

# Technical Service Bulletin

Mazda North American Operations  
Irvine, CA 92618-2922



<b>Subject:</b> "ULTRASONIC SENSOR MALFUNCTION" MESSAGE IN INSTRUMENT CLUSTER	<b>Bulletin No.:</b> 09-014/20
	<b>Last Issued:</b> 04/15/2020

## APPLICABLE MODEL(S)/VINS

2019-2020 Mazda3  
2020 CX-30

## DESCRIPTION

Some customers may experience "Ultrasonic sensor malfunction" warning message displayed in the instrument cluster when driving or at a stop. The warning message continues until the ignition is turned off. Upon inspection, one or more of following DTC are detected in the parking assist unit (ultrasonic).

B1B36:04	Front corner ultrasonic sensor (RH) signal circuit malfunction
B1B38:04	Front ultrasonic sensor (RH) signal circuit malfunction
B1B40:04	Front corner ultrasonic sensor (LH) signal circuit malfunction
B1B42:04	Front ultrasonic sensor (LH) signal circuit malfunction
B1B44:04	Rear corner ultrasonic sensor (RH) signal circuit malfunction
B1B46:04	Rear ultrasonic sensor (RH) signal circuit malfunction
B1B48:04	Rear corner ultrasonic sensor (LH) signal circuit malfunction
B1B50:04	Rear ultrasonic sensor (LH) signal circuit malfunction
B1B5A:04	Rear side ultrasonic sensor (RH) signal circuit malfunction
B1B5C:04	Rear side ultrasonic sensor (LH) signal circuit malfunction

This is caused by communication error(s) detected between the parking assist unit and the ultrasonic sensors from incoming electromagnetic noise. To eliminate this concern, the control program of the parking assist unit has been modified to not detect unnecessary communication errors and to stop the warning message as soon as the communication has recovered, even without turning the ignition off.

Customers having this concern should have their vehicle repaired using the following repair procedure.

Page 1 of 10

**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

## REPAIR PROCEDURE

1. Verify customer concern.

2. Reprogram the parking assist unit (**PAU** on MDARS) using the Mazda Diagnostic And Repair Software (MDARS). Refer to "MDARS - ECU Reprogramming Procedure".

### NOTE:

- If the current calibration file name on the ECU FILENAME screen is the same as **B0J8-67UK2-D** (w/ front sonar) / **B0J9-67UK2-D** (w/o front sonar) or with a later suffix, reprogramming is not necessary.
- After reprogramming, pending DTC P2610:00 [PCM] will be stored without the Check Engine Light ON. Start the engine and clear the DTC.
- After reprogramming, if DTC U2120:00 and/or U2500:82 are stored and the i-ACTIVSENSE warning light (amber) turns ON, refer to SA-036/19.

3. Verify the repair.

### MDARS ECU Reprogramming Procedure

**NOTE:** This procedure explains a generic reprogramming for all Electrical Control Units (ECU) such as PCM, BCM, ESU, etc. Be aware that some sentences and screen shots below mention a certain control unit such as "PCM" or "BCM" as an example.

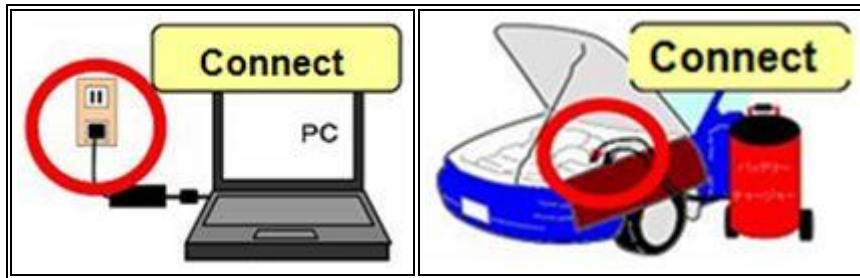
**ATTENTION: READ ALL CAUTIONS AND NOTES BEFORE AND AFTER REPROGRAMMING!**

### CAUTION:

- **A poor connection between the vehicle and M-MDS and/or low voltage may result in abnormal termination and/or data corruption. A low battery voltage may cause a reprogramming failure resulting in unexpected ECU replacement.**
- **Make sure that the following connections are firmly connected, then DO NOT touch the VCM and DLC cable to prevent noise and a poor connection.**
  - **Between the vehicle-side connector and the DLC cable**
  - **Between the PC-side connector and the USB port of the PC**

