Mazda North American Operations Irvine, CA 92618-2922



Subject:

WHITE LINES APPEAR IN INSTRUMENT CLUSTER

Bulletin No.: 09-020/23

Last Issued : 04/19/2023

BULLETIN NOTES

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

Previous TSBs:	Date(s) Issued:
09-018/20	04/23/20 and 10/30/20

APPLICABLE MODEL(S)/VINS

2019-2020 Mazda3 (Japan built) vehicles with VINs lower than JM1BP*****152017 (produced before Sep. 5, 2019) 2019-2020 Mazda3 (Mexico built) vehicles with VINs lower than 3MZBP*****128583 (produced before Nov. 29, 2019) 2020 CX-30 (Mexico built) vehicles with VINs lower than 3MVDM*****102129 (produced before Nov. 1, 2019)

DESCRIPTION

Some customers may notice white lines appearing across the instrument cluster (as shown below). The white lines may be caused during the production process where poor contact occurs at the internal LCD terminals.



To eliminate this concern, the production process for the instrument cluster has been modified.

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

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REPAIR PROCEDURE

1. Verify the customer concern.

2. Remove the instrument cluster according to MGSS online:

- Mazda3: (INSTRUMENT CLUSTER REMOVAL/INSTALLATION)
- CX-30: (INSTRUMENT CLUSTER REMOVAL/INSTALLATION)

3. Check if the instrument cluster is a modified part or not by inspecting the label (as shown below) on the back of the part.

INSTRUMENT CLUSTER LABEL INSPECTION:

Mazda3 (Japan built) vehicles:

The lot number on the label includes the production date ("YYMMDD" format) and the serial number ("NNNN") of the day.

-6H BDEL-55430-B BDGF Made In China CY190812A0096	Format: ** <u>YYMMDD</u> A <u>NNNN</u> Sample: CY <u>190812</u> A <u>0096</u> means the 96th production on A ugust 12, 2019
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NOTE: If the production date and the serial number on the label is the same or later than the First Modified Lot Number (as shown above), it is a modified part..

Part Number	First Modified Lot Number
BDGG-55-430B	BV190721A0001
BCPT-55-430A	HP190723A0001
BDEL-55-430B	CV190720A0001
BDGF-55-430B	AV190721A0001
BDMN-55-430B	DV190722A0001

Mazda3 (Mexico built) vehicles:

The lot number on the label consists of 4 digits for the part number (PPPP) and 6 digits (NNNNNN) for the serial number (it does not include the production date).



NOTE: If the serial number on the label is the same or later than the First Modified Lot Number (as shown above), it is a modified part.

Part Number

First Modified Lot Number

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BEDP-55-430B	BEGT 035077
BFRW-55-430A	BFKL 032895
BDTS-55-430B	BDFT 021137
BDCJ-55-430A	BDJL 037762

CX-30 (Mexico built) vehicles:

The lot number on the label consists of 4 digits for the part number (PPPP) and 6 digits (NNNNNN) for the serial number (it does not include the production date).

6H BDTS-55430-B BDTS-55430-B Made In China BDFT 021137	Format: PPPP <u>NNNNN</u> Sample: BDFT <u>021137</u> means BDTS-55-430 and the seria I number 021137
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NOTE: If the serial number on the label is the same or later than the First Modified Lot Number (as shown above), it is a modified part.

Part Number	First Modified Lot Number
DAKM-55-430	DAGE 035138
DGJ2-55-430	DGFE 033317

- If the instrument cluster is found to be a modified part, this Service Information is **NOT applicable** since the inner part of the instrument cluster may not be the cause. In this case, just replace the instrument cluster assembly with a new one and claim it under normal warranty.
- If the instrument cluster is not found to be a modified part, replace just the inner part of the instrument cluster according to the repair procedure below.

Tools Needed:

Tool Description	Notes
TORX [®] driver (T10)	
TORX [®] driver (T20)	
Anti-static wrist strap	lf available
Anti-static gloves	lf available

NOTE: It is recommended to perform this repair indoors in a clean, anti-static, dust free environment with relative humidity in the 40-60% range.

1. Place the instrument cluster on the flat side of the bubble wrap (bubble side down). Place the instrument cluster so the display faces up.

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NOTE: If available, an anti-static mat is recommended.



