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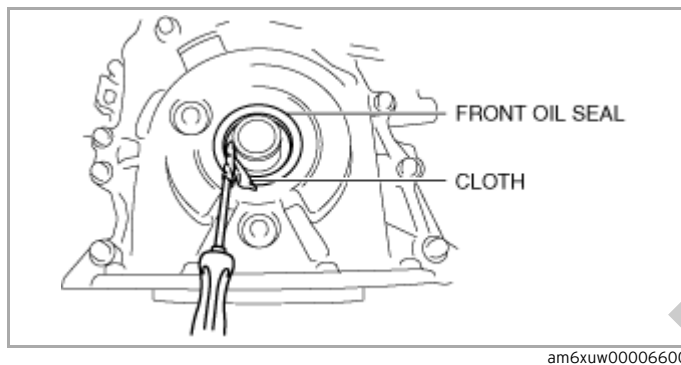
FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2004 MAZDA B Series / Bravo Freestyle Cab OEM Service and Repair Workshop Manual

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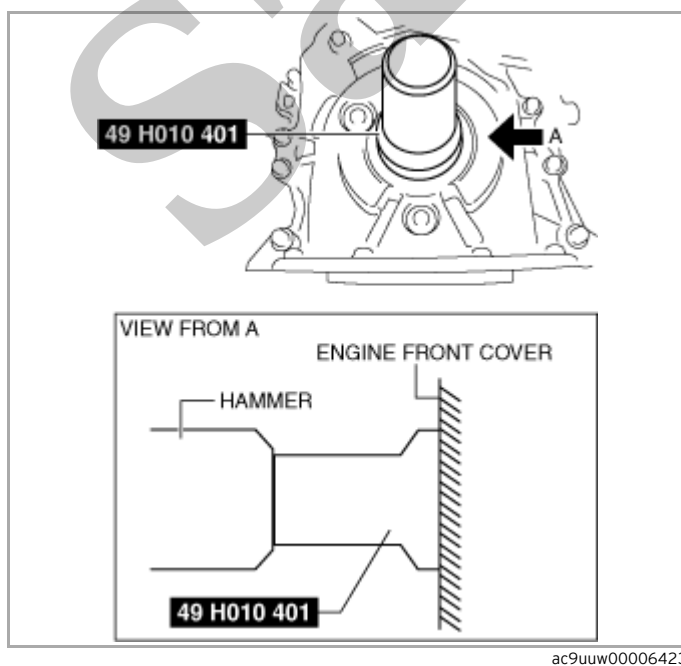
Front Oil Seal Removal Note

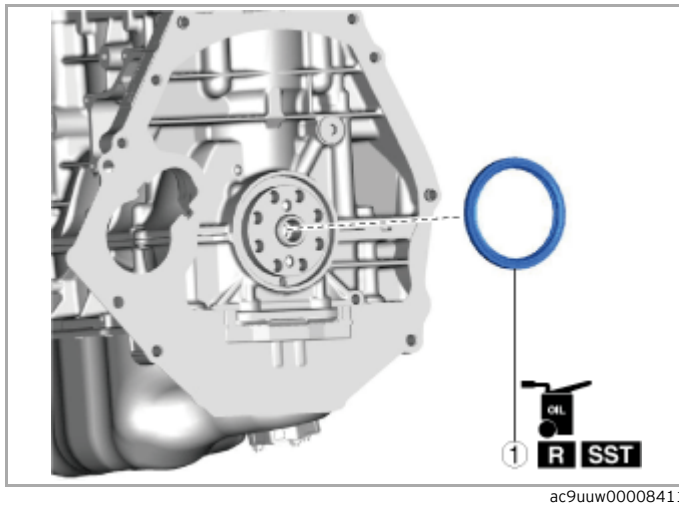
1. Cut the oil seal lip using a utility knife.
2. Remove the oil seal using a flathead screwdriver with the tip protected by a clean cloth to prevent damage to the oil seal sliding part of the crankshaft.



Front Oil Seal Installation Note

1. Apply clean engine oil to the inner surface of a new front oil seal.
2. Insert the front oil seal into the engine front cover by hand.
3. Tap the oil seal in evenly using the SST and a hammer.

