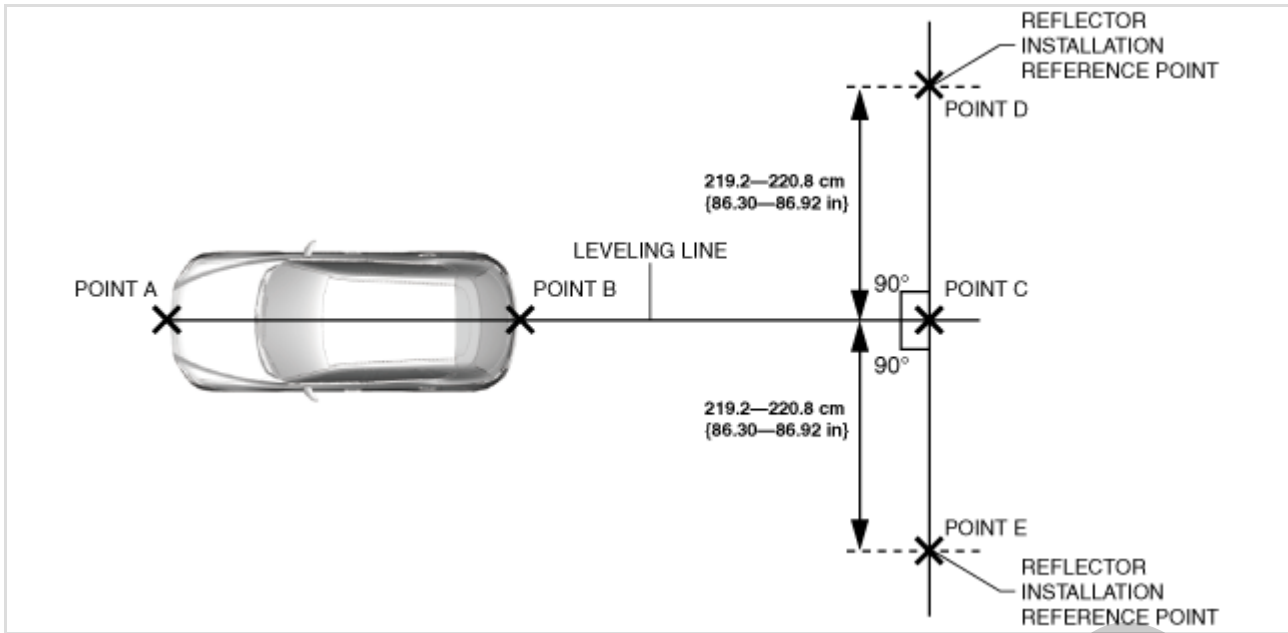


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Mazda 3 2025 Manual - Service and Repair Workshop Guide

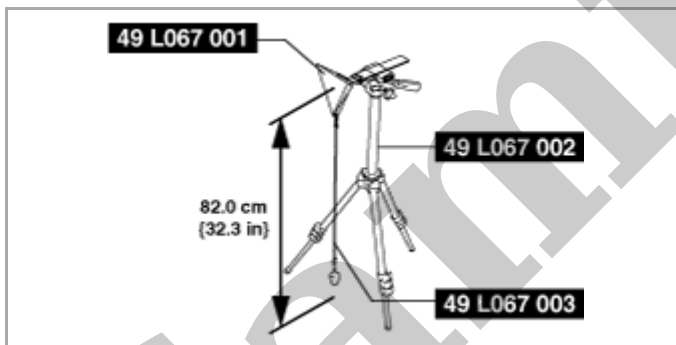
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ac5wzw00015440

12. Pull the connected points D, C and E lines (SST (reflector) installation line).

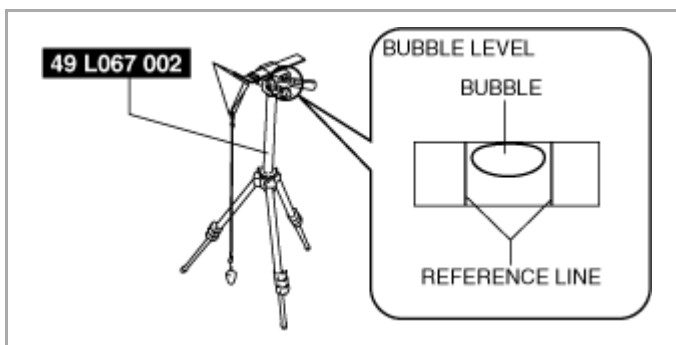
13. Install the SST (reflector and plum bob) to the SST (tripod).



