tan Case 2 Case. Steady State Still Geal			1	Diagon Soc		
								Fiedse See		
				Gear slip	>= 400 RPM			>= Neutral Time		
			1				1	iveutral Lime	(Sec)	
								Cal		
			1	Intrusive test						
			1	commanded 6th gear			1			
			1		Please Refer		1			
			1	If attained Gear. ≠ 6th for time	>= to Table 3 in Shift Time (Sec					
					Supporting	′				
					Documents					
			1	if the above conditions have been			1			
				me						
		I I		1				_ 51	th Gear Fail	
1				Incroment File Coor Fall Country						-
				Increment 5th Gear Fail Counter				>= 3	Count	

Value	Malfunction	Conditions	Required	Mil Illum.
			>= 14 C456 Fail	
r			Counts	-
>= 400 RPM			>= Please See Table 5 For Neutral Timer Neutral Time (Sec)	
Plass refer to			Cal	
<pre>>= Table 3 in Supporting Documents</pre>				
t			6th Gear Fail	
r -			>= 3 Count OR C456 Fail	
	PRNDL State defaulted	= FALSE Boolean	Counts	-
	IMS fault pending indication	= FALSE Boolean = FALSE Boolean		
	TPS validity flag Hydraulic System Pressurized	= TRUE Boolean = TRUE Boolean		
	Minimum output speed for	>= 67 RPM		
	A OR B			
	(A) Output speed enable	>= 67 RPM		
	Common Enable Criteria	0.3004003 101		
	Ignition Voltage Lo Ignition Voltage Hi	>= 8.5996094 Volts <= 31.999023 Volts		
	Engine Speed Lo	>= 400 RPM		
	Engine Speed is within the	<= 7500 RPIVI		
	allowable limits for Throttle Position Signal valid	= TRUF Boolean		
	HSD Enabled	= TRUE Boolean		
	Transmission Fluid Temperature	>= -6.65625 °C		
	Input Speed Sensor fault	= FALSE Boolean		
	Default Gear Option is not			
	present			
Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,		
conditions.				
		ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174		
		P0175, P0201, P0202, P0203, P0204,		
		P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305.		
		P0306, P0307, P0308, P0401, P042E		
	Value Value s	Value Matrixetion s	Value Mailunction Conditions s	Value Maturetion Conditions Regured s

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions		Time Required	Mil Illum.
Variable Bleed Solenoid (VBS)	P0797	Pressure Control (PC) Solenoid C	Fail Case 1 Case: Steady State 1st						One Trip
	10777	Stuck On [C456] (Steady State)	Attained Gear slip	>= 400 RPM Table Based Time Please Refer to Table Enable Time 4 in (Sec)					
			Intrusive test: (CBR1 clutch exhausted) Gear Ratio Gear Ratio	<pre></pre>					
			If the above parameters are true				>=	1.1 Fail Timer (Sec)
							>=	2 Fail Count in 1st Gear	
							>=	3 Total Fail Counts	_
			Fail Case 2 Case Steady State 2nd Max Delta Output Speed Hysteresis	Table Based value Please Refer to 3D Table 1 in supporting documents Table Based value Please					
			Min Delta Output Speed Hysteresis	>= Refer to 3D Table 2 in rpm/sec supporting documents Table Based Time Please					
			If the Above is True for Time	>= Refer to Table 17 in Sec supporting documents					
			Intrusive test: (CB26 clutch exhausted) Gear Ratio Gear Ratio If the above parameters are true	<= 1.209594727 >= 1.094360352					
							>=	1.1 Fail Timer (Sec)
							>=	3 Fail Count in 2nd Gear or	
							>=	3 Total fail counts	5
			Fail Case 3 Case Steady State 3rd						1

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	-	Enable Conditions			Tir Reg	me uired	Mil Illum.
			Max Delta Output Speed	Table Based value Please Refer to 3D >= Table 1 in rpm/sec								
			nysteresis	supporting documents Table Based								
			Min Delta Output Speed Hysteresis	>= Refer to 3D Table 2 in rpm/sec supporting								
			If the Above is True for Time	documents Table Based Time Please Refer to Table								
			In the Above is true for time	>= 17 in Sec supporting documents								
			(C35R clutch exhausted) Gear Ratio Gear Ratio	<= 1.209594727 >= 1.094360352								
			If the above parameters are true						>=	1.1	Fail Timer (Sec)	
									>=	3	Fail Count in 3rd Gear	
									>=	OR 3	Total Fail Counts	
					PRNDL State defaulted inhibit RVT	=	FALSE	Boolean Boolean Boolean				
					output speed TPS validity flag	>= =	0 TRUE	RPM Boolean				
					HSD Enabled Hydraulic_System_Pressurize	=	TRUE TRUE	Boolean Boolean				
					a A OR B (A) Output speed enable	>=	67	Nm				
					(B) Accelerator Pedal enable Ignition Voltage Lo	>= >=	0.5004883 8.5996094	Nm Volts				
					Ignition Voltage Hi Engine Speed Lo Engine Speed Hi	<= >= <=	31.999023 400 7500	Volts RPM RPM				
					Engine Speed is within the allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW Accelerator Pedal enable	>=	5.0003052	Pct				
					Engine Torque Enable if Attained Gear=1st FW	>=	5	Nm				
					Engine Torque Enable Transmission Fluid	<=	-6.65625	°C				
					I emperature Input Speed Sensor fault Output Speed Sensor fault	=	FALSE	Boolean				
					Default Gear Option is not present	=	TRUE	Doolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.				
				Disable	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)	P0797	Pressure Control (PC) Solenoid C Stuck On [C456] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 111 in Supporting Documents for Exhaust Delay Timers) Primary Oncoming Clutch Pressure Command Status Primary Offgoing Clutch Pressure Command Status Range Shift Status Range Shift Status Attained Gear Slip If the above conditions are true increment appropriate Fail 1 Timers Below: fail timer 1 (4-1 shifting with throttle) fail timer 1 (4-2 shifting with ut throttle) fail timer 1 (4-2 shifting with throttle) fail timer 1 (4-3 shifting with throttle) fail timer 1 (4-3 shifting with throttle) fail timer 1 (5-3 shifting with throttle) fail timer 1 (5-3 shifting with throttle) fail timer 1 (5-3 shifting with throttle) fail timer 1 (6-2 shifting without throttle) fail timer 1 (6-2 shifting without throttle) fail timer 1 (6-2 shifting without throttle) fail timer 1	a TRUE Boolean b a Maximum pressurized c Clutch exhaust command d a Initial Clutch Control d a Normand d			Total Fail Time = (Fail 1 + Fail 2) See Enable Timers for Fail >= Timer 1, and sec Reference Supporting Table 15 for Fail Timer 2	One Trip				
0	Fault	Manifere Offentianus	Malfamatian			Consultant			r			
----------------------------	-------	--	--	---	------------------------	---	--	---	----	-------------	---	-------------------
Component/	Fault	Monitor Strategy	Criteria	I nresho Valuo	DIG	Malfunction	Ena	litions		Fin Roci	ne	WIII Illum
	0000	Description	If fail timer is greater than threshold increment corresponding gear fail counter and total fail	Value			00110					
			counter 4th gear fail counter						>=	3	Fail Counter From 4th Gear	
			5th gear fail counter						>=	3	OR Fail Counter From 5th Gear OR	
			6th gear fail counter						>=	3	Fail Counter From 6th Gear OR	
			Total fail counter						>=	5	Total Fail Counter	
					Disable Conditions:	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 MIL not Illuminated for DTC's:	>= -6.6 = FA = FA ≠ T >= 1 >= 1 >= 1 = FA = FA = FA = TI TCM: P0716, P0717 P182E ECM: P0101, P0102 P0107, P0108, P017 P0175, P0201, P0202	55625 °C LSE Boolean LSE Boolean Ist Boolean RUE Boolean 100 RPM 150 RPM LSE Boolean LSE Boolean LSE Boolean RUE Boolean RUE Boolean RUE Boolean RUE Boolean RUE Boolean RUE Boolean 2, P0722, P0723,				
							P0205, P0206, P020 P0301, P0302, P030 P0306, P0307, P030)7, P0203, P0204,)7, P0208, P0300,)3, P0304, P0305,)8, P0401, P042E				
Mode Switch	P1762	Transmission Mode Switch Signal Circuit (rolling count)	Rolling count value received from BCM does not match expected value	= TRUE B	Boolean				>=	3	Fail Counter	Special No MIL
						Dattorn Switch Mossage			>	10	Sample Timer (Sec)	
						Haten Switch Message Health Engine Speed Lo Engine Speed is within the allowable limits for	= TI >= 4 <= 7	RUE Boolean 400 RPM 500 RPM 5 Sec				
					Disable Conditions:	MIL not Illuminated for DTC's:	TCM: None ECM: None					
Internal Mode Switch (IMS)	P182E	Internal Mode Switch - Invalid Range	Fail Case 1 Current range	Transition 1 = (bit state R 1110)	Range							One Trip

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres	shold	Secondary Malfunction		Enable Conditions			Time Requir	ed	Mil Illum.
				. C	eTRGR e P	_								
			Previous range	≠ R	NDL_Drive6	Range								
				0										
			Previous range	≠ R	NDL_Drive3	Range								
					Range Shift									
			Range Shift State	=	Completed	ENUM								
			Absolute Attained Gear Slip	<=	50 Sixth	rpm								
			Attained Gear	>=	First									
			Throttle Position Available	=	TRUE									
			I hrottle Position Output Speed	>= 8	200	rom								
			Engine Torque	>=	50	Nm								
			Engine Torque	<=	8191.75	Nm								
			If the above conditions are met								>=	1	Fail Seconds	
			If Fail Timer has Expired then									-	5 1 0 1	
			Increment Fail Counter								>=	5	Fail Counts	
			Fail Case 2 Output Speed The following PRNDL sequence	<=	/0	rpm								
			events occur in this exact order:											
			PRNDL state	=	Drive 6 (bit	Range								
			PRNDL state = Drive 6 for	>=	1	Sec								
					Transition 8	Danas								
			PRINDL State	=	(bit state 0111)	Range								
			PRNDL state	=	Drive 6 (bit	Range								
				-	state 0110) Transition 1									
			PRNDL state	=	(bit state	Range								
					1110)	C								
			Neutral Idle Mode	<=	Inactive	Sec								
			If all conditions above are met											
			Increment delay Timer											
			Increment Fail Timer								>=	3	Fail Seconds	
			delay timer	>=	1	Sec								
			If Fail Timer has Expired then	>=	400	JUL .						2	Fall Counts	
			Increment Fail Counter	_					0 75 05		>=	2	Fall Counts	
			Fail Case 3 Current range	T	ransition 13 (bit state	Range	Previous range	¥	CerrGR_ e PRNDL					
			cu.on higo		0010)		. ronous range		_Drive3					
			Engine Terrus	<u> </u>	8100	Nm	Drovious range	4	CeTRGR_					
			Engine Torque	>=	-0172	INITI	Previous range	+	_Drive3					
			Engine Torque	<=	8191.75	Nm	IMS is 7 position configuration	=	0	Boolean				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Threshold Value	Secondary Malfunction	-	Enable Conditions		Tin Requ	ne iired	Mil Illum.
·			If the above conditions are met then, Increment Fail Timer	t		1 then the "previous range" criteria above must also be satsified when the "current			>=	0.225	Seconds	
			If Fail Timer has Expired then Increment Fail Counter			2000 - Transmon 17			>=	15	Fail Counts	
			Fail Case 4 Current range	. =	Transition 8 (bit state Range 0111)	Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8						
			Inhibit bit (see definition)	=	FALSE	Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park)						
			Steady State Engine Torque Steady State Engine Torque If the above conditions are met then Increment Fail Timer	e >= e <=	100 Nm 8191.75 Nm				>=	0.225	Seconds	
			If the above Condtions have been met, Increment Fail Counter						>=	15	Fail Counts	
			Fail Case 5 Throttle Position Available The following PRNDL sequence events occur in this exact order:	=	TRUE Boolean							
			PRNDL State	e =	Reverse (bit state 1100) Transition 11							
			PRNDL State	=	(bit state Range 0100) Neutral (bit							
			PRNDL State	2 =	state 0101) Transition 11							
			PRNDL State	=	(bit state Range 0100)							
			Then delay timer increments Delay timer	>=	5 sec							
			Range Shift State	=	Range Shift Complete							
			Absolute Attained Gear Slip Attained Gear Attained Gear	<pre> <= <= >=</pre>	50 rpm Sixth First							
			Throttle Position Output Speed	>= >=	8.000183105 pct 200 rpm							
			If the above conditions are met Increment Fail Timer	-	Ille wel /h2k				>=	20	Seconds	
			Fail Case 6 Current range	-	state 0000 or 1000 or 0001)	A Open Circuit Definition (flag set false if the following conditions are met):						
			and			Current Range	¥	Transition 11 (bit state 0100)				
			A Open Circuit (See Definition)	=	FALSE Boolean	or		N				
						Last positive state	¥	Neutral (bit state 0101)				
						or						

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	T	Tim	0	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions		Requi	ired	Illum.
					Previous transition state	Transition ≠ 8 (bit state 0111)				
			If the above Condtions are met then, Increment Fail timer		Fail case 5 delay timer	= 0 sec	>=	6.25	Seconds	
			Fail Case 7 Current PRNDL State	= PRNDL circuit ABCP = 1101 Range						
			and Previous PRNDL state	= PRNDL circuit ABCP =1111 Range						
			Input Speed Reverse Trans Ratio Reverse Trans Ratio	>= 150 RPM <= 2.975952148 ratio >= 3.423950195 ratio						
			If the above Condtions are met then, Increment Fail timer				>=	6.25	Seconds	_
										-
			P 182E will report test fail when any of the above 7 fail cases are met							
					Ignition Voltage Lo Ignition Voltage Hi	>= 8.5996094 Volts <= 31.999023 Volts				
					Engine Speed Lo Engine Speed Hi Engine Speed is within the	i <= 400 RPM <= 7500 RPM				
					allowable limits for Engine Torque Signal Valid	>= 5 Sec = TRUE Boolean				
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723, P07C0, P078E, P077C, P0720,				
						ECM: P0101, P0102, P0103, P0106,				
						P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300,				
						P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On [CB26] (Dynamic)	Primary Offgoing Clutch is exhausted (See Table 13 in Supporting Documents for	= TRUE Boolean						One Trip
			Exnaust Delay Timers) Primary Oncoming Clutch Pressure Command Status	= Maximum pressurized						
			Primary Offgoing Clutch Pressure Command Status	= Clutch exhaust command						
			Range Shift Status Attained Gear Slip	<pre></pre>						
			If above coditons are true, increment appropriate Fail 1 Timers Below:							

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria		Thres Valu	hold Je	Secondary Malfunction		Enable Conditions			Tim Requi	e red	Mil Illum.
			fail timer 1 (2-1 shifting with throttle) fail timer 1 (2-1 shifting without throttle) fail timer 1	>= 0	0.5	Fail Time (Sec) Fail Time (Sec)								
			(2-3 shifting with throttle) fail timer 1	>= 0	0.5	Fail Time (Sec)								
			(2-3 shifting without throttle) fail timer 1 (2-4 shifting with throttle)	>= 0	0.299804688	Fail Time (Sec)								
			fail timer 1 (2-4 shifting without throttle)	>=	0.5	Fail Time (Sec)								
			fail timer 1 (6-4 shifting with throttle)	>= 0).299804688	Fail Time (Sec)								
			fail timer 1 (6-4 shifting without throttle) fail timer 1	>=	0.5	Fail Time (Sec)								
			(6-5 shifting with throttle) fail timer 1	>= 0	0.5	Fail Time (Sec)								
			(6-5 shifting without throttle)	>=	0.5	rali fille (Sec)								
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers								To = 2) Tii >= T :	tal Fail Time (Fail 1 + Fail See Enable mers for Fail imer 1, and Reference Supporting Table 15 for Fail Timer 2	sec	
			If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter											
			2nd gear fail counter								>=	3	Fail Counter From 2nd Gear	
			6th gear fail counter								>=	3	OR Fail Counter From 6th Gear OR	
			total fail counter								>=	5	Total Fail Counter	
							TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled	>= = = = = = = =	-6.65625 FALSE FALSE 1st TRUE 100 150 FALSE FALSE FALSE TRUE	°C Boolean Boolean Boolean RPM RPM Boolean Boolean Boolean Boolean				