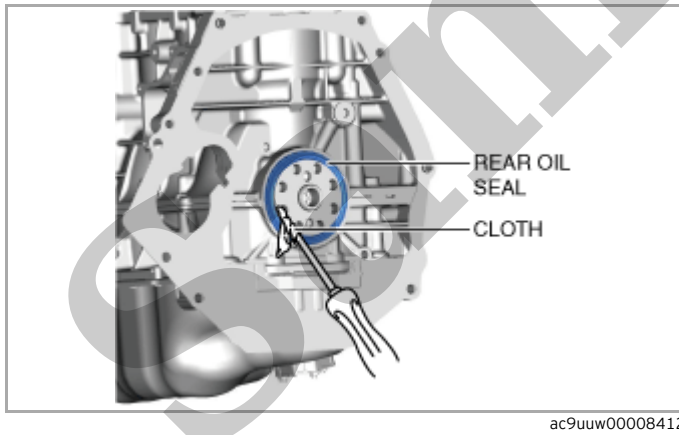




1	Rear oil seal (See Rear Oil Seal Installation Note.) (See Rear Oil Seal Installation Note.)
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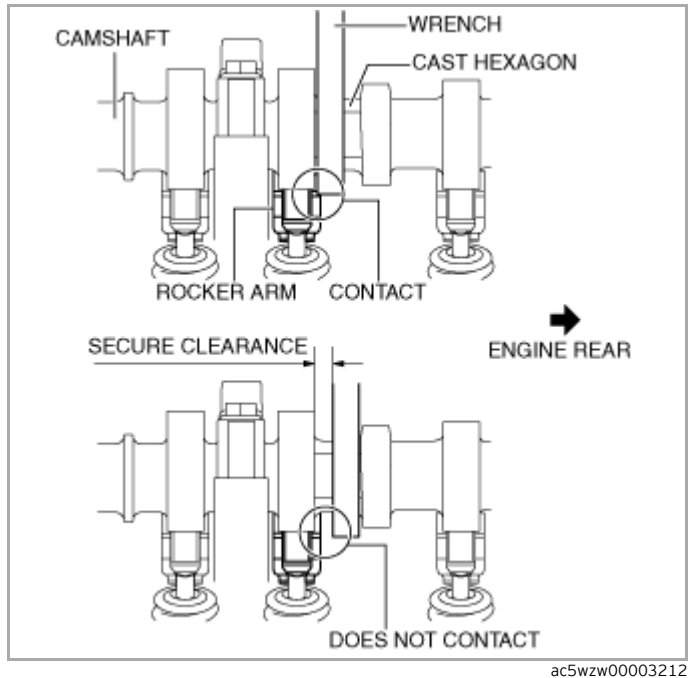
Rear Oil Seal Removal Note

1. Cut the oil seal lip using a utility knife.
2. Remove the oil seal using a flathead screwdriver with the tip protected by a clean cloth to prevent damage to the oil seal sliding part of the crankshaft.



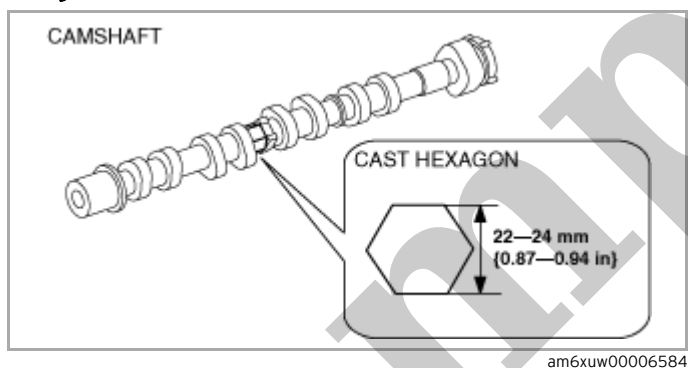
Rear Oil Seal Installation Note

1. Apply clean engine oil to the inner surface of a new rear oil seal.
2. Insert the rear oil seal into the cylinder block by hand.
3. Tap the oil seal in evenly using the SST and a hammer.

