

Technical Service Bulletin

Mazda North American Operations
Irvine, CA 92618-2922



Subject: SBS/SCBS WARNING LIGHT ON WITH DTC U0420:68	Bulletin No.: 15-003/20
	Last Issued: 10/02/2020

BULLETIN NOTES

This bulletin supersedes the previously issued bulletin(s) listed below. The changes are noted in Red.

Previously issued TSBs:	Date issued:
15-003/20	09/04/20

APPLICABLE MODEL(S)/VINS

2017-2018 Mazda3 (Japan built) with VINS lower than JM1BN*****199539 (produced before November 1, 2018)

2017-2018 Mazda3 (Mexico built) with VINS lower than 3MZBN*****277188 (produced before December 21, 2018)

2017 Mazda6 (with Lane-keep Assist System or High Beam Control (HBC) system only)

2018-2020 Mazda6 with VINS lower than JM1GL*****526219 (produced before July 21, 2020)

2017-2020 (US spec) / 2018-2020 (Mexico spec) CX-5 with VINS lower than JM3KF*****796943 (produced before February 4, 2020)

2018-2020 CX-9 with VINS lower than JM3TC*****423432 (produced before June 23, 2020)

DESCRIPTION

Some vehicles may exhibit that the SBS/SCBS warning light (amber) turns ON right after the engine is started with DTC U0420:68 [FSC] (Error signal received from electric power steering (EPS) control module) stored in memory.

For Mazda6 and CX-5, the following error messages may appear in the instrument cluster.

- Front camera sensor system malfunction
- Forward Smart City Brake Support Malfunction
- Driver attention alert system malfunction

This may be caused by the battery voltage falling and the EPS control module failing the initial learning for the steering center position while cranking. The FSC detects the error notified by the EPS control module. To correct this concern, the control software of the EPS control module has been modified while the repair procedure modifies the FSC for earlier repairs in the market.

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

Page 1 of 9

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. Update the Mazda Modular Diagnostic System (M-MDS) to the latest version (IDS 108.04 or later).
3. Check the current software version of the Forward Sensing Camera (FSC).

Log Viewer - Technician View (Full Diagnostic)

```

Optional equipment Modules - Pass - (EPB)
Standard Equipment Modules - Pass - (EPS)
(F_BCM) Part Number = TK52-675X0-A
Standard Equipment Modules - Pass - (F_BCM)
(FSC) Part Number = B61L-67XCX-E
(FSC) FILENAME = ████-67XK2-██
(FSC)_HARDWARE_NUM = B61L-67XK1-A
Optional equipment Modules - Pass - (FSC)
Optional equipment Modules - Pass - (HUD)
(IC) Part Number = G48P-55430-
(IC) FILENAME = GRV1-554K2-M
(IC)_HARDWARE_NUM = G48P-554K1-
Standard Equipment Modules - Pass - (IC)
(PCM) Part Number = SHBWD
(PCM) FILENAME = SHBW-188K2-D
Standard Equipment Modules - Pass - (PCM)
Optional equipment Modules - Pass - (PSM)
Standard Equipment Modules - Pass - (R_BCM)
Standard Equipment Modules - Pass - (RCM)
Optional equipment Modules - Pass - (SBS/MRCC)
Standard Equipment Modules - Pass - (SSU)
(TCM) Part Number = FZ21-21EM1-G
(TCM) FILENAME = SHBW-21PS1-A
(TCM)_HARDWARE_NUM = FZ21-18ZB7-D
Standard Equipment Modules - Pass - (TCM)
    
```

- If the file name is B61L-67XK2-S or with earlier suffix, or GSH7-67XK2-C, replace the FSC with a new one according to the instructions on MGSS (FORWARD SENSING CAMERA (FSC) REMOVAL/INSTALLATION).
 - Recheck the software version of the new FSC by repeating this step.

Current file name	Notes
B61L-67XK2-S or earlier	FSC replacement required
GSH7-67XK2-C	FSC replacement required

NOTE: Due to hardware compatibility, further software update after B61L-67XK2-S or GSH7- 67XK2-C is not available without replacing the FSC.

- If the file name is **NOT** B61L-67XK2-S or with earlier suffix, or GSH7-67XK2-C, go to step 4.

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.

4. Reprogram the Forward Sensing Camera (FSC) with Mazda Modular Diagnostic System (M-MDS) using IDS **108.04** or later software **if the current calibration file name on the ECU FILENAME screen is earlier than the Calibration Files Information**. Refer to "FSC Reprogramming Procedure".

