

Technical Service Bulletin

Mazda North American Operations
Irvine, CA 92618-2922

**Subject:**

TAPPING NOISE FROM ENGINE

Bulletin No.: 01-002/21

Last Issued : 04/30/2021

BULLETIN NOTES

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

| Previously issued TSBs: | Date issued: |
|-------------------------|---------------------------------|
| 01-002/21 | 01/14/21 |
| 01-006/20 | 11/04/20, 07/06/20 and 04/23/20 |

APPLICABLE MODEL(S)/VINS

2019-2021 Mazda3 (US spec non-turbo)

2018-2021 Mazda6 (US spec non-turbo)

2018-2021 CX-5 (US spec non-turbo)

2020-2021 CX-30 (US spec non-turbo)

DESCRIPTION

Some vehicle may exhibit a tapping noise from the engine during idling; etc., and synchronized to the engine rpm. The tapping noise may be caused by the switchable hydraulic lash adjuster (HLA), which may not work properly due to air bubbles accumulated in the oil passage in it. To eliminate this concern, the switchable HLA has been modified for increased oil supply to reduce air bubbles in the oil passage.

NOTE: The switchable HLA can be pressed down with a finger if air bubbles have accumulated in it.

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

REPAIR PROCEDURE

1. Verify customer concern.

NOTE: If the vehicle returns with the same issue after TSB is performed, contact Hotline.

2. Using a listening device or stethoscope, start the engine and listen to each cylinder's intake and exhaust side to determine the location of the tapping noise.

3. Remove the cylinder head cover and check each switchable HLA of the cylinder that makes the tapping noise to see if it can be pressed down with a finger like the attached video clip (to confirm if the noise is caused at the switchable HLA).

- If it can be compressed even a little, it should be replaced.
- If the noise is caused at other parts, this TSB is not applicable. Diagnose and repair according to the instructions on MGSS.

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4. Replace the switchable HLA with a modified one according to the instructions on MGSS.

- Mazda3 (HYDRAULIC LASH ADJUSTER (HLA) REMOVAL/INSTALLATION [WITH CYLINDER DEACTIVATION])
- Mazda6 (HYDRAULIC LASH ADJUSTER (HLA) REMOVAL/INSTALLATION [WITH CYLINDER DEACTIVATION])
- CX-5 (HYDRAULIC LASH ADJUSTER (HLA) REMOVAL/INSTALLATION [WITH CYLINDER DEACTIVATION])
- CX-30 (HYDRAULIC LASH ADJUSTER (HLA) REMOVAL/INSTALLATION [WITH CYLINDER DEACTIVATION])

Videos

- SHLA Installation
- SHLA Installation - Correct vs Incorrect
- Rocker Arm Inspection during HLA Replacement

5. Perform following steps to eliminate the air bubbles.

a. With the vehicle parked, keep the engine rpm at 2000 rpm for 5 minutes.

NOTE: Engine rpm will fall to idle normally due to the failsafe function.

b. Again, keep the engine rpm at 2000 rpm for 5 minutes.

NOTE:

- DO NOT skip this step even if the noise is gone.
- Engine rpm will fall to idle normally due to the failsafe function.

c. Confirm the noise is gone.

NOTE: If the noise still exists, contact Hotline.

6. Verify repair.

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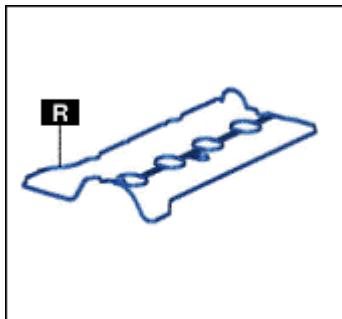
PARTS INFORMATION

| Parts Number | Description | Qty. | Notes |
|--------------|---------------------------------|------|---|
| PYFA-12-1A0A | Adjuster, Hydraulic Lash Switch | 1-8 | |
| PYFA-10-235 | Gasket, Head Cover | 1 | [R] |
| PE01-12-257 | Ring, "O" | 1 | [R] for electric variable valve timing motor/driver |
| PE01-10-673 | Ring, "O" | 1 | [R] [Japan built vehicles] for vacuum pump |
| P54G-10-673 | Ring, "O" | 1 | [R] [Mexico built vehicles] for vacuum pump |
| PE01-13-555 | Rubber, Seal | 1 | [R] [Japan built vehicles] for fuel pump |
| PEAR-13-555 | Rubber, Seal | 1 | [R] [Mexico built vehicles] for fuel pump |
| PE01-20-ZF1 | Ring, "O" | 1 | [R] for fuel pump |
| PYMM-13-290A | Pipe, Fuel | 1 | [R] for fuel pump |
| PYFA-10-193 | Gasket, RR.Housing | 1 | [R] for rear housing |
| 9YA02-0678 | Bolt | 1 | [R] for front cover |
| 9YA02-0865 | Bolt | 1 | [R] for front cover |