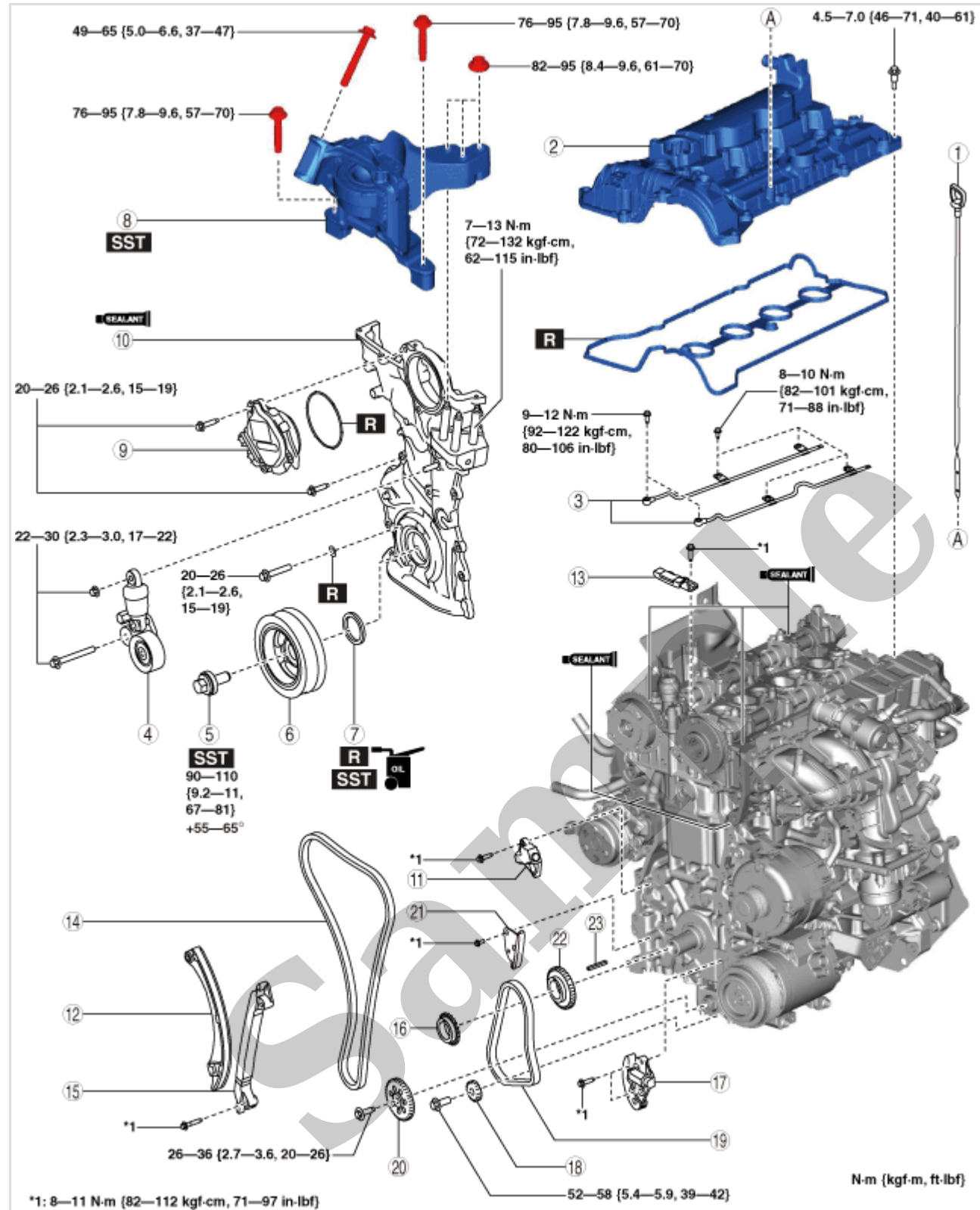


Note

- Width at the cast hexagon of the camshaft is 22–24 mm {0.87–0.94 in}.