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14. Adjust so that the height of the SST (reflector) from the floor surface is 82.0 cm (32.3in).

15. Level the SST (reflector) by adjusting the leveling bubble on the SST (tripod) so that it is centered on the bubble reference line.



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16. Align point D or point E with the end of the SST (plum bomb).

BLIND SPOT MONITORING (BSM) BRACKET REMOVAL/INSTALLATION

SM2900000

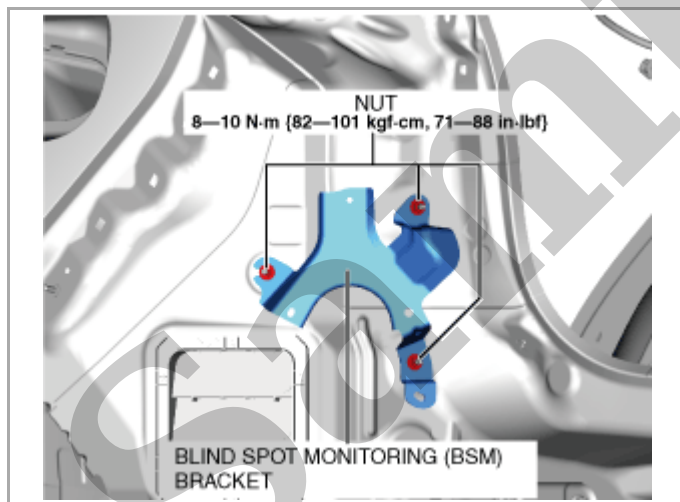
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1. Disconnect the negative battery terminal. (See [NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.](#))

2. Remove the following parts:

- (1) Rear combination light (See [REAR COMBINATION LIGHT REMOVAL/INSTALLATION.](#))
- (2) Rear splash shield (See [SPLASH SHIELD REMOVAL/INSTALLATION.](#))
- (3) Rear bumper (See [REAR BUMPER REMOVAL/INSTALLATION.](#))
- (4) Blind spot monitoring (BSM) control module (See [BLIND SPOT MONITORING \(BSM\) CONTROL MODULE REMOVAL/INSTALLATION.](#))

3. Remove the nuts.



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4. Remove the blind spot monitoring (BSM) bracket.

5. Install in the reverse order of removal.

Caution

•If the blind spot monitoring (BSM) bracket is replaced, not performing the blind spot monitoring (BSM) radar test will cause a deviation in the radar emission angle which could result in the system not detecting a vehicle approaching from the rear correctly. When the blind spot monitoring (BSM) bracket is replaced, perform the blind spot monitoring (BSM) radar test.

6. When the blind spot monitoring (BSM) bracket is replaced, perform the blind spot monitoring (BSM) radar test. (See [BLIND SPOT MONITORING \(BSM\) RADAR TEST.](#))

MRCC INITIALIZATION SETTING

SM2900003

id15200000430

Warning

• If the MRCC initial setting is not completed, the Mazda radar cruise control (MRCC) system, smart brake support (SBS) system, and the distance recognition support system (DRSS) will not operate normally which could lead to an unexpected accident. Therefore, when performing the following work, always perform the MRCC initial setting so that the MRCC system, SBS system, DRSS operate normally.

- SAS control module removal/installation

Note

• The initial setting may finish abnormally for the following reasons: If it finishes abnormally, after completion of repairs, then perform the MRCC initial setting again.

- Vehicle moves/shakes during initial setting (such as getting in vehicle, opening door)
- SAS control module malfunction
- Abnormal battery voltage

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 "Electrical".

(2) Select "SBS/MRCC".

(3) Select "System Initialize".