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable		Tim	ired	Mil
Jystem	Code	Description	ontenta	Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,	1	nequ	licu	
				Conditions:	DTC's:	P182E				
						FCM: P0101 P0102 P0103 P0106				
						P0107, P0108, P0171, P0172, P0174,				
						P0175, P0201, P0202, P0203, P0204,				
						P0205, P0206, P0207, P0208, P0300, P0301_P0302_P0303_P0304_P0305				
						P0306, P0307, P0308, P0401, P042E				
Variable Bleed Solenoid (VBS)	P2715	Pressure Control (PC) Solenoid D Stuck On ICB261 (Steady State)	Fail Case 1 Case: Steady State 1:	st						One Trip
		Static on [OD20] (Steady State)	Attained Gear sl	p >= 400 RPM						
				Table Based						
				Time Please Refer to Table Enable Time						
			If the Above is True for Tim	e >= 4 in (Sec)						
				supporting						
			Intrusive tes	documents t:						
			(CBR1 clutch exhausted	()						
			Gear Rat	0 <= 2.482177734						
			If the above parameters are tru	e 2.243649009						
							>=	1.1	Fail Timer (Sec))
									Fail Count in	ĺ
							>=	5	1st Gear	
									Or Tabal Fall	
							>=	5	Counts	
			Fail Case 2 Case: Steady State 3rd Gea	ar						
				Lable Based						
			Max Delta Output Spee	d Refer to 3D						
			Hysteres	s Table 1 in						
				documents						
				Table Based						
			Min Dolta Output Spec	value Please						
			Hysteres	>= Table 2 in rpm/sec						
				supporting						
				documents Table Based						
				Time Please						
			If the Above is True for Tim	e >= Refer to Table Sec						
				supporting						
				documents						
			Intrusive tes	t: A						
			Gear Rat	0 <= 2.482177734						
			Gear Rat	0 >= 2.245849609						
			If the above parameters are tru	e						
							>=	1.1	Fail Timer (Sec))
							>=	3	Fail Count in 3rd Gear	

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Tin Reau	ne ired	Mil Illum.
- , - 1011								or	
							>= 5	Total Fail Counts	
			Fail Case 3 Case: Steady State 4rd Gear					Counts	
				Table Based					
			Max Delta Output Speed	Refer to 3D					
			Hysteresis	>= Table 1 in					
				documents					
				Table Based					
			Min Delta Output Speed	Refer to 3D					
			Hysteresis	>= Table 2 in rpm/sec					
				supporting documents					
				Table Based					
				Time Please Refer to Table					
			If the Above is True for Time	>= 17 in Sec					
				supporting documents					
			Intrusive test:	doodmonto					
			(C1234 clutch exhausted) Gear Ratio	<= 0.700317383					
			Gear Ratio	>= 0.633666992					
			If the above parameters are true						
							>= 1.1	Fail Timer (Sec)	
							>= 3	4th Gear	
								Or Total Fail	
							>= 5	Counts	
			Fail Case 4 Case: Steady State 5th Gear	Table Decod					
				value Please					
			Max Delta Output Speed	>= Refer to 3D Table 1 in rpm/sec					
			Tysiciesis	supporting					
				documents Table Pased					
				value Please					
			Min Delta Output Speed	>= Refer to 3D Table 2 in rpm/sec					
			Tysiciesis	supporting					
				documents Table Based					
				Time Please					
			If the Above is True for Time	>= Refer to Table Sec					
				supporting					
			Intrusivo tost.	documents					
			(C35R clutch exhausted)						
			Gear Ratio	<= 0.700317383 >= 0.633666992					
			If the above parameters are true	- 0.00000772					

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable		Ti	ime	Mil
System	Code	Description	Criteria	Value	Malfunction	Conditions		Req	luired	Illum.
							>=	1.1	Fail Timer (Sec)	
							>=	2	Fail Count in	
							>=	3	5th Gear	
									Or Total Fail	
							>=	5	Counts	
					PRNDL State defaulted	i = FALSE Boolean			Counts	
					inhibit RVT	= FALSE Boolean				
					IMS fault pending indication	n = FALSE Boolean				
					output speed	1 >= 0 RPM				
					I PS validity flag) = IRUE Boolean				
					Hydraulic System Pressurize					
					d	= TRUE Boolean				
					A OR B	3				
					(A) Output speed enable	e >= 67 Nm				
					(B) Accelerator Pedal enable	e >= 0.5004883 Nm				
					Ignition Voltage Lo	>= 8.5996094 Volts				
					Ignition Voltage Hi	1 <= 31.999023 Volts				
					Engine Speed Lu	i <= 7500 RPM				
					Engine Speed is within the					
					allowable limits for	r >= 5 Sec				
					if Attained Gear=1st FW	/				
					Accelerator Pedal enable					
					if Attained Gear=1st FW	/ >= 5 Nm				
					Engine Torque Enable	2				
					Engine Torque Enable	<= 8191.875 Nm				
					Transmission Fluid	1				
					Temperature	>= -6.65625 °C				
					Input Speed Sensor fault	t = FALSE Boolean				
					Output Speed Sensor fault	t = FALSE Boolean				
					Default Gear Option is not	t = TRUE				
					present	t				
				Disable	MIL not Illuminated for	TCM: P0716, P0717, P0722, P0723,				
				Conditions	DTC's:	: P182E				
						ECM. 00101 00102 00102 00104				
						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				
			Drimony Officiana Clutch in							One Trin
		Pressure Control (PC) Solenoid F	Primary Origoing Clutch IS exhausted (See Table 10 in							
Variable Bleed Solenoid (VBS)	P2724	Stuck On (Dynamic)	Supporting Documents for	= TRUE Boolean						
		······································	Exhaust Delay Timers)							
			Primary Oncoming Clutch	Maximum						
1			Pressure Command Status	pressurized						
			Primary Offgoing Clutch Pressure	Clutch exhaust						
			Command Status	= command						

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction	Enable Conditions	Time Required	Mil Illum.
			Range Shift Status	≠ Initial Clutch Control				
			Attained Gear Slip	<= 40 RPM				
			If the above conditions are true increment appropriate Fail 1					
			Timers Below:					
			(2-6 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (2-6 shifting without throttle)	>= 0.5 sec				
			fail timer 1	>= 0.299804688 sec				
			(3-5 Shirting with throttle) fail timer 1	N= 0.5 500				
			(3-5 shifting without throttle) fail timer 1	>= 0.0 Set				
			(4-5 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1 (4-5 shifting without throttle)	>= 0.5 sec				
			fail timer 1 (4-6 shifting with throttle)	>= 0.299804688 sec				
			fail timer 1	>= 0.5 sec				
			(4-6 shifting without throttle)				Total Cail Time	
							= (Fail 1 + Fail	
							2) See Enable Timers for Fail	
			If Attained Gear Slip is Less than Above Cal Increment Fail Timers				>= Timer 1, and sec	
							Supporting	
							Table 15 for Fail Timer 2	
			If fail timer is greater than					
			threshold increment corresponding					
			gear fail counter and total fail counter	-				
			2nd gear fail counter				>= 3 Fail Counter From 2nd Gear	
							Fall Country	
			3rd gear fail counter				>= 3 Fail Counter From 3rd Gear	
							- Fail Counter	
			4th gear fail counter				>= 3 From 4th Gear	
			total fail counter				>= 5 Total Fail	
					TUT Enable temperature	>= -6.65625 °C	Counter	
					Input Speed Sensor fault	= FALSE Boolean		
					Command / Attained Gear	= FALSE Buolean ≠ 1st Boolean		
					High Side Driver ON output speed limit for TUT	= TRUE Boolean >= 100 RPM		
					input speed limit for TUT	>= 150 RPM		
					IMS Fault Pending	= FALSE Boolean = FALSE Boolean		
					Service Fast Learn Mode	= FALSE Boolean = TRUF Boolean		

Component/	Fault	Monitor Strategy	Malfunction	Threshold	Secondary Malfunction	Enable	Time	Mil Illum
System	Code	Description	Gnena	Value	Manufiction	Conditions	Requir	eu mum.
				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, P042F		
Variable Bleed Solenoid (VBS)	P2724	Pressure Control (PC) Solenoid E Stuck On (Steady State)	Fail Case 1 Case: 5th Gea	ır				One Tri
			Max Delta Output Speec Hysteresis	d s >= Table Base Refer to 3D Table 1 in supporting				
			Min Delta Output Speed Hysteresis	documents Table Based value Please s >= Refer to 3D Table 2 in rpm/sec supporting				
			If the Above is True for Time	documents Table Based Time Please Refer to Table 17 in Supporting				
			Intrusive test (C35R clutch exhausted) Gear Ratic	documents t: i) o <= 1.209594727				
			Gear Ratio	o >= 1.094360352 e				
							>= 1.1	Fail Timer (Sec) Fail Count in
							~ 3	5th Gear OR Total Fail
			Fail Case 2 Case: 6th Gea	ir Tabla Pasad			>- 5	Counts
			Max Delta Output Speec Hysteresis	d s >= Table based value Please Refer to 3D Table 1 in supporting				
			Min Delta Output Speec Hysteresis	documents Table Based value Please d s >= Refer to 3D Table 2 in supporting documents				

Component/ System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Malfunction		Enable Conditions			Ti Rec	ime wired	Mil Illum.
Jyatem	Joue	Description		Table Based						noq		
				Time Please		1						
			If the Alberta is True for Time	Refer to Table		1						
			If the Above is true for time	>= 17 in Sec		1						
				supporting		1						
				documents		1						
			Intrusive test:			1						
			(CB26 clutch exhausted)			1						
			Gear Ratio	<= 1.209594727		1						
			Gear Ratio	>= 1.094360352		1						
			If the above parameters are true			1						
						1			>=	1.1	Fail Timer (Sec)	
						1					Fall Count in	
						1			>=	3	Fall Count In	
						1						
						1					Total Fail	
						1			>=	3	Counts	
					PRNDL State defaulted	=	FALSE	Boolean				
					inhibit RVT	=	FALSE	Boolean				
					IMS fault pending indication	=	FALSE	Boolean				
					output speed	>=	0	RPM				
					TPS validity flag	=	TRUE	Boolean				
					HSD Enabled	=	TRUE	Boolean				
					Hydraulic_System_Pressurize	=	TRUF	Boolean				
					d	1						
					A OR B	1	(7	N.				
					(A) Output speed enable (D) Accelerator Dodal enable	>=	0/	NIII				
					(D) ACCEREIATOL PEUAL ETIADIE	>=	0.0004000	Volte				
					Ignition Voltage Lo	~-	31 000023	Volts				
					Engine Speed Lo	>=	400	RPM				
					Engine Speed Hi	<=	7500	RPM				
					Engine Speed is within the	1	-	0				
	1				allowable limits for	>=	5	Sec				
					if Attained Gear=1st FW	\	5 0003052	Det				
					Accelerator Pedal enable		3.0003032	T CL				
					if Attained Gear=1st FW	>=	5	Nm				
					Engine Torque Enable	-	0					
					if Attained Gear=1st FW	<=	8191.875	Nm				
	1				Engine Torque Enable	1						
					Temperature	>=	-6.65625	°C				
					Input Speed Sensor fault	=	FALSE	Boolean				
	1				Output Speed Sensor fault	-	FALSE	Boolean				
					Default Gear Option is not	1	TRUE	20010011				
					present	=	TRUE					
	1					1						
						1						1

Component/ F	Fault	Monitor Strategy	Malfunction	Threshold	Secondary	Enable	Time	Mil
System C	Code	Description	Criteria	Value	Malfunction	Conditions	Required	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		

<u> Table 1</u>										
	Axis	0.00	64.00	128.00	192.00	256.00	320.00	384.00	448.00	512.00 N*m
	Curve	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00 RPM
Table 2										
Table 2	Axis	-6 67	-6.66	40.00 %						
	Curve	409.59	2.00	2.00 S	ec					
			2.00	1.00						
Table 3	_									
	Axis	-6.67	-6.66	40.00 °(C					
	Curve	409.59	4.00	4.00 S	ec					
Table 4										
Table 4	Avis	-6.67	-6 66	40.00 %						
	Curve	409.59	2.00	2.00 S	ec					
Table 5	_									
	Axis	-6.67	-6.66	40.00 °(C					
	Curve	409.59	3.00	3.00 S	ec					
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 Se	ec			
			I		I					
<u>Table 7</u>	_									
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C	,			
	Curve	409.00	3.40	1.40	1.30	1.20 Se	ec			
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 Se	ec			
			0.00							

Table 9									
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C			
	Curve	409.00	3.30	1.30	1.20	1.10 Se	с		
Table 10	🗖			(0.00					
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C			
	Curve	3.03	1.86	1.00	0.75	0.58 Se	С		
Table 11									
	Avis	-6.67	-6 66	40.00	80.00	120.00 °C			
	Curve	1 72	1 11	0.60	00.00	0.22.5e	c		
		1.12	1.1.1	0.00	0.00	0.22 00	0		
Table 12									
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C			
	Curve	2.12	1.39	0.84	0.64	0.33 Se	с		
Table 13									
	Axis	-6.67	-6.66	40.00	80.00	120.00 °C			
	Curve	2.51	0.95	0.50	0.29	0.13 Se	С		
Table 14									
	Axis	-6.67	-6 66	40.00	80.00	120.00 °C			
	Curve	2.97	0.82	0.47	0.20	0.13 Se	с		
		2.07	0.02	0.11	0.20	0.10	•		
Table 15									
	Axis	-40.00	-30.00	-20.00	-10.00	0.00	10.00	20.00	30.00
	Curve	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Table 16	🗖	0.05	0.00	10.00					
	Axis	-6.67	-6.66	40.00 °C	,				

40.00 °C

0.00 Sec

16 OBDG05 2D Summary Tables TCM LFX Caprice PPV 6 Speed T43



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 ^o	С
Curve	256.00	50.00	45.00	40.00	34.00	25.00	20.00	20.00	256.00 °	С