**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

- **When reprogramming with MDARS, power consumption and voltage fluctuation are greater than with IDS. Use the Power Supply mode in the Battery Management System (GR8) and connect an AC adapter to the PC to stabilize voltage fluctuation.**



### BEFORE REPROGRAMMING NOTE:

- Turn off all electrical loads (i.e. A/C blower, audio system, rear defogger and headlights).
- Perform a self-test and verify no DTCs are stored. If any DTCs are stored, repair the concern and delete the DTCs.
- Disconnect any aftermarket accessories (non-genuine Mazda accessories).
- Terminate all programs other than MDARS on the PC. Running other programs may interfere with the MDARS performance, resulting in the PC freezing or other problems.
- Perform reprogramming with a proper internet connection. When using a wireless network, make sure the connection is strong.
- Make sure to keep enough free space on the PC's hard disc. Insufficient free space (less than 1 GB) may result in the PC freezing during reprogramming.

1. Connect the M-MDS to the vehicle.
2. Launch the Mazda Diagnostic And Repair Software (MDARS).

**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.



5. Select Work Support group.

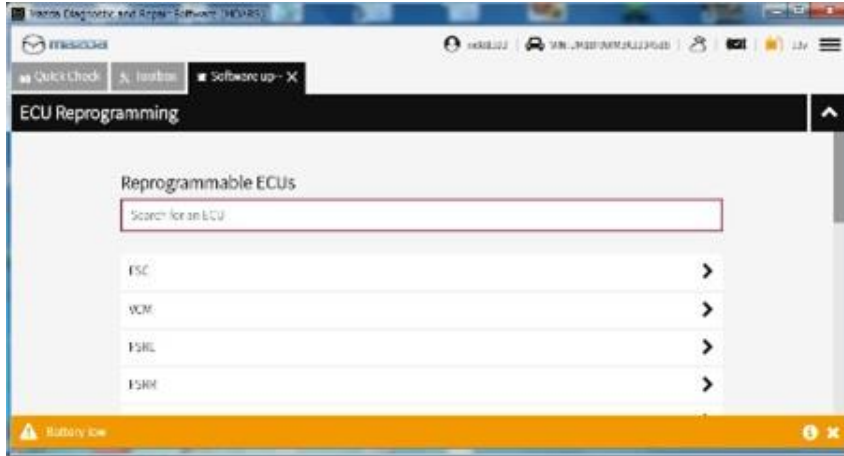


6. Select "Software update", then click "Run".

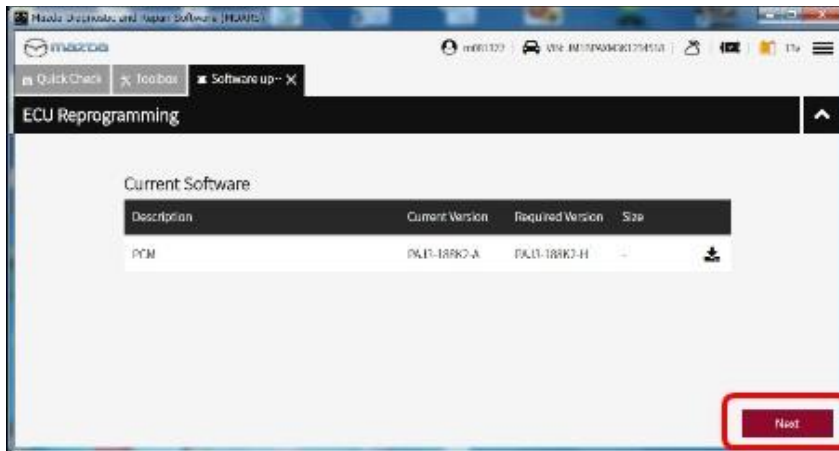


**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

7. Select the ECU to be reprogrammed.

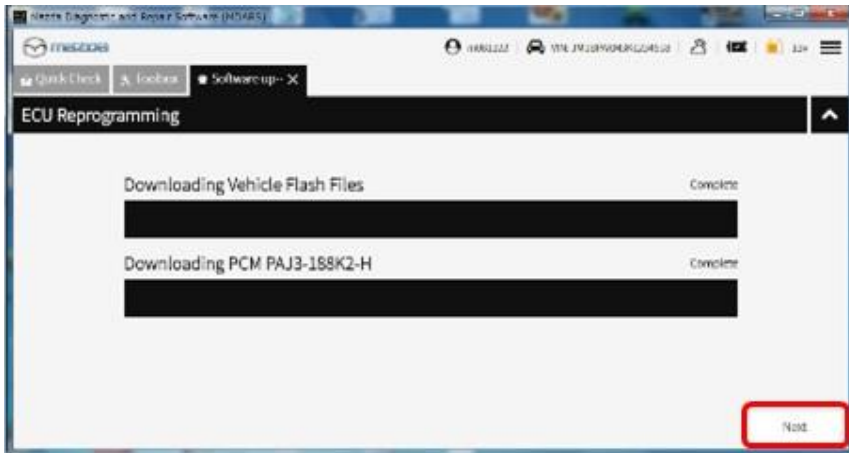


8. Confirm the current and new software versions, then click "Next".  
**NOTE:** When reprogramming the BCM, two softwares will be shown.



**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

9. Wait for the download, then click “Next”. **NOTE:** When reprogramming the BCM, downloading will occur twice.

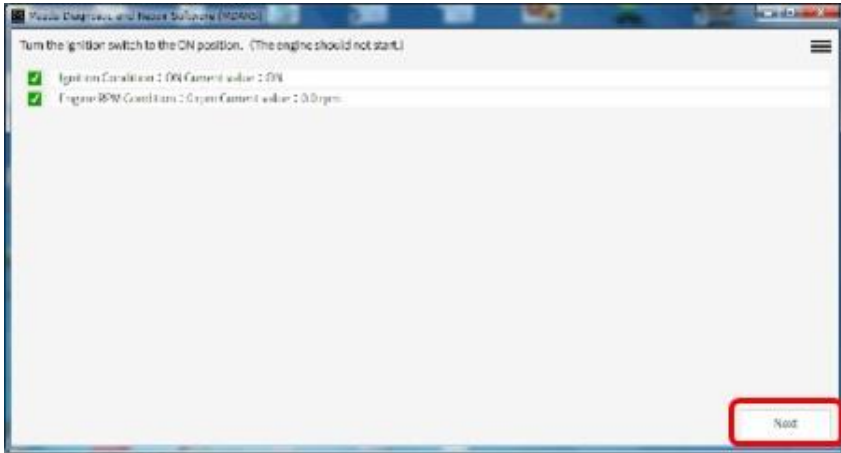


10. Read the screen instructions, then click “Next”.



**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by “do-it-yourselfers.” Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical—including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

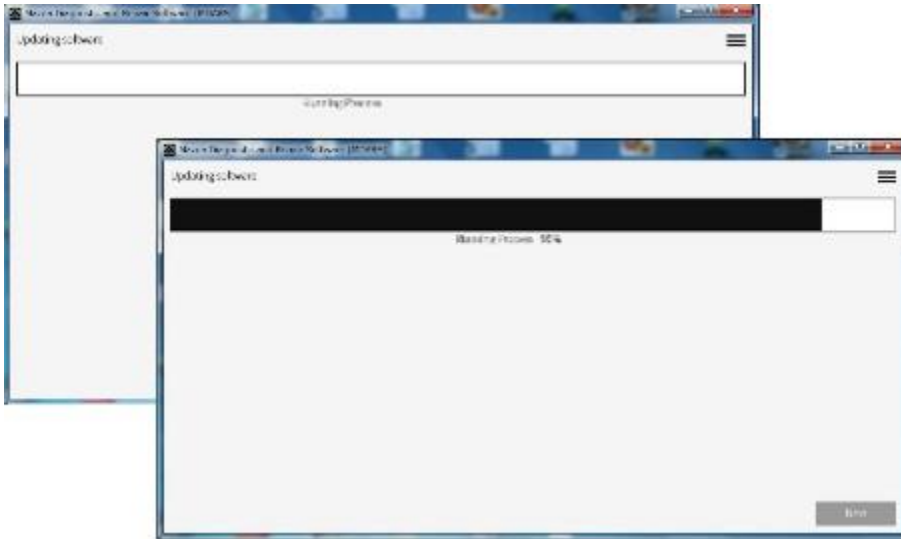
11. Follow the instructions on the screen, then click “Next”.