3. Perform the MRCC initial setting following the instructions on the screen.

RADAR UNIT AIMING

SM2900006

id15200000460

Special Service Tool (SST)

49 L067 001 Reflector		49 L067 002 Tripod		49 L067 003 Plum-bob	
49 L067 006 Plum-bob		-	-	-	-

Warning

• Radiofrequency radiation exposure information:

- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be kept with minimum distance of 20 cm {7.9 in} between the radiator (antenna) and your body at all times during adjustment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

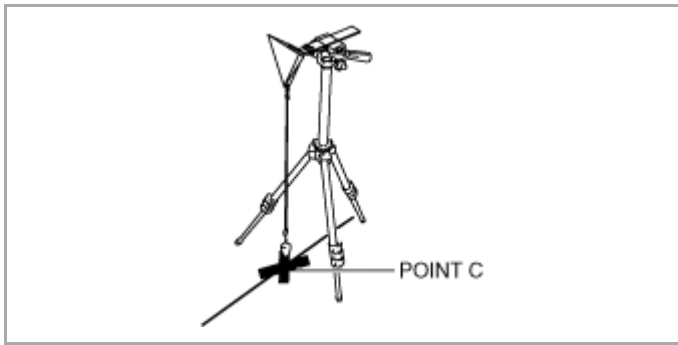
• If the radar unit aiming adjustment is not completed, the Mazda radar cruise control (MRCC) system, Distance recognition support system (DRSS), and Smart brake support (SBS) will not operate normally which could lead to an unexpected accident. Therefore, when performing the following work, always perform the aiming adjustment so that the Mazda radar cruise control (MRCC) system, Distance recognition support system (DRSS), and Smart brake support (SBS) operate normally.

- Radar unit, radar unit bracket replacement

1. Park the vehicle on level ground.

Caution

- If the vehicle and reflector are set at different heights or different angles, accurate adjustment cannot be performed.
- Level ground conditions must be within 1 degree for the front and back, and right and left.
- Perform the work in an area where 8 m {26 ft} or more of space from the vehicle front and 4 m {13 ft} or more of width are available.
- Perform the aiming adjustment in a place where there is no obstruction up to 1.2 m {3.9 ft} or more from the road surface at approx. 8 m {26 ft} from vehicle front.
- Remove cargo from the cabin and trunk compartment so that the vehicle is in an unloaded condition.
- Adjust the tire pressure of each tire to the specified value.
- Do not let foreign material (metal, plastic material) get into the aiming implementation area to prevent radio wave interference.
- Do not move or shake the vehicle during aiming adjustment (such as riding in or opening a door).
- Remove dust or dirt from the radiator grille ornament.
- Do not turn the power off during the aiming adjustment.
- The voltage supplied to the radar unit must be 9.5–15.5 V.
- The aiming adjustment must be performed under approx. -30–60 °C {-22–140 °F} conditions.



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Note

- Visually verify that the reflection surface of the reflector faces the vehicle.

11. Visually inspect the surfaces of the radar unit and the radiator grille ornament for the following:

- Dirt is adhering to radar unit surface
- Dirt is adhering to radiator grille ornament surface
- Foreign material (reflective object) is adhering to radar unit
- Foreign material (reflective object) is adhering to radiator grille ornament surface

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

Caution

- If the engine is started, the aiming may not be performed correctly due to oscillation. Perform the aiming with the engine stopped.

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

- (1) Select "Electrical".
- (2) Select "SBS/MRCC".
- (3) Select "Radar Aiming".

14. Perform the aiming adjustment following the instructions on the screen.

15. If "Aiming has been unsuccessful." is displayed on the screen, repair according to the error code in the following chart.

- If verification and repair are completed, perform the aiming adjustment again.

Error code	Item	Possible cause	Inspection item (s)
Code 1	Improper target position	<ul style="list-style-type: none"> • SST (reflector) installation mistake • Marking setting mistake • Improper installation of radar unit • Radar unit malfunction 	<ul style="list-style-type: none"> • SST (reflector) installation condition • Marking setting condition (SST string) • Radar unit installation condition and installation part condition • Applicable DTC troubleshooting

CRUISE CONTROL SWITCH REMOVAL/INSTALLATION [MAZDA RADAR CRUISE CONTROL (MRCC) SYSTEM]

SM2900008

id1520000048a

1. For the cruise control switch removal/installation, refer to the steering switch removal/installation because the cruise control switch is installed to the steering switch. (See [STEERING SWITCH REMOVAL/INSTALLATION](#).)