Table 19

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

<u>Table 20</u>

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

<u>Table 21</u>

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

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Lateral Acceleration Sensor Signal	C124F	Lateral Acceleration Sensor Circuit Low	Lateral Acceleration Sensor Signal Value	<= -3.85 [G]	Ignition Voltage Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 3 sec continuously > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	180 sec	No MIL "Special C"
					Diagnostic Service Request to Disable Normal	(all 4 criteria for 2 [sec] continuously) = NOT PRESENT		
					U0121 (Lost Communication with Anti-Lock Brake System (ABS) Control Module) P0826 (Up and Down Shift Switch Circuit)	= NOT DETECTED = NOT DETECTED		
					C1251 (Lateral Acceleration Sensor Performance)	= NOT DETECTED		
					P175F (Acceleration Sensor Signal message Counter Incorrect)	= NOT DETECTED		
Lateral Acceleration Sensor Signal	C1250	Lateral Acceleration Sensor Circuit High	Lateral Acceleration Sensor Signal Value	>= 3.85 [G]	Ignition Voltage Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	 > 9000 [mV] for 3 sec continuously > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously) 	180 sec	No MIL "Special C"
					Diagnostic Service Request to Disable Normal Communication U0121 (Lost Communication with Anti-Lock Brake System (ABS) Control Module) P0826 (Up and Down Shift Switch Circuit)	= NOT PRESENT = NOT DETECTED = NOT DETECTED		
					C1251 (Lateral Acceleration Sensor Performance) P175F (Acceleration Sensor Signal message	= NOT DETECTED = NOT DETECTED		
	04054				Counter Incorrect)		0.40	
Lateral Acceleration Sensor Signal	C1251	Lateral Acceleration Sensor Performance	Lateral Acceleration Sensor Signal Value	= unchanged	Ignition Voltage Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 3 sec continuously > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	240 msec	No MIL "Special C"
					Diagnostic Service Request to Disable Normal Communication U0121 (Lost Communication with Anti-Lock Brake System (ABS) Control Module) C124F (Lateral Acceleration Sensor Circuit Low)	= NOT PRESENT = NOT DETECTED = NOT DETECTED		
					C1250 (Lateral Acceleration Sensor Circuit High)	= NOT DETECTED		
					P175F (Acceleration Sensor Signal message Counter Incorrect) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) Vehicle Speed Absolute Value of Lateral Acceleration Sensor Signal Value CAN signal	= NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED >= 15 [kph] 0.53 [G] < "Value" < 3.85 [G]		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
System Voltage	P0563	System Voltage High	Battery Voltage	> 18 [V]	Ignition Voltage The Input Speed signal is available from the Input Speed Sensor Input Speed P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) OR Ignition Voltage Engine speed Engine speed signal validity U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A")	> 9000 [mV] = TRUE > 400 [rpm] for [> 2 sec] = NOT DETECTED = NOT DETECTED = NOT DETECTED > 9000 [mV] > 400 [rpm] for [> 2 sec] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED	10 sec	1
Internal Control Module Memory	P0601	Internal Control Module Memory Checksum Error	Read each memory location in the Flash ROM and calculate the checksum. Compare the calculated checksum to the checksum originally stored in Flash ROM.	Checksums do not match	Ignition Voltage (Diagnostic test is only executed during TCM initialization, immediately after the TCM is powered up)	> 9000 [mV]	100 msec	1
Internal Control Module Memory Keep Alive Memory (KAM)	P0603	Internal Control Module Keep Alive Memory (KAM) Error	Compare calculated checksum with stored checksum.	Checksums do not match	Ignition Voltage (Diagnostic test is only executed during TCM initialization, immediately after the TCM is powered up)	> 9000 [mV]	100 msec	1
Internal Control Module Random Access Memory (RAM)	P0604	Internal Control Module Random Access Memory (RAM) Error	Compare memory location with expected value that was written to it (0x55555555 or 0xAAAAAAAA)	If any 8-bit memory location reads a different number than was written to it, the TCM recognizes this as a RAM malfunction.	Ignition Voltage (Diagnostic test is only executed during TCM initialization, immediately after the TCM is powered up)	> 9000 [mV]	100 msec	1
Transmission Control Module (TCM)	P0606	Control Module Processor	Main Processor Failure This TCM is an ISO 26262 (System Functional Safety) compliant module. In order to confirm that the TCM control system functioning properly, the TCM is equipped with a secondary CPU which validates the basic operation / calculations of the primary CPU (and utilimately, the control system		(none)	(none)	10 msec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			software). There are several Safety Integrity Functions which are capable of detecting microprocessor or TCM hardware related malfunctions, which would require the activation of safe state reactions.					
			The TCM performs checks on the processor performance every 10 msec. If any of the following checks fail a single time, then this malfunction is confirmed.	- TDUE				
			ROM Check malfunction confirmed RAM Check malfunction confirmed	= TRUE = TRUE				
Transmission Control Module	D0/0/	Control Madula Drassoor	Program Flow Check malfunction confirmed	= IRUE			10 maga	1
(TCM)	10000		The Main and Sub Processor both check for correct communication with eachother every 10 msec. If either processor detects a communication error a single time, this malfunction is confirmed. Communication Error between Main and Sub Processors is detected	= TRUE	(none)	(none)	i u insec	
Transmission Control Module (TCM)	P0606	Control Module Processor	Solenoid Cut Malfunction (Main OR Sub Processor Solenoid Cut Line) During a TCM power-down, both the Primary and Secondary CPU's perform a test on their ability to cut (override) the command current to the linear shift solenoids. The basic test performed by each CPU is as follows: • After commanding an all solenoid current cut, the feedback current from linear solenoids SL1 to SL5 (all drive clutch linear solenoids) is less than a calibrated threshold for a calibrated time period. (Note that this calibrated threshold is less than the solenoid standby current) If the above test does NOT pass, a malfunction is assumed and a flag is stored in the TCM non- volatile memory. Upon the next TCM power-up, the OBD system will report the malfunction and illuminate the MIL. Main Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5) OR Sub Processor Solenoid Cut Request Feedback Current for any of the solenoids (SL1 - SL5)	= ACTIVE > 20 [mA] = ACTIVE > 20 [mA]	TCM is powering down (Ignition Voltage transitions from High to Low)	= TRUE	100 msec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Transmission Range Sensor "A" Circuit	P0705	Transmission Range Switch Circuit	Transmission Range Sensor P,R,N, and D Circuits Vehicle Speed P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse)	> (Battery Voltage - 2 [V]) >= 30 [kph] = NOT DETECTED = NOT DETECTED = NOT DETECTED	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its Emergency Mode (*4)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE	30 sec	1
Transmission Range Sensor "A" Circuit	P0706	Transmission Range Switch Performance	2 or more Transmission Range Sensor P,R,N, or D Circuits	< 2 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	5 sec	1
Transmission Fluid Temperature Sensor "A" Circuit	P0711	Transmission Fluid Temperature Sensor "A" Circuit Range/Performance	Difference between Initial ATF Temperature Value and the Initial Engine Coolant Temperature Value (*) (*) After the Ignition Switch is turned ON and the TCM is initialized, the difference between the ATF Temperature and Engine Coolant Temperature is stored in memory. Once the enable criteria have been met, that value is compared to a calibrated threshold. If the value exceeds the calibrated threshold, the TCM will determine that the ATF temperature is not rational and that a malfunction has occurred.	> Difference_Temp_Map (*13)	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory ATF Temperature at Power-up ATF Temperature at Power-up ATF Temperature Vehicle Speed Change in Engine Coolant temperature Propulsion System Off Time Propulsion System Off Time Validity Engine Coolant Temperature Signal Status U0073 (CAN Bus-OFF) U0100 (Lost Communication with ECM/PCM "A") P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Emergency Mode ("4) Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE	 > 9000 [mV] for 10 [msec] continuously > 10.2 [V] < 32.0 [V] > 400 [RPM] > VALID > NOT DETECTED > NOT DETECTED -55 [deg C] < ATF Temp < 200 [deg C] > 20 [deg C] > 20 [deg C] > 24 [km/h], for [400 sec cumulatively] > +5 [deg C] > 8 [hours] = VALID = NOT DETECTED = NOT ACTIVE > 8 [sec] 	10 msec	2
Transmission Fluid Temperature Sensor "A" Circuit	P0711	Transmission Fluid Temperature Sensor "A" Circuit Range/Performance	ATF Temperature (*) (*) <detection1> The first diagnostic is designed to check the ATF temperature value at start-up and confirm that it gradually increases over a period of time, once the</detection1>	<= 20 [deg C]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A")	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID	10 min	2

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			vehicle has been driven at a speed above a calibrated threshold. This is done by checking if the ATF temperature has remained below a calibrated threshold value for a calibrated period of time. This diagnostic routine will only be able to detect a malfunction if the actual ATF temperature at TCM power-up is less than the aforementioned threshold value.		U0073 (CAN Bus-OFF) ATF Temperature P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Vehicle speed Emergency Mode (*4) Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE	= NOT DETECTED -55 [deg C] < ATF Temp < 200 [deg C] = NOT DETECTED = NOT DETECTED Not in P, R or N Range = NOT DETECTED = NOT DETECTED >= 40 [km/h] (One time during the drive cycle) = NOT ACTIVE = NOT ACTIVE > 8 [sec]		
			OR ATF Temperature T/C Heat Load (*) <detection2> The second diagnostic checks for a stuck ATF value by analyzing the estimated torque converter (T/C) Heat Load (*) over time. The T/C heat load calculation is used by other existing transmission controls, and therefore provides an excellent metric by which the rationality of the ATF temperature value can be determined during warm-up. For this diagnostic test, the T/C Heat Load, which is calculated each task cycle by the TCM, is continually summed. Over time, this sum will become a large value, and during that time the ATF temperature must be increasing. A malfunction is determined if the value of the ATF temperature has remained below a calibrated threshold temperature and the value of the T/C Heat Load Sum becomes greater than a calibrated threshold (based on the ATF temperature value becomes less than the value stored when the summing of the T/C heat load started, or exceeds the calibrated threshold, the heat load calculation sum will be cleared. (*) T/C Heat Load = (TCCF x Torque Capacity x (Engine Speed – Input Speed x Tr)) [kW] TCCF: T/C Capacity Factor Tr: Torque Ratio (Note): The Heat Load is only calculated if the Output Speed is greater than a calibrated</detection2>	<= 20deg.C >= otcal_map (*3)	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its ATF Temperature P0713 (Transmission Fluid Temperature Sensor *A* Circuit High) P0712 (Transmission Fluid Temperature Sensor *A* Circuit Low) Emergency Mode (*4) Input Speed CAN signal validity Output Speed CAN signal validity	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT ACTIVE = VALID = VALID	193 sec minimum (Depending on the vehicle operating conditions and driving pattern, this algorithm may take longer than 10 min to detect a malfunction. In that case, the algorithm above will catch the malfunction first.)	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description	l		1		Required	Illum.
Transmission Fluid Temperature Sensor "A" Circuit	P0712	Transmission Fluid Temperature Sensor "A" Circuit Low	Transmission Fluid Temperature Sensor Value	> 200 [degC]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	60 sec	1
Transmission Fluid Temperature Sensor "A" Circuit	P0713	Transmission Fluid Temperature Sensor "A" Circuit High	Transmission Fluid Temperature Sensor Value	< -55 [degC]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Drive Time (*) (*) Drive Time is defined as follows: Range Selector Position Switch P0705 (Range Selector Switch B+ Short / Open) P0706 (Range Selector Switch GND Short)	 > 9000 [mV] for 10 [msec] continuously > 10.2 [V] < 32.0 [V] > 400 [RPM] > VALID = NOT DETECTED > 1 [minute] (cumulative) = D Range = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED 	12 sec	1
Input/Turbine Speed Sensor "A" Circuit	P0717	Input/Turbine Speed Sensor "A" Circuit No Signal	Number of pulses received from the Output Speed Sensor while no pulses are received from the Input Speed Sensor. The time to complete the test is a function of output shaft speed.	>= 6500 pulses	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode ("4) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously C1 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously C2 OFF CONTO (DUPU Speed Sensor Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2749, P0963, P2763, P0966, P0970, P2720, P2739, P0963, P2763, P0964, P09710, P2720, P2749, P2748, P2748, P0962, P2764	<pre>> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_C1ctrlFin (*1) T_C3ctrlFin (*1) >= 2nd Gear = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED >= 300 RPM = NOT DETECTED ALL = NOT DETECTED</pre>	At Max Output Speed: 2.4 [sec] At Min Output Speed: 54.2 [sec]	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE	= NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT ACTIVE >= 8 sec		
Output Speed Sensor Circuit	P0722	Output Speed Sensor Circuit No	Number of pulses received from the Input Speed	>= 13000 pulses	Ignition Voltage	> 9000 [mV] for 10 [msec]	At Max Input Speed:	1
		Signal	Sensor while no pulses are received from the Output Speed Sensor. The time to complete the test is a function of input shaft speed.		Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM 'A') U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode ("4) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously C1 OFF Control has been INACTIVE for this amount of time continuously C2 OFF Control has been INACTIVE for this amount of time continuously P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) Output Speed calculated by Input Speed sensor P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High)	continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all & criteria for 2 [sec] continuously) = NOT ACTIVE = D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_C1ctrlFin (*1) T_C3ctrlFin (*1) = NOT DETECTED = NOT DETECTED	8.9 [sec] At Idle Input Speed: 108.3 [sec]	
					Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been	= NOT ACTIVE		
Gear Patio (6th Gear)	D0720	Coar 6 Incorrect Datio	Difference between actual Coar Datio and 4th	> 20 [%]	INACTIVE	>= 8 [sec]	12 sec (cumulatively)	1
Gear Ratio (6th Gear)	P0/29	Gear o incorrect katio	Gear Ratio	> ZU [%]	Current Gear	= 6TH GEAR	12 sec (cumulatively)	1
					Output Speed Ignition Voltage Battery Voltage Battery Voltage	>= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V]		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725,			
					P2734, P0748, P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					-	-		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of	- 5 ()		
					time continuously	T ShiftFin (*1)		
					The Input Speed signal is available from the Input			
					Speed Sensor	= TRUE		
					The Output Speed signal is available from the			
					Output Speed Sensor	= TRUE		
					ATE Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	THEOL		
					amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as			
					a reaction to Safe Gear Control.	= TRUE		
					AND the following conditions	are NOT satisfied		
					Difference between actual Gear Ratio and 7th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
Gear Ratio (6th Gear Stuck)	P0729	Gear 6 Incorrect Ratio	Difference between actual Gear Ratio and 7th	< 4 %			5 sec	1
. ,			Gear Ratio		Current Gear	= 01H GEAR		
					Output Speed	>= 60 [rpm]		
					Innut Torque	>= 50 [Nm] OR <= -50 [Nm]		
					input rorque	(occur at least 1 time during detection)		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with FCM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)			
					Neutral Avoidance Control			
					Celencid Cut Condition (*Nete 2)			
					Solenou Cut Conulion (Note 5)			
					Time since Solehold Cut (Note 3) control has been	> 8 [Sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					P0962, P2764, P0778, P0798, P2716, P2725.			
					P2734 P0748 P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					D07DE (Input/Turbing Speed Sensor "A" Circuit			
					Low			
					P0/17 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)			
					Range Selector Position Switch	= D Range		
						5		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)			
					Carage Shift Control has been INACTIVE for this			
					Galage Shirt Control has been in ACTIVE for this			
						T_GarageFin (T)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input	= TRUF		
					Speed Sensor	- INOE		
					The Output Speed signal is available from the	- TRUE		
					Output Speed Sensor			
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this			
					amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as			
					a reaction to Safe Gear Control	= TRUE		
					a reaction to oure dear control.			
Gear Ratio (1st Gear Stuck)	P0731	Gear 1 Incorrect Ratio	Difference between actual Gear Ratio and 2nd	< 4 [%]			2 25 sec	1
	10/51		Gear Ratio	< 1 [20]	Current Gear	= 1ST GEAR	2.20 306	
				I	Output Speed	>= 60 [rpm]		
			Difference between actual Coar Datio and and	4 [9/]	Output Speed	>- 00 [i'pili]		
			Coor Dette	< 4 [70]	Input Speed	<= 6000 [rpm]		
1	I	I	Gear Katio	l				