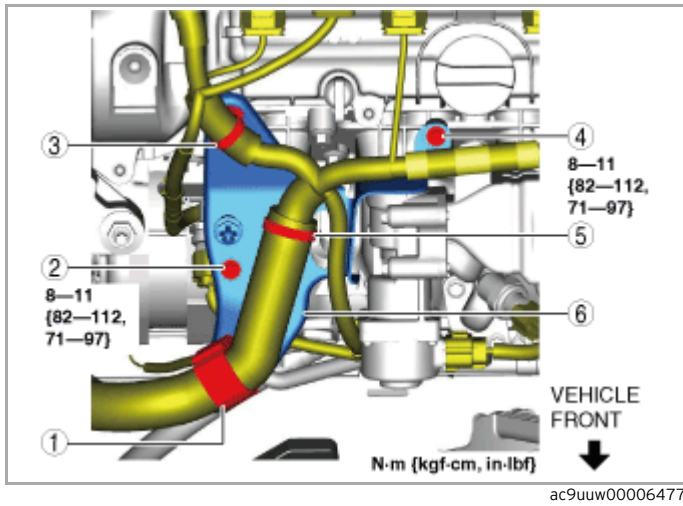


1. Disconnect the negative battery terminal. (See [NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.](#))
2. Remove the plug hole plate. (See [PLUG HOLE PLATE REMOVAL/INSTALLATION \[SKYACTIV-G 2.5T\].](#))
3. Remove the ignition coil/ion sensors. (See [IGNITION COIL/ION SENSOR REMOVAL/INSTALLATION \[SKYACTIV-G 2.5T\].](#))
4. Remove the front under cover No.2. (See [FRONT UNDER COVER No.2 REMOVAL/INSTALLATION.](#))
5. Remove the front splash shield (RH). (See [SPLASH SHIELD REMOVAL/INSTALLATION.](#))
6. Remove the drive belt. (See [DRIVE BELT REMOVAL/INSTALLATION \[SKYACTIV-G 2.5T\].](#))
7. Drain the engine oil. (See [ENGINE OIL REPLACEMENT \[SKYACTIV-G 2.5T\].](#))
8. Remove the oil pan. (See [OIL PAN REMOVAL/INSTALLATION \[SKYACTIV-G 2.5T\].](#))



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1	Dipstick
2	Cylinder head cover (See Cylinder Head Cover Removal Note.) (See Cylinder Head Cover Installation Note.)
3	Oil shower pipe (See Oil Shower Pipe Installation Note.)
4	Drive belt auto tensioner (See DRIVE BELT AUTO TENSIONER REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].)
5	Crankshaft pulley lock bolt (See FRONT OIL SEAL REPLACEMENT [SKYACTIV-G 2.5T].)
6	Crankshaft pulley

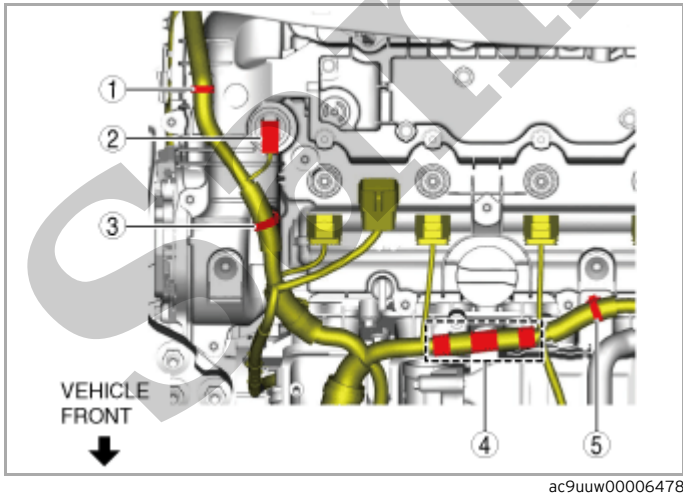


1	Wiring harness clip
2	Bolt
3	Wiring harness clip
4	Bolt
5	Wiring harness clip
6	Wiring harness bracket

5.Set the engine wiring harness aside using the following procedure:

