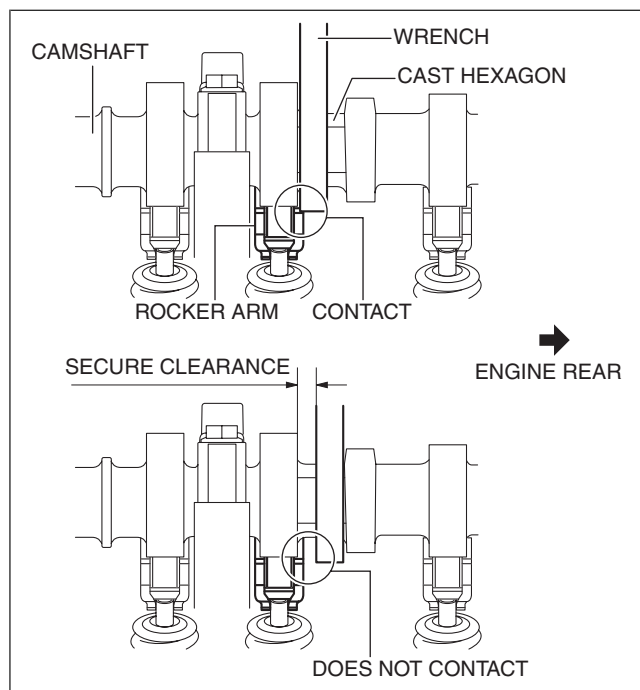


## TIMING CHAIN DISASSEMBLY

id011000505500

### Caution

- If the camshaft is rotated with the timing chain removed and the piston at the top dead center position, the valve may contact the piston and the engine could be damaged. When rotating the camshaft with the timing chain removed, rotate it after lowering the piston from the top dead center position.
- When rotating the camshaft using a wrench on the cast hexagon, the wrench may contact the rocker arm and damage the rocker arm. To prevent damage to the rocker arm when holding the camshaft on the cast hexagon, use the wrench at engine rear side as shown in the figure to secure a clearance between the cam.

