

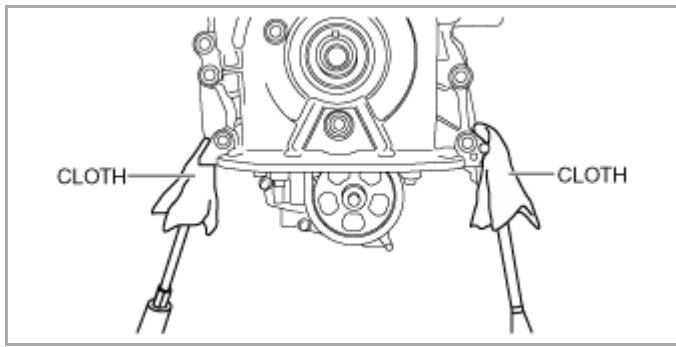
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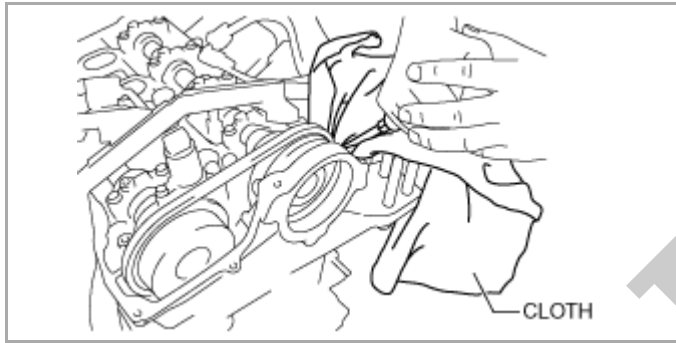
2005 MAZDA B Series / Bravo Dual Cab OEM Service and Repair Workshop Manual

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- Do not apply excessive force to the screwdriver. Otherwise, the engine front cover could be damaged.
- Be careful not to scratch or damage the seal surface. Otherwise, it could cause oil leakage.



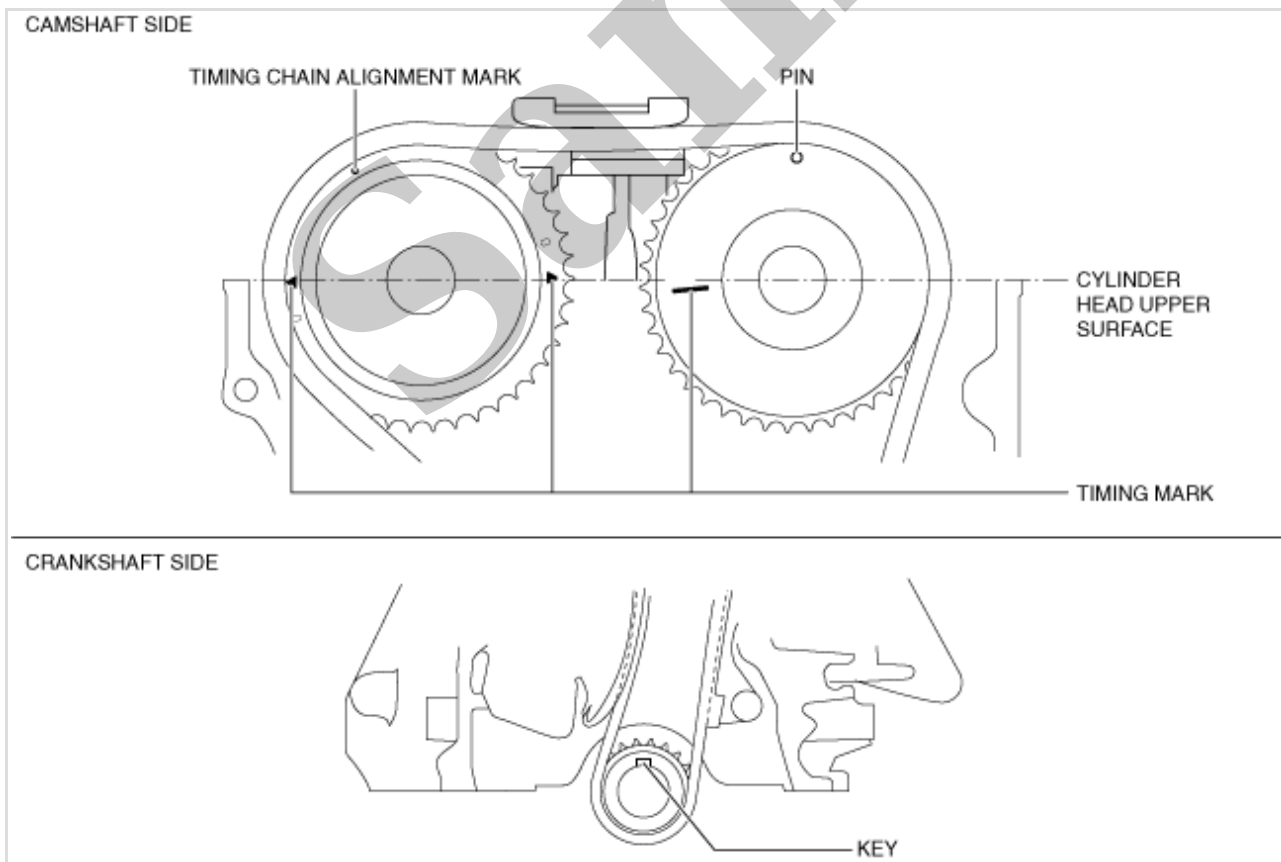
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Timing Chain Removal Note