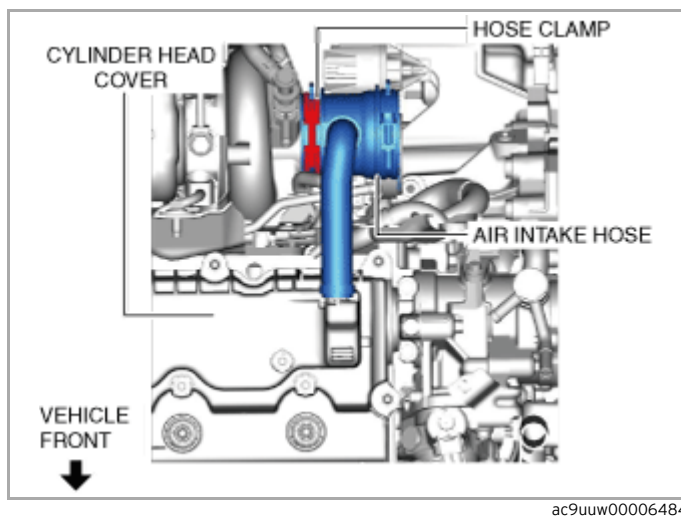
(1)Disconnect or remove the following parts.

Step 1



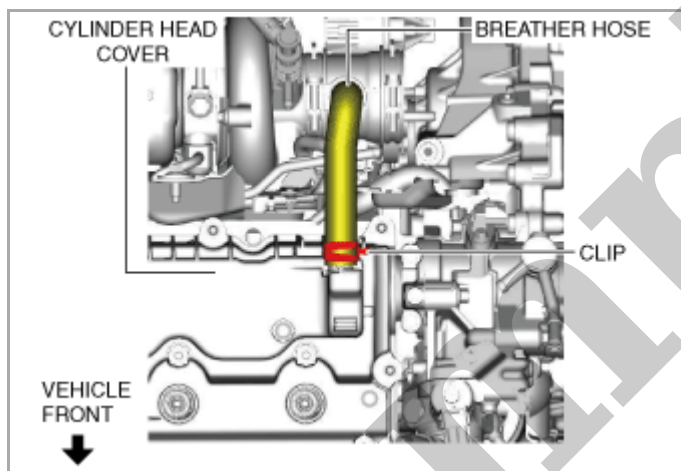
1	Wiring harness clip
2	OCV connector
3	Wiring harness clip
4	Wiring harness clip
5	Wiring harness clip

Step 2



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12. Disconnect the breather hose shown in the figure. (Except U.S.A., Canada and Israel)

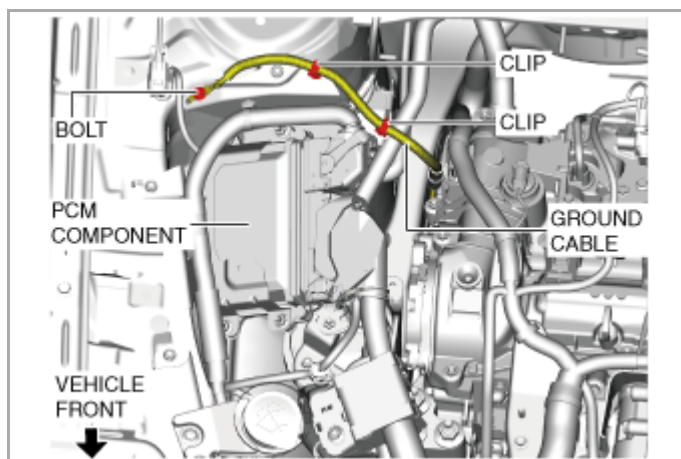


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13. Remove the cylinder head cover.