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
						{if ATF Temp >= 0 [degC]}		
			OR		Engine Torque	>= 80 [Nm]		
					Lighto Forquo	{if ATF Temp < 0 [degC]}		
						>= 150 [Nm]		
			Difference between actual Gear Ratio and 4th	< 4 [%]	Ignition Voltage	> 9000 [mV] for 10 [msec]		
			Gear Ratio	1	Battery Voltage	> 10.2 [V]		
			UR Difference between estual Coar Datie and Eth	. 4 00/1	Battery Voltage	<= 32.0 [V]		
			Coor Detio	< 4 [%]	Engine Speed	> 400 [RPIVI] - VALID		
			Gedi Raliu		LI0100 (Lost Communication with ECM/DCM "A")			
					LI0073 (CAN BUS-OFF)	= NOT DETECTED		
					The TCM has completed the read operation of its			
					non-volatile memory	(all 8 criteria for 2 [sec] continuously)		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					P0974 (Shift Solenoid "A" Control Circuit High)			
					P0973 (Shift Solenoid "A" Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2/03, P0900, P09/0, P2/20, P2/29, P2/30, D0062, D2764, D0779, D0709, D2716, D2725			
					P0702, F2704, F0776, F0776, F2710, F2723, P2734 P0748 P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0/22 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (Note 1)			
					P0503 (System Vollage High) D2525 (Ignition Switch Run/Start Docition Circuit			
					High)			
					Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this			
					amount of time continuously	T_GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input	= TRUE		
					Speed Sensor			
					Output Speed Sensor	= TRUE		
					ATE Temperature	>= -20 [deg C]		
					Ouick Stop Detection Flag (*Note /)	= FAI SF		
					Safe Gear Control has been INACTIVE for this			
					amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as	TOUE		
					a reaction to Safe Gear Control.	= IKUE		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
Gear Ratio (2nd Gear)	P0732	Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 2nd	> 20 [%]			12 sec (cumulatively)	1
System Gear Ratio (2nd Gear)	Code P0732	Description Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 2nd Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P071F (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0755 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Circuit) P0705 (Transmission Range Switch Circ	= 2ND GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED = NOT DETECTED	Required 12 sec (cumulatively)	<u>Illum.</u> 1
					amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The length Speed stand is available from the length	T_GarageFin (*1) T_ShiftFin (*1)		
					Speed Sensor The Output Speed signal is available from the Output Speed Sensor	= TRUE = TRUE		
					ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously	>= -20 [deg C] = FALSE tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
					AND the following conditions Difference between actual Gear Ratio and 3rd Gear Ratio	are NOT satisfied < 4 [%] for 1 [sec] continuously		

upwer Local Local Mapping Mapp	Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
Gran Ratio (Ind Gran Stuck) Gran Ratio (Ind Gran Stuck) Gran Ratio Gran Gran Gran Ratio Gran Gran Gran Ratio Gran Gran Gran Ratio Gran Gran Ratio	System	Code	Description			Difference between actual Gear Ratio and 4th Gear Ratio Difference between actual Gear Ratio and 7th Gear Ratio Difference between actual Gear Ratio and 8th Gear Ratio	< 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously	redailea	mum.
amount of time continuously T_GarageFin (*1)	Gear Ratio (2nd Gear Stuck)	P0732	Gear 2 Incorrect Ratio	Difference between actual Gear Ratio and 3rd Gear Ratio OR Difference between actual Gear Ratio and 4th Gear Ratio OR Difference between actual Gear Ratio and 8th Gear Ratio	< 4 %	Current Gear Output Speed Input Torque Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A* Circuit High) P07BF (Input/Turbine Speed Sensor *A* Circuit Low) Signal) P077D (Output Speed Sensor Circuit Low) P0777 (Output Speed Sensor rone Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (Ignition Switch Run/Start Position Circuit High) P0705 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously	= 2ND GEAR >= 60 [rpm] >= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection) > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED	5 sec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			The lengt Creed signal is susible from the lengt		Required	Illum.
					The Input Speed signal is available from the Input Speed Sensor The Output Speed Signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Gear Ratio (3rd Gear)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 3rd	> 20 [%]	Current Gear	- 3RD GEAR	12 sec (cumulatively)	1
			Gear Ratio		Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Output Speed Sensor Circuit Low) P077D (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0753 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0705 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously	= 3RD GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1)		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Ouick Stop Detection Flag ("Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control. AND the following conditions Difference between actual Gear Ratio and 7th Gear Ratio	= TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE are NOT satisfied < 4 [%] for 1 [sec] continuously		
Gear Ratio (3rd Gear Stuck)	P0733	Gear 3 Incorrect Ratio	Difference between actual Gear Ratio and 7th Gear Ratio	< 4 [%]	Current Gear Output Speed Input Torque Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Input/Turbine Speed Sensor "A" Circuit Low) Signal) P077D (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P07253 (Ignition Switch Run/Start Position Circuit High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0705 (Transmission Range Switch Performance)	= 3RD GEAR >= 60 [rpm] >= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection) > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED = NOT DETECTED	5 sec	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL IIIum.
					Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Gear Ratio (4th Gear)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 4th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P078, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07FF (Input/Turbine Speed Sensor "A" Circuit Low) P077D (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0725 (System Voltage Low Supply 2) ("Note 1) P0543 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0705 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously	= 4TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range = NOT DETECTED = NOT DETECTED	12 sec (cumulatively)	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					Shift Control has been INACTIVE for this amount of			
					time continuously	I_ShiftFin (*1)		
					The Input Speed signal is available from the Input	= TRUE		
					Speed Sensor	intoL		
					The Output Speed signal is available from the	= TRUE		
					Output Speed Sensor	- HOE		
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh GE(*1)		
					amount of time continuously			
					The TCM is not commanding a neutral condition as	- TRUE		
					a reaction to Safe Gear Control.	- HOE		
					AND the following conditions	are NOT entiofied		
					AND THE TOHOWING CONTINUES			
					Difference between actual Geal Ratio and Stu Geal	< 4 [/0]		
					Nalio			
					Dillerence between actual Geal Ratio and our Geal	< 4 [70]		
					Rallo Difference between estual Coer Datis and 7th Coer			
					Difference between actual Gear Ratio and 7th Gear	< 4 [%]		
					Raio	Ior T [sec] continuously		
Gear Ratio (4th Gear Stuck)	P0734	Gear 4 Incorrect Ratio	Difference between actual Gear Ratio and 3rd	< 1 %			5 sec	1
			Gear Ratio		Current Gear	= 4TH GEAR	0 000	
					Output Speed	>= 60 [rpm]		
			OR	1 4 94	have the second	>= 50 [Nm] OR <= -50 [Nm]		
			Difference between actual Gear Ratio and 6th	< 4 %	Input Forque	(occur at least 1 time during detection)		
			Geal Railo					
					Ignition Voltage	> 9000 [mV] for 10 [msec]		
					Battery Voltage	> 10.2 [V]		
					Battery Voltage	<= 32.0 [V]		
					Engine Speed	> 400 [RPM]		
					Engine Speed Signal Validity	= VALID		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (*4)	= NOT ACTIVE		
					Neutral Avoidance Control	= NOT ACTIVE		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					Time since Solenoid Cut (*Note 3) control has been	> 8 [sec]		
					INACTIVE			
						ALL Malfunctions = NOT DETECTED		
					PU974 (Shift Solenoid "A" Control Circuit High)			
					PUAV3 (Shirt Solenoid A' Control Circuit Low)			
					Status of all of the Gear Ratio malfunctions:			
					(P0967, P0971, P2721, P2730, P2739, P0963,			
					P2763, P0966, P0970, P2720, P2729, P2738,			
					PUY02, P2/04, PU/18, PU/98, P2/16, P2/25,			
					P2734, PU748, P2701)			
					DOTRE (Input/Turbing Speed Sensor "A" Circuit			
					Low			
					LUW/ D0717 /Input/Turbing Speed Sensor "A" Circuit No.			
					Signal)			
					P077D (Output Speed Sepsor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulso)			
					P0592 (System Voltage Low Supply 2) (*Noto 1)			
I	I	I	I	I	1 0372 (System voliage Low Supply 2) (NOIE I)	l l		I

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= D Range = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Gear Ratio (5th Gear)	P0735	Gear 5 Incorrect Ratio	Difference between actual Gear Ratio and 5th Gear Ratio	> 20 [%]	Current Gear Current Gear Output Speed Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07FBF (Input/Turbine Speed Sensor "A" Circuit Low) P0771 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0772 (System Voltage Low Supply 2) ("Note 1) P0543 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)	= 5TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	12 sec (cumulatively)	1

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
					Range Selector Position Switch P0705 (Transmission Range Switch Circuit)	= D Range = NOT DETECTED		
					P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously	= NOT DETECTED T_GarageFin (*1)		
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input Speed Sensor	= TRUE		
					The Output Speed signal is available from the Output Speed Sensor	= TRUE		
					ATF Temperature Quick Stop Detection Flag (*Note 4)	>= -20 [deg C] = FALSE		
					Safe Gear Control has been INACTIVE for this amount of time continuously	tmr_inh_GE (*1)		
					The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= TRUE		
					AND the following conditions Difference between actual Gear Ratio and 6th Gear Ratio Difference between actual Gear Ratio and 7th Gear Ratio Difference between actual Gear Ratio and 8th Gear Ratio	are NOT satisfied < 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously < 4 [%] for 1 [sec] continuously		
Gear Ratio (5th Gear Stuck)	P0735	Gear 5 Incorrect Ratio	Difference between actual Gear Ratio and 6th Gear Ratio	< 4 %	Current Gear	= 5TH GEAR	5 sec	1
			OR		Output Speed	>= 60 [rpm]		
			Difference between actual Gear Ratio and 7th Gear Ratio	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm] (occur at least 1 time during detection)		
			Gear Ratio OR Difference between actual Gear Ratio and 8th Gear Ratio	< 4 %	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2720, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2739, P20963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A* Circuit High) P07BF (Input/Turbine Speed Sensor *A* Circuit Low)	<pre>> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED</pre>		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch	= D Range		
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	<pre>= NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE</pre>		
	P0/41	Performance/Stuck Off	Speed: AND The time since SLU pressure has gone above a calibratable value: is greater than a calibratable time:	> 100 [[pfi1] >= 6290 [gf/cm^2] T_SLUFull (*6)	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio maffunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P0717 (Input/Turbine Speed Sensor "A" Circuit No Signal) P077D (Output Speed Sensor Circuit Low)	 > 9000 [III 9] IO 10 [III SEC] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED 	12 Sec (cumulaiiveiy)	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High)			
					Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously Range Selector Position Switch Time since shifting to D Engine Torque Engine Speed ATF Temperature SLU Pressure: - Pressure Value: - Time since meeting value criteria: SL Solenoid Command The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor	T_GarageFin (*1) T_ShiftFin (*1) = D Range = 8 [sec] >= 0 [Mm] < 4000 [rpm] >= 20 [degC] PLUP_CLOSE_FAIL (*5) T_SLUFull (*6) = ON = TRUE = TRUE		
					Output Speed Sensor P2770 (SL Solenoid B+ Short / Open) P2769 (SL Solenoid GND Short) P2763 (SLU Solenoid GND Short) P2764 (SLU Solenoid GND Short) P2761 (SLU Feedback stuck) P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low)	 NOT DETECTED 		
Pressure Control Solenoid "A" Control Circuit (SLT Solenoid)	P0748	Pressure Control Solenoid "A" Electrical	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1
			(*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition ("Note 3) P0962 (Pressure Control Solenoid "A" Control Circuit Low) P0963 (Pressure Control Solenoid "A" Control Circuit High) Emergency Mode ("4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			"feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed					

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description	22				Required	Illum.
			OR ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. ie]: Absolute value of ie ie: Difference between "commanded current" and		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition ("Note 3) P0962 (Pressure Control Solenoid "A" Control Circuit Low) P0963 (Pressure Control Solenoid "A" Control Circuit High) Emergency Mode ("4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			"feedback current"					
Gear Ratio (7th Gear)	P076F	Gear 7 Incorrect Ratio	Difference between actual Gear Ratio and 7th	> 20 [%]	Current Gear	= 7TH GEAR	12 sec (cumulatively)	1
			Gear Railo		Output Speed Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of al of the Gear Ratio maffunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P07BF (Input/Turbine Speed Sensor "A" Circuit Low) Signal) P077D (Output Speed Sensor Circuit Low) P077C (Output Speed Sensor No Pulse) P0592 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage Ligh) P2535 (Ignition Switch Run/Start Position Circuit High)	<pre>>= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED = D Range</pre>		
Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
--	-------	--	--	---	--	---	---	--------
System	Code	Description					Required	Illum.
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor ATF Temperature Quick Stop Detection Flag ("Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	= NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE		
Noutral condition of D Dange (C1	D0774	Droceuro Control Solonoid "D" Church	Noutral Condition Decision (C1 cannot array)					1
Neutral condition at D Range (C1 no engagement)	P0776	Pressure Control Solenoid "B" Stuck OFF	Neutral Condition Decision (C1 cannot engage) Engine Speed - Input Speed Input Speed	< 150 [rpm] > Output Speed x L_gear(*7) + 400 [rpm]	Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) The TCM has completed the read operation of its Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of al of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P077B (Input/Turbine Speed Sensor "A" Circuit Low) Signal) P077D (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P07523 (System Voltage Low Supply 2) ("Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) ATF temperature Garage Shift Control (N to D) has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously	> 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED >= 0 [degC] T_GarageFin (*1) T_ShiftFin (*1)	{ gearRpm(*8) >= 0 AND gearRpm <= 1500 } 3.3 sec { gearRpm(*8) >= 1501 AND gearRpm <= 3000 } { gearRpm(*8) >= 3001 } 0.8 sec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			l		Required	Illum.
System	Code	Description			Range Selector Position Switch Current gear Output Speed Current lock up status Lockup type The Input Speed signal is available from the Input Speed Sensor P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Ouick Stop Detection Flag ("Note 4) Prohibit Neutral Judgment flag (") (") Prohibit Neutral Judgment flag (") (") Prohibit Neutral Judgment : The following Criteria is met, Prohibit Neutral Judg Clear counter_NfailD Criteria: 1 and 2 and 3 and 4 and 5 and 6, for 30 1. current Gear: 4th 2. RANGE_D(defined signal)	 D Range for 1000 [msec] continuously 1st OR 2nd OR 3rd OR 4th OR 5th 500 [rpm] OFF LUP NO CONTROL TRUE NOT DETECTED NOT DETECTED FALSE FALSE and fag = TRUE 0 [msec] continuously 	Required	IIIum.
					 3. Slip Speed > 500 [rpm] 4. Output Speed = 0 [rpm] 5. Not shifting 6. Current gear != GEAR_1STEB Release condition The following Criteria is met, Prohibit Neutral Judg Criteria: 1 or 2 or 3 	iment flag = FALSE		
			Confirm C1 as Failed Element (Check C2 and C3 t	to see if C1 has malfunctioned)				
			When the following conditions are ALL satisfied, th	ne criteria are considered to be met:				1
			Increment counter_NfailD					
			Input Speed	< 200 [rpm]				
			Engine Speed	> 600 [rpm]				
			ivedital condition detection in progress	ies				
Pressure Control Solenoid "B"	P0777	Pressure Control Solenoid "B" Stuck ON	This fault is confirmed after a calibratable number of counts of the "SL1 Stuck ON"(*) failure counter: Number of counts: (*) If the following conditions are met for a calibrated time period continuously, the algorithm will increment the "SL1 Stuck ON" failure Timer: Current Gear Difference between Actual Gear Ratio and Expected Gear Ratio: ATF Pressure Switch Command Flag_SLC1drain (*) Flag_SLC1drain (*) is determined to be ON when the following condition is true: SLC1 Pressure For the following time continuously:	= 4 = 1000 [msec] = 6th or 7th or 8th < 4 [%] = ON = ON = ON <= 300 [gf/cm^2] = Time_PSLdrain (*12) [msec]	Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725,	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	4 sec	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					P2734, P0748, P2701) P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0542 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					High)			
					P0601 (Internal Control Module Memory Checksum			
					Error)			
					Safe Gear Control has been INACTIVE for this	tmr inh CE (*1)		
					amount of time continuously			
					Range Selector Position Switch	= D Range		
					Time since changing Range Selector Resition to D	- 9000 [mcoc]		
					ATE temperature	= 0000 [IIISEC]		
					P0713 (Transmission Eluid Temperature Sensor	= NOT DETECTED		
					"A" Circuit High)			
					P0712 (Transmission Fluid Temperature Sensor	= NOT DETECTED		
					"A" Circuit Low)			
					P0842 (Transmission Fluid Pressure Sensor/Switch	= NOT DETECTED		
					"A" Circuit Low)			
					P0843 (Transmission Fluid Pressure Sensor/Switch	= NOT DETECTED		
					"A" Circuit High			
					Garage Shift Control has been INACTIVE for this	T. C		
					Shift Control has been INACTIVE for this amount of	I_GarageFin (*1)		
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input			
					Speed Sensor	= TRUE		
					The Output Speed signal is available from the			
					Output Speed Sensor	= IRUE		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Safe Gear Control has been INACTIVE for this	tmr inh GF (*1)		
					amount of time continuously	20 [Nm]		
					Cutout Spood	>= ou [INII]		
					The TCM is not commanding a neutral condition as	>= 60 [ipiii]		
					a reaction to Safe Gear Control	= TRUE		
Pressure Control Solenoid "B" Control	P0778	Pressure Control Solenoid "B"	sum_ie (*)	> 60000 [mA]	Ignition Voltage	> 9000 [mV] for 10 [msec]	1 to 3 sec (cumulatively)	1
Circuit (SL1 Solenoid)		Electrical			Battery Voltage	continuously		
					Battery Voltage	> 10.2 [V]		
					I ne TCM has completed the read operation of its	<= 32.0 [V]		
					non-volatile memory	(all 4 criteria for 2 [sec] continuous[v)		
			(*) The first algorithm checks the cumulative sum		Battery Voltage	> 11 [V] for [> 500 msec]		
			of the difference of the linear solenoid feedback		Linear Solenoid Feedback current	< 1358 [mA]		
			current and commanded current. This sum,		Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
			named "sum_ie", will be updated on every clock		P0966 (Pressure Control Solenoid "B" Control	= NOT DETECTED		
			cycle of the microprocessor (10 msec). If the		Circuit Low)			

