

2001 MY for Shift Solenoid "B" Performance (Shift Solenoid Valve S2) Monitor (P0755)

2001 MY for Pressure Control Solenoid "B" Performance (Shift Solenoid Valve SL2) Monitor (P0755)

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MONITOR STRATEGY

Required sensors/Components	Main	Shift solenoid valve No.2
	Sub	None
Frequency of operation	Continuous	
Duration	Less than 10 sec.	
MIL operation	2 driving cycles	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
The monitor will run whenever the following DTCs are not present.	See page In-39	

Engine family	Item	Specification	
		Minimum	Maximum
5VZ-FE	Condition (A)		
	Intake air temperature	-10 °C (14 °F) or more	Less than 70 °C (158 °F)
	Engine coolant temperature	60 °C (140 °F) or more	Less than 105 °C (221 °F)
	Transmission range	"D"	
	Battery voltage	10 V or more	–
	Speak retard by KCS control	–	8° CA or more
	Transfer range "Hi" [4WD]		
	Throttle valve opening angle	0 % or more	–
	Vehicle speed	5 km/h (3 mph) or more	–
	OFF malfunction		
	ECM selected gear	2nd	
	Throttle valve opening angle	10 % or more	Less than 30 %
	ON malfunction		
	ECM selected gear	4th with lock up	

Component T/M Outputs – Solenoid

1MZ-FE (SIENNA, AVALON, CAMRY, CAMRY SOLARA)	Condition (A)		
	Engine coolant temperature	60 °C (140 °F) or more	—
	Transmission range	"D"	
	OFF malfunction (A)		
	ECM selected gear	2nd	
	Throttle valve opening angle	10.5 % or more at engine speed 3,000 rpm (condition vary with engine speed)	—
	OFF malfunction (B)		
	ECM selected gear	3rd	
	Throttle valve opening angle	10.5 % or more at engine speed 3,000 rpm (condition vary with engine speed)	—
	OFF malfunction (C)		
	ECM selected gear	4th	
	Throttle valve opening angle	10.5 % or more at engine speed 3,000 rpm (condition vary with engine speed)	—
	ON malfunction (A)		
	ECM selected gear	1st	
	Vehicle speed	—	Less than 40 km/h (25 mph)
	Throttle valve opening angle	15.0 % or more and 10.5 % or more at engine speed 3,000 rpm (condition vary with engine speed)	—
	ON malfunction (B)		
	ECM selected gear	3rd	
	Throttle valve opening angle	10.5 % or more at engine speed 3,000 rpm (condition vary with engine speed)	—
	ON malfunction (C)		
	ECM selected gear	4th	
	Throttle valve opening angle	10.5 % or more at engine speed 3,000 rpm (condition vary with engine speed)	—

5S-FE	Condition (A)		
	Engine coolant temperature	60 °C (140 °F) or more	Less than 105 °C (221 °F)
	Transmission range	"D"	
	Battery voltage	10 V or more	—
	Spark retard by KCS control	—	Less than 10° CA
	OFF malfunction (A)		
	IAT	–10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	2nd	
	Throttle valve opening angle	10 % or more	Less than 30 %
	OFF malfunction (B)		
	IAT	–10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	1st	
	Throttle valve opening angle	35 % or more	—
	OFF malfunction (C)		
	IAT	–10 °C (14 °F) or more	Less than 70 °C (158 °F)
	Current ECM selected gear	2nd	
	Last ECM selected gear	1st	
	Throttle valve opening angle	7 % or more	—
	Closing change of throttle valve opening angle	–5 % or more	Less than 5 %
	OFF malfunction (D)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 60 %
	OFF malfunction (E)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 60 %
	OFF malfunction (F)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 60 %
	OFF malfunction (G)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	3rd	
	Throttle valve opening angle	5 % or more	Less than 60 %
	OFF malfunction (H)		
	Engine idling	OFF	
	Barking	OFF	
	ECM selected gear	3rd	
	Throttle valve opening angle	5 % or more	Less than 60 %