No.3 Engine Mount Removal Note

1. Remove the clip and bolt shown in the figure and set the ground cable aside.

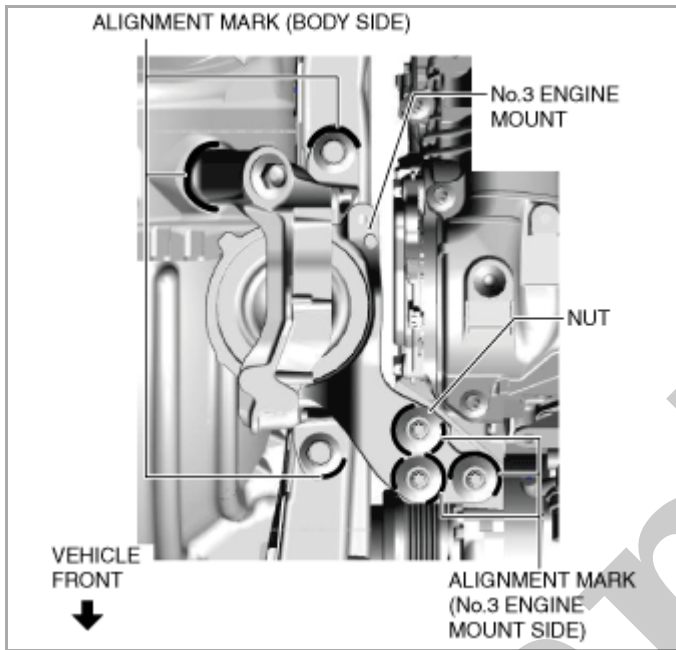


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Caution

- Slots have been adopted for the No.3 engine mount installation holes. 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. Before removing the No.3 engine mount, place alignment marks on the No.3 engine mount and body so that they can be assembled to the same positions as before removal.

7.Place alignment marks on the locations shown in the figure so that they can be assembled to the same positions as before removal.



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Note

- Paint so that the No.3 engine mount is framed on the body side and the outline of the nut is framed on the No.3 engine mount side.

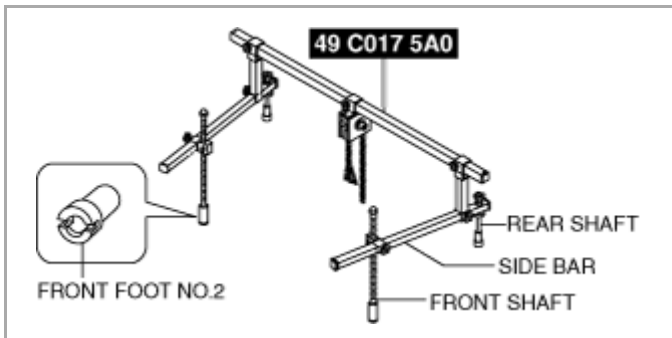
8.Install the SST using the following procedures.

Caution

- Refer to the SST instruction manual for the basic handing procedure.

Note

- Install front foot No. 2 to the left and right front shafts of the SST.



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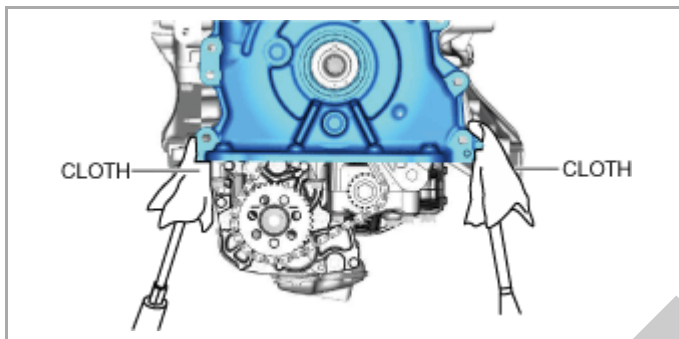
(1)Protect the positions shown in the figure using tape.

2.Remove the engine front cover installation bolts.

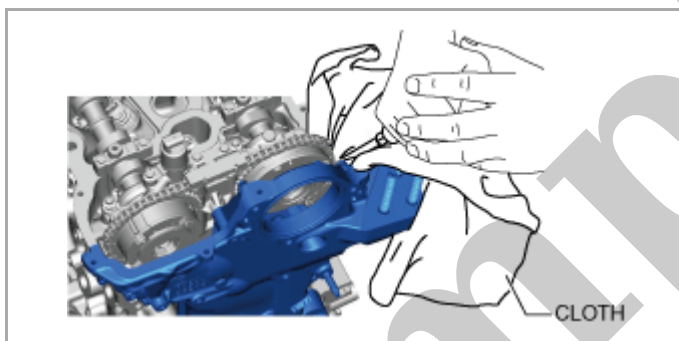
3.Using a screwdriver wrapped in a cloth, peel the sealant away a little at a time, and remove the engine front cover.