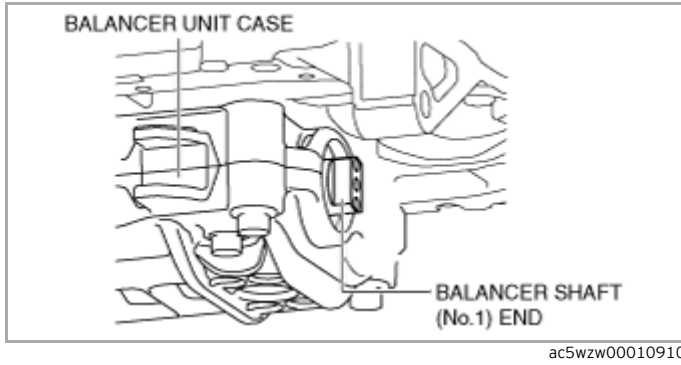
1. Rotate the crankshaft clockwise to align the timing marks and the key position as shown in the figure, and set cylinder No.1 at top dead center (TDC).



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Note

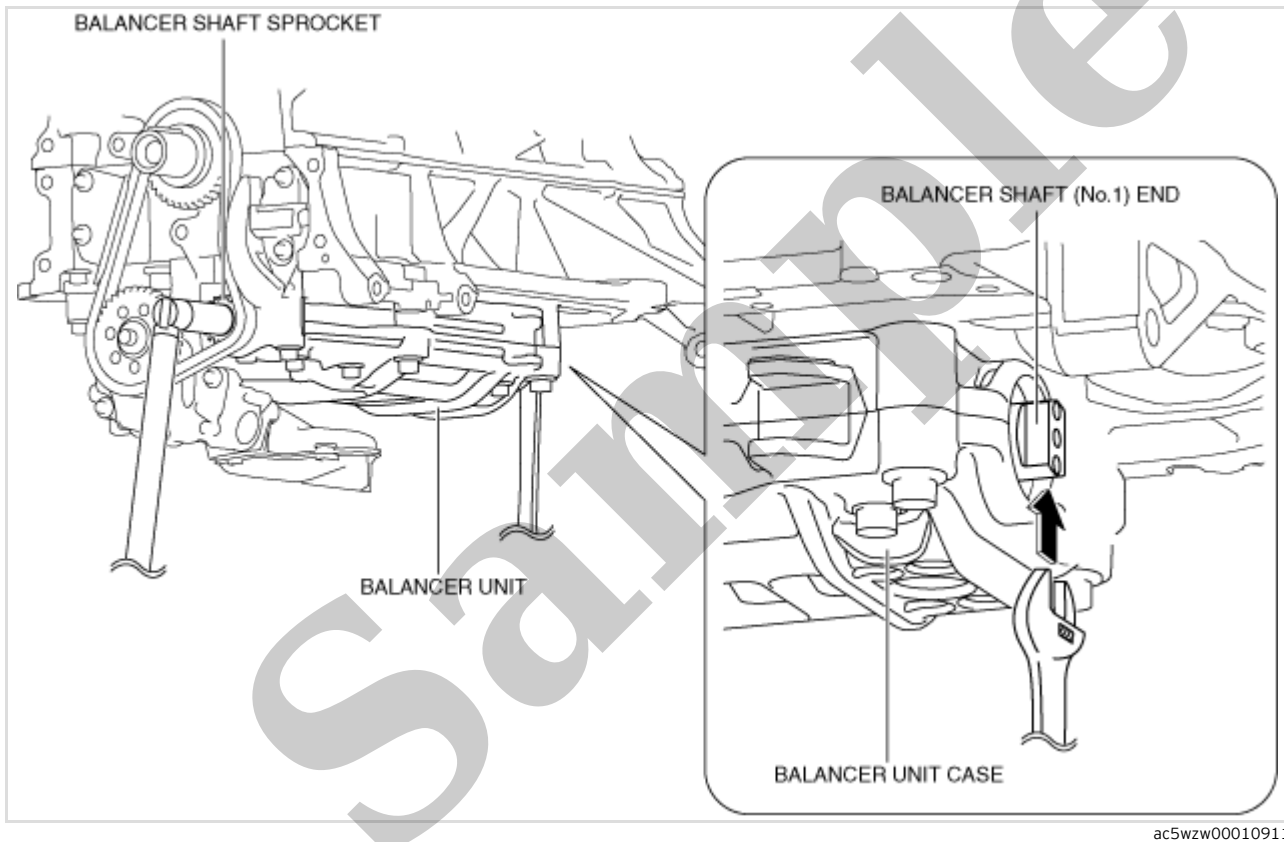
- At this stage, only loosen the installation bolt, do not remove it. Remove the bolt after removing the oil pump chain tensioner.
- The balancer unit is constructed such that the end of the balancer shaft (No.1) protrudes from the balancer unit case. The balancer shaft (No.1) can be locked against rotation by holding the end using a wrench.