Component T/M Outputs – Solenoid

5S-FE	OFF malfunction (I)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	4th	
	Throttle valve opening angle	5 % or more	Less than 60 %
	OFF malfunction (J)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	4th	
	Throttle valve opening angle	5 % or more	Less than 60 %
	ON malfunction (A)		
	IAT	-10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	4th with lock up	
	ON malfunction (B)		
	IAT	-10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	1st	
	Throttle valve opening angle	35 % or more	-
	ON malfunction (C)		
	IAT	-10 °C (14 °F) or more	Less than 70 °C (158 °F)
	Current ECM selected gear	2nd	
	Last ECM selected gear	1st	
	Throttle valve opening angle	7 % or more	-
	Closing change of throttle valve opening angle	-5 % or more	Less than 5 %
	ON malfunction (D)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 60 %
	ON malfunction (E)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 60 %
	ON malfunction (F)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 60 %
	ON malfunction (G)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	3rd	
	Throttle valve opening angle	5 % or more	Less than 60 %

5S-FE	ON malfunction (H)			
	Engine idling	OFF		
	Braking	OFF		
	ECM selected gear	3rd		
	Throttle valve opening angle	5 % or more	Less than 60 %	
	ON malfunction (I)			
	Engine idling	OFF		
	Braking	OFF		
	ECM selected gear	4th		
	Throttle valve opening angle	5 % or more	Less than 60 %	
	ON malfunction (J)			
	Engine idling	OFF		
	Braking	OFF		
	ECM selected gear	4th		
	Throttle valve opening angle	5 % or more	Less than 60 %	
2ZZ-GE	Condition (A)			
	Engine coolant temperature	60 °C (140 °F) or more	—	
	Transmission range	"D"		
	Transmission fluid temperature	–20 °C (–4 °F) or more	—	
	Condition (B)			
	ECM selected gear	1st		
	Vehicle speed	10 km/h (6 mph) or more	Less than 40 km/h (25 mph)	
	Throttle valve opening angle	15 % or more and 4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—	
	Condition (C)			
	ECM selected gear	3rd or 4th		
	Vehicle speed	10 km/h (6 mph) or more	—	
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—	
	1ZZ-FE (CELICA)	Condition (A)		
		Engine coolant temperature	60 °C (140 °F) or more	—
		Transmission range	"D"	
OFF malfunction (A)				
ECM selected gear		1st		
Vehicle speed		10 km/h (6 mph) or more	Less than 40 km/h (25 mph)	
Throttle valve opening angle		7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—	
OFF malfunction (B)				
ECM selected gear		3rd		
Throttle valve opening angle		7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—	

Component T/M Outputs – Solenoid

1ZZ-FE (CELICA)	OFF malfunction (C)		
	ECM selected gear	4th	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	ON malfunction (A)		
	ECM selected gear	2nd	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	ON malfunction (B)		
	ECM selected gear	3rd	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	ON malfunction (C)		
	ECM selected gear	4th	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
1NZ-FE	Condition (A)		
	Engine coolant temperature	60 °C (140 °F) or more	—
	Transmission range	"D"	
	OFF malfunction (A)		
	ECM selected gear	1st	
	Vehicle speed	9 km/h (6 mph) or more	Less than 40 km/h (25 mph)
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	OFF malfunction (B)		
	ECM selected gear	3rd	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	OFF malfunction (C)		
	ECM selected gear	4th	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	ON malfunction (A)		
	ECM selected gear	2nd	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	ON malfunction (B)		
	ECM selected gear	3rd	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—

1NZ-FE	ON malfunction (C)		
	ECM selected gear	4th	
	Throttle valve opening angle	7.0 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
1MZ-FE(ES300)	Condition (A)		
	Engine coolant temperature	60 °C (140 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	ON malfunction (B)		
	ECM selected gear	1st	
	Vehicle speed	10 km/h (6 mph) or more	Less than 40 km/h (25 mph)
	Throttle valve opening angle	15 % or more and 4.5 % at engine speed 1,900 rpm (condition vary with engine speed)	–
	ON malfunction (C)		
	ECM selected gear	3rd or 4th	
	Vehicle speed	10 km/h (6 mph) or more	–
	Throttle valve opening angle	3.5 % at engine speed 1,900 rpm (condition vary with engine speed)	–
3UZ-FE	Condition (A)		
	Engine coolant temperature	40 °C (104 °F) or more	–
	Transmission range	"D"	
	Spark advance from Max. retard timing by KCS control	0° CA or more	–
	OFF malfunction (A)		
	ECM selected gear	1st	
	Vehicle speed	2 km/h (1 mph) or more	Less than 40 km/h (25 mph)
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	OFF malfunction (B)		
	ECM selected gear	2nd	
	Vehicle speed	2 km/h (1 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	OFF malfunction (C)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
	Vehicle speed	2 km/h (1 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	OFF malfunction (D)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	