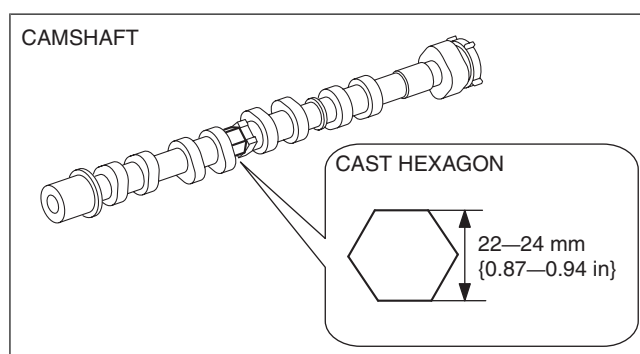


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### Note

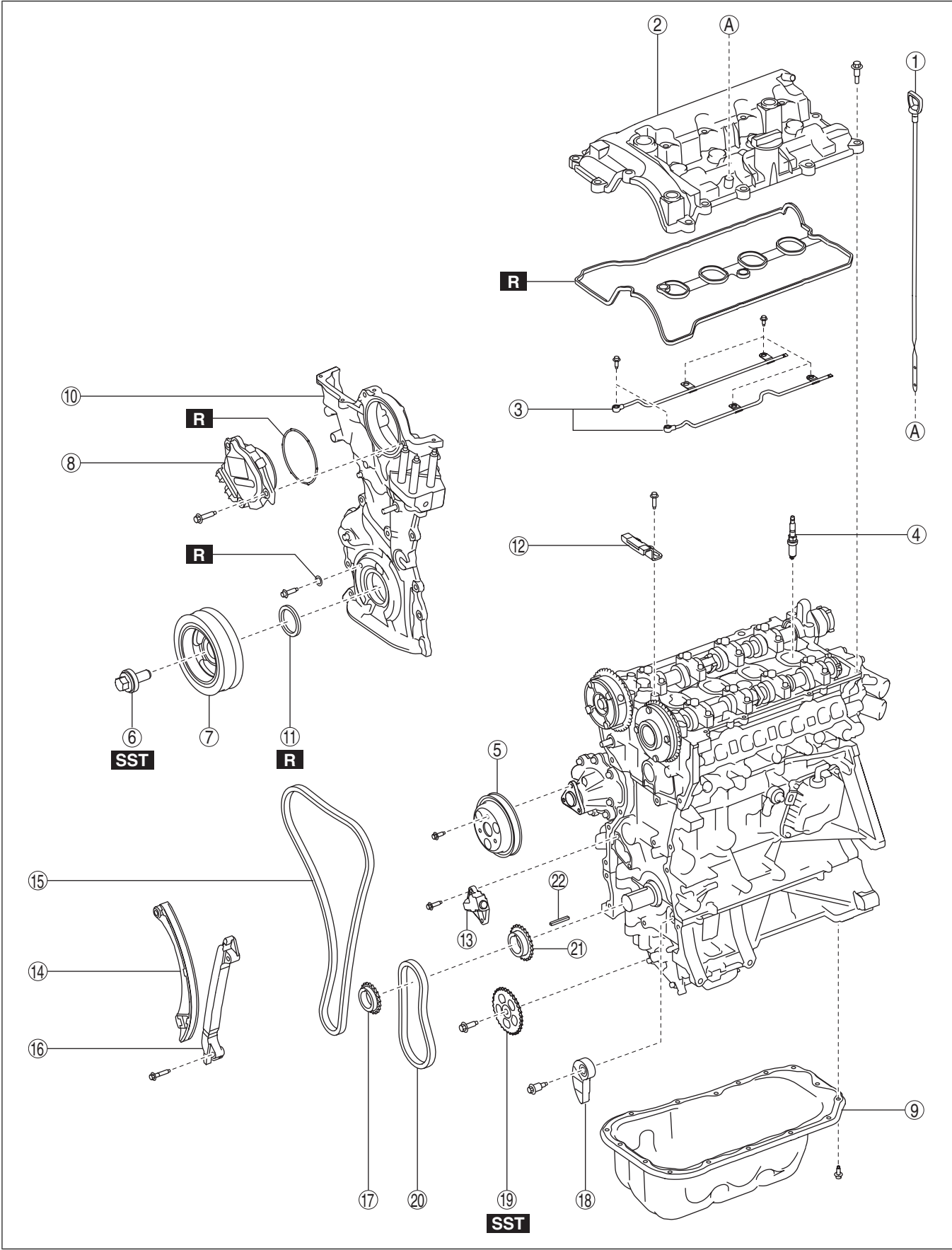
- Width at the cast hexagon of the camshaft is 22—24 mm {0.87—0.94 in}.

1. Disassemble in the order indicated in the table.



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SKYACTIV-G 2.0



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1	Dipstick
2	Cylinder head cover