(1) Lock the balancer shaft (No.1) against rotation as shown in the figure.

Caution

- To prevent damage to the balancer unit, protect the end of the balancer shaft (No.1) with a rag.



(2) Slightly loosen the balancer shaft sprocket installation bolt.

3. Slightly loosen the oil pump driven sprocket installation bolt using the following procedure:

Note

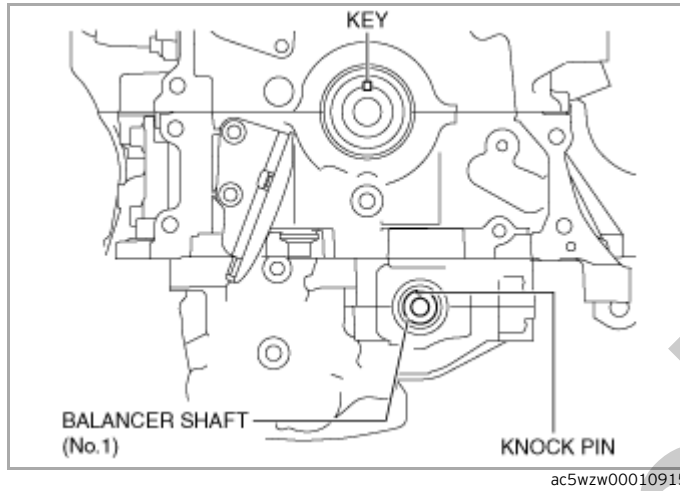
- At this stage, only loosen the installation bolt, do not remove it. Remove the bolt after removing the oil pump chain tensioner.

(1) Temporarily assemble the crankshaft pulley lock bolt, and lock the oil pump against rotation as shown in the figure.

9.Remove the oil pump driven sprocket.

Oil Pump Chain Installation Note

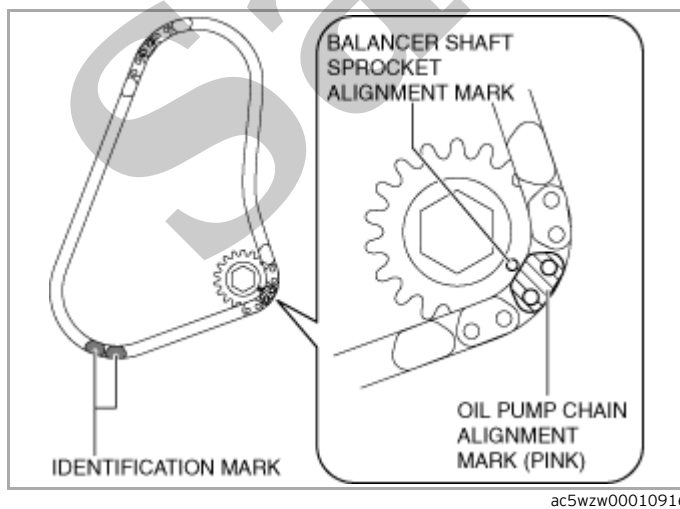
1.Verify that the key and knock pin are aligned to the positions shown in the figure.



2.Temporarily assemble the oil pump driven sprocket.

3.Temporarily tighten the oil pump driven sprocket installation bolt.

4.Align the oil pump chain alignment mark with the balancer shaft sprocket alignment mark.