12. Wait for the reprogramming to complete.

**NOTE:**

- The progress bar will stay at 90% for 30 seconds. This is not a failure.
- When reprogramming the BCM, this process will occur twice.

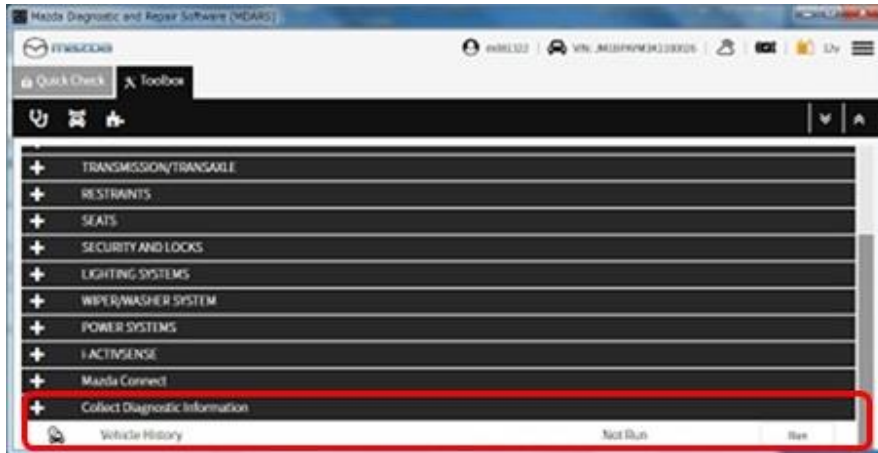


**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by “do-it-yourselfers.” Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

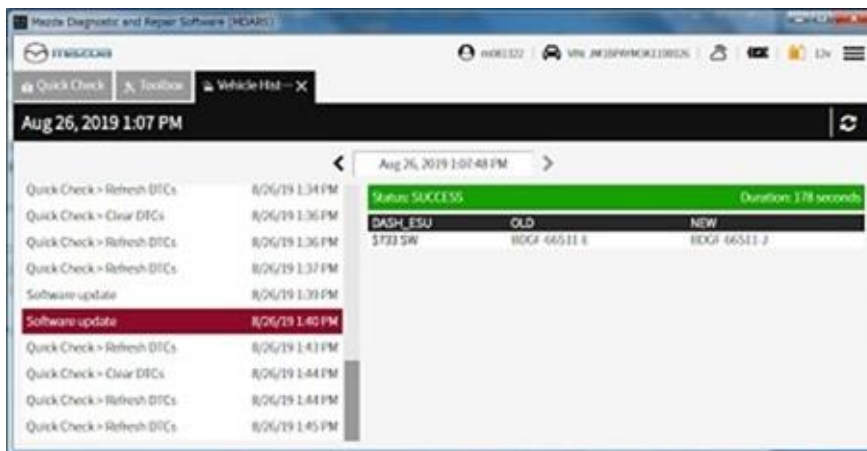


## AFTER REPROGRAMMING NOTE:

- Select "Vehicle History" under "Collect Diagnostic Information", then click "Run".



- Confirm the reprogramming on the screen and save the screen copy as a record.



**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

**WARRANTY INFORMATION****NOTE:**

- This warranty information applies only to verified customer complaints on vehicles eligible for warranty repair.
- This repair will be covered under Mazda's New Vehicle Limited Warranty term.
- Additional diagnostic time cannot be claimed for this repair.

Warranty Type	A
Symptom Code	64
Damage Code	9W
Part Number Main Cause	5555-67-UU0
Quantity	0
Operation Number / Labor Hours:	XXS2LXFX / 0.3 Hrs.

**CONSUMER NOTICE:** The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.