NOTE:

- **If the current calibration file name on the ECU FILENAME screen is the same as shown in Calibration Files Information or with later suffix, reprogramming is not necessary.**
- Always update the IDS tool first, then follow on-screen instructions to download the needed calibration file for FSC reprogramming.

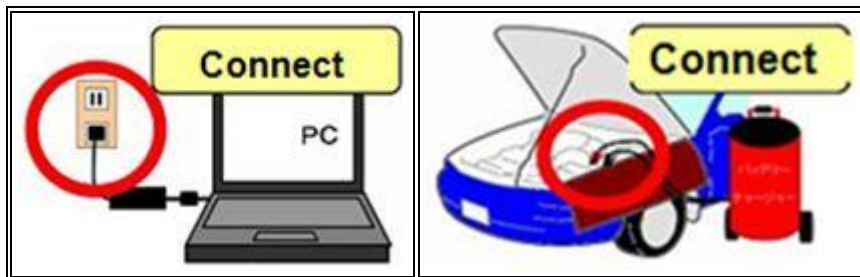
CAUTION: To avoid causing issues during FSC reprogramming, take extra care with all VCM cable connections and the battery voltage.

5. Verify repair.

**FSC Reprogramming Procedure
Service Caution for Reprogramming**

NOTE: Poor connection between the vehicle and M-MDS and/or low voltage may result in abnormal termination and/or data corruption.

- Make sure that the following connections are firmly connected:
 - Between the vehicle-side connector and the DLC cable
 - Between the PC-side connector and USB port of PC
- DO NOT touch the VCM and DLC cable to prevent noise and a poor connection.
- Connect the AC adapter to the PC in order to stabilize voltage fluctuation during reprogramming. DO NOT use the vehicle battery outlet as a power source for the PC.



- During reprogramming, connect a battery charger to the vehicle with the charge current maintained within 10 to 15A to stabilize voltage fluctuation.

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.

Before reprogramming, pay attention to the vehicle condition and PC environment.

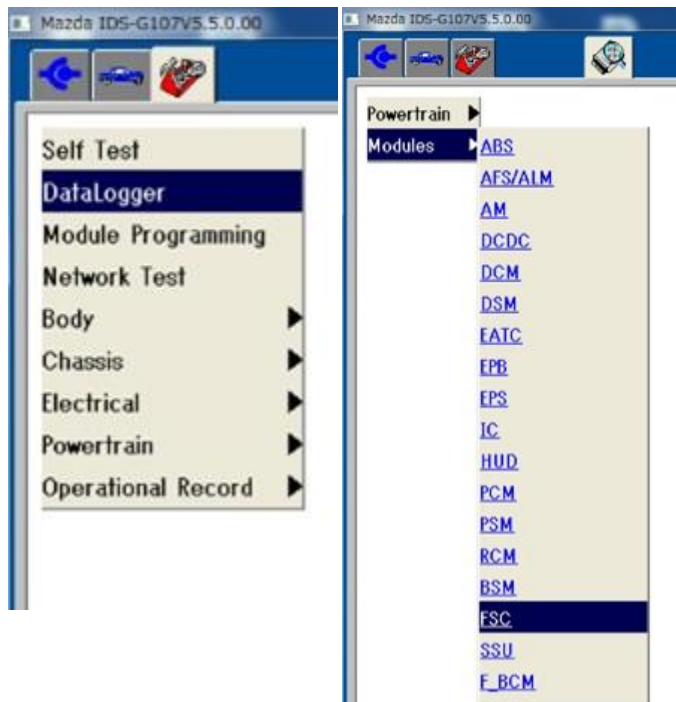
- Turn off all electrical loads, especially the A/C (blower), audio, rear defogger and headlights.
- Perform the self-test and verify no DTC is stored. If any DTC is stored, fix the concern and delete the DTC.
- Disconnect all non-genuine aftermarket accessories.
- Terminate all programs other than IDS on the PC, otherwise the PC may freeze or other issues may occur.
- Verify that the latest IDS software is installed on the PC.
- If using a wireless network, make sure the connection is strong.
- Make sure to keep proper free space on the PC's hard disc. Insufficient free space (less than 1 GB) may cause the PC to freeze during reprogramming.