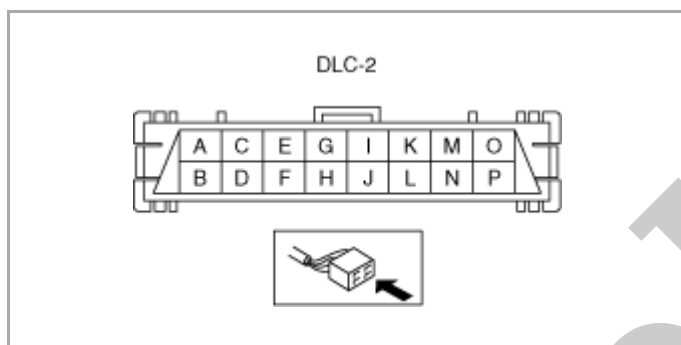
Sample

External on-board diagnostic tester communication function

- The external on-board diagnostic tester communication function is for sending/receiving data to and from each module and the external on-board diagnostic tester mutually.
- The M-MDS has been adopted as an external on-board diagnostic tester, and DLC-2 has been adopted as a communication media.

Data Link Connector (DLC) -2

- A DLC-2 compliant with the International Standardization Organization (ISO) standard has been adopted.
- Connector shapes and terminal layouts as specified by ISO 15031-3 (SAE J1962) have been adopted, and the terminals are 16-pin.



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--: Not applicable

Terminal	Function
A	Terminal for battery power supply
B	Terminal for headlight auto leveling system initial setting
C	Sophisticated Airbag Sensor (SAS) control module
D	--
E	Terminal LO for HS-CAN
F	Terminal HI for HS-CAN
G	--
H	Ground terminal for serial communication
I	--
J	Body ground terminal
K	--
L	--
M	--
N	--
O	--
P	--