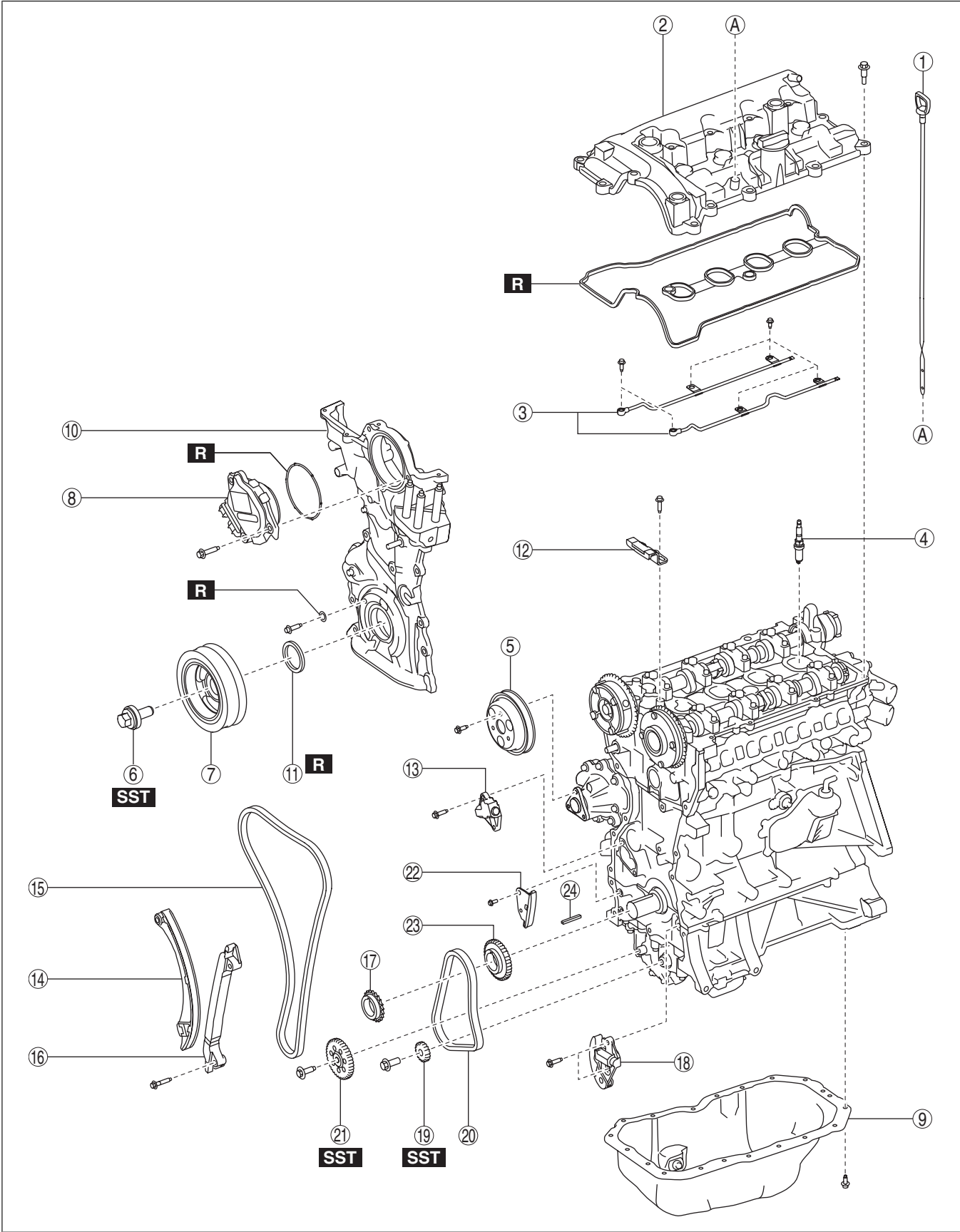
3	Oil shower pipe
4	Spark plug

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5	Water pump pulley (See Water Pump Pulley Disassembly Note.)
6	Crankshaft pulley lock bolt (See Crankshaft Pulley Lock Bolt Disassembly Note.)
7	Crankshaft pulley
8	Electric variable valve timing motor/driver
9	Oil pan (See Oil Pan Disassembly Note.)
10	Engine front cover (See Engine Front Cover Disassembly Note.)
11	Front oil seal (See Front Oil Seal Disassembly Note.)
12	Chain guide (No.1)
13	Chain tensioner (See Chain Tensioner Disassembly Note.)

14	Tensioner arm
15	Timing chain
16	Chain guide (No.2)
17	Crankshaft sprocket
18	Oil pump chain tensioner
19	Oil pump driven sprocket (See Oil Pump Driven Sprocket Disassembly Note (SKYACTIV-G 2.0).)
20	Oil pump chain
21	Oil pump drive sprocket
22	Key

SKYACTIV-G 2.5



bpe1ze0000062

1	Dipstick
2	Cylinder head cover
3	Oil shower pipe
4	Spark plug

5	Water pump pulley (See Water Pump Pulley Disassembly Note.)
6	Crankshaft pulley lock bolt (See Crankshaft Pulley Lock Bolt Disassembly Note.)