1. Verify the temperature of the FSC.

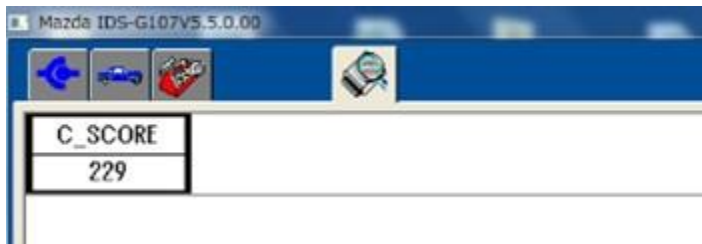
- If the FSC is hot [140 °F (60 °C) or higher], cool it down. Otherwise the FSC reprogramming process may fail.

NOTE:

- Turning the engine off will help to cool down the FSC.
- The FSC temperature can be monitored by the data logger function of the Mazda Modular Diagnostic System (M-MDS).

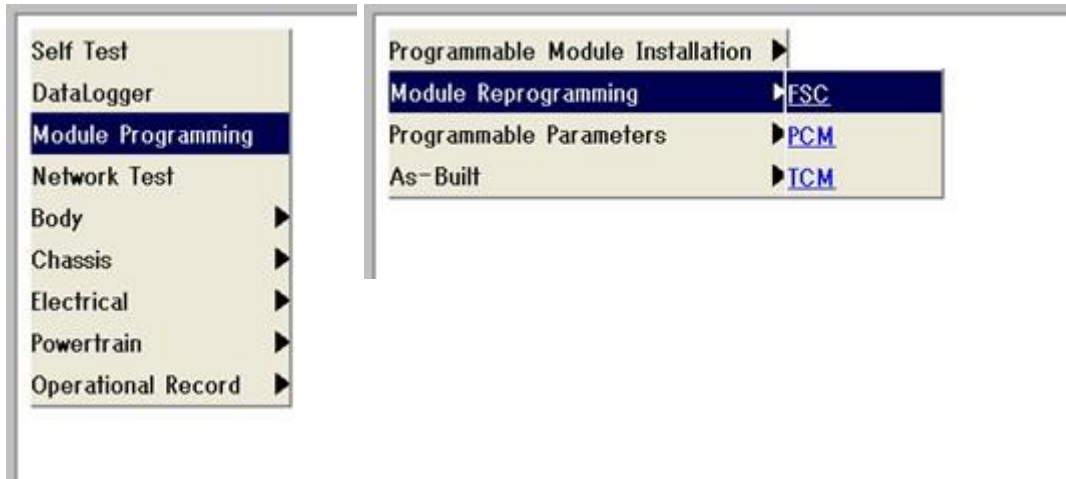


CONSUMER NOTICE: The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers 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.



The C_SCORE indicates the FSC temperature. As the temperature rises, the value of C_SCORE decreases, therefore "C_SCORE" must be **174 or higher** to perform the FSC reprogramming.

2. Select "Module Reprogramming", then select "FSC".

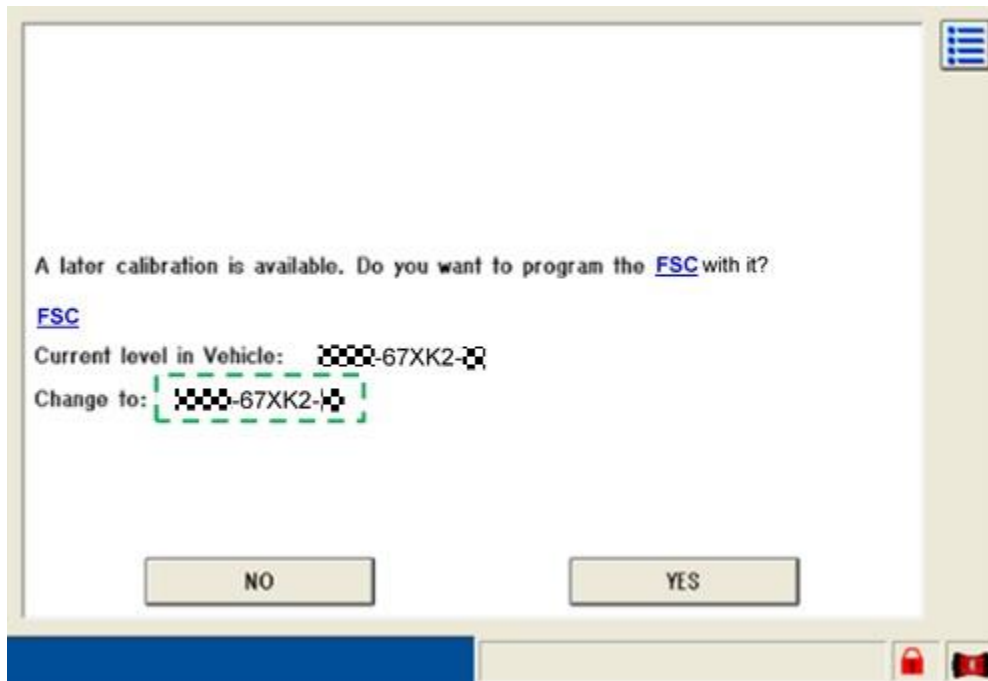


CONSUMER NOTICE: The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers 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.