2. Using the T20 driver, remove two (2) black screws. **NOTE:**

- Do not grab the hood.
- Do not drop the screws on the lens.





3. Place the instrument cluster upside down. **NOTE:**

- Grab the side of the instrument cluster to move it.
- Do not grab the hood.

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• Do not slide the hood on the working mat.



4. Disconnect the switch harnesses. **NOTE:** Pinch the top (1) of the connector to unlock it.



Location of connectors



Connector



Side view of Lock mechanism

NOTE: If it is difficult by hand, use the plastic tweezers included in the parts set.



Using tweezers

Mazda3 - Early Production Vehicles Only:

Some early production Mazda3 vehicles have a harness cover and white connector. The white connector does not have a lock mechanism, so simply pull the connector to disconnect it.

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Harness cover



White connector

5. Release the switch harnesses from the hook (1). Do not release it from the black part (2).



6. Using the T10 driver, remove the silver screws in order 1-4. **NOTE:** Take care not to apply excess force to the hood.



7. Using the T10 driver, remove the silver screws in order 1-2. **NOTE:** Take care not to apply excess force to the hood.



8. To remove the rear cover, (by hand, with tweezers or trim remover), release the hooks in order 1-9. **NOTE:**

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- Releasing the hooks in the wrong order may result in damage to the connectors or hooks.
- If the hooks are deformed or broken, stop the repair and replace the instrument cluster with a new one.



9. Gently remove the rear cover using both hands. **NOTE:**

- Take care not to damage the flat cables and harnesses.
- Take care not to damage the parts by static electricity or foreign matter.
- Do not apply a strong shock to the stepper motors to avoid unexpected calibration errors.



10. Disconnect the flat cables for switches.

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NOTE: Raise the connector lock wearing thin gloves or by using non-metallic tools.



 Raise the lock tab



11. While slightly raising it (releasing from stopper on both sides), pull the green tab to disconnect.



Pull the green tab





NOTE:

- DO NOT touch the contact side of the flat cables. Touching them with bare hands may result in corroded contacts.
- Place the removed flat cables under the circuit board to avoid damaging the contacts. Take care not to fold the flat cables.

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Damaged contact



12. Disconnect the flat cables for the LCD panel



NOTE: Raise the lock of the connector wearing thin gloves or by using non-metallic tools.



13. While slightly raising it (releasing from stopper (1) on both sides), pull the brown tab to disconnect. NOTE:

- DO NOT touch the contact side of the flat cables. Touching them with bare hands may result in corroded contacts.
- Place the removed flat cables under the circuit board to avoid damaging the contacts. Take care not to fold the flat cables.

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Locked





Unlocked



Place the removed cable under the circuit board



Place the removed cable under the circuit board

14. Release the hooks to remove the circuit board in order 1-4.



NOTE: Twist the hooks by hand to release. If a bar or tweezers are used to push the hooks, take care not to break them by excess force.

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Twist hooks to release



Released

15. Remove the circuit board from the case.

NOTE: Using both hands, raise the circuit board vertically to remove it. The image below shows the right hand only to clarify the position to be held.



NOTE:

- Take care not to hit the rim of the case during removing.
- Take care not to drop objects on the screen (1) and do not to touch the stepper motors (2).



Case side



Removed circuit board

16. Remove the LCD module from the circuit board using the T10 driver. Remove the circuit board screws in order 1-4. **NOTE:**

- Hold the edge of the circuit board to avoid damaging the parts and terminals on both sides.
- Place the circuit board as shown below.

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LCD removed

17. Check the manufacturing date on the label of the removed LCD module.

NOTE: The manufacturing date uses a YYYY-MM-DD format. The date should be on or after 2019-09-21 (September 21, 2019).

18. Place an "X" on the label of the old LCD module to avoid confusion between old and new parts.







19. Open the package of a new LCD module. Place the package on the working mat so the top of the front side of LCD module is in right direction (as shown below).

NOTE:

- Take care not to fold the flat cables and not to touch the contacts.
- Do not remove the protective film on the LCD display at this time.



Right direction



Wrong direction

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Right direction



Protective film attached

20. Align the locating holes on the circuit board to the locating pins on the LCD module.





Locating pins and holes

NOTE: Take care not to hit the LED on the circuit board.