7	Crankshaft pulley
8	Electric variable valve timing motor/driver
9	Oil pan (See Oil Pan Disassembly Note.)
10	Engine front cover (See Engine Front Cover Disassembly Note.)
11	Front oil seal (See Front Oil Seal Disassembly Note.)
12	Chain guide (No.1)
13	Chain tensioner (See Chain Tensioner Disassembly Note.)
14	Tensioner arm
15	Timing chain
16	Chain guide (No.2)
17	Crankshaft sprocket
18	Oil pump chain tensioner (See Oil Pump Chain Disassembly Note (SKYACTIV-G 2.5).)

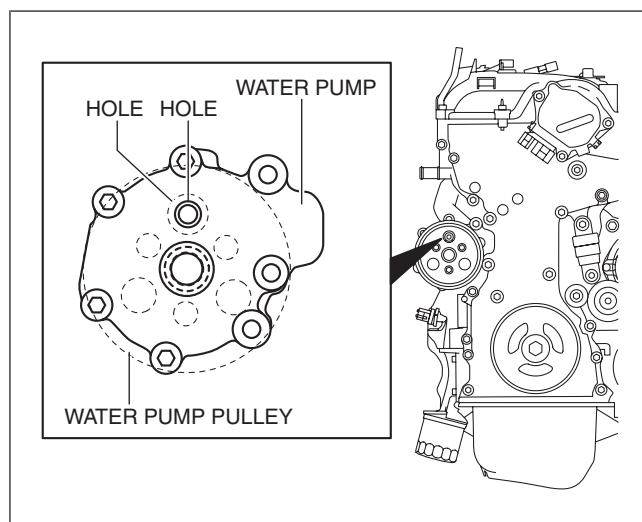
19	Balancer shaft sprocket (See Oil Pump Chain Disassembly Note (SKYACTIV-G 2.5).)
20	Oil pump chain (See Oil Pump Chain Disassembly Note (SKYACTIV-G 2.5).)
21	Oil pump driven sprocket (See Oil Pump Chain Disassembly Note (SKYACTIV-G 2.5).)
22	Oil pump chain guide
23	Oil pump drive sprocket
24	Key

### Water Pump Pulley Disassembly Note

#### Caution

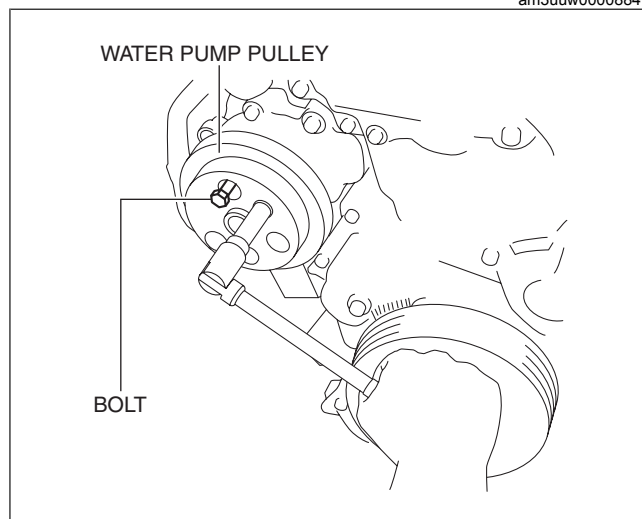
- Be careful not to damage the belt groove and surface of the water pump pulley when using tools, otherwise it will cause wear, breakage, abnormal noise of the drive belt (stretch belt), damage to the pulley, and rust.

1. Align the water pump pulley hole with the water pump hole as shown in the figure.



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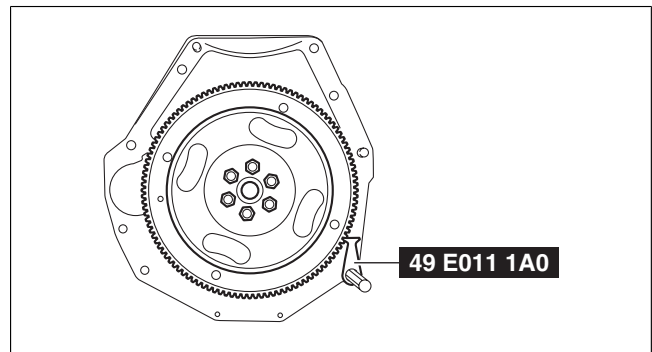
2. Insert an appropriate bolt (length **approx. 70 mm {2.8 in}**) into the water pump hole as shown in the figure, and lock the water pump pulley against rotation.
3. Remove the water pump pulley.
4. Remove the bolt used for locking the water pump pulley against rotation.



