

Service Alert

Mazda North American Operations
Irvine, CA 92618-2922

**Subject:**

CRACKED REAR DIFFERENTIAL (REVISED)

Service Alert No.: SA-007/23

Last Issued : 01/27/2023

BULLETIN NOTES

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

Previous Service Alerts:	Date(s) Issued:
SA-033/21	05/11/21
SA-047/20	11/18/20, 10/14/20 and 04/28/20
SA-022/18	05/01/18

APPLICABLE MODEL(S)/VINS

2017-~~2022~~ CX-3 AWD

2017-~~2022~~ CX-5 AWD

2017-~~2022~~ CX-9 AWD

DESCRIPTION

The rear differential case could develop a crack in the case, as shown below.

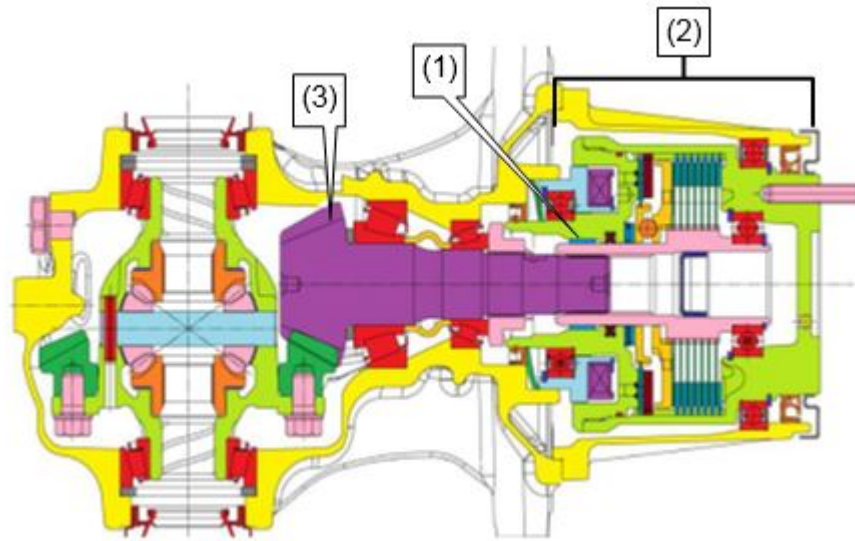
NOTE: This could affect new vehicles just delivered to the dealer as well as customer vehicles.



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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.

This concern is caused when the sliding bearing (1) in the coupling (2) is seized and causes the coupling component to fit loosely. The pinion shaft head (3) then contacts the differential case and causes a crack.



CAUTION WHEN DRIVING AWD VEHICLES:

1. Be sure to release the Electric Parking Brake (EPB) before starting the vehicle. If a vehicle is started aggressively with the EPB applied, higher torque and slippage may occur in the coupling component causing damage to the sliding bearing. To release the EPB manually, firmly depress the brake pedal and press the EPB switch.

NOTE: The EPB can be released while the ignition is switched ON or while the engine is running.

Under the following conditions, an applied EPB can be automatically released by depressing the accelerator pedal.

- When the engine is running.
- When the driver's door is closed.*
- When the driver's seat belt is fastened.*

(Manual transaxle)

- When the shift lever is in a position other than neutral.
- When the clutch pedal is depressed halfway.

(Automatic transaxle)

- When the selector lever is in the D, M, or R position

(* These conditions may not be followed during new vehicle transportation)

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When the AUTOHOLD system is turned ON, the EPB is automatically applied; AUTOHOLD is released under the following conditions.

NOTE: Do not forget to release the EPB when this happens.

- When the driver's seat belt is unfastened.
- When the driver's door is opened.
- When approx. ten (10) minutes or longer have passed since the AUTOHOLD operation started.

2. When unloading a vehicle from a trailer, a) be sure that all tire straps/bands are removed and b) avoid aggressive starting to prevent coupling slippage, which is caused by a large difference of rotation between the front and rear wheels.

NOTE: If a vehicle is left for a long period of time on a trailer with the front end lifted up, the oil in the rear differential unit flows to the rear and the sliding bearing may not receive enough lubrication. If the vehicle is started aggressively at that time, it may damage the sliding bearing.

This Service Information is applicable to customer vehicles as well. If the vehicle is parked on an inclined (front end is facing upward) for a long period of time, then started aggressively, the same situation described above may occur.

REPAIR PROCEDURE

1. If the vehicle belongs to a customer, request the customer to fill out the questionnaire attached below. If the vehicle is a rental (AVIS, Enterprise, etc.) or a used car without a known history, note this on the repair order and let the MASH agent know, no questionnaire is needed.

2. Take photos of rear differential damage.

3. Contact MASH for differential approval. Have photos available for a quick approval.

4. Replace the rear differential assembly according to MGSS.

NOTE: The rear differential does not come with the breather.

5. **CX-5 and CX-9:** Inspect the AWD control unit and see if it requires replacing (see part information below).

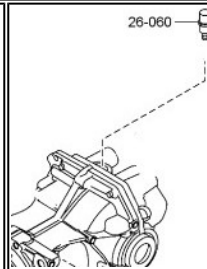
NOTE: CX-30 and Mazda 3 have the AWD control unit built into the PCM, update the PCM to the current level on MDARS.

PARTS INFORMATION

When replacing the rear differential assembly, refer to the GEPC for the part number.

NOTE: The rear differential does not come with the differential breather. This will need to be replaced with the differential.

Rear differential breather



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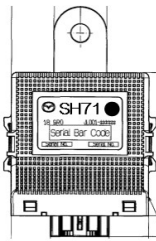
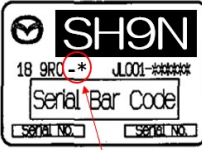
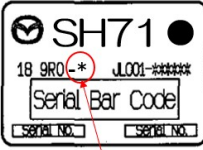
Control unit replacement.

CX-3: Does not require an AWD control unit replacement.

CX-5 and CX-9: Inspect the part number shown on the AWD control unit and compare it to the list below. If the control unit requires replacement, replace the AWD control unit with the differential.

Part number on AWD control unit	Replace AWD control unit with part number
SH9N-18R0 <u>G</u> level or below	SH9N-18R0 <u>H</u> level or higher
SH71-189R0 <u>No suffix or all suffix</u>	DO NOT replace the AWD control unit
KP01189R0 <u>All suffix</u>	SH9N-18R0 <u>H</u> level or higher

Examples of the labels on the AWD control units:

P/N	SH9N-189R0-*	SH71-189R0-*
Shape		
Label notation	 <p>-H and after H level OK</p>	 <p>-all level OK</p>

WARRANTY INFORMATION

Normal warranty.

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