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL
			value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< le =< 50mA" 3) Sign of ie is changed		P0967 (Pressure Control Solenoid "B" Control Circuit High) Emergency Mode (*4)	= NOT DETECTED = NOT ACTIVE		
			OR					
			ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			 (*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current" 		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P0966 (Pressure Control Solenoid "B" Control Circuit Low) P0967 (Pressure Control Solenoid "B" Control Circuit High) Emergency Mode (*4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
Output Speed Sensor Circuit	P077C	Output Speed Sensor Circuit High	Output Speed Sensor Circuit Voltage	< 0.206 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Output Speed Sensor Circuit	P077D	Output Speed Sensor Circuit Low	Output Speed Sensor Circuit Voltage	> 2.727 [V]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid)	P0798	Pressure Control Solenoid "C" Electrical	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1
			(*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum,		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE		

Component / System	Fault Code	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum
			named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed		P0970 (Pressure Control Solenoid "C" Control Circuit Low) P0971 (Pressure Control Solenoid "C" Control Circuit High) Emergency Mode (*4)	= NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			OR		ļ	ļ		
			ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected. I be linear solenoid exceed a solution of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected.		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition ("Note 3) P0970 (Pressure Control Solenoid "C" Control Circuit Low) P0971 (Pressure Control Solenoid "C" Control Circuit High) Emergency Mode ("4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			"feedback current"					
Input/Turbine Speed Sensor "A" Circuit	P07BF	Input/Turbine Speed Sensor "A" Circuit Low	Input Speed Sensor Circuit Voltage	< 0.206 V	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Input/Turbine Speed Sensor "A" Circuit	P07C0	Input/Turbine Speed Sensor "A" Circuit High	Input Speed Sensor Circuit Voltage	> 2.727 V	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 sec	1
Gear Ratio (8th Gear)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 8th Gear Ratio	> 20 [%]	Current Gear Output Speed Ignition Voltage Battery Voltage Battery Voltage Engine Speed Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*)	= 8TH GEAR >= 500 [rpm] > 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED	12 sec (cumulatively)	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
					U0073 (CAN Bus-OFF)	= NOT DETECTED		
					Emergency Mode (^4)			
					Neutral Avoidance Control			
					Solenoid Cut Condition ("Note 3)			
					Time since Solenoid Cut ("Note 3) control has been	> 8 [sec]		
					INACTIVE	ALL Malfunctions NOT DETECTED		
					D0074 (Shift Salapaid "A" Captrol Circuit Lligh)	ALL MAINTCIONS = NOT DETECTED		
					P0974 (Shift Solehoid "A" Control Circuit Low)			
					Status of all of the Gear Patio malfunctions:			
					(P0967 P0971 P2721 P2730 P2739 P0963			
					P2763 P0966 P0970 P2720 P2729 P2738			
					P0962 P2764 P0778 P0798 P2716 P2725			
					P2734, P0748, P2761)			
					P07C0 (Input/Turbine Speed Sensor "A" Circuit			
					High)			
					P07BF (Input/Turbine Speed Sensor "A" Circuit			
					Low)			
					P0717 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (*Note 1)			
					P0563 (System Voltage High)			
					P2535 (Ignition Switch Run/Start Position Circuit			
					Pange Selector Position Switch	- D Pange		
					Range Selector i Usition Switch	- D Range		
					P0705 (Transmission Range Switch Circuit)	= NOT DETECTED		
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
					Garage Shift Control has been INACTIVE for this	NOT DETECTED		
					amount of time continuously	T GarageFin (*1)		
					Shift Control has been INACTIVE for this amount of			
					time continuously	T_ShiftFin (*1)		
					The Input Speed signal is available from the Input	TOUL		
					Speed Sensor	= IRUE		
					The Output Speed signal is available from the			
					Output Speed Sensor			
					ATF Temperature	>= -20 [deg C]		
					Quick Stop Detection Flag (*Note 4)	= FALSE		
					Sate Gear Control has been INACTIVE for this	tmr_inh_GE (*1)		
					amount of time continuously	、 /		
					The TCM is not commanding a neutral condition as	= TRUE		
					a reaction to Sale Gear Control.			
					AND the following conditions	are NOT satisfied		
					Difference between actual Gear Ratio and 6th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
					Difference between actual Gear Ratio and 7th Gear	< 4 [%]		
					Ratio	for 1 [sec] continuously		
						-		
Gear Ratio (8th Gear Stuck)	P07D9	Gear 8 Incorrect Ratio	Difference between actual Gear Ratio and 7th	< 4 %	Current Gear	= 8TH GEAR	5 sec	1
			Gear Ratio		Output Croad	(0 [mm]		
			OP.	I	Output Speed	>= ου [ιμπι]		
			Difference between actual Gear Ratio and 6th	< 4 %	Input Torque	>= 50 [Nm] OR <= -50 [Nm]		
1		1		1		(occur at least 1 time during detection)		1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System 0	Code	Description					Required	Illum.
System (Code	Description			Ignition Voltage Battery Voltage Engine Speed Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2739, P0963, P2763, P0966, P0970, P2720, P2739, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A* Circuit High) P07BF (Input/Turbine Speed Sensor *A* Circuit Low) P0717 (Input/Turbine Speed Sensor *A* Circuit Low) P077C (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor No Pulse) P0592 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch P0706 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Input Speed Sensor ATF Temperature Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously The TCM is not commanding a neutral condition as a reaction to Safe Gear Control.	<pre>> 9000 [mV] for 10 [msec] > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED ALL Malfunctions = NOT DETECTED = NOT DETECTED = NOT DETECTED = NOT DETECTED T_GarageFin (*1) T_ShiftFin (*1) = TRUE = TRUE >= -20 [deg C] = FALSE tmr_inh_GE (*1) = TRUE</pre>	Required	

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Tap Up Switch	P0815	Upshift Switch Circuit	"Platform Transmission Tap Up/Down Switch State" CAN Signal	= \$1 (Increment Switch Active)	Ignition Voltage	> 9000 [mV] for 3 sec continuously	34 sec Total	No MIL "Special
					Ignition Voltage	> 9000 [mV] for 10 [msec]	(4 sec for P, R, N-Range)	C"
					Battery Voltage	continuously	(20 (D. D)	
					Battery Voltage	> 10.2 [V]	(30 sec for D-Range)	
					non-volatile memory	<= 32.0 [V]		
					non voldale memory	(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
					Module)	= NOT DETECTED		
					P0826 (Up and Down Shift Switch Circuit)	= NOT DETECTED		
					P1761 (Up and Down Shift Switch Signal Circuit)	= NOT DETECTED		
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	= NOT DETECTED = NOT DETECTED		
Tap Down Switch	P0816	Downshift Switch Circuit	"Platform Transmission Tap Up/Down Switch State" CAN Signal	= \$2 (Decrement Switch Active)	Ignition Voltage	> 9000 [mV] for 3 sec continuously	34 sec Total	No MIL "Special
					Ignition Voltage	> 9000 [mV] for 10 [msec]	(4 sec for P, R, N-Range)	C"
					Battery Voltage	continuously	(20 (D. D)	
					Battery Voltage	> 10.2 [V]	(30 sec for D-Range)	
					I ne TCM has completed the read operation of its	<= 32.0 [V]		
					non-voidule memory	(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Request to Disable Normal Communication	= NOT PRESENT		
					U0140 (Lost Communication with Body Control	= NOT DETECTED		
					P0826 (Up and Down Shift Switch Circuit)	= NOT DETECTED		
					P1761 (Up and Down Shift Switch Signal Circuit)	= NOT DETECTED		
					D0705 (Transmission Dange Switch Circuit)			
					P0706 (Transmission Range Switch Performance)	= NOT DETECTED		
Tap Up/Down Switch	P0826	Up and Down Shift Switch Circuit	"Platform Transmission Tap Up/Down Switch State" CAN Signal	= \$3 (Illegal Up/Down Switch State Active)	Ignition Voltage	> 9000 [mV] for 3 sec continuously	4 sec	No MIL "Special
					Ignition Voltage	> 9000 [mV] for 10 [msec]		C.
					Battery Voltage			
					The TCM has completed the read operation of its	<= 32 0 [V]		
					non-volatile memory			
						(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Request to Disable Normal	- NOT PRESENT		
					Communication			
					UU14U (Lost Communication with Body Control Module)	= NOT DETECTED		
					P1761 (Up and Down Shift Switch Signal Circuit)	= NOT DETECTED		
					P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	= NOT DETECTED = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Manual Mode Switch	P0827	Up and Down Shift Switch Circuit Low Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	< 5.0 [%]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Manual Mode Switch	P0828	Up and Down Shift Switch Circuit High Voltage	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage [%])	> 25.5 [%]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED	30 sec	No MIL "Special C"
Transmission Fluid Pressure Sensor/Switch "A" Circuit	P0842	Transmission Fluid Pressure Sensor/Switch "A" Circuit Low	Transmission Fluid Pressure Sensor Status	= ON	The following parameters must be met for a calibrated period of time. Ignition Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM "A") U0073 (CAN Bus-OFF) Emergency Mode ("4) Neutral Avoidance Control Solenoid Cut Condition ("Note 3) Time since Solenoid Cut ("Note 3) control has been INACTIVE P0974 (Shift Solenoid "A" Control Circuit High) P0973 (Shift Solenoid "A" Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor "A" Circuit High) P071PF (Input/Turbine Speed Sensor "A" Circuit Low) P0717 (Output Speed Sensor Circuit Low) P0772 (Output Speed Sensor Circuit High) P0722 (Output Speed Sensor Circuit High) P0543 (System Voltage Low Supply 2) ("Note 1) P0553 (Ignition Switch Run/Start Position Circuit High)	Time_SwONfailw (*2) > 9000 [mV] for 10 [msec] continuously > 10.2 [V] < 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	1 sec	2