Note

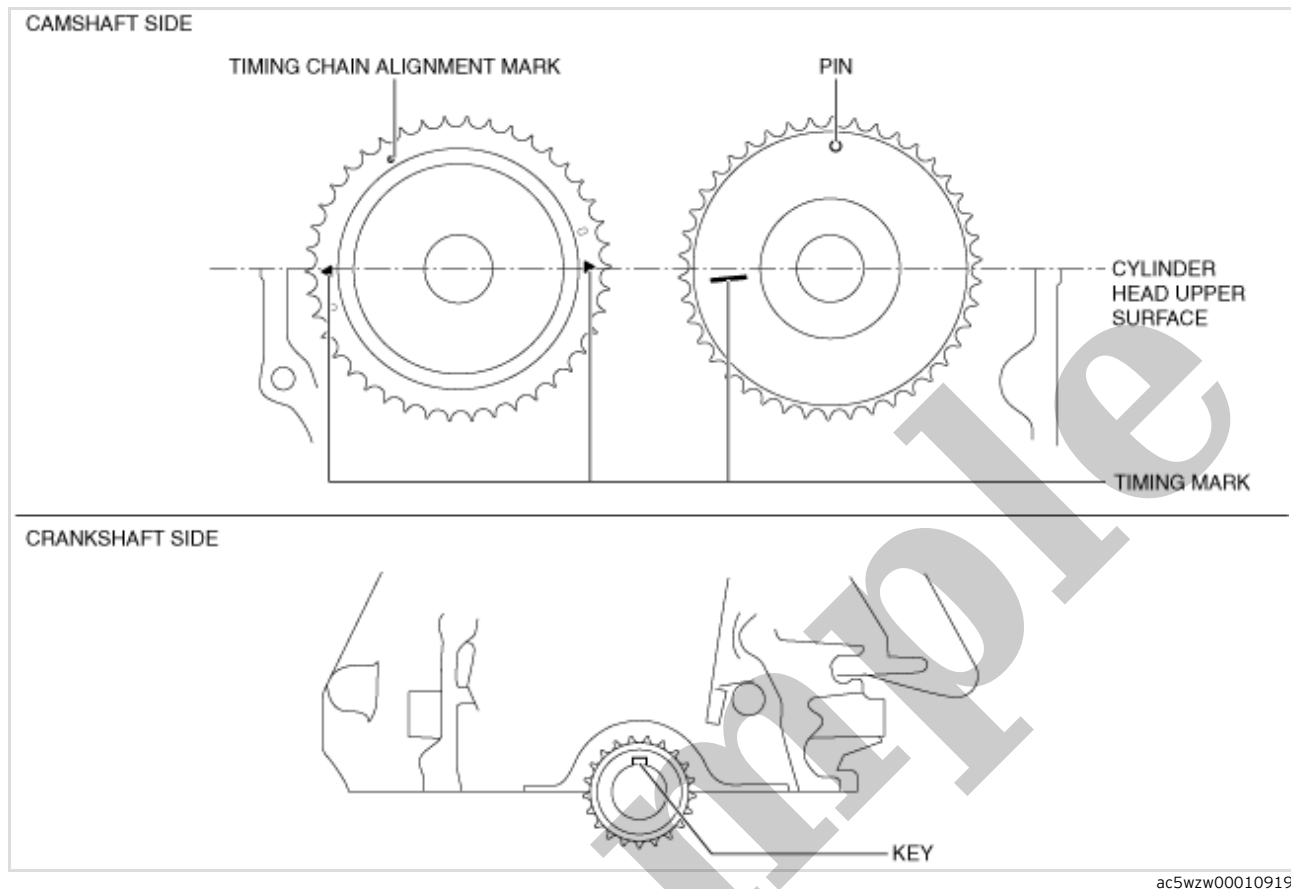
- The oil pump chain has an alignment mark in addition to two identification marks.

5.Install the oil pump chain and balancer shaft sprocket as a single unit while aligning the alignment marks on each sprocket and oil pump chain as shown in the figure.

- If a new oil pump chain tensioner is used, remove the installed stopper.

Timing Chain Installation Note

1. Verify that the timing marks and the key are aligned to the position shown in the figure.

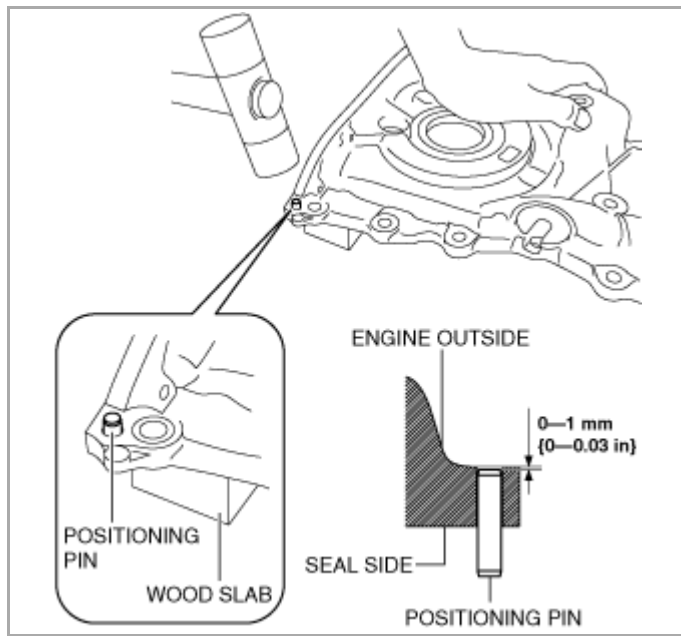


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Note

- The timing mark is not parallel with the upper surface of the cylinder head.