Caution

- 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.



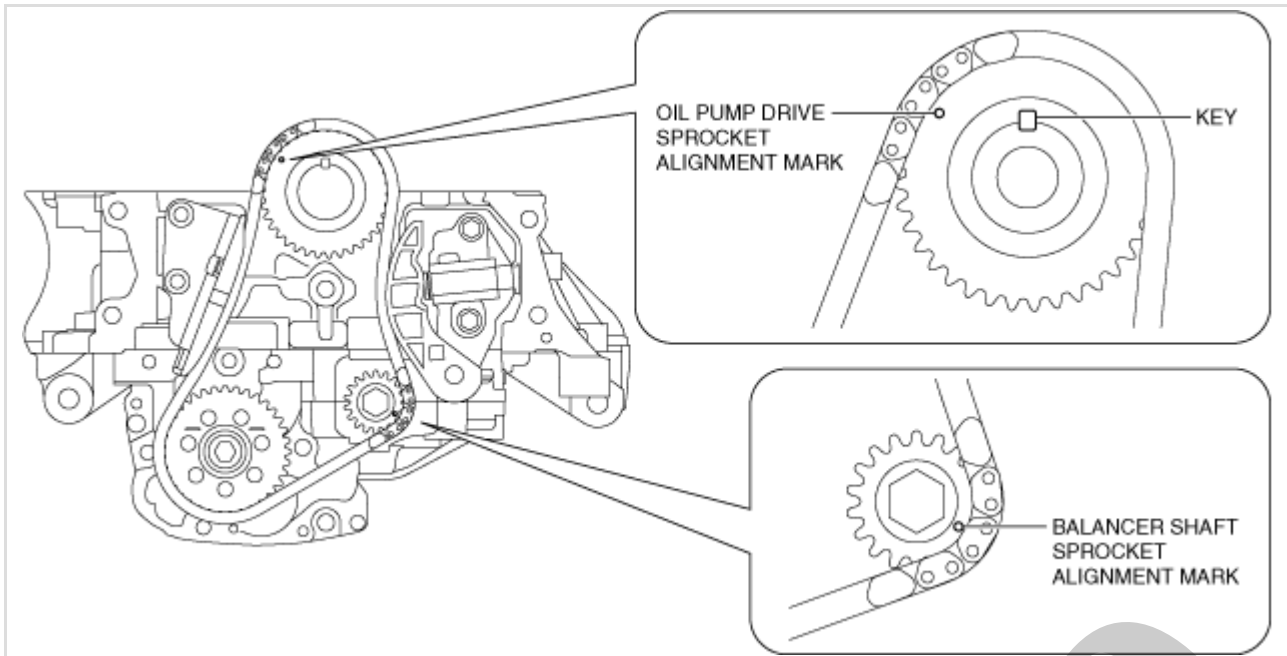
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Timing Chain Removal Note

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).



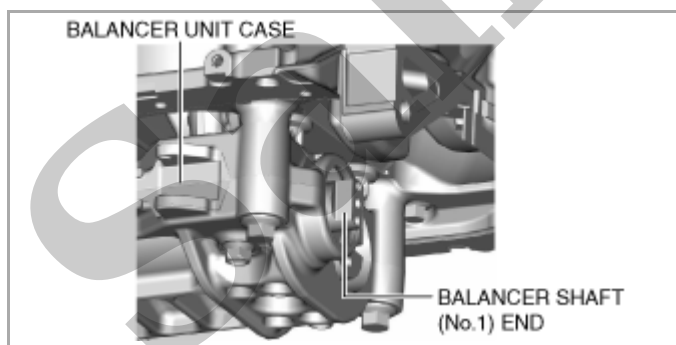
Note

- If they are not in the positions shown in the figure, rotate the crankshaft to set cylinder No.1 to top dead center (TDC).

2.Slightly loosen the balancer shaft 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.
- 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 cloth.