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description			D0/01/latensel.Control Markula Manager Charleson		Required	llium.
					P0601 (Internal Control Module Memory Checksum Error) Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously ATF Temperature	T_GarageFin (*1) T_ShiftFin (*1) >= 20 [deg C]		
					 A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) Range Selector Position Switch Time Since Shifting to P.R, or N The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor Output Speed Sensor	= NOT DETECTED = P or R or N Range Time_SwDNFin (*2) = TRUE = TRUE = FALSE tmr_inh_GE (*1) ALL = NOT DETECTED		
	B	-			a reaction to Safe Gear Control.	= IKUE		
Transmission Fluid Pressure Sensor/Switch "A" Circuit	P0843	Transmission Fluid Pressure Sensor/Switch "A" Circuit High	Current Gear	= 1st, 2nd, 3rd, 4th, or 5th	The following parameters must be met for a calibrated period of time continuously.	Time_SwOFFfailw (*2)	2 sec	2
			Difference between actual Gear Ratio and Expected Gear Ratio ATF Pressure Command ATF Pressure Switch Status Engine Speed Time since Engine Speed exceeded threshold above Output Speed Engine Torque without Acceleration Input Speed	< 4 % >= 1600 [kPa] = OFF > 500 [rpm] > 1000 [msec] >= 60 [rpm] >= 80 [Nm] <= 6000 [rpm]	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of al of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A* Circuit High) P07BF (Input/Turbine Speed Sensor *A* Circuit Low) P0717 (Input/Turbine Speed Sensor *A* Circuit No Signal) P0772 (Output Speed Sensor Circuit High) P0772 (Output Speed Sensor No Pulse)	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
Manual Mode Switch	P085F	Up and Down Shift Switch Circuit Stuck in Range	Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage (=	10.4 [%] < Manual Switch < 14.8 [%]	P0592 (System Voltage Low Supply 2) (*Note 1) P0563 (System Voltage High) P2535 (Ignition Switch Run/Start Position Circuit High) Range Selector Position Switch Garage Shift Control has been INACTIVE for this amount of time continuously Shift Control has been INACTIVE for this amount of time continuously ATF Temperature P0713 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit High) P0712 (Transmission Fluid Temperature Sensor "A" Circuit Low) The Input Speed signal is available from the Input Speed Sensor The Output Speed signal is available from the Output Speed Sensor Quick Stop Detection Flag (*Note 4) Safe Gear Control has been INACTIVE for this amount of time continuously Gear Ratio Failure Status (P0731, P0732, P0733, P0734, P0735, P0729, P076F, P07D9) The TCM is not commanding a neutral condition as a reaction to Safe Gear Control. Ignition Voltage Battery Voltage Battery Voltage Battery Voltage	= D Range T_GarageFin (*1) T_ShiftFin (*1) >= OT_Sw_det (*14) = NOT DETECTED = NOT DETECTED = TRUE = TRUE = FALSE tmr_inh_GE (*1) ALL = NOT DETECTED = TRUE > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM]	30 sec	No MIL "Special C"
Manual Mode Switch	P085F	Up and Down Shift Switch Circuit Stuck in Range	[%]) Manual Mode Switch Signal Level (*) (*) The Manual Mode Switch signal level is determined as a percentage of Ignition Voltage (= Manual Mode Switch Voltage / Ignition Voltage	14.8 [%] <= Manual Switch < 25.5 [%]	U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High) Ignition Voltage Battery Voltage Engine Speed Engine Speed Engine Speed Signal Validity	= VALID = NOT DETECTED 9 [V] <= IG <= 32 [V] = NOT DETECTED = NOT DETECTED > 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] > 400 [RPM]	34 sec (cumulative between P/R/N and D range tests)	No MIL "Special C"
			[%]) The time period is based on the Gear Selector Position: - for 4 sec continuously in P,R, or N range AND - for 30 sec continuously in D range		U0100 (Lost Communication with ECM/PCM 'A') U0073 (CAN Bus-OFF) Ignition Voltage P2534 (Ignition Voltage Low Supply) P2535 (Ignition Switch Run/Start Position Circuit High) P0705 (Transmission Range Switch Circuit) P0706 (Transmission Range Switch Performance)	 VALID NOT DETECTED 9 [V] <= IG <= 32 [V] NOT DETECTED NOT DETECTED NOT DETECTED NOT DETECTED NOT DETECTED 		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Pressure Control Solenoid "A" Control Circuit (SLT Solenoid)	P0962	Pressure Control Solenoid "A" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	500 msec	1
					Solenoid Cut Condition ("Note 3) P0963 (Pressure Control Solenoid "A" Control	(all 4 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT DETECTED for [1 sec]		
Pressure Control Solenoid "A" Control Circuit (SLT Solenoid)	P0963	Pressure Control Solenoid "A" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P0962 (Pressure Control Solenoid "A" Control Circuit Low)	= NOT DETECTED for [1 sec]		
Pressure Control Solenoid "B" Control Circuit (SL1 Solenoid)	P0966	Pressure Control Solenoid "B" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					Solenoid Cut Condition ("Note 3) P0967 (Pressure Control Solenoid "B" Control Circuit High)	= NOT ACTIVE = NOT DETECTED for [1 sec]		
Pressure Control Solenoid "B" Control Circuit (SL1 Solenoid)	P0967	Pressure Control Solenoid "B" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P0966 (Pressure Control Solenoid "B" Control Circuit Low)	= NOT DETECTED for [1 sec]		
Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid)	P0970	Pressure Control Solenoid "C" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					Solenoid Cut Condition ("Note 3) P0971 (Pressure Control Solenoid "C" Control Circuit High)	= NOT ACTIVE = NOT DETECTED for [1 sec]		
Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid)	P0971	Pressure Control Solenoid "C" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P0970 (Pressure Control Solenoid "C" Control Circuit Low)	= NOT DETECTED for [1 sec]		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Shift Solenoid "A" Control Circuit (SR solenoid)	P0973	Shift Solenoid "A" Control Circuit Low	Comparison of SR solenoid Commanded State to Actual State	Actual State is "OFF" when Commanded State is "ON"	Ignition Voltage Battery Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously > 10.2 [V]	500 msec	1
			(*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driver hardware. The software just		The TCM has completed the read operation of its non-volatile memory	<= 32.0 [V] (all 4 criteria for 2 [sec] continuous[v)		
			reads the state as ON or OFF. The solenoid driver determines the state is ON at Battery		SR Solenoid Command	= ON		
			Voltage - 1 [V]		Time elapsed since last solenoid state change	> 10 msec		
Shift Solenoid "A" Control Circuit (SR solenoid)	P0974	Shift Solenoid "A" Control Circuit High	Comparison of SR solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by	Actual State is "ON" when Commanded State is "OFF"	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	500 msec	1
			the solenoid driver hardware. The software just reads the state as ON or OFF. The solenoid driver determines the state is ON at Battery		SD Solonoid Command	(all 4 criteria for 2 [sec] continuously)		
			Voltage - 1 [V]		SR Solenold Command	= UFF		
Transmission Control Module (TCM)	P16F3	Control Module Redundant Memory Performance	Downshift commanded (*)	< Minimum Safe Gear (*)	PO606 (Control Module Processor) - Solenoid Cut Malfunction Solenoid Cut Request	= NOT DETECTED = INACTIVE	150 msec	1
			(*) The solenoid patterns for the currently engaged gear, target gear, and minimum allowed gear (which is dependent on the vehicle speed) are compared, and the downshift to be commanded would cause unintended vehicle deceleration.					
Un-usual shifting with Max Pressure Control Control Solenoid "B" Control Circuit (SL1 Solenoid) Pressure Control Solenoid "C" Control Circuit (SL2 Solenoid) Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid) Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid) Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P170A P170B P170C P170D P170E	Pressure Control Solenoid Valve "2" Max Pressure Not Achieved Pressure Control Solenoid Valve "3" Max Pressure Not Achieved Pressure Control Solenoid Valve "4" Max Pressure Not Achieved Pressure Control Solenoid Valve "5" Max Pressure Not Achieved Pressure Control Solenoid Valve "6" Max Pressure Not Achieved	Each component (C1, C2, C3, C4, and B1) diagnosed has its own unique error counter, which will diagnose the failed component if the malfunction is detected. These counters are shared between all of the algorithms. If any one of those counters becomes equal to a calibrated total value, the malfunction will be confirmed and a DTC will be stored. There are (7) unique algorithms which run simultaneously in order to attempt to detect a MAX pressure malfunction. These algorithms are fairly complex; therefore they have been described in detail in section 5. count_fail_SLC1MAX_usft (*) count_fail_SLC2MAX_usft (*) count_fail_SLC3MAX_usft (*) (*):refer to conditions A-1 to E below	>= 5 >= 5 >= 5 >= 5 >= 5	Ignition Voltage Battery Voltage Battery Voltage Engine Speed Signal Validity U0100 (Lost Communication with ECM/PCM *A*) U0073 (CAN Bus-OFF) The TCM has completed the read operation of its non-volatile memory Emergency Mode (*4) Neutral Avoidance Control Solenoid Cut Condition (*Note 3) Time since Solenoid Cut (*Note 3) control has been INACTIVE P0974 (Shift Solenoid *A* Control Circuit High) P0973 (Shift Solenoid *A* Control Circuit Low) Status of all of the Gear Ratio malfunctions: (P0967, P0971, P2721, P2730, P2739, P0963, P2763, P0966, P0970, P2720, P2729, P2738, P0962, P2764, P0778, P0798, P2716, P2725, P2734, P0748, P2761) P07C0 (Input/Turbine Speed Sensor *A* Circuit High) P07BF (Input/Turbine Speed Sensor *A* Circuit	> 9000 [mV] for 10 [msec] > 10.2 [V] <= 32.0 [V] > 400 [RPM] = VALID = NOT DETECTED = NOT DETECTED (all 8 criteria for 2 [sec] continuously) = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE = NOT ACTIVE > 8 [sec] ALL Malfunctions = NOT DETECTED	(Shift time dependent) 300 msec to 2 sec, 5 times cumulatively.	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	illum.
					P0/17 (Input/Turbine Speed Sensor "A" Circuit No			
					Signal)			
					P077D (Output Speed Sensor Circuit Low)			
					P077C (Output Speed Sensor Circuit High)			
					P0722 (Output Speed Sensor No Pulse)			
					P0592 (System Voltage Low Supply 2) (Note 1)			
					P0503 (System Vollage High)			
					P2555 (Ighilion Switch Ruh/Staft Position Circuit			
					Carago Shift Control has been INACTIVE for this			
					amount of time continuously	T. CorogoEin (*1)		
					Pango Soloctor Desition Switch	D Dango		
					Wheel Spin Detected			
					Output Spood	= 1 ALSL		
					ATE temperature	>= 300 [ipi1]		
					The Input Speed signal is available from the Input			
					Sneed Sensor	= TRUE		1
					The Output Speed signal is available from the			
					Output Speed Sensor	= TRUE		1
					Safe Gear Control has been INIACTIVE for the			1
					amount of time continuously	tmr_inh_GE (*1)		1
			Unusual Shifting Test A-1: Up-shift with Tie-up	(C1, C3, C4, or B1 not released)	Ι	1	-	
			In a pressure control manufaction exists during an up the element commanded to disongage. Such a ma	D-Shill, it may be impossible to release				
			the transmission takes an excessively long time to s	tart the up shift (Input Speed change				
			from current gear to target gear) while the engagen	nent pressure is sufficient				
			When the following conditions are ALL satisfied, the	en the criteria is considered to be met	-			
			Based on the Upshift that was occurring, the associ	iated counter is incremented as				
			for up-shifts (2-8, 3-7, 4-6, 5-6, 5-7, 5-8)	count fail SLC1MAX usft	1			
			for up-shifts (3-4, 3-5, 7-8)	count fail SLC3MAX usft				
			for up-shifts (4-5, 6-7, 6-8)	count fail SLC4MAX usft				
			for up-shifts (2-3, 2-4, 2-5)	count_fail_SLB1MAX_usft				
			During any of the following Up-Shifts	(2-8, 3-7, 4-6, 5-6, 5-7, 5-8, 3-4, 3-5,	1			
				7-8, 4-5, 6-7, 6-8, 2-3, 2-4, 2-5)				
			Shift Control for Torque Phase B has begun	= TRUE				
			Time since beginning of Torque Phase B	>= TimeTrp_B (*10)				1
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				1
			Shifting does not begin despite of shifting	= TRUE				1
			commanded. (No change in inRpm eventhough					1
			the shift command is made)					1
			Max of engine flare ratio	<= 50 [rpm]				1
			The gear ratio before shift control began is normal	= TRUE				
			(*A)					1
								1
			The gear ratio at the beginning of the shift is					
				FO [New]				
			Input Forque	>= 50 [INM]				
				- 50 [Nm]				1
				<				
			(*A) This condition is met if the following is true:					
			, , , , , , , , , , , , , , , , , , ,					
			Difference between actual Gear Ratio and	< 4 [%]				
			expected Gear Ratio					1
			(*B) This condition is met if the following is true:					
l	I	1		l	1		1	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio					
			Unusual Shifting Test A-2: Down-shift with Tie-	up (C1, C3, C4, or B1 not released)	•	•		
			If a pressure control malfunction exists during a dow	vn-shift, it may be impossible to				
			release an element which is supposed to disengage	e. Such a malfunction is possible to				
			detect when the transmission takes an excessively	long time to start a down-shift (Input				
			Speed change from current gear to target gear) wh	ile the engagement pressure is				
			When the following conditions are ALL satisfied, the	en the criteria is considered to be met.				
			Based on the Down-shift that was occurring, the as	sociated counter is incremented as				
			for down-shifts (5-2, 5-3, 5-4, 6-4, 7-3, 8-2)	count fail SI C2MAX usft				
			for down-shifts (3-2, 7-5, 7-6)	count fail SI C3MAX usft				
			for down-shifts $(4-2, 4-3, 6-5)$	count fail SLC4MAX usft				
			for down-shifts (8-5, 8-6, 8-7)	count_fail_SLB1MAX_usft				
			During any of the following Down-Shifts	(3-2, 4-2, 4-3, 5-2, 5-3, 5-4, 6-4, 6-5,				
				7-3 7-5 7-6 8-2 8-5 8-6 8-7)				
			After "Start of initial release pressure control	= TRUF				
			nhase"	- INOL				
			Release Pressure Control Phase Duration	>= Time failA down1 (*10)				
				\sim Time fail down? (*10)				
			Applied Element Command Prossure	$> 3 \cap [ka/cm^2]$				
			Applied Lieffient Continand Pressure	when Input Torque with No				
				Accoloration < 100 [Nm]				
			Shifting doos not begin dosnite of shifting					
			commanded (No change in inDom eventhough	= IKUL				
			the shift command is made)					
			Min of opging flore ratio	EQ [mm]				
			The gear ratio before chift control began is normal					
				= IKUL				
			UR The gear ratio at the beginning of the chift is					
			normal (*P)					
				FO [b]				
			Input i orque	>= 50 [NM]				
				<= -50 [NM]				
			("A) This condition is met if the following is true:					
			Differences had used a study Constrainty	404				
			Difference between actual Gear Ratio and	< 4%				
			expected Gear Ratio					
			("B) This condition is met if the following is true:					
			Differences had used as the LO Doris	0.10/1				
			Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio					
			Unusual Chifting Test D 1. Un shift with Engine	Flave (C1, C4, ex D1 pet released)			-	
			The TLOOSN & Speed transmission is anything full		[4	
			The TL80SN 8-Speed transmission is equipped wi	in failsale valves to miligate any effects				
			falsely engaged the targue transfer from the surger	ring some smill types if an element is				
			discupted	LEU CIULCHES ATIU/UL DLAKES WIILDE				
			When ALL of the conditions of a state are satisfied.	the function then moves to the payt				
			state. Based on the Lin shift that was accurring the	associated counter is incromented as				
			for up shifts (6.7. 6.9)	count fail SLC1MAX use				
			101 up-shifts (0-7, 0-8)	count_idit_SEC_INIAX_USIL				
			for up oblifies $(7 - 6)$					
			ioi up-snins (3-4, 3-5, 4-5)	COUNT_IAI_SEBTIMAX_USIT				
I	l	l			l	I		1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			State 1 (Start Detection due to Deviation from Expe	ected Transmission Input Speed)				
			If ALL conditions are met:					
			During any of the following single clutch to clutch	(6-7, 6-8, 7-8, 3-4, 3-5, 4-5)				
			Up-shifts					
			Input Speed - (Output Speed x Gear Ratio of	>= flare_fail_up (*11)				
			current gear before shifting)					
			NOT in multiplex shifting	= TRUE				
			State 2 (Determine the Fault Type or check for Inp	ut Speed Deviation Correction)				
			Criteria 2-1: if ALL conditions are met:					
			Input Speed - (Output Speed x Gear Ratio of	<= flare_fail_up (*11) - 200 [rpm]				
			current gear before shifting)					
			TCM currently commanding a Clutch-to-Clutch Up-	= FALSE				
			shift					
			Criteria 2-2: if ALL conditions are met:					
			The TCM is commanding a (3-4, 3-5, or 4-5 up-	= TRUE				
			shift)					
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			Criteria 2-3: If ALL conditions are met:	TOUE				
			The TCM is commanding a (6-7 or 6-8 up-shift)	= IRUE				
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			Criteria 2-4: if ALL conditions are met:					
			The TCM is commanding a (7-8 up-shift)	= TRUE				
			"Time Since State 1" timer	> Time324 (*X) [sec]				
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			Criteria 2-5: if condition (A) AND (condition (B) OR	(C)) are met:	1			
			(A) "Time Since State 1" timer	> TimeFailB (*10) [sec]				1
			(B) "Release Element Pressure at Flare Start"	> 2.0 [kg/cm^2]				1
			(C) Applied Element Commanded Pressure	> 2.0 [kg/cm^2]				
			State 3 (Conclude Malfunction Detection and Resu	me Normal Operations)				
			if ALL conditions are met:					
			"Exit Unusual Shifting Test B-1" timer	> TimeFailB (*10) [sec]				
			Unuquel Chiffing Test D.2. Down shift with Eng	ing Flore (D1 not released)				
			The TL 20SN 2 Speed transmission is equipped with	h failsafo valvos to mitigato any offorts				
			of falsely engaged brakes or clutches. However, du	ring some shift types if an element is				
			falsely engaged the torque transfer from the expect	ted clutches and/or brakes will be				
			disrupted. A symptom of such a malfunction is a lar	ge Input Speed Deviation (*1) (i.e.				
					1			
			State 1 (Start Detection due to Deviation from Exp	ected Transmission Input Speed	1			
				seed manamaalon input opeed)				
			Criteria 1-1: if ALL conditions are met:	(4.2)				
			Time since the start of the apply pressure control	(4-3) < 1.0 [soc]				
			Time since the start of the apply pressure control	< 1.0 [Sec]				
			1		I		1	1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear	>= 500 [rpm]				
			expected after the shift)					
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			The gear ratio before shift control began is normal	= TRUE				
			(*A)					
			OR					
			The gear ratio at the beginning of the shift is					
			normal (^A B)					
			("A) This condition is met if the following is true:					
				40/				
			Difference between actual Gear Ratio and	< 4%				
			(*P) This condition is mot if the following is true:					
			(b) This contaition is thet if the following is true.					
			Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio	< 0 [70]				
			Criteria 1-2: if ALL conditions are met	I				
			During the following Down-shift	(5-4, 5-3)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear	>= 500 [rpm]				
			expected after the shift)					
			Input Speed Acceleration	> 5000 [rpm/sec]				
				for 0.03 [sec]				
			The gear ratio at the beginning of the shift indicates	= TRUE				
			8th gear					
			State 2 (Increment the malfunction counter or wait	for the shift to complete)				
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time324 (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) OF	R (C)) are met:				
			(A) During the following Down-shift	(4-3)				
			(B) The shift has completed	= IKUE				
			(c) input Speed - (Output Speed x Gear Ratio of	< 500 [IIII]				
			Criteria 2.3: if condition (A) AND (condition (P) OF	(C)) are met:				
			(A) During the following Down-shift	(5-4 5-3)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of	< 500 [rpm]				
			gear expected after the shift)					
			State 3 (Conclude Malfunction Detection and Resu	ume Normal Operations)				
			if ALL conditions are met:	•				
			"Exit Unusual Shifting Test B-2" timer	> Time423B (*10) [sec]				
			Unusual Shifting Test B-3: Down-shift with Eng	gine Flare (C1 not released)		[
			The TL80SN 8-Speed transmission is equipped wi	th failsafe valves to mitigate any effects				
			or laisely engaged brakes of clutches. However, du	any some sniit types if an element is				
			disrupted. A symptom of such a malfunction is a la	rige Input Speed Deviation (*1) (i.e.				
			usrupicu. A symptom of such a mailuffiction is a la	ige input speed Deviation (1) (i.e.				
			State 1 (Start Detection due to Deviation from Exp	ected Transmission Input Speed)				
			Criteria 1-1: if ALL conditions are met:					
			During the following Down-shift	(8-7, 8-6, 7-6)				
			Time since the start of the apply pressure control	< 1.0 [sec]				