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### Crankshaft Pulley Lock Bolt Disassembly Note

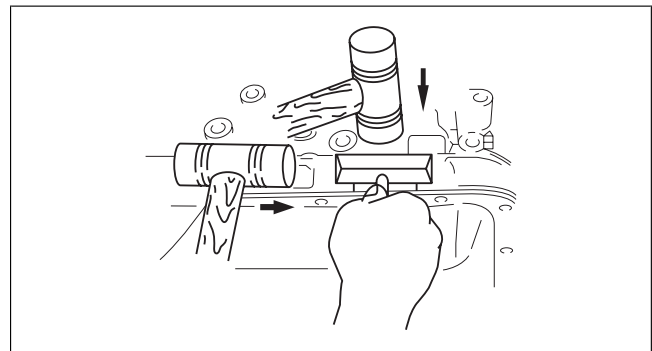
1. Hold the crankshaft using the **SST**.
2. Remove the crankshaft pulley lock bolt.



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### Oil Pan Disassembly Note

1. Remove the oil pan using a separator tool.



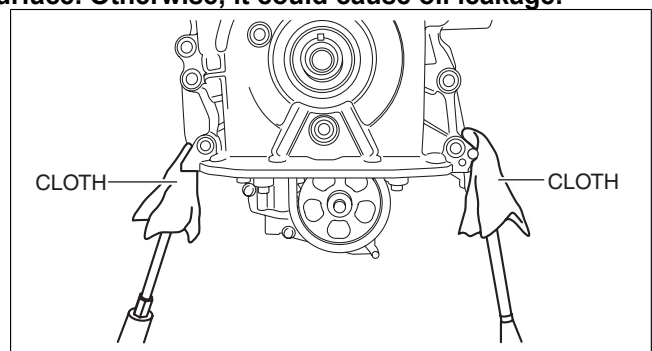
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### Engine Front Cover Disassembly Note

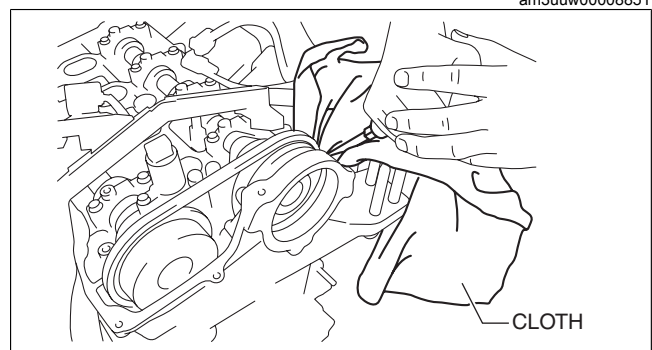
1. Remove the engine front cover installation bolts.
2. Using a screwdriver wrapped in a cloth, peel the sealant away a little at a time, and remove the engine front cover.

#### 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.



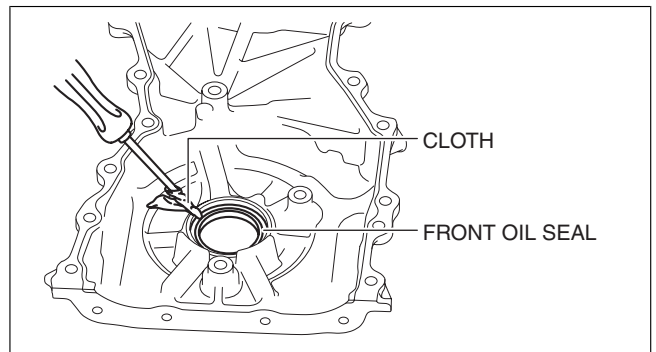
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### Front Oil Seal Disassembly Note