3. The following screen will be displayed: Click 'YES' and follow the M-MDS instructions to reprogram the FSC.

- If the message “No later calibration is available on the system for this FSC” is displayed, the FSC is already at the latest calibration and this Service Information does not apply. “Current level in Vehicle” will show the new file name.

NOTE: The calibration level does not match to the part number level.



4. After reprogramming, remove the session, then open a new session again and go to the “Log Viewer” screen on which the programmed file name is displayed as shown below.

- If the new file name matches to the list or with later suffix, the reprogramming has been successfully completed.

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.

Log Viewer - Technician View (Full Diagnostic)

```

Optional equipment Modules - Pass - (EPB)
Standard Equipment Modules - Pass - (EPS)
(F_BCM) Part Number = TK52-675X0-A
Standard Equipment Modules - Pass - (F_BCM)
(FSC) Part Number = B61L-67XCX-E
(FSC) FILENAME = XXXX-67XK2-S
(FSC)_HARDWARE_NUM = B61L-67XK1-A
Optional equipment Modules - Pass - (FSC)
Optional equipment Modules - Pass - (HUD)
(IC) Part Number = G48P-55430-
(IC) FILENAME = GRV1-554K2-M
(IC)_HARDWARE_NUM = G48P-554K1-
Standard Equipment Modules - Pass - (IC)
(PCM) Part Number = SHBWD
(PCM)_FILENAME = SHBW-188K2-D
Standard Equipment Modules - Pass - (PCM)
Optional equipment Modules - Pass - (PSM)
Standard Equipment Modules - Pass - (R_BCM)
Standard Equipment Modules - Pass - (RCM)
Optional equipment Modules - Pass - (SBS/MRCC)
Standard Equipment Modules - Pass - (SSU)
(TCM) Part Number = FZ21-21EM1-G
(TCM) FILENAME = SHBW-21PS1-A
(TCM)_HARDWARE_NUM = FZ21-18ZB7-D
Standard Equipment Modules - Pass - (TCM)

```

CALIBRATION INFORMATION

Model	File Name	
	New	Old
Mazda3, Mazda6, CX-5, CX-9	KDD1-67XK2-A	B61L-67XK2-T or later
Mazda6, CX-5, CX-9	GSH7-67XK2-K	GSH7-67XK2-D or later

NOTE: File names depend on the FSC hardware.

PARTS INFORMATION

Parts Number	Description	Qty.	Notes
KDD1-67-XCX	Camera, Forward Sensing	1	Only if current file name is B61L-67XK2-S or earlier
GSH7-67-XCXK	Camera, Forward Sensing	1	Only if current file name is GSH7-67XK2-C.

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.

NOTE: Depending on the version of the available parts, the repair procedure differs. Suffix of the part number and the file name do not always match. (For example, GSH7-67- XCXC is shipped with the software GSH7-67XK2-D installed.)

Parts Number		Notes
B61L-67-XCXS or older	GSH7-67-XCXB	Not to be used for this repair.
B61L-67-XCXT to B61L-67-XCXW	GSH7-67-XCXC to GSH7-67-XCXJ	Reprogramming is required.
KDD1-67-XCX or later	GSH7-67-XCXK or later	Reprogramming is NOT required.

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.

Reprogramming only

Warranty Type	A
Symptom Code	62
Damage Code	99
Part Number Main Cause	KDD1-67-XCX (if the new file name is KDD1-67XK2-A) GSH7-67-XCXK (if the new file name is GSH7-67XK2-K)
Quantity	0
Operation Number / Labor Hours:	XXS4PXF / 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.

FSC replacement only

Warranty Type	A
Symptom Code	62
Damage Code	99
Part Number Main Cause	KDD1-67-XCX or GSH7-67-XCXK
Quantity	1
Operation Number / Labor Hours:	XXS4PARX / 0.5 Hrs.

FSC replacement and reprogramming

Warranty Type	A
Symptom Code	62
Damage Code	99
Part Number Main Cause	B61L-67-XCX* or GSH7-67-XCX* (except GSH7-67-XCXK or later)
Quantity	1
Operation Number / Labor Hours:	XXS4PBRX / 0.5 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.