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description		TOUE			Required	illum.
			NOT in multiplex snirting	= IRUE				
			Input Speed - (Output Speed X Geal Ratio of geal	>= 300 [ipm]				
			Input Speed Acceleration	E000 [rpm/cool				
			Input Speed Acceleration	for 0.03 [soc]				
			The gear ratio before shift control began is normal	= TRUF				
				- 1102				
			OR					
			The gear ratio at the beginning of the shift is					
			normal (*B)					
			(*A) This condition is met if the following is true:					
			Difference between actual Gear Ratio and	< 4 [%]				
			expected Gear Ratio					
			(*B) This condition is met if the following is true:					
			Difference between actual Gear Ratio and	< 8 [%]				
			expected Gear Ratio					
			State 2 (Increment the malfunction counter or wait	for the shift to complete)				
			Critoria 2.1. if ALL conditions are moti	•				
			"Time Since State 1" timer	Time857a (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) OE	2 (C)) are met:				
			(A) During the following Down-shift	(8-7 8-6 7-6)				
			(B) The shift has completed	= TRUF				
			(C) Input Speed - (Output Speed x Gear Ratio of	< 300 [rpm]				
			gear expected after the shift)					
			State 3 (Conclude Malfunction Detection and Resu	ime Normal Operations)				
			if ALL conditions are met:					
			"Exit Unusual Shifting Test B-3" timer	> Time857b (*X) [sec]				
			Unusual Shifting Test B-4: Down-shift with Eng	gine Flare (C3 not released)				
			The TL80SN 8-Speed transmission is equipped with	th failsafe valves to mitigate any effects				
			or raisely engaged brakes or clutches. However, du	ring some snift types if an element is				
			laisely engaged, the torque transfer from the expect	cted clutches and/or brakes will be				
			usi upieu. A symptom of such a mailunction is a la	rge input speed Deviation (1) (i.e.				
			State 1 (Start Detection due to Deviation from Exp	ected Transmission Input Speed)				
			Criteria 1-1: if ALL conditions are met:					
			During the following Down-shift	(5-4)				
			Time since the start of the apply pressure control	< 1.0 [sec]				
			NOT in multiplex shifting	= TRUE				
			Input Speed - (Output Speed x Gear Ratio of gear	>= 300 [rpm]				
			expected after the shift)	5000 (mm// a a)				
			Input Speed Acceleration	> 5000 [rpm/sec]				
			The gear ratio at the beginning of the chift is 7th					
			The year ratio at the beginning of the shift is 7th	= INUE				
			you	1				
			State 2 (Increment the malfunction counter or wait	for the shift to complete)				
			Criteria 2-1: if ALL conditions are met:					
			"Time Since State 1" timer	> Time54a (*10) [sec]				
			Criteria 2-2: if condition (A) AND (condition (B) OF	R (C)) are met:				
			During the following Down-shift	(5-4)				
			(B) The shift has completed	= TRUE				
			(C) Input Speed - (Output Speed x Gear Ratio of	< 300 [rpm]				
			gear expected after the shift)					

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
	1		State 3 (Conclude Malfunction Detection and Resi	ume Normal Operations)	1			1
			if ALL conditions are met:					
			"Exit Unusual Shifting Test B-4" timer	> Time54h (*X) [sec]				
			Unusual Shifting Test F: Gear Ratio Malfunctio	n during Shifting			-	
			Note: To confirm if a shift ratio is fulfilled the follow	ing criteria is used:			-	
			If all of the following conditions are mot:	ing chiena is used.	-			
			It dif of the following conditions are met.	(1 2 1 2 1 4 1 5)	-			
			During the following shifts	(1-2, 1-3, 1-4, 1-3)				
			Stri gear ratio runnied at the beginning of the Shirt	= IRUE				
				50 DL 1				
			Input Torque	<= -50 [NM]				
				OR				
				>= 50 [Nm]				
			Applied Element Command Pressure	> 2.5 [kg/cm^2]				
			If all of the following conditions are met:					
			During the following shifts	(2-8)				
			8th gear ratio fulfilled at the beginning of the shift	= TRUE				
			for 1.0 sec					
			Input Torque	<= -50 [Nm]				
				OR				1
				>= 50 [Nm]				
			If all of the following conditions are met-	- s hand	1 1			1
			During the following shifts	(3-7)	1			1
			7th dear ratio fulfilled at the beginning of the shift					
			for 1.0 coc	= IKUL				
			In I.U Sec	EQ [New]				
			input Forque	<= -00 [INII]				
				>= 50 [INM]	-			
			If all of the following conditions are met:		-			
			During the following shifts	(4-6)				
			6th gear ratio fulfilled at the beginning of the shift	= IRUE				
			for 1.0 sec					
			Input Torque	<= -50 [Nm]				
				OR				
				>= 50 [Nm]				
			If all of the following conditions are met:					
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 4-5,				
				4-3, 4-2, 4-1, 2-1, 2-1EB, 1EB-1, 1-				
				1EB)				
			3rd gear ratio fulfilled at the beginning of the shift	= TRUE				
			for 1.0 sec					
			Input Torque	<= -50 [Nm]				1
				OR				1
				>= 50 [Nm]				1
			Applied Element Command Pressure	$> 2.5 [kg/cm^2]$				1
			(this condition only applies to the following shifts (1.					1
			2 1-3 1-4 1-5)					1
			If all of the following conditions are moti	1	4 1			1
			In an or the following control on safe file:	(565759654740070/	4 1			
			During the following stills	(0-0, 0-7, 0-0, 0-3, 0-7, 0-0, 8-7, 8-0,				
			7th goor ratio fulfilled at the beginning of the					
			for 1.0 and	= IKUE				
			IOF T.U Sec	50 [b]1				
			input i orque	<= -50 [NM]				1
				UR				1
				>= 50 [Nm]	4			1
			If all of the following conditions are met:	•]			1
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 2-1,				1
				2-1EB, 1EB-1, 1-1EB)				1

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			4th gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm]				
				OR [Nm]				
			Applied Element, Command Prossure	>= 50 [N(1)]				
			(this condition only applies to the following shifts (1.	> 2.5 [kg/cm 2]				
			2. 1-3. 1-4. 1-5)					
			If all of the following conditions are met:					
			During the following shifts	(5-6, 5-7, 5-8, 8-7, 8-6, 8-5)				
			6th gear ratio fulfilled at the beginning of the shift	= TRUE				
			for 1.0 sec	50 [Ni1				
			input i orque	<= -50 [INM]				
				>= 50 [Nm]				
			If all of the following conditions are met:	· · · · · · · · · · · · · · · · · · ·				
			During the following shifts	(1-2, 1-3, 1-4, 1-5, 1EB-1, 1-1EB)				
			2nd gear ratio fulfilled at the beginning of the shift for 1.0 sec	= TRUE				
			Input Torque	<= -50 [Nm]				
				OR				
			Annie d Elemente Commend Deserves	>= 50 [Nm]				
			Applied Element Command Pressure (this condition only applies to the following shifts (1)	> 2.5 [kg/cm^2]				
			2. 1-3. 1-4. 1-5)					
			If all of the following conditions are met:					
			During the following shifts	(5-6, 5-7, 5-8)				
			8th gear ratio fulfilled at the beginning of the shift	= TRUE				
			for 1.0 sec	50.01				
			Input I orque	<= -50 [NM]				
				>= 50 [Nm]				
Lateral Acceleration Sensor Signal	P175F	Acceleration Sensor Signal message	The "Longitude/Latitude Acceleration Sensor	= 5 counts	Ignition Voltage	> 9000 [mV] for 3 sec continuously	250 msec	No MIL
(Rolling Count)		Counter Incorrect	Value Alive Rolling Count" CAN signal is not		Ignition Voltage	> 9000 [mV] for 10 [msec]		"Special
			updated for a calibratable number of counts		Battery Voltage	continuously		C"
			consecutively.		Battery Voltage	> 10.2 [V]		
					The TCM has completed the read operation of its	<= 32.0 [V]		
					non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Sonvice Request to Disable Normal			
						= NOT PRESENT		
					U0140 (Lost Communication with Body Control			
					Module)	= NOT DETECTED		
Tap Up/Down Switch	P1761	Up and Down Shift Switch Signal	The "Platform Transmission Tap Up/Down Switch	= 5 counts	Ignition Voltage	> 9000 [mV] for 3 sec continuously	150 msec	No MIL
(Rolling Count)		Circuit	Status Alive Rolling Count" CAN signal is not		Ignition Voltage	> 9000 [mV] for 10 [msec]		"Special
			updated for a calibratable number of counts		Battery Voltage	continuously		C
			consecutively.		The TCM has completed the read operation of its	> 10.2 [V]		
					non-volatile memory	<- 02.0 [V]		
						(all 4 criteria for 2 [sec] continuously)		
					Diagnostic Service Reguest to Disable Normal			
					Communication	= NUT PRESENT		
					U0140 (Lost Communication with Body Control			
					Module)			

Component / System	Fault Code	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
Ignition Switch Run/Start Position	P2534	Ignition Switch Run/Start Position	Ignition Voltage	< 9 [V]	Battery Voltage	>= 9 [V]	20 sec	1
Circuit		Circuit Low			The TCM is not operating out of a service mode			
					The TCM has completed the read operation of its non-volatile memory CAN Based Engine Controller Run Crank Terminal Status CAN Based Engine Running Signal U0073 (CAN Bus-OFF)	= Active = TRUE = NOT DETECTED = NOT DETECTED		
					BUS OFF State from CAN controller	= Not Received		
					Receiving ECM CAN frame	= TRUE		
Ignition Switch Run/Start Position	P2535	Ignition Switch Run/Start Position	Ignition Voltage	> 9 [V]	Battery Voltage	>= 9 [V]	3 sec	1
Circuit		Circuit riigi			The TCM is not operating out of a service mode			
					The TCM has completed the read operation of its non-volatile memory CAN Based Engine Controller Run Crank Terminal	la settas		
					Status	= macive		
					CAN Based Engine Running Signal U0073 (CAN Bus-OFF)	= FALSE = NOT DETECTED		
					U0100 (Lost Communication with ECM/PCM "A")	= NOT DETECTED		
					BUS OFF State from CAN controller Receiving ECM CAN frame	= Not Received = TRUE		
Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid)	P2716	Pressure Control Solenoid "D" Electrical	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1
			(*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed.		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2720 (Pressure Control Solenoid "D" Control Circuit Low) P2721 (Pressure Control Solenoid "D" Control Circuit High) Emergency Mode (*4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA" 3) Sign of ie is changed					

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description	00				Required	Illum.
			OR ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected.		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition ("Note 3) P2720 (Pressure Control Solenoid "D" Control Circuit Low) P2721 (Pressure Control Solenoid "D" Control Circuit High) Emergency Mode (*4)	 > 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE 		
			ie: Difference between "commanded current" and "feedback current"					
Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid)	P2720	Pressure Control Solenoid "D" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					Solenoid Cut Condition (*Note 3) P2721 (Pressure Control Solenoid "D" Control Circuit High)	= NOT ACTIVE = NOT DETECTED for [1 sec]		
Pressure Control Solenoid "D" Control Circuit (SL3 Solenoid)	P2721	Pressure Control Solenoid "D" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P2720 (Pressure Control Solenoid "D" Control Circuit Low)	= NOT DETECTED for [1 sec]		
Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid)	P2725	Pressure Control Solenoid "E" Electrical	lsum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1
			(*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed. ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition ("Note 3) P2729 (Pressure Control Solenoid "E" Control Circuit Low) P2730 (Pressure Control Solenoid "E" Control Circuit High) Emergency Mode ("4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		