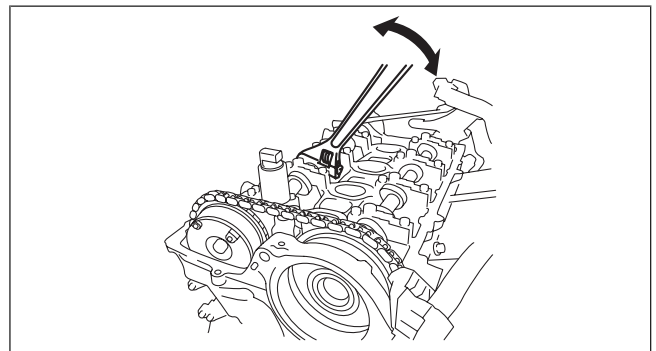
1. Remove the oil seal using a flathead screwdriver with the tip protected by a clean cloth.



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### Chain Tensioner Disassembly Note

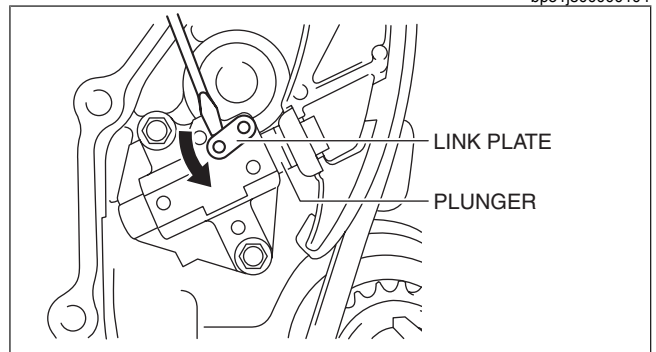
1. While moving the exhaust camshaft back and forth in the direction of the arrow using a wrench on the cast hexagon, press down the link plate of the timing chain tensioner using a precision screwdriver and release the plunger lock.



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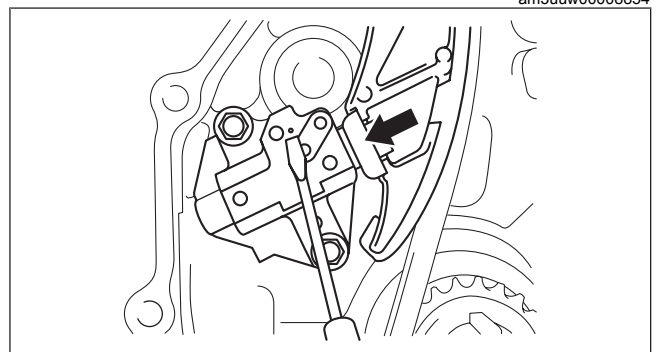
### Note

- When moving the exhaust camshaft back and forth, the timing chain pushes the plunger in the chain tensioner making it easier to operate the link plate.



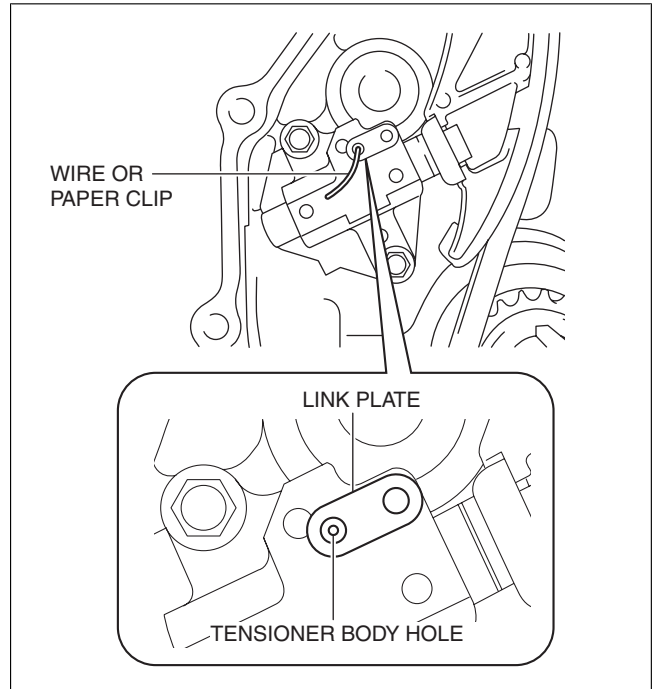
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2. Push back the plunger slowly in the direction shown in the figure with the link plate still pushed down.
3. Remove the screwdriver from the link plate with the plunger still pushed down.
4. Release the force slightly from the plunger, and move it back and forth **2—3 mm {0.08—0.11 in}**.