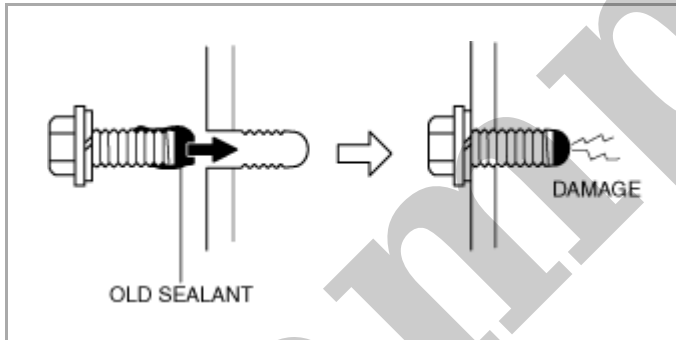
2. Install the timing chain while aligning the marks on each sprocket and the timing chain as shown in the figure.



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Caution

- If a bolt with silicone sealant adhering to it is used, it could result in cracks in the cylinder head and cylinder block.

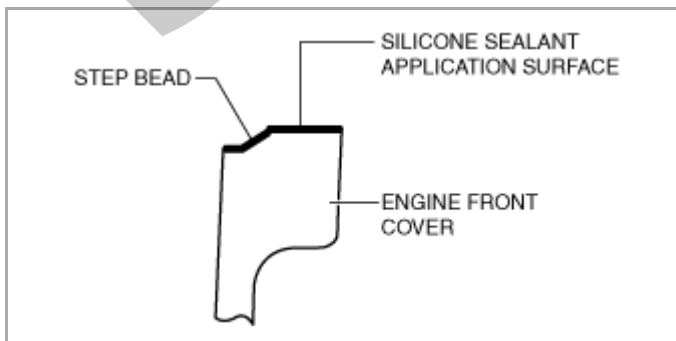


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2. When reusing an engine front cover installation bolts, remove silicone sealant adhering to the bolts.

Caution

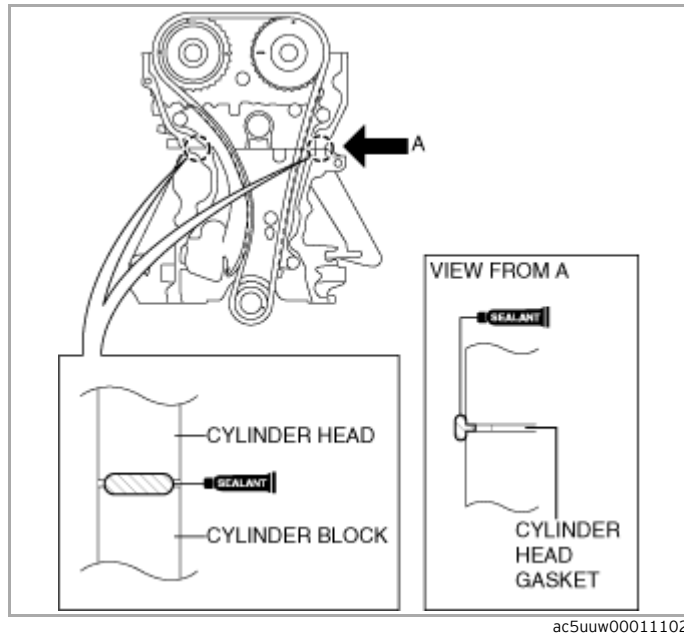
- If oil, dirt, and sealant remain on the silicone sealant application surface and the step bead, the silicone sealant will not seal which will cause oil leakage.



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3. Completely clean and remove oil, dirt, silicone sealant or other foreign matter that may be adhering to the engine front cover, cylinder head, and cylinder block.

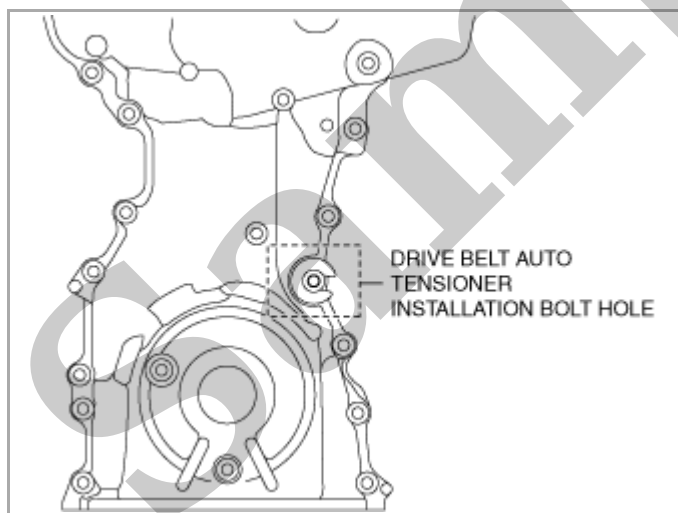
4. Degrease the silicone sealant application surface and the step bead.



