

2002 MY for Shift Solenoid "C" Performance (Shift Solenoid Valve S3) Monitor (P0760)

2002 MY for Pressure Control Solenoid "C" Performance (Shift Solenoid Valve SL3) Monitor (P0760)

To return to monitor description, see page [Cm-288](#).

MONITOR STRATEGY

Required sensors/Components	Main	Shift solenoid valve No.3
	Sub	None
Frequency of operation	Continuous	
Duration	1MZ-FE	(A) & OFF malfunction (A) 0.8 sec. (A) & OFF malfunction (B) 1 sec. (A) & (ON malfunction (A), (B)) 0.8 sec. (A) & ON malfunction (C) 0.4 sec.
	3UZ-FE, 2JZ-GE	Less than 10 sec.
MIL operation	2 driving cycles	

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
1MZ-FE	Condition (A)		
	Engine coolant temperature	10 °C (50 °F) or more	–
	Transmission range	"D"	
	Transmission fluid temperature	–20 °C (–4 °F) or more	–
	Transmission fluid temperature sensor circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	
	Input shaft speed sensor circuit	Not circuit malfunction	
	Internal counter shaft speed sensor circuit	Not circuit malfunction	
	Output shaft speed sensor circuit	Not circuit malfunction	
	Shift solenoid "A" circuit	Not circuit malfunction	
	Shift solenoid "B" circuit	Not circuit malfunction	
	Shift solenoid "C" circuit	Not circuit malfunction	
	Shift solenoid "D" circuit	Not circuit malfunction	
	"SR" solenoid circuit	Not circuit malfunction	

1996–2003 ADDITION OF OBD (OTH021U)

Component T/M Outputs – Solenoid

1MZ-FE	Shift solenoid "E" circuit	Not circuit malfunction	
	OFF malfunction (A)		
	ECM selected gear	4th or 5th	
	Throttle valve opening angle	4.5 % or more at engine speed 1,900 rpm (condition vary with engine speed)	—
	OFF malfunction (B)		
	ECM selected gear	4th	
	Throttle valve opening angle	5 % or more	—
	Vehicle speed	10 km/h (6 mph) or more	—
	ON malfunction (A)		
	ECM selected gear	1st	
	Vehicle speed	—	Less than 40 km/h (25 mph)
	Throttle valve opening angle	4.5 % 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 output speed 1,400 rpm (condition vary with engine speed)	—
	Malfunction of shift solenoid "B" & "C"	Not detected	
	ON malfunction (C)		
	Throttle valve opening angle	7.0 % or more at output speed 1,050 rpm (condition vary with engine speed)	—
	Malfunction of shift solenoid "B"	Not detected	
3UZ-FE (SC430)	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	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 (B)		
	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)	—

3UZ-FE (SC430)	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)		
	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 (B)		
	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 (C)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
3UZ-FE (LS430, GS430)	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	—
	Neutral start switch circuit	Not circuit malfunction	
	Shift solenoid "A" circuit	Not circuit malfunction	
	Shift solenoid "B" circuit	Not circuit malfunction	
	Shift solenoid "C" circuit	Not circuit malfunction	
	Shift solenoid "D" circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	
	OFF malfunction (A)		
	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)	—

Component T/M Outputs – Solenoid

3UZ-FE (LS430, GS430)	OFF malfunction (B)		
	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 (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)		
	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 (B)		
	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 (C)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	
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	-
	Neutral start switch circuit	Not circuit malfunction	
	Shift solenoid "A" circuit	Not circuit malfunction	
	Shift solenoid "B" circuit	Not circuit malfunction	
	Shift solenoid "C" circuit	Not circuit malfunction	
	Shift solenoid "D" circuit	Not circuit malfunction	
	ECT sensor circuit	Not circuit malfunction	

2JZ-GE	OFF malfunction (A)		
	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 (B)		
	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 (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)		
	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 (B)		
	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 (C)		
	Current ECM selected gear	5th	
	Last ECM selected gear	4th	

TYPICAL MALFUNCTION THRESHOLDS

Engine family	Detection criteria	Threshold
1MZ-FE	Following condition met (a. and b.) or (c. and d. and e.).	
	It is necessary 2 judgements/driving cycle 1st judgement; temporary flag ON 2nd judgement; pending fault code ON	
	a. = (A) & OFF malfunction (A)	
	Input speed/Intermediate speed (NT/NC)	$0.93 \leq \text{NT/NC} < 1.07$
	b. = (A) & OFF malfunction (B)	
	Intermediate speed/Output speed (NC/NO)	$0.95 \leq \text{NC/NO} < 1.09$
	c. = (A) & ON malfunction (A)	
	Input speed/Intermediate speed (NT/NC)	$0.93 \leq \text{NT/NC} < 1.07$
	d. = (A) & ON malfunction (B)	
	Input speed – Intermediate speed (NT – NC)	700 rpm or more
	e. = (A) & OFF malfunction (C)	
	Input speed – Intermediate speed (NT – NC)	$< -500 \text{ rpm or } \geq 700 \text{ rpm}$
Except 1MZ-FE	[OFF malfunction]	
	Following conditions met a. and b. and c. and d.	
	It is necessary 2 judgements/driving cycle 1st judgement; temporary flag ON 2nd judgement; pending fault code ON	
	a. = (A) & OFF malfunction (A)	
	Input speed/Output speed (NC0/NO)	$0.00 \leq \text{NC0/NO} \leq 0.20$
	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)	Not 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.	
	It is necessary 2 judgements/driving cycle 1st judgement; temporary flag ON 2nd judgement; pending fault code ON	
	a. = (A) & ON malfunction (A)	
	Input speed/Output speed (NC0/NO)	$0.93 \leq \text{NC0/NO} \leq 1.07$
	b. = (A) & ON malfunction (B)	
	Input speed/Output speed (NC0/NO)	Not change as follows $0.93 \leq \text{NC0/NO} \leq 1.07$ ↓ $0.00 \leq \text{NC0/NO} \leq 0.20$
	c. = (A) & OFF malfunction (C)	
	Output record from ECM for 4th → 5th upshifting	Recorded