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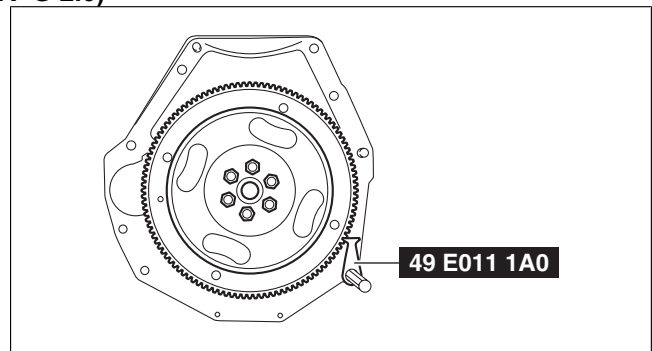
5. Insert a wire with an **approx. diameter of 1.5 mm {0.059 in}** or a paper clip where the link plate hole and the tensioner body hole overlap to secure the link plate and lock the plunger.
6. Remove the chain tensioner.



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#### Oil Pump Driven Sprocket Disassembly Note (SKYACTIV-G 2.0)

1. Hold the crankshaft using the **SST**.
2. Remove the oil pump driven sprocket.



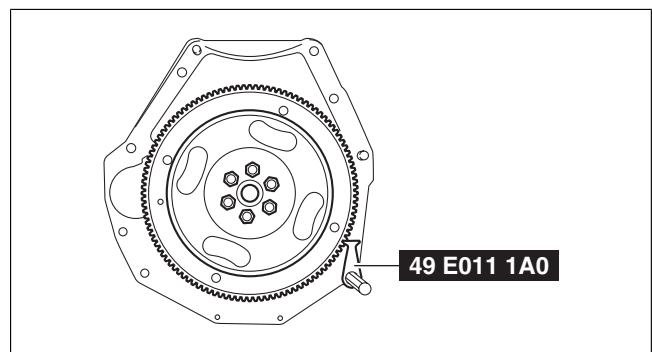
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#### Oil Pump Chain Disassembly Note (SKYACTIV-G 2.5)

1. Hold the crankshaft using the **SST**.
2. Slightly loosen the balancer shaft sprocket and oil pump driven sprocket installation bolts.

##### Note

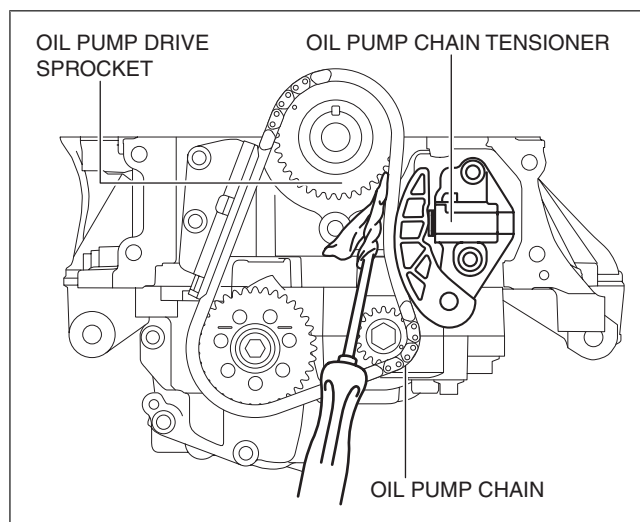
- At this stage, only loosen the installation bolts, do not remove it. Remove the bolt after removing the oil pump chain tensioner.