Component T/M Outputs – Solenoid

3UZ–FE	ON malfunction (A)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
	Vehicle speed	2 km/h (1 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	ON malfunction (B)		
	ECM selected gear	5th	
	Vehicle speed	2 km/h (1 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	ON malfunction (C)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
1MZ–FE (RX300, HIGH LAND-ER), 2AZ–FE, 1AZ–FE	Condition (A)		
	Engine coolant temperature	60 °C (140 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	Condition (B)		
	ECM selected gear	1st	
	Vehicle speed	10 km/h (6 mph) or more	Less than 40 km/h (25 mph)
	Throttle valve opening angle	15 % or more and 4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
	Condition (C)		
	ECM selected gear	3rd or 4th	
	Vehicle speed	10 km/h (6 mph) or more	–
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	–
2UZ–FE (SEQUOIA, LX470, LAND CRUISER)	Condition (A)		
	Engine coolant temperature	40 °C (104 °F) or more	–
	Transmission range	"D"	
	Transfer range "Hi" [4WD]		
	Throttle valve opening angle	0 % or more	–
	Vehicle speed	5 km/h (3 mph) or more	–
	OFF malfunction (A)		
	ECM selected gear	2nd	
	Vehicle speed	3 km/h (2 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–

2UZ-FE (SEQUOIA, LX470, LAND CRUISER)	OFF malfunction (B)		
	ECM selected gear	3rd	
	Vehicle speed	3 km/h (2 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	OFF malfunction (C)		
	ECM selected gear	4th	
	Vehicle speed	3 km/h (2 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	ON malfunction (A)		
	ECM selected gear	1st	
	Vehicle speed	3 km/h (2 mph) or more	Less than 40 km/h (25 mph)
	Throttle valve opening angle	15 % or more and 6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	ON malfunction (B)		
	ECM selected gear	3rd	
	Vehicle speed	3 km/h (2 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
	ON malfunction (C)		
	ECM selected gear	4th	
	Vehicle speed	3 km/h (2 mph) or more	–
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	–
3RZ-FE	Condition (A)		
	Engine coolant temperature	55 °C (131 °F) or more	Less than 105 °C (221 °F)
	Transmission range	"D"	
	Battery voltage	10 V or more	–
	Spark retard by KCS control	–	Less than 10° CA
	Transmission fluid temperature	–	Less than 130 °C (266 °F) (hysteresis 110 °C (230 °F))
	Transfer range "Hi" [4WD]		
	Throttle valve opening angle	0 % or more	–
	Vehicle speed	5 km/h (3 mph) or more	–
	OFF malfunction		
	Intake air temperature	–10 °C (14 °F) or more	Less than 90 °C (194 °F)
	Throttle valve opening angle	12 % or more (condition vary with engine speed)	Less than 35 %
	ON malfunction		
	Intake air temperature	–10 °C (14 °F) or more	Less than 90 °C (194 °F)
	ECM selected gear	4th with lock up	

Component T/M Outputs – Solenoid

1ZZ-FE (COROLLA)	Condition (A)		
	Engine coolant temperature	55 °C (131 °F) or more	Less than 105 °C (221 °F)
	Transmission range	"D"	
	Battery voltage	10 V or more	—
	Spark retard by KCS control	0° CA or more	—
	OFF malfunction (A)		
	IAT	−10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	2nd	
	Throttle valve opening angle	18 % or more	Less than 35 %
	OFF malfunction (B)		
	IAT	−10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	1st	
	Throttle valve opening angle	30 % or more	—
	OFF malfunction (C)		
	IAT	−10 °C (14 °F) or more	Less than 70 °C (158 °F)
	Current ECM selected gear	2nd	
	Last ECM selected gear	1st	
	Throttle valve opening angle	10 % or more	—
	Closing change of throttle valve opening angle	−5 % or more	Less than 5 %
	OFF malfunction (D)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	OFF malfunction (E)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	OFF malfunction (F)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	OFF malfunction (G)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	3rd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	OFF malfunction (H)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	3rd	
	Throttle valve opening angle	7 % or more	Less than 50 %