8. Install the engine front cover to the engine.

Note

- Temporarily install an appropriate bolt to the drive belt auto tensioner installation bolt hole to prevent:
 - A silicone sealant adhesion malfunction in the drive belt auto tensioner installation bolt hole.
 - A bolt mis-installation due to silicone sealant hardening.

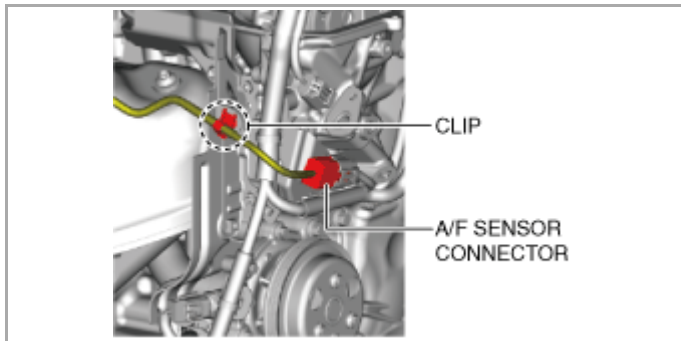


9. Prepare an appropriate M8 x 1.25 bolt (length 40 mm {1.6 in}).

Caution

- For the number 10 bolt of the tightening order, install the bolts with new washer.

10. Tighten the engine front cover installation bolts in the order shown in the figure.



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No.3 Engine Mount Installation Note

Caution

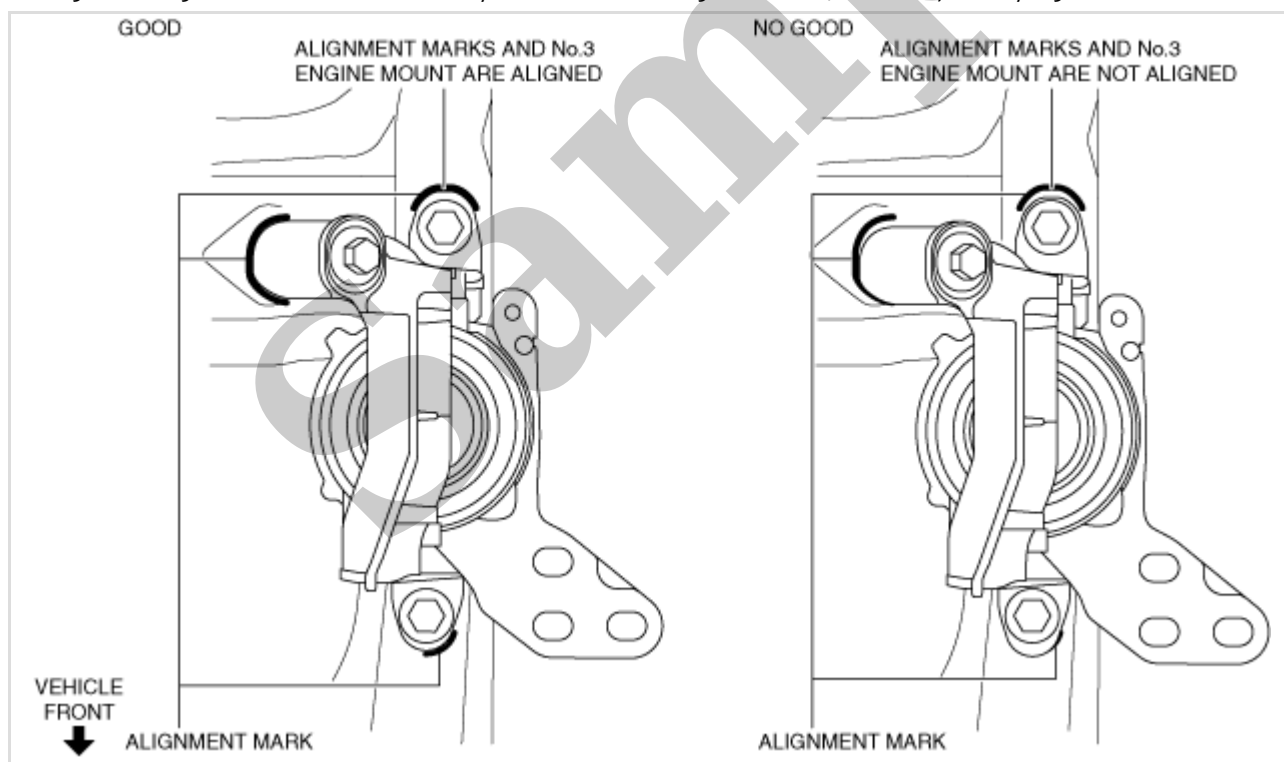
- If the No.3 engine mount is deviated from the original position when installing the No.3 engine mount, engine noise or vibration could increase. When installing the No.3 engine mount, align the alignment mark placed during removal and install it to the original position.