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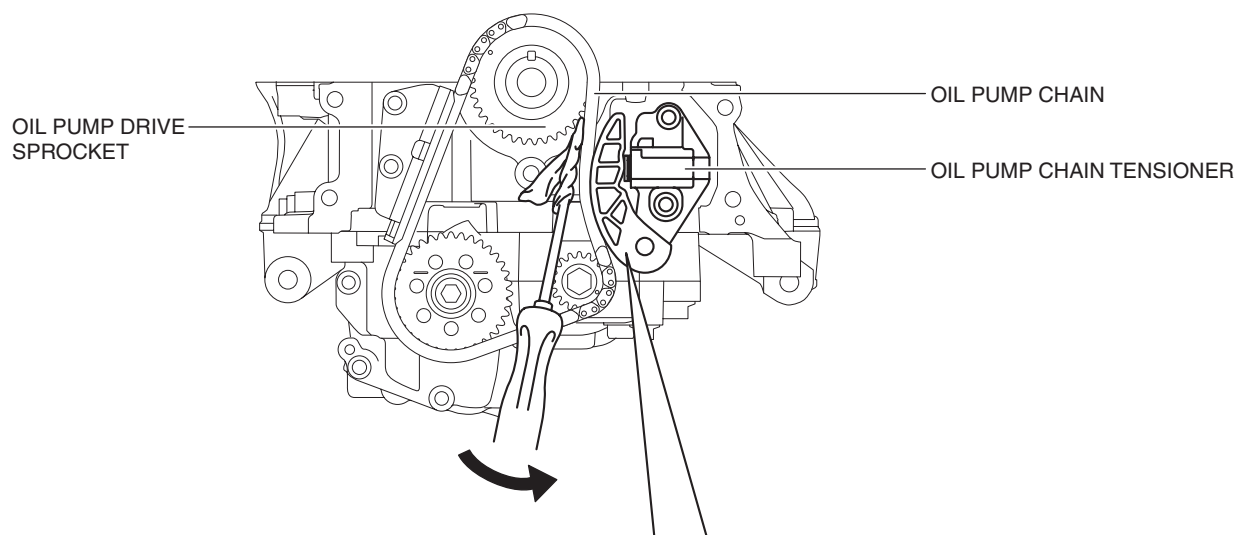


3. Set a cloth wrapped flathead screwdriver in the gap between oil pump drive sprocket and the oil pump chain as shown in the figure.



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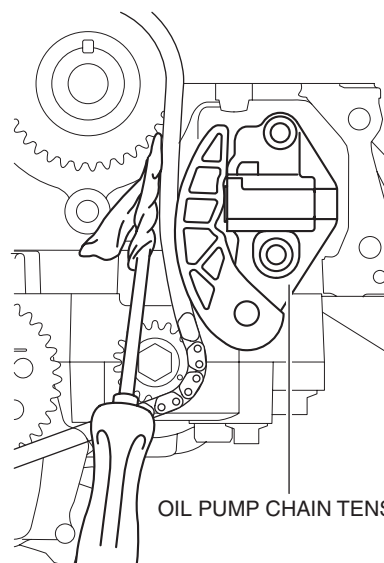
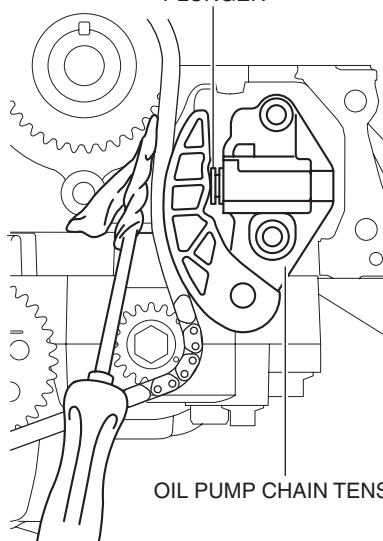
4. Move the screwdriver in the direction of the arrow and press the oil pump chain, and then press in the plunger of the oil pump chain tensioner.



BEFORE PRESSING

PLUNGER

AFTER PRESSING



bpe1ze00000065

- 
5. Insert a wire with an approx. diameter of 1.4 mm {0.055 in} or a paper clip into the body hole of the oil pump chain tensioner with the plunger pressed.

**Note**

- The wire or paper clip secures the plunger, and the tension can be released.
6. Remove the oil pump chain tensioner.
  7. Remove the oil pump chain and balancer shaft sprocket as a single unit.
  8. Remove the oil pump driven sprocket.