1ZZ-FE (COROLLA)	OFF malfunction (I)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	4th	
	Throttle valve opening angle	7 % or more	Less than 50 %
	OFF malfunction (J)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	4th	
	Throttle valve opening angle	7 % or more	Less than 50 %
	ON malfunction (A)		
	IAT	-10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	4th with lock up	
	ON malfunction (B)		
	IAT	-10 °C (14 °F) or more	Less than 70 °C (158 °F)
	ECM selected gear	1st	
	Throttle valve opening angle	30 % or more	-
	ON malfunction (C)		
	IAT	-10 °C (14 °F) or more	Less than 70 °C (158 °F)
	Current ECM selected gear	2nd	
	Last ECM selected gear	1st	
	Throttle valve opening angle	10 % or more	-
	Closing change of throttle valve opening angle	-5 % or more	Less than 5 %
	ON malfunction (D)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	ON malfunction (E)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	ON malfunction (F)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	2nd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	ON malfunction (G)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	3rd	
	Throttle valve opening angle	7 % or more	Less than 50 %

Component T/M Outputs – Solenoid

1ZZ-FE (COROLLA)	ON malfunction (H)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	3rd	
	Throttle valve opening angle	7 % or more	Less than 50 %
	ON malfunction (I)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	4th	
	Throttle valve opening angle	7 % or more	Less than 50 %
	ON malfunction (J)		
	Engine idling	OFF	
	Braking	OFF	
	ECM selected gear	4th	
	Throttle valve opening angle	7 % or more	Less than 50 %
2UZ-FE (TUNDRA)	Condition (A)		
	Engine coolant temperature	40 °C (104 °F) or more	—
	Transmission range	"D"	
	Transfer range "Hi" [4WD]		
	Throttle valve opening angle	0 % or more	—
	Vehicle speed	5 km/h (3 mph) or more	—
	OFF malfunction (A)		
	ECM selected gear	2nd	
	Vehicle speed	3 km/h (2 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	OFF malfunction (B)		
	ECM selected gear	3rd	
	Vehicle speed	3 km/h (2 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	ON malfunction (A)		
	ECM selected gear	1st	
	Vehicle speed	3 km/h (2 mph) or more	Less than 40 km/h (25 mph)
	Throttle valve opening angle	15 % or more and 6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	ON malfunction (B)		
	ECM selected gear	3rd	
	Vehicle speed	3 km/h (2 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—

2UZ-FE (TUNDRA)	ON malfunction (C)		
	ECM selected gear	4th	
	Vehicle speed	3 km/h (2 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
2JZ-GE	Condition (A)		
	Engine coolant temperature	40 °C (104 °F) or more	—
	Transmission range	"D"	
	Spark advance from Max. retard timing by KCS control	0° CA or more	—
	OFF malfunction (A)		
	ECM selected gear	1st	
	Vehicle speed	2 km/h (1 mph) or more	Less than 40 km/h (25 mph)
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	OFF malfunction (B)		
	ECM selected gear	2nd	
	Vehicle speed	2 km/h (1 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	OFF malfunction (C)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
	Vehicle speed	2 km/h (1 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	OFF malfunction (D)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
	ON malfunction (A)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
	Vehicle speed	2 km/h (1 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	ON malfunction (B)		
	ECM selected gear	5th	
	Vehicle speed	2 km/h (1 mph) or more	—
	Throttle valve opening angle	6.5 % or more at engine speed 2,000 rpm (condition vary with engine speed)	—
	ON malfunction (C)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	