Component / System	Fault Code	Monitor Strategy / Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time Required	MIL Illum.
			sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< $ie = < 50mA^{*}$ 3) Sign of ie is changed					
			OR					
			ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected.		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2729 (Pressure Control Solenoid "E" Control Circuit Low) P2730 (Pressure Control Solenoid "E" Control Circuit High) Emergency Mode (*4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			ie: Difference between "commanded current" and "feedback current"					
Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid)	P2729	Pressure Control Solenoid "E" Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					Solenoid Cut Condition (*Note 3) P2730 (Pressure Control Solenoid "E" Control Circuit High)	= NOT ACTIVE = NOT DETECTED for [1 sec]		
Pressure Control Solenoid "E" Control Circuit (SL4 Solenoid)	P2730	Pressure Control Solenoid "E" Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P2729 (Pressure Control Solenoid "E" Control Circuit Low)	= NOT DETECTED for [1 sec]		
Pressure Control Solenoid "F" Control Circuit (SL5 Solenoid)	P2734	Pressure Control Solenoid "F" Electrical	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1
			(*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2738 (Pressure Control Solenoid "F" Control Circuit Low)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
			value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed		P2739 (Pressure Control Solenoid "F" Control Circuit High) Emergency Mode (*4)	= NOT DETECTED		
			confirmed.					
			ie: Difference of "commanded current" and					
			ie added to "sum ie" every 10 msec					
			sum_ie is cleared if at least one of the following					
			conditions are satisfied					
			2) -50mA =< ie =< $50mA''$					
			3) Sign of ie is changed					
			OR					
			ie (*)	> 50 [mA]	Ignition Voltage	> 9000 [mV] for 10 [msec]	2 sec	1
					Battery Voltage	continuously		
					The TCM has completed the read operation of its	<= 32.0 [V]		
					non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
			(*) The second algorithm checks the absolute		Battery Voltage	> 11 [V] for [> 500 msec]		
			feedback current and commanded current over		Solenoid Cut Condition (*Note 3)	< 1358 [maj = NOT ACTIVE		
			time. If the absolute value of the difference of the		P2738 (Pressure Control Solenoid "F" Control	= NOT DETECTED		
			linear solenoid feedback current and commanded		Circuit Low)			
			calibrated period of time continuously, a		Circuit High)	= NOT DETECTED		
			malfunction will be detected.		Emergency Mode (*4)	= NOT ACTIVE		
			ie : Absolute value of ie					
			ie: Difference between "commanded current" and "feedback current"					
Pressure Control Solenoid "F" Control	P2738	Pressure Control Solenoid "F" Control	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage	> 9000 [mV] for 10 [msec]	500 msec	1
Circuit (SL5 Solenoid)		Circuit Low			Battery Voltage	continuously		
					Battery Voltage	> 10.2 [V]		
					non-volatile memory	<= 52.0 [V]		
						(all 4 criteria for 2 [sec] continuously)		
					Solenoid Cut Condition (*Note 3)	= NOT ACTIVE		
					P2739 (Pressure Control Solenoid "F" Control Circuit High)	= NOT DETECTED for [1 sec]		
Pressure Control Solenoid "F" Control	P2739	Pressure Control Solenoid "F" Control	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage	> 9000 [mV] for 10 [msec]	500 msec	1
Circuit (SES SOIETIOIO)		u cui nyn			Battery Voltage	> 10.2 [V]		
					The TCM has completed the read operation of its non-volatile memory	<= 32.0 [V]		
						(all 4 criteria for 2 [sec] continuously)		
					P2738 (Pressure Control Solenoid "F" Control Circuit Low)	= NOT DETECTED for [1 sec]		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Torque Converter Clutch Pressure Control Solenoid Control Circuit (SLU Solenoid)	P2761	Torque Converter Clutch Pressure Control Solenoid Control Circuit/Open	sum_ie (*)	> 60000 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	1 to 3 sec cumulatively	1
			(*) The first algorithm checks the cumulative sum of the difference of the linear solenoid feedback current and commanded current. This sum, named "sum_ie", will be updated on every clock cycle of the microprocessor (10 msec). If the value of the sum becomes greater than a calibrated threshold, a malfunction will be confirmed.		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low) P2763 (Torque Converter Clutch Pressure Control Solenoid Control Circuit High) Emergency Mode (*4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			ie: Difference of "commanded current" and "feedback current" ie added to "sum_ie" every 10 msec sum_ie is cleared if at least one of the following conditions are satisfied 1) Enable conditions are not satisfied 2) -50mA =< ie =< 50mA 3) Sign of ie is changed					
			0R ie (*)	> 50 [mA]	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	2 sec	1
			(*) The second algorithm checks the absolute value of the difference of the linear solenoid feedback current and commanded current over time. If the absolute value of the difference of the linear solenoid feedback current and commanded current exceeds a calibrated threshold for a calibrated period of time continuously, a malfunction will be detected.		Battery Voltage Linear Solenoid Feedback current Solenoid Cut Condition (*Note 3) P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low) P2763 (Torque Converter Clutch Pressure Control Solenoid Control Circuit High) Emergency Mode (*4)	> 11 [V] for [> 500 msec] < 1358 [mA] = NOT ACTIVE = NOT DETECTED = NOT DETECTED = NOT ACTIVE		
			ie : Absolute value of ie ie: Difference between "commanded current" and "feedback current"					
l orque Converter Clutch Pressure Control Solenoid Control Circuit (SLU Solenoid)	P2763	Torque Converter Clutch Pressure Control Solenoid Control Circuit High	Linear Solenoid Feedback Current	>= 1358mA	Ignition Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	500 msec	1
					P2764 (Torque Converter Clutch Pressure Control Solenoid Control Circuit Low)	= NOT DETECTED for [1 sec]		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Torque Converter Clutch Pressure Control Solenoid Control Circuit (SLU Solenoid)	P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	Linear Solenoid Feedback Current	< 20mA	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	500 msec	1
					non-volatile memory	(all 4 criteria for 2 [sec] continuously)		
					Solenoid Cut Condition (*Note 3) P2763 (Torque Converter Clutch Pressure Control	= NOT ACTIVE		
					Solenoid Control Circuit High)	= NOT DETECTED for [1 sec]		
Torque Converter Clutch (TCC) Enable Solenoid (SL solenoid)	P2769	Torque Converter Clutch Circuit Low	Comparison of SL solenoid Commanded State to Actual State (*) The TCM software does not directly determine the Actual State of the solenoid. This is done by	Actual State is "OFF" when Commanded State is "ON"	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its near volditing memory.	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V]	500 msec	2
			the solenoid driver hardware. The software just reads the state as ON or OFF. The software just		SL Solonoid Command	(all 4 criteria for 2 [sec] continuously)		
			Voltage - 1 [V]		Time elapsed since last solenoid state change	= UN > 10 msec		
Torque Converter Clutch (TCC) Enable Solenoid (SL solenoid)	P2770	Torque Converter Clutch Circuit High	Comparison of SL solenoid Commanded State to Actual State	Actual State is "ON" when Commanded State is "OFF"	Ignition Voltage Battery Voltage	> 9000 [mV] for 10 [msec] continuously	500 msec	2
			(*) The TCM software does not directly determine the Actual State of the solenoid. This is done by the solenoid driver hardware. The software just		The TCM has completed the read operation of its non-volatile memory	<= 32.0 [V] (all 4 criteria for 2 [sec] continuously)		
			driver determines the state is ON at Battery Voltage - 1 [V]		SL Solenoid Command Time elapsed since last solenoid state change	= OFF > 10 msec		
CAN Bus-Off	U0073	CAN Bus-OFF	Bus Off malfunction is received from the CAN controller	11 times continuously	Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] for 10 [msec] continuously > 10.2 [V] <= 32.0 [V] (all 4 criteria for 2 [sec] continuously)	10 sec	1
Engine Control Module (ECM)	10100	Lost Communication with ECM/DCM	CANI frame:		Ignition Voltage	> 9000 [m]/l for 5 sec continuously	1 500	1
	00100	"A"	"PTEL_Engine_Torque_Status"		Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] > 10.2 [V] <= 32.0 [V] (all 4 criteria for 5 [sec] continuously)	7 300	1
					U0073 (CAN Bus-OFF) Diamagtia Sanias Deguast ta Diashla Narmal	= NOT DETECTED		
					Communication	= NOT PRESENT		
Anti-Lock Brake System (ABS) Module	U0121	Lost Communication with Anti-Lock	CAN frame:	= NOT RECEIVED	Ignition Voltage	> 9000 [mV] for 5 sec continuously	4 sec	No MIL
		Brake System (ABS) Control Module	"PPEL_Chassis_General_Status_1"		Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory	> 9000 [mV] > 10.2 [V] <= 32.0 [V] (all 4 criteria for 5 [sec] continuously)		"Special C"
					U0073 (CAN Bus-OFF) Diagnostic Service Request to Disable Normal Communication	= NOT DETECTED = NOT PRESENT		

Component /	Fault	Monitor Strategy /	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Time	MIL
System	Code	Description					Required	Illum.
Body Control Module (BCM)	U0140	Lost Communication with Body Control Module	CAN frame: "PPEI_Platform_Trans_Requests"	= NOT RECEIVED	Ignition Voltage Ignition Voltage Battery Voltage Battery Voltage The TCM has completed the read operation of its non-volatile memory U0073 (CAN Bus-OFF) Diagnostic Service Request to Disable Normal Communication	 > 9000 [mV] for 5 sec continuously > 9000 [mV] > 10.2 [V] < 32.0 [V] (all 4 criteria for 5 [sec] continuously) = NOT DETECTED = NOT PRESENT 	4 sec	No MIL "Special C"

Tables			
		ATF Ten	nperature
	< -20 degC	>= -20 degC	>= -10 degC

			-	> -10 degC	< 20 degC	-	
(*1)	T_GarageFin	Delay Time after Garage Shift Control	50000	8000	2000	1000	[msec]
	T_ShiftFin	Delay Time after Shifting Control	50000	2000	1000	500	[msec]
	T_C1ctrlFin	Delay Time after C1 OFF control	8000	8000	2000	1000	[msec]
	T_C3ctrlFin	Delay Time after C3 OFF control	8000	8000	2000	1000	[msec]
	tmr_inh_GE	Delay Time after Gear Hold function has been activated	50000	2000	1000	500	[msec]

			ATF Temperature		
			< 40 degC	>= 40 degC	
(*2)	Time_SwOFFfailw	All Window conditions must be met for the following time, continuously	4000	2000	[msec]
	Time_SwONfailw	All Window conditions must be met for the following time, continuously	4000	2000	[msec]
	Time_SwDNFin	Delay Time after shifting to P, R, or N position	7000	3000	[msec]

(*3)	otcal_map	Calibrated threshold for the calculated heat load sum. Value is determined
		through linear interpolation of the initial ATF Temperature at Power On

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(*4)	Emergency Mode	Indicates that a serious malfunction has occurred and the transmission has stopped operating normally. In
		order to allow continued driving, the transmission will default to a safe operational state which is designed to prevent damage to the powertrain and vehicle occupants. As this condition will affect emissions, the MII will always be illuminated when emergency mode is active. Also referred to as a failure induced "Limp home" or "Limp in" mode by some manufacturers.

The following tables lists all malfunctions in which an Emergency Mode is entered upon their detection.

DTC	Monitor Description	Emergency Mode (*)
P0563	System Voltage High	3
P0601	Internal Control Module Memory Checksum Error	3
P0602	Control Module Programming Error	3
P0604	Internal Control Module Random Access Memory (RAM) Error	3
P0717	Input/Turbine Speed Sensor "A" Circuit No Signal	3
P0722	Output Speed Sensor Circuit No Signal	2
P0729	Gear 6 Incorrect Ratio	2

>= 20 degC

P0731	Gear 1 Incorrect Ratio	2
P0732	Gear 2 Incorrect Ratio	2
P0733	Gear 3 Incorrect Ratio	2
P0734	Gear 4 Incorrect Ratio	2
P0735	Gear 5 Incorrect Ratio	2
P0748	Pressure Control Solenoid "A" Electrical	1
P076F	Gear 7 Incorrect Ratio	2
P0776	Pressure Control Solenoid "B" Stuck OFF	2
P0777	Pressure Control Solenoid "B" Stuck ON	2
P0778	Pressure Control Solenoid "B" Electrical	1
P077C	Output Speed Sensor Circuit High	3
P077D	Output Speed Sensor Circuit Low	3
P0798	Pressure Control Solenoid "C" Electrical	1
P07BF	Input/Turbine Speed Sensor "A" Circuit High	3
P07C0	Input/Turbine Speed Sensor "A" Circuit Low	3
P07D9	Gear 8 Incorrect Ratio	2
P0962	Pressure Control Solenoid "A" Control Circuit Low	1
P0963	Pressure Control Solenoid "A" Control Circuit High	1
P0966	Pressure Control Solenoid "B" Control Circuit Low	1
P0967	Pressure Control Solenoid "B" Control Circuit High	1
P0970	Pressure Control Solenoid "C" Control Circuit Low	1
P0971	Pressure Control Solenoid "C" Control Circuit High	1
P0973	Shift Solenoid "A" Control Circuit Low	3
P0974	Shift Solenoid "A" Control Circuit High	3
P170A	Unusual Shifting - SL1 MAX Pressure Failure	2
P170B	Unusual Shifting - SL2 MAX Pressure Failure	2
P170C	Unusual Shifting - SL3 MAX Pressure Failure	2
P170D	Unusual Shifting - SL4 MAX Pressure Failure	2
P170E	Unusual Shifting - SL5 MAX Pressure Failure	2
P2534	Ignition Switch Run/Start Position Circuit Low	3
P2716	Pressure Control Solenoid "D" Electrical	1
P2720	Pressure Control Solenoid "D" Control Circuit Low	1
P2721	Pressure Control Solenoid "D" Control Circuit High	1
P2725	Pressure Control Solenoid "E" Electrical	1
P2729	Pressure Control Solenoid "E" Control Circuit Low	1
P2730	Pressure Control Solenoid "E" Control Circuit High	1
P2734	Pressure Control Solenoid "F" Electrical	1
P2738	Pressure Control Solenoid "F" Control Circuit Low	1
P2739	Pressure Control Solenoid "F" Control Circuit High	1

P2761	Torque Converter Clutch Pressure Control Solenoid Control Circuit/Open	3
P2763	Torque Converter Clutch Pressure Control Solenoid Control Circuit High	3
P2764	Torque Converter Clutch Pressure Control Solenoid Control Circuit Low	3
U0073	CAN Bus-OFF	3
U0100	Lost Communication with ECM/PCM "A"	3

(*) Emergency Mode	Final Gear State
1	3rd or 6th Gear (one might not be possible due to failed component)
2	4th Gear
3	3rd Gear

*5	PLUP_CLOSE_FAIL	= Minimum of the following values:			
	<u> </u>	1	6290		
			= Maximum of the foll	lowing values:	
		2	1 P_RelayV_Keep (*)		
			2	0.8 * 0.576 * P_secLC + 688	1

(*) P_RelayV_Keep	LF3	LFX
	900	750

			ATF Ten	nperature	
			< 20 degC	>= 20 degC	
*6	T_SLUFull	Time since SLU Pressure met PLUP_CLOSE_FAIL (*5) criteria	10	3	[sec]
					•
*7	I_gear	1st Gear Ratio at RANGE D			I

*8 gearRpm = Input Speed - Output Speed x I_gear (*9)

*9 1

TimeTrp_B

This timer is calculated based on input torque

				OilTemp [degC]				
				~-20	-19 ~ -1	0 ~ 19	20-64	65 ~
*10			< -10	5000	3000	2000	1000	800
			-10 ~ 40	5000	3000	3000	1900	1000
	Time_failA_up1 [msec] Inp	put Torque [Nm]	40 ~ 100	5000	3000	1000	800	600
			100 ~ 250	5000	3000	1000	500	300
			> 250	5000	3000	1000	500	300
			< -10	5000	1400	1200	1000	800

		-10 ~ 40	5000	1600	1400	1200	1100
Time_failA_down1 [msec]	Input Torque [Nm]	40 ~ 100	5000	1600	1400	1200	1100
		100 ~ 250	5000	1600	1400	1200	1100
		> 250	5000	1600	1400	1200	1000
		NO_S0 (*)	5000	1600	1400	1200	1000
		NO_S1	5000	1600	1400	1200	1000
Time_failA_down2 [msec]	Output Speed [rpm]	NO_S2	5000	1600	1400	1200	1000
		NO_S3	5000	1400	1200	1000	800
		NO_S4	5000	1400	1200	1000	800
		NO_S0 (*)	3000	2800	2500	2200	2000
	Output Speed [rpm]	NO_S1	3000	2800	2500	2200	2000
Time_failA_down2 C [msec]		NO_S2	3000	2800	2500	2200	2000
		NO_S3	3000	2800	2500	2200	2000
		NO_S4	3000	2800	2500	2200	2000
Time54a [msec]	msec	-	5000	500	200	100	100
Time857a [msec]	msec	-	5000	500	200	100	100
Time423a [msec]	msec	-	5000	500	200	100	100
Time324 [msec]	msec	-	5000	500	200	100	100
Time fail B [msec]	msec	-	5000	2000	500	500	500
Time324b [msec]	msec	-	2000	2000	1000	1000	1000
Time423b [msec]	msec	-	2000	2000	1000	1000	1000
Time857b [msec]	msec	-	2000	2000	1000	1000	1000
Time54b [msec]	msec	-	2000	2000	1000	1000	1000

(*) During Upshifts [rpm]

NO_S0	NO_S1	NO_S2	NO_S3	NO_S4
1200	2400	3600	4800	6000

During Downshifts [rpm]

NO_S0	NO_S1	NO_S2	NO_S3	NO_S4
750	1500	2500	3750	5250

*11	flare_	fail	_up

	During the following Up-shifts									
up [rpm]	6-7	6-8	3-4	3-5	4-5	7-8	All others	remarks		
	300	300	500	500	500	300	500	for LFX		
	500	500	1000	1000	1000	500	1000	for LF3		

*12	Time_PSLdrain [msec]	LF3	LFX
		1500	500

*13	Difference_Temp_Map	Engine Off Time [hrs]	0	1	2	3	4	5	6	7+
		Temp Difference [degC]	43	43	43	43	43	43	43	43

*14	OT_Sw_det [degC]	LF3	LFX
		-10	40

Notes

Note 1	CARB has given approval for the diagnostic algorithm P0592 (System Voltage Low Supply 2) (*Note 1) to be detected and confirmed by the vehicle electrical charging system. The TCM treats this as a Type C diagnostic and stores a service DTC when this malfunction is confirmed. Additionally, the TCM has an algorithm to detect when the System Voltage is critically low (< 9 [V]), and is no longer capable of functioning normally. Below this critically low voltage threshold, it is necessary to disable some diagnostics based on this algorithm, due to the effect a low voltage condition has on the ability of the TCM to control the transmission. Therefore, the TCM relies on the vehicle charging system to illuminate the MIL and alert the driver to this low voltage condition.	
Note 2	These malfunctions relate to invalid CAN signals, which are transmitted by the ECM. The components from which these signals are derived are diagnosed by the ECM, which will store an emissions related DTC code, and illuminate the MIL, as necessary when a malfunction related to these components occurs. Therefore no DTCs are stored by the TCM when they are detected.	
Note 3	Solenoid Cut Condition	When an ISO26262 Functional Safety related malfunction occurs, the TCM performs a Solenoid Cut, which cuts all current to the solenoids as a safe state reaction, putting the transmission into a default state (3rd or 7th gear, depending on vehicle speed).
Note 4	Quick Stop Detection Flag	This flag is intended to prevent misdetection of any malfunctions which could be caused by air in the ATF pick-up due to high gravitational forces. This flag will be set to TRUE if the conditions necessary for Quick Stop Detection are met. It is sufficient to say this flag will only become TRUE if the driver is braking heavily and the vehicle is rapidly decelerating. At all other times the value of this flag will be FALSE.