21. Align the four (4) sets of holes.

NOTE: DO NOT apply excess force to avoid damaging the locating pins.

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22. Attach the LCD module to the circuit board by using the T10 driver. Gently tighten the silver mounting screws in order 1-4 (torque: $0.6 \text{ N} \cdot \text{m}$).

NOTE: Confirm there is no gap between the screw flange and the circuit board.



Locating pin and screw



Mounting holes



Locating pin and screw

23. Using the supplied hand blower, clean the circuit board, LCD module and screen panel.

NOTE: Do not use compressed air as it may contain moisture and small particles that may lead to quality concerns with the LCD module.



Before hand blowing

After hand blowing

24. <u>Slowly</u> remove the protective film from the LCD module and assemble the circuit board to the case. **NOTE:**

• Quick removal of the protective film causes static electricity, which may result in particle shadows or other parts

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damage.

- If fibers are found on the LCD module, clean it with the hand blower.
- Be aware of particles caused during the repair such as sweat or saliva transferred from the gloves that may result in poor appearance and/or poor connection issues.



Slowly remove the film



Assemble the parts

25. Hold the edge of the circuit board, confirming the locating pins and frame of the LCD. Place the circuit board onto the case.

26. Twist the hooks in the reverse direction of releasing. Set the hooks in order 1-4.



NOTE: Confirm the location of the locating pins







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NOTE: Confirm locating pins and hooks are not damaged.







27. Connect the flat cables for the LCD module. While slightly raising it (releasing from stopper (1) on both sides), holding the brown tab, insert the flat cable into the connector.

28. Lock the connector wearing thin gloves or using non-metallic tools.



Before connected



Cable inserted



Locked

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29. Connect the flat cables for the switches. While slightly raising it (releasing from stopper (1) on both sides), holding the green tab, insert the flat cable into the connector.



30. Lock the connector wearing thin gloves or using non-metallic tools.



On the way





Cable inserted





Locked



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Take care not to disconnect the other side

Insert straight

Damaged contact

31. Install the rear cover.

NOTE: Take care not to pinch the harnesses. Align the three (3) locating pins to the holes on the rear cover.









32. Engage the hooks in order 1-9, then double check all the hooks are correctly engaged.



Not engaged

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33. Using the T10 driver, tighten four (4) silver screws on the back of the rear cover. Tighten srews in order 1-4.



34. Using the T10 driver, tighten two (2) silver screws on the side of the rear cover. Tighten srews in order 1-2.



35. Using the T20 driver, tighten two (2) black screws on the side of the rear cover.



36. Place the switch harnesses into the hook (1).

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37. Connect the switch harnesses.

NOTE: Insert it straight to avoid damaging the pins.



38. Check the instrument cluster for the following items. If any one of the items below are found, replace the instrument cluster assembly.

Item	Inspection Method
Damage or whitening of the hooks	Visually
Damage on the rim of the hood	Visually
Damage on the lens	Visually
Unusual noise	Shake by hand

39. Install the instrument cluster according to MGSS online:

- Mazda3: (INSTRUMENT CLUSTER REMOVAL/INSTALLATION)
- CX-30: (INSTRUMENT CLUSTER REMOVAL/INSTALLATION)

40. Check the appearance and function of the instrument cluster. If any one of the items below are found, replace the instrument cluster assembly.

Item

Inspection Method

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Illumination brightness	Adjust operation / visually	
Gauges	Visually	
Black or white segment on the LCD screen	Visually	
Shadows on the LCD screen	Visually	
White lines on the LCD screen	Visually	

PARTS INFORMATION

Part Number	Description	Qty.	Notes
BDYF-55-40Y	Meter Set	1	Meter Set includes parts listed below

No.	Description	Qty.		
1	LCD display unit 1			
2	Powder-free gloves 1			
3	3 Hand blower 1			
4	Anti-static mat	1		
5	Bubble wrap working mat	1		
6	Plastic tweezers	1		

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.

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Warranty Type	A
Symptom Code	88
Damage Code	9W
Part Number Main Cause	BDYF-55-40Y
Quantity	1
Operation Number / Labor Hours:	(Mazda3) - XXS17CRX / 0.9 Hrs. (CX-30) - XXS17ERX / 0.7 Hrs.

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