TYPICAL MALFUNCTION THRESHOLDS

Engine family	Detection criteria	Threshold
5VZ-FE	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	(A) & OFF malfunction	
	Engine speed	1st gear ratio or more x NO rpm
	(A) & ON malfunction	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
5S-FE	OFF malfunction	
	Following condition met I or II I = a. II = b. c. d. e. f. g. h. i. j.	
	(I) = a.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = (A) & OFF malfunction (A)	
	Engine speed	$\geq$ 1st gear ratio x NO rpm
	(II) = b. & (d. and (not g.) and (not i.)) = b. & ((not e.) and (not f.) and h. and (not i.)) = c. & (d. and (not g.) and (not i.)) = c. & ((not e.) and (not f.) and h. and (not i.))	
	There are 2 judgment steps/driving cycle 1st judgment step; when following condition met, temporary flag becomes ON. b. or c. It is necessary 2 judgments/driving cycle 2nd judgment step; when following condition met. pending fault code becomes ON. {d. and (not g.) and (not i.)} or {(not e.) and (not f.) and h. And (not i.)}	
	b. = (A) & OFF malfunction (B)	
	Engine speed	< 0.65 x NO + 1,900 rpm
	c. = (A) & OFF malfunction (C)	
	NElast – NEcurrent	< 475 rpm at throttle angle 30 % (condition vary with throttle angle)
	d. = (A) & OFF malfunction (D)	
	Engine speed	$\geq$ 1st gear ratio x NO + 50 rpm
	e. = (A) & OFF malfunction (E)	
	Engine speed	$\geq$ 2nd gear ratio x NO – 50 rpm < 2nd gear ratio x NO + 50 rpm
	f. = (A) & OFF malfunction (F)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	g. = (A) & OFF malfunction (G)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm

5S-FE	h. = (A) & OFF malfunction (H)	
	Engine speed	$\geq$ 4th gear ratio x NO – 50 rpm < 4th gear ratio x NO + 50 rpm
	i. = (A) & OFF malfunction (I)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	j. = (A) & OFF malfunction (J)	
	Engine speed	$\geq$ 4th gear ratio x NO – 50 rpm < 4th gear ratio x NO + 50 rpm
	ON malfunction	
	Following condition met I or II	
	(I) = a.	
	a. = (A) & ON malfunction (A)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	(II) = b. & (e. and (not h.) and (not j.)) = b. & ((not d.) and (not f.) and (not h.) and i.) = c. & (e. and (not h.) and (not j.)) = c. & ((not d.) and (not f.) and (not h.) and i.)	
	There are 2 judgment step/driving cycle 1st judgment step; when following condition met, temporary flag becomes ON. b. or c. It is necessary 2 judgments/driving cycle 2nd judgment step; when following condition met, pending fault code becomes ON. {d. and (not g.) and (not i.)} or {(not e.) and (not f.) and h. and (not i.)}	
	b. = (A) & ON malfunction (B)	
	Engine speed	< 0.65 x NO + 1,900 rpm
	c. = (A) & ON malfunction (C)	
	NElast – NEcurrent	< 475 rpm at throttle angle 30 % (condition vary with throttle angle)
	d. = (A) & ON malfunction (D)	
	Engine speed	$\geq$ 1st gear ratio x NO + 50 rpm
	e. = (A) & ON malfunction (E)	
	Engine speed	$\geq$ 2nd gear ratio x NO – 50 rpm < 2nd gear ratio x NO + 50 rpm
	f. = (A) & ON malfunction (F)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	g. = (A) & ON malfunction (G)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	h. = (A) & ON malfunction (H)	
	Engine speed	$\geq$ 4th gear ratio x NO – 50 rpm < 4th gear ratio x NO + 50 rpm
	i. = (A) & ON malfunction (I)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	j. = (A) & ON malfunction (J)	
	Engine speed	$\geq$ 4th gear ratio x NO – 50 rpm < 4th gear ratio x NO + 50 rpm