Note

- When replacing the No.3 engine mount, place a mark at the same position as the one placed before removal.

1. Temporarily tighten the No.3 engine mount installation bolts and nuts using the following procedure:

(1) Align the alignment marks on the body side and No.3 engine mount, and temporarily tighten the bolts shown in the figure.



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(2) Temporarily tighten the nuts shown in the figure while aligning the alignment marks of the No.3 engine mount and nuts.

- If the alignment marks are not aligned, align the alignment marks while slightly moving the engine and temporarily tighten the nuts.

Installation position	Tightening torque
1	9–12 N·m {92–122 kgf·cm, 80–106 in·lbf}
2, 3	8–10 N·m {82–101 kgf·cm, 71–88 in·lbf}

Cylinder Head Cover Installation Note

Caution

- To assure the sealing performance of the cylinder head cover, be careful of the following:
 - Verify that the cylinder head cover gasket is inserted into the cylinder head cover groove and install the cylinder head cover.
 - Completely clean and remove any oil, dirt, silicone sealant or other foreign matter from the seal surface.
- To prevent silicone sealant from hardening, adhere the cylinder head cover and the cylinder head firmly within 10 min. after applying silicone sealant. After adhering them, tighten the installation bolts immediately.

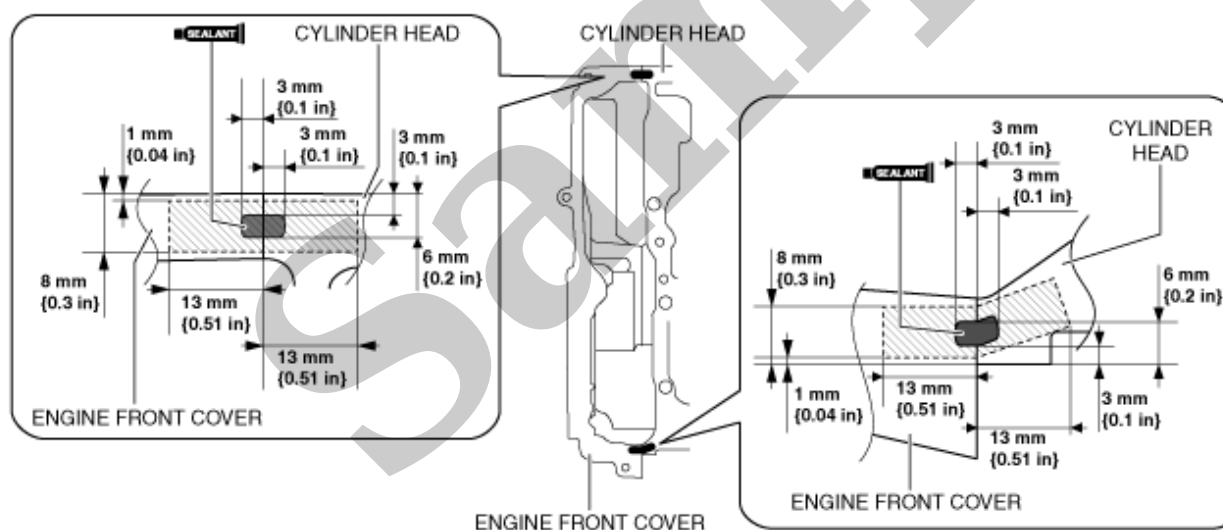
1. Insert a new cylinder head cover gasket into the cylinder head cover groove.

2. Apply silicone sealant (TB1217D or equivalent) to the areas shown in the figure.

Note

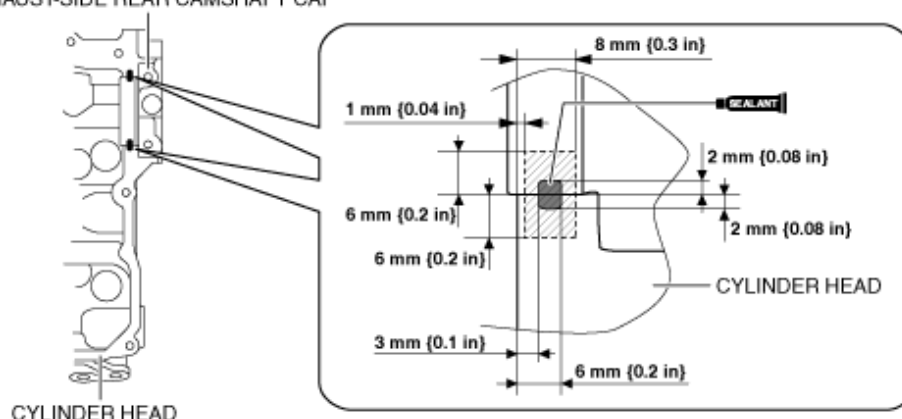
- Apply the silicone sealant so that it does not protrude from the shaded area in the figure.

