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2016 MAZDA MX-5 / Miata Roadster Coupe OEM Service and Repair Workshop Manual

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Sample

DTC INSPECTION [START STOP UNIT]

SM2899100

id0902p602850

CMDTC Self Test

1.Connect the M-MDS to the DLC-2.

2.After the vehicle is identified, select the following items from the initialization screen of the M-MDS.

- (1)Select "Self Test".
- (2)Select "All CMDTCs".

3.Verify the DTC according to the directions on the screen.

- If any DTCs are displayed, perform troubleshooting according to the corresponding DTC inspection after recording the snapshot data. (See **DTC TABLE [START STOP UNIT].**)

4.After completion of repairs, clear all DTCs stored in the start stop unit. (See **CLEARING DTC [START STOP UNIT].**)

ODDTC Self Test

1.Connect the M-MDS to the DLC-2.

2.After the vehicle is identified, select the following items from the initialization screen of the M-MDS.

- (1)Select "Self Test".
- (2)Select "Modules".
- (3)Select "SSU".

3.Verify the DTC according to the directions on the screen.

- If any DTCs are displayed, perform troubleshooting according to the corresponding DTC inspection after recording the snapshot data. (See **DTC TABLE [START STOP UNIT].**)

4.After completion of repairs, clear all DTCs stored in the start stop unit. (See **CLEARING DTC [START STOP UNIT].**)

Snapshot Data

Snapshot data item	Unit	Data contents	Data read/use method	Corresponding data monitor items
TOTAL_TIME	hh:mm:ss *2	Accumulated total elapsed time since vehicle completion until start stop unit detects a DTC Note When the ROOM fuse is removed, and the ignition is switched off, the time is not included in the elapsed time.	The elapsed time from which the start stop unit detects DTCs to the present can be calculated by performing the following procedure. - Verify the instrument cluster PID item TOTAL_TIME. - Verify the snapshot data item TOTAL_TIME. - Subtract 2 from 1.	TOTAL_TIME
TRNS_NUM_L	Initial/No.1/No.2/No.3/No.4/No.5/No.6	Registration number of the remote transmitter	If the start stop unit detects DTC B13D3:16 (Low remote transmitter battery voltage), inspect the remote transmitter in which the malfunction is occurring using the following procedure to display the registration number of the remote transmitter that was operated. - Verify the registration number of the remote transmitter in the snapshot data. - Display the start stop unit PID item RF_TRNS_NUM and inspect the battery voltage of the remote transmitter having the same registration number as the recorded remote transmitter registration number.	–
VPWR	V	Start stop unit power supply voltage	–	VPWR_B2
VPWR_B1	V	Start stop unit power supply voltage (ROOM fuse)	–	VPWR_B1
VSPD_STATUS	Stop/0-10km/h/Over10km/h/FAIL	Vehicle speed status	- The start stop unit constantly receives the vehicle speed sent via CAN communication from the instrument cluster. - If a DTC is detected, the start stop unit records the vehicle speed when the DTC was detected, and it is displayed in the M-MDS.	SPEEDOMTR

*1:Instrument cluster PID (See **PID/DATA MONITOR TABLE [INSTRUMENT CLUSTER].**)

*2:The seconds may be indicated after the decimal point.

Verifying DTCs Using Security Indicator Light (Immobilizer System)

Note

4.Press the clear button on the DTC screen to clear the DTC.

5.Switch the ignition off.

6.Switch the ignition ON (engine off or on) and wait for 5 s or more.

7.Perform DTC inspection. (See **DTC INSPECTION [START STOP UNIT].**)

8.Verify that no DTCs are displayed.

Sample

DTC C0051:2F [START STOP UNIT]

SM2899044

id0902p602130

Description	Steering angle sensor signal error
Detection condition	• Start stop unit detects the steering angle sensor signal error for 5 s or more with the ignition switched ON (engine off or on).
Fail-safe	Not applicable
Possible cause	• Start stop unit malfunction
System wiring diagram	Not applicable

Diagnostic Procedure

Step	Inspection	Action
1	VERIFY IF MALFUNCTIONING LOCATION IS START STOP UNIT DEPENDING ON REPEATABILITY • Clear the DTC for the start stop unit using the M-MDS. (See CLEARING DTC [START STOP UNIT].) • Switch the ignition ON (engine off or on) and wait for 5 s or more. • Retrieve the start stop unit DTCs using the M-MDS. (See DTC INSPECTION [START STOP UNIT].) • Is the same DTC displayed?	Yes Replace the start stop unit, then go to the next step. (See START STOP UNIT REMOVAL/INSTALLATION.)
		No Go to the next step.
2	VERIFY IF OTHER DTCs DISPLAYED • Are any other DTCs displayed?	Yes Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [START STOP UNIT].)
		No DTC troubleshooting completed.

Sample

Sample

DTC TABLE [START STOP UNIT]

SM2899102

id0902p602870

Immobilizer System

×: Applicable–: Not applicable

DTC				KEY warning light (red)*2	Multi- information display*3	Push button start indicator light (amber)	Description	Fail-safe	Drive
M-MDS display*1		Security indicator light flash pattern							
Start stop unit	PCM								
U3000:96	P1260:00	09		On	Display	Flash	Start stop unit malfunction	–	
B10D9:87	P1260:00	11		–	–	Flash	Coil antenna (built into push button start) error	–	
B13D3:05	P1260:00	13		–	–	–	Remote transmitter program error	–	
B13D3:94	P1260:00	13		–	–	–	Communicat ion error with remote transmitter	–	

DTC No.	KEY warning light (red)* ¹	Multi-information display* ²	Push button start indicator light (amber)	Description	Fail-safe	Drive cycle	Self test type* ³	Memory function	Page
B13C3:16	On	Display	–	LF control unit power supply voltage low input	×	–	C	×	(See B13 [START STOP UNIT])
B13C3:29	On	Display	–	Communication error between start stop unit and LF control unit	×	–	C	×	(See B13 [START STOP UNIT])

*1:Without multi-information display

*2:"Keyless system malfunction" is displayed in the multi-information display. (With multi-information display)

*3:C: CMDTC self test, D: ODDTC self test

Start Stop Unit

×: Applicable –: Not applicable

DTC No.	KEY warning light (red)* ¹	Multi-information display* ²	Push button start indicator light (amber)	Description	Fail-safe	Drive cycle	Self test type* ³	Memory function	Page
B108B:23	–	–	Flash	Push button start switch 1 circuit malfunction	×	–	C	×	(See B10 [START STOP UNIT])
B108B:24	–	–	Flash	Push button start switch 1 circuit malfunction	–	–	C	×	(See B10 [START STOP UNIT])
B108C:23	–	–	Flash	Push button start switch 2 circuit malfunction	×	–	C	×	(See B10 [START STOP UNIT])
B108C:24	–	–	Flash	Push button start switch 2 circuit malfunction	–	–	C	×	(See B10 [START STOP UNIT])
B10AC:13 ^{*4}	–	–	–	Cruise control switch circuit malfunction	–	–	C	×	(See B10 [START STOP UNIT])