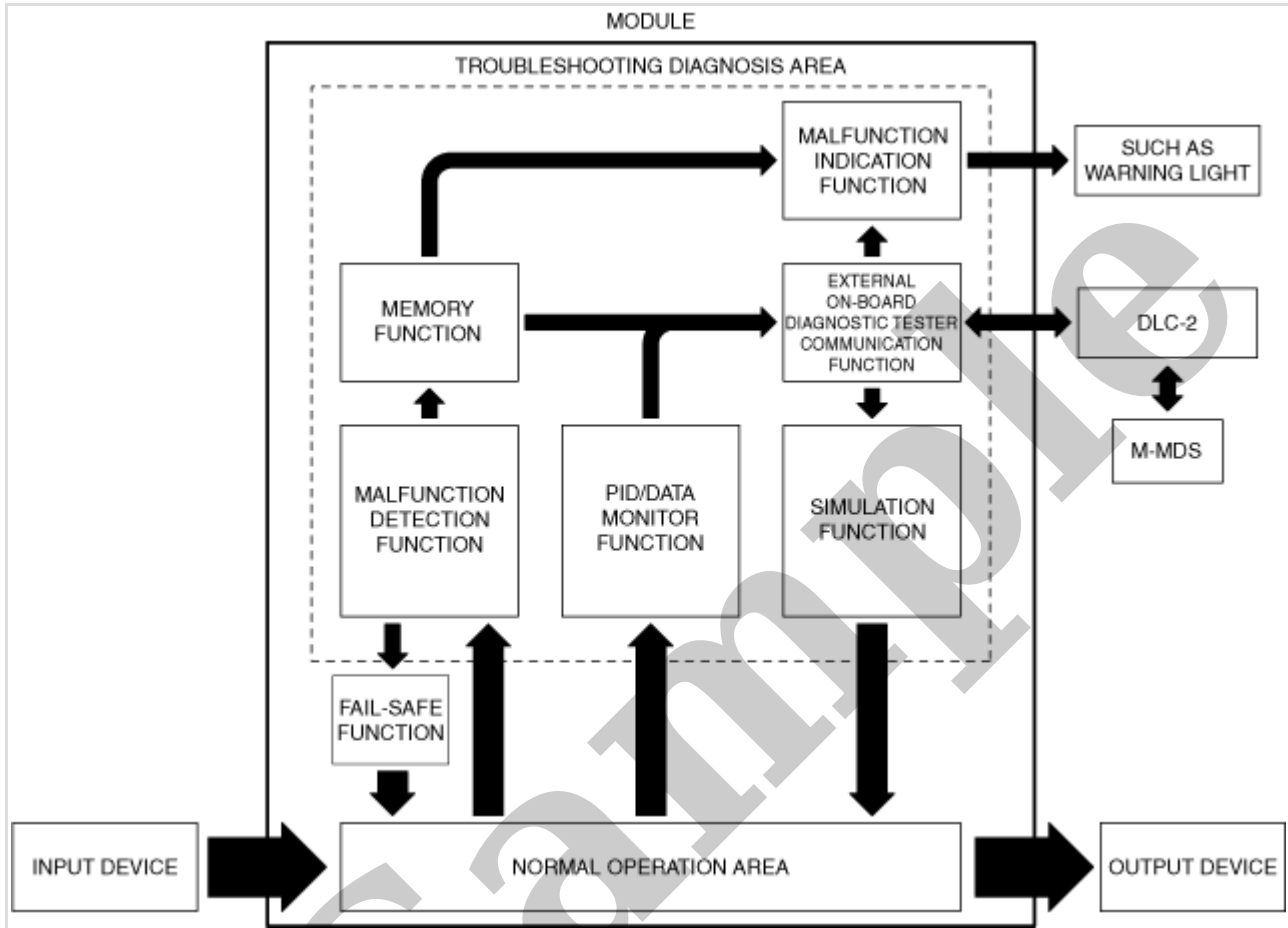
Memory function

- The memory function stores malfunctions detected by the malfunction detection function in the volatile memory or non-volatile memory in each module as a DTC.
- The stored DTC can be read by the M-MDS. (See **DTC INSPECTION**.)

Topological figure

- A Controller Area Network (CAN) system has been adopted which performs transmission/reception of multiple module signals.
- For details on the Controller Area Network (CAN) system, refer to the [CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW]. (See [CONTROLLER AREA NETWORK \(CAN\) MALFUNCTION DIAGNOSIS FLOW \[TYPE-A \(SKYACTIV-G 2.5\)\]](#)). (See [CONTROLLER AREA NETWORK \(CAN\) MALFUNCTION DIAGNOSIS FLOW \[TYPE-A \(SKYACTIV-G 2.5T, SKYACTIV-D 2.2\)\]](#)). (See [CONTROLLER AREA NETWORK \(CAN\) MALFUNCTION DIAGNOSIS FLOW \[TYPE-B\]](#)).

Block Diagram

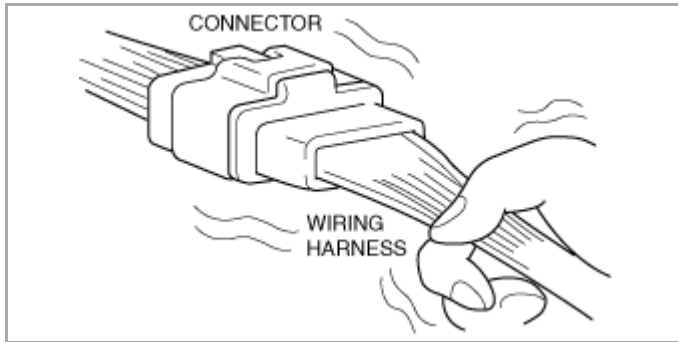


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Caution

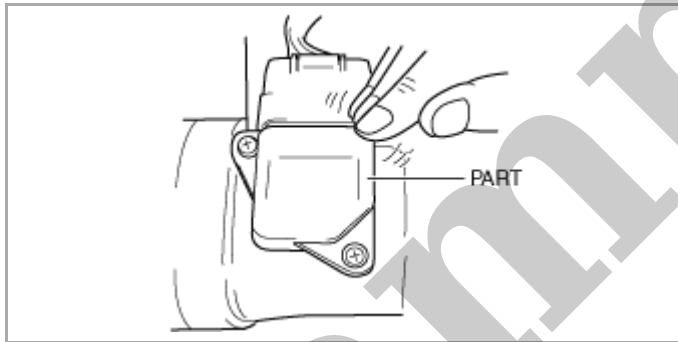
- Do not apply excessive force when shaking the part or wiring harness. Otherwise, an open circuit may occur.

3. Lightly shake connectors and wiring harnesses while verifying the PID value.



- If a PID value does not stabilize, inspect the connector and terminal for poor connection.

4. Lightly shake a part while verifying the PID value.



- If the PID value does not stabilize or a part mis-operation occurs, inspect the connector and terminal for a poor connection and the part for poor installation.

5. Operate the simulation function for the electric system component suspected to be the malfunction cause. (See **SIMULATION INSPECTION**.)

6. Lightly shake the part after operating the simulation function.

- If abnormal noise occurs from the part, inspect the connector and terminal for poor connection and the part for poor installation.

Water spraying inspection

- If the malfunction occurred during high humidity, heavy rain, or heavy snow conditions, perform the following procedure.

Caution