Component T/M Outputs – Solenoid

1MZ-FE (SIENNA, AVALON, CAMRY, CAMRY SOLARA)	OFF malfunction	
	Following conditions met a. and b. and c.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = OFF malfunction (A)	
	Input speed/Output speed (NC2/NO)	$2.07 \leq \text{NC2/NO} \leq 2.37$
	b. = OFF malfunction (B)	
	Input speed/Output speed (NC2/NO)	$0.63 \leq \text{NC2/NO} \leq 0.77$
	c. = OFF malfunction (C)	
	Input speed/Output speed (NC2/NO)	$0.63 \leq \text{NC2/NO} \leq 0.77$
	ON malfunction	
	Following conditions met a. and b. and c.	
	a. = ON malfunction (A)	
	Input speed/Output speed (NC2/NO)	$0.00 \leq \text{NC2/NO} \leq 0.20$
	b. = ON malfunction (B)	
	Input speed/Output speed (NC2/NO)	$0.88 \leq \text{NC2/NO} \leq 1.02$
	c. = ON malfunction (C)	
	Input speed/Output speed (NC2/NO)	$0.88 \leq \text{NC2/NO} \leq 1.02$
1MZ-FE (RX330, HIGH LANDER, ES300), 2AZ-FE, 2ZZ-GE, 1AZ-FE	Following conditions met a. and b.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = (A) and (B)	
	Input speed/Output speed (NT/NC)	$0.93 \leq \text{NT/NC} \leq 1.07$
	b. = (A) and (C)	
	Input speed/Output speed (NT/NC)	$1.49 \leq \text{NT/NC} \leq 1.63$
1ZZ-FE (CELICA)	OFF malfunction	
	Following conditions met a. and b. and c.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = (A) & OFF malfunction (A)	
	Input speed/Output speed (NT/NO)	$1.50 \leq \text{NT/NO} \leq 1.80$
	b. = (A) & OFF malfunction (B)	
	Input speed/Output speed (NT/NO)	$0.95 \leq \text{NT/NO} \leq 1.09$
	c. = (A) & OFF malfunction (C)	
	Input speed/Output speed (NT/NO)	$0.95 \leq \text{NT/NO} \leq 1.09$
	ON malfunction	
	Following conditions met d. and e. and f.	
	d. = (A) & ON malfunction (A)	
	Input speed/Output speed (NT/NO)	$2.75 \leq \text{NT/NO} \leq 3.35$
	e. = (A) & ON malfunction (B)	
	Input speed/Output speed (NT/NO)	$0.64 \leq \text{NT/NO} \leq 0.78$
	f. = (A) & ON malfunction (C)	
	Input speed/Output speed (NT/NO)	$0.64 \leq \text{NT/NO} \leq 0.78$

1NZ-FE	OFF malfunction	
	Following conditions met a. and b. and c.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = (A) & OFF malfunction (A)	
	Input speed/Output speed (NT/NO)	$1.50 \leq \text{NT/NO} \leq 1.80$
	b. = (A) & OFF malfunction (B)	
	Input speed/Output speed (NT/NO)	$0.95 \leq \text{NT/NO} \leq 1.09$
	c. = (A) & OFF malfunction (C)	
	Input speed/Output speed (NT/NO)	$0.95 \leq \text{NT/NO} \leq 1.09$
	ON malfunction	
	Following conditions met a. and b. and c.	
	a. = (A) & ON malfunction (A)	
	Input speed/Output speed (NT/NO)	$2.75 \leq \text{NT/NO} \leq 3.35$
	b. = (A) & ON malfunction (B)	
	Input speed/Output speed (NT/NO)	$0.64 \leq \text{NT/NO} \leq 0.78$
	c. = (A) & ON malfunction (C)	
	Input speed/Output speed (NT/NO)	$0.64 \leq \text{NT/NO} \leq 0.78$
3UZ-FE, 2JZ-GE	OFF malfunction	
	Following conditions met a. and b. and c. and d.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = A & OFF malfunction (A)	
	Input speed/Output speed (NC0/NO)	$3.14 \leq \text{NC0/NO} \leq 7.34$
	b. = A & OFF malfunction (B)	
	Input speed/Output speed (NC0/NO)	$3.14 \leq \text{NC0/NO} \leq 7.34$
	c. = A & OFF malfunction (C)	
	Input speed/Output speed (NC0/NO)	Change as follows $0.93 \leq \text{NC0/NO} \leq 1.07$ ↓ $0.00 \leq \text{NC0/NO} \leq 0.20$
	d. = A & OFF malfunction (D)	
	Output record from ECM for 4th → 5th upshifting	Recorded
	ON malfunction	
	Following conditions met a. and b. and c.	
	a. = A & ON malfunction (A)	
	Input speed/Output speed (NC0/NO)	Not change as follows $0.93 \leq \text{NC0/NO} \leq 1.07$ ↓ $0.00 \leq \text{NC0/NO} \leq 0.20$
	b. = A & ON malfunction (B)	
	Input speed/Output speed (NC0/NO)	$1.30 \leq \text{NC0/NO} \leq 1.55$
	c. = A & ON malfunction (C)	
	Output record from ECM for 4th → 5th upshifting	Recorded