ENGINE FRONT SIDE

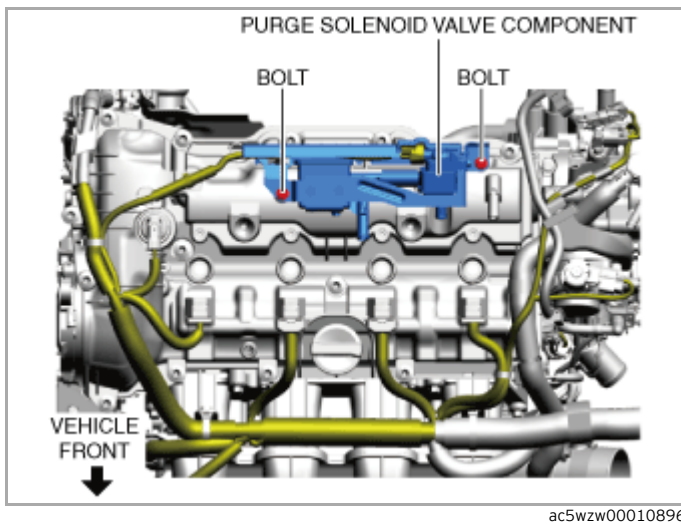


ENGINE REAR SIDE

EXHAUST-SIDE REAR CAMSHAFT CAP



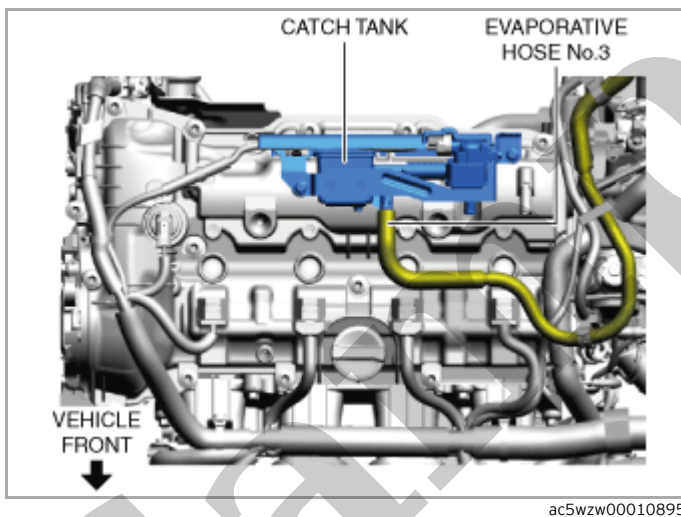
(3) Tighten the bolts shown in the figure.



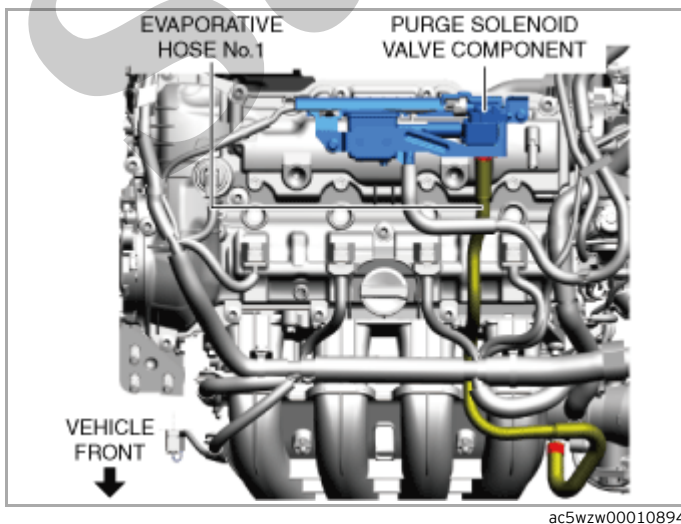
Tightening torque

8–11 N·m {82–112 kgf·cm, 71–97 in·lbf}

(4) Connect the evaporative hose No.3 to the catch tank. (See **PURGE SOLENOID VALVE REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)]**.)



(5) Install the evaporative hose No.1.



Note

• For the evaporative hose No.1 installation, refer to the following major item.

— Intake manifold side: (See **INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-G (WITHOUT EGR COOLER)]**.)