[R] Replacement Parts

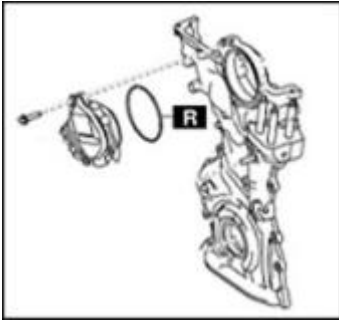
Replacement parts location

- Gasket for cylinder head cover

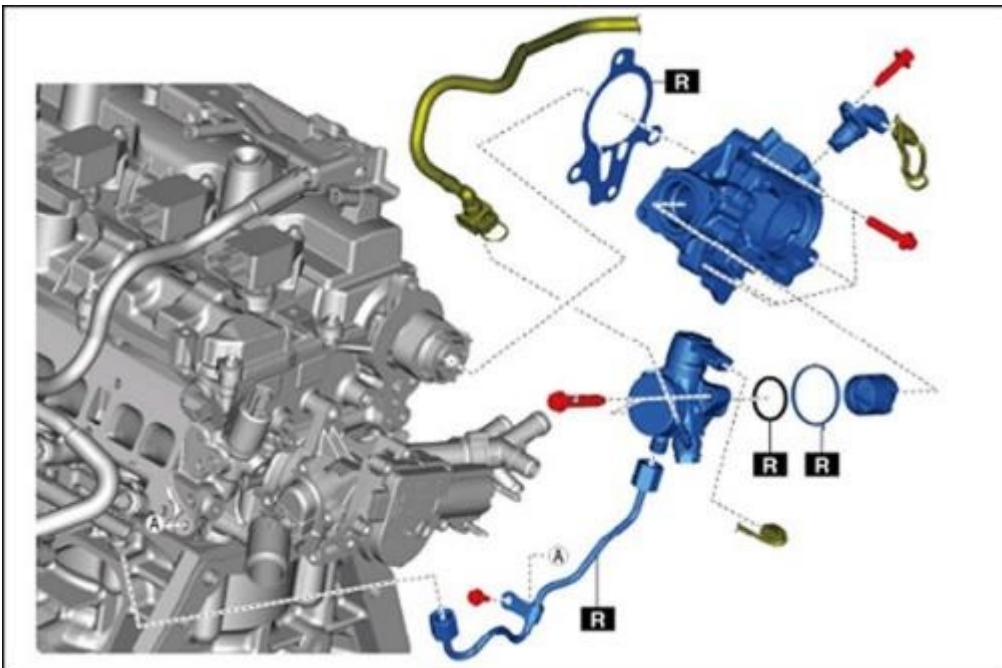


- O-ring for electric variable valve timing motor/driver
- O ring for vacuum pump

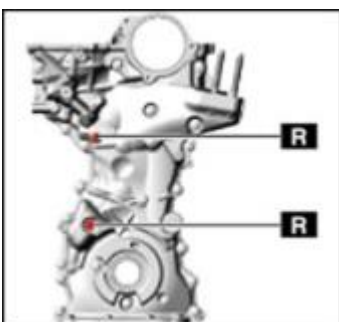
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- Gaskets and pipe for high pressure fuel pump



- Blind plugs (upper and lower) on the engine front cover service holes



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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 Powertrain Limited Warranty term.
- Additional diagnostic time cannot be claimed for this repair.

| | |
|---------------------------------|---|
| Warranty Type | A |
| Symptom Code | 80 |
| Damage Code | 99 |
| Part Number Main Cause | PYFA-12-1A0A |
| Quantity | 1-8 |
| Operation Number / Labor Hours: | XXT12XRX / 3.4 Hrs. (Mazda3, Mazda6, CX-30) 3.5 Hrs. (CX-5) |

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