Component T/M Outputs – Solenoid

2UZ-FE (SEQUOIA, LX470, LAND CRUISER)	OFF malfunction	
	Following conditions met a. and b. and c.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = OFF malfunction (A)	
	Input speed/Output speed (NC0/NO)	$2.63 \leq \text{NC0/NO} \leq 3.20$
	b. = OFF malfunction (B)	
	Input speed/Output speed (NC0/NO)	$0.00 \leq \text{NC0/NO} \leq 0.22$
	c. = OFF malfunction (C)	
	Input speed/Output speed (NC0/NO)	$0.00 \leq \text{NC0/NO} \leq 0.22$
	ON malfunction	
	Following conditions met a. and b. and c.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = A & ON malfunction (A)	
	Input speed/Output speed (NC0/NO)	$1.40 \leq \text{NC0/NO} \leq 1.67$
	b. = A & ON malfunction (B)	
	Input speed/Output speed (NC0/NO)	$0.93 \leq \text{NC0/NO} \leq 1.07$
	c. = A & ON malfunction (C)	
	Input speed/Output speed (NC0/NO)	$0.93 \leq \text{NC0/NO} \leq 1.07$
3RZ-FE	(A) & OFF malfunction	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	Engine speed	$\geq 1\text{st gear ratio} \times \text{NO rpm}$
	(A) & ON malfunction	
	Engine speed	$\geq 1\text{st gear ratio} \times \text{NO} - 50 \text{ rpm}$ and $< 3\text{rd gear ratio} \times \text{NO} + 50 \text{ rpm}$
1ZZ-FE (COROLLA)	OFF malfunction	
	Following condition met I = a. or II = b. c. d. e. f. g. h. i. j.	
	(I) = a.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = (A) & OFF malfunction (A)	
	Engine speed	$\geq 1\text{st gear ratio} \times \text{NO rpm}$
	(II) = b. & (d. and (not g.) and (not i.)) = b. & ((not e.) and (not f.) and h. and (not i.)) = c. & (d. and (not g.) and (not i.)) = c. & ((not e.) and (not f.) and h. and (not i.))	
	There are 2 judgment steps/driving cycle 1st judgment step; when following condition met, temporary flag becomes ON. b. (times) or c. (times) It is necessary 2 judgments/driving cycle 2nd judgment step; when following condition met, pending fault code becomes ON. {d. and (not g.) and (not i.)} or {(not e.) and (not f.) and h. and (not i.)}	

1ZZ-FE (COROLLA)	b. = (A) & OFF malfunction (B)	
	Engine speed	< 0.7 x NO + 2,100 rpm
	c. = (A) & OFF malfunction (C)	
	NElast – NEcurrent	< 512.5 rpm at throttle angle 40 % (condition vary with throttle angle)
	d. = (A) & OFF malfunction (D)	
	Engine speed	$\geq$ 1st gear ratio x NO + 50 rpm
	e. = (A) & OFF malfunction (E)	
	Engine speed	$\geq$ 2nd gear ratio x NO – 50 rpm < 2nd gear ratio x NO + 50 rpm
	f. = (A) & OFF malfunction (F)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	g. = (A) & OFF malfunction (G)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	h. = (A) & OFF malfunction (H)	
	Engine speed	$\geq$ 4th gear ratio x NO – 50 rpm < 4th gear ratio x NO + 50 rpm
	i. = (A) & OFF malfunction (I)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	j. = (A) & OFF malfunction (J)	
	Engine speed	$\geq$ 4th gear ratio x NO – 50 rpm < 4th gear ratio x NO + 50 rpm
	ON malfunction	
	Following condition met I or II	
	(I) = a.	
	a. = (A) & ON malfunction (A)	
	Engine speed	$\geq$ 3rd gear ratio x NO – 50 rpm < 3rd gear ratio x NO + 50 rpm
	(II) = b. & (e. and (not h.) and (not j.)) = b. & ((not d.) and (not f.) and (not h.) and i.) = c. & (e. and (not h.) and (not j.)) = c. & ((not d.) and (not f.) and (not h.) and i.)	
	There are 2 judgment step/driving cycle 1st judgment step; when following condition met, temporary flag becomes ON. b. (times) or c. (times) It is necessary 2 judgments/driving cycle 2nd judgment step; when following condition met, pending fault code becomes ON. {e. and (not h.) and (not j.)} or {(not d.) and (not f.) and (not h.) and i.}	
	b. = (A) & ON malfunction (B)	
	Engine speed	< 0.7 x NO + 2,100 rpm
	c. = (A) & ON malfunction (C)	
	NElast – NEcurrent	< 512.5 rpm at throttle angle 40 % (condition vary with throttle angle)
	d. = (A) & ON malfunction (D)	
	Engine speed	$\geq$ 1st gear ratio x NO + 50 rpm

Component T/M Outputs – Solenoid

1ZZ-FE (COROLLA)	e. = (A) & ON malfunction (E)	
	Engine speed	$\geq 2\text{nd gear ratio} \times \text{NO} - 50 \text{ rpm}$ $< 2\text{nd gear ratio} \times \text{NO} + 50 \text{ rpm}$
	f. = (A) & ON malfunction (F)	
	Engine speed	$\geq 3\text{rd gear ratio} \times \text{NO} - 50 \text{ rpm}$ $< 3\text{rd gear ratio} \times \text{NO} + 50 \text{ rpm}$
	g. = (A) & ON malfunction (G)	
	Engine speed	$\geq 3\text{rd gear ratio} \times \text{NO} - 50 \text{ rpm}$ $< 3\text{rd gear ratio} \times \text{NO} + 50 \text{ rpm}$
	h. = (A) & ON malfunction (H)	
	Engine speed	$\geq 4\text{th gear ratio} \times \text{NO} - 50 \text{ rpm}$ $< 4\text{th gear ratio} \times \text{NO} + 50 \text{ rpm}$
	i. = (A) & ON malfunction (I)	
	Engine speed	$\geq 3\text{rd gear ratio} \times \text{NO} - 50 \text{ rpm}$ $< 3\text{rd gear ratio} \times \text{NO} + 50 \text{ rpm}$
	j. = (A) & ON malfunction (J)	
	Engine speed	$\geq 4\text{th gear ratio} \times \text{NO} - 50 \text{ rpm}$ $< 4\text{th gear ratio} \times \text{NO} + 50 \text{ rpm}$
2UZ-FE (TUNDRA)	OFF malfunction	
	Following conditions met a. and b.	
	a. = (A) & OFF malfunction (A)	
	Input speed/Output speed (NC0/NO)	$2.63 \leq \text{NC0/NO} \leq 3.20$
	b. = (A) & OFF malfunction (B)	
	Input speed/Output speed (NC0/NO)	$0.00 \leq \text{NC0/NO} \leq 0.22$
	ON malfunction	
	Following conditions met a. and b. and c.	
	It is necessary 2 judgments/driving cycle 1st judgment; temporary flag ON 2nd judgment; pending fault code ON	
	a. = (A) & ON malfunction (A)	
	Input speed/Output speed (NC0/NO)	$1.40 \leq \text{NC0/NO} \leq 1.67$
	b. = (A) & ON malfunction (B)	
	Input speed/Output speed (NC0/NO)	$0.93 \leq \text{NC0/NO} \leq 1.07$
	c. = (A) & ON malfunction (C)	
	Input speed/Output speed (NC0/NO)	$0.93 \leq \text{NC0/NO} \leq 1.07$