

2012 - Mazda6 - Engine

TIMING CHAIN REMOVAL/ INSTALLATION [MZI 3.7 V6]

WARNING:

- Fuel vapor is hazardous. It can very easily ignite, causing serious injury and damage. Always keep sparks and flames away from fuel.
- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, always complete the "Fuel Line Safety Procedure". (See [BEFORE SERVICE PRECAUTION \[MZI 3.7 V6\]](#).)
- Continuous exposure to USED engine oil has caused skin cancer in laboratory mice. Protect your skin by washing with soap and water immediately after working with engine oil.

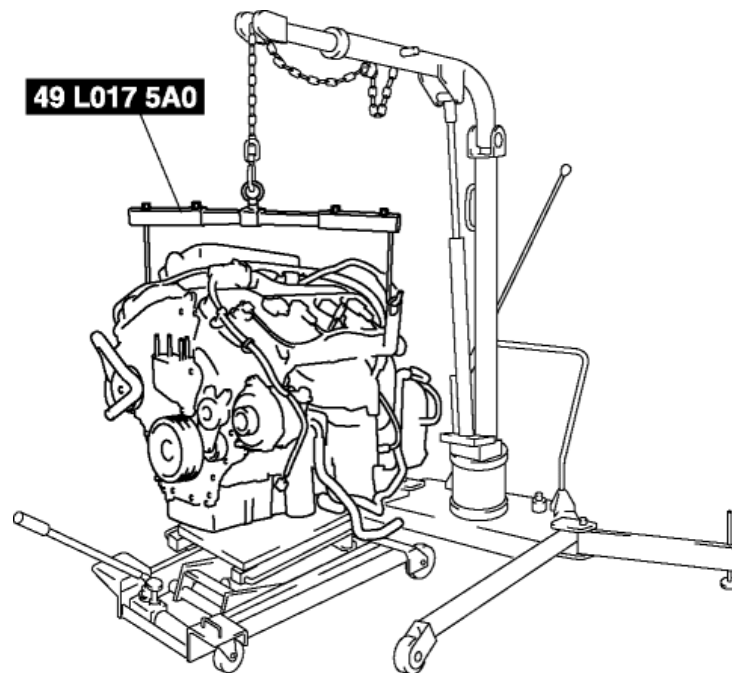
NOTE:

- The following procedure "TIMING CHAIN REMOVAL/INSTALLATION" is performed after the engine and transaxle component is removed from the vehicle. (See [ENGINE REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)

1. Drain the engine oil. (See [ENGINE OIL REPLACEMENT \[MZI 3.7 V6\]](#).)
2. Remove the engine and transaxle component. (See [ENGINE REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
3. Secure the engine and transaxle component using a hoist and the **SST**.

WARNING:

- Protect and stabilize the lowered engine and transaxle component with crossties to prevent injury or damage due to roll over.

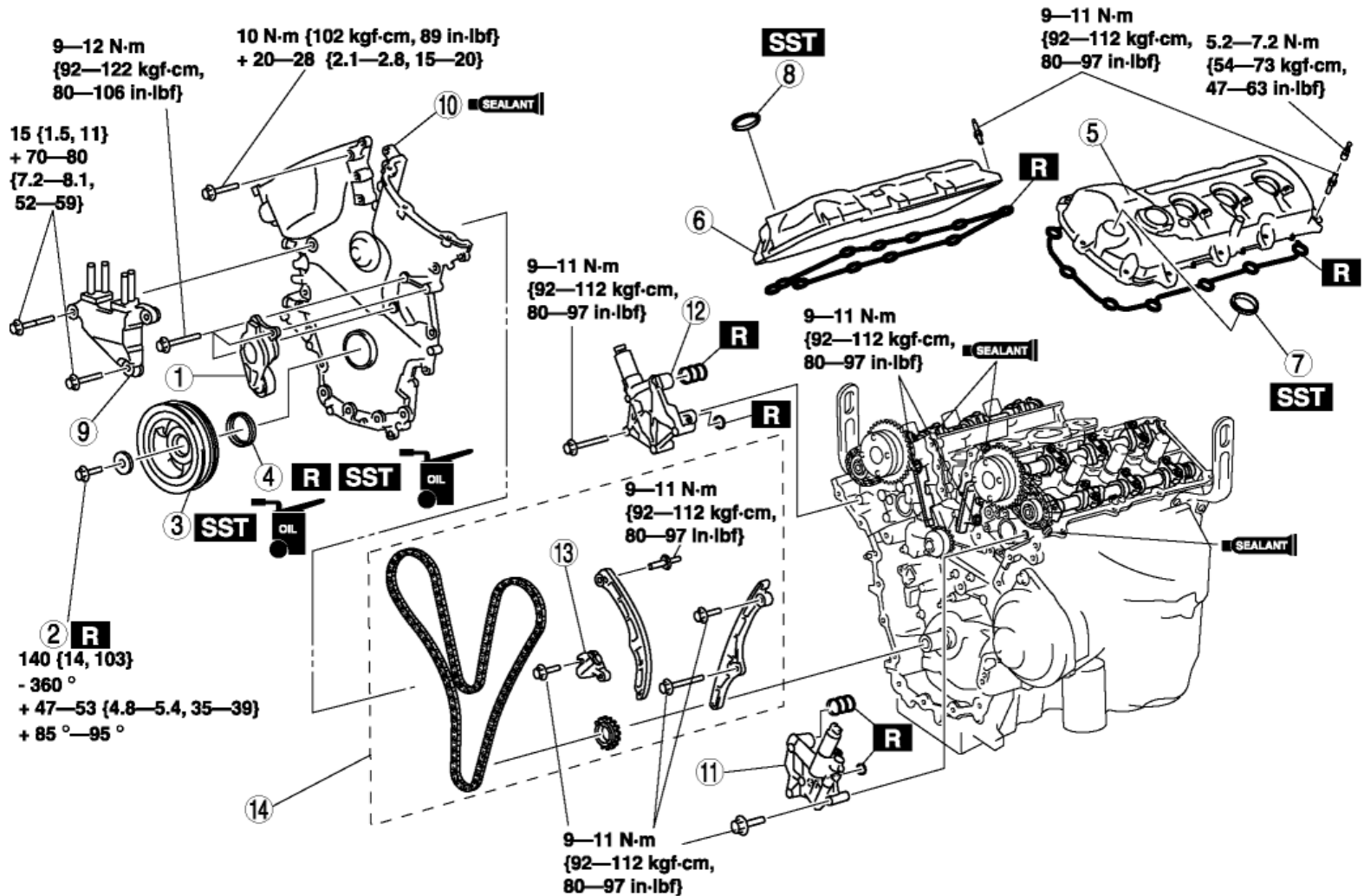


4. Remove the dynamic chamber and throttle body as a single unit. (See [INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
5. Remove the ignition coils. (See [IGNITION COIL REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
6. Remove the dipstick.
7. Remove the power steering oil pump drive belt. (See [DRIVE BELT REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
8. Remove the power steering oil pump. (See [POWER STEERING OIL PUMP REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
9. Remove in the order indicated in the table.
10. Install in the reverse order of removal.

11. Start the engine and:

- Inspect the runout and contact on the pulley and belt.
- Inspect for engine oil, engine coolant, ATF, power steering fluid and fuel leakage.
- Verify the ignition timing, idle speed and idle mixture. (See [ENGINE TUNE-UP \[MZI 3.7 V6\]](#).)
- Engine accessories operation.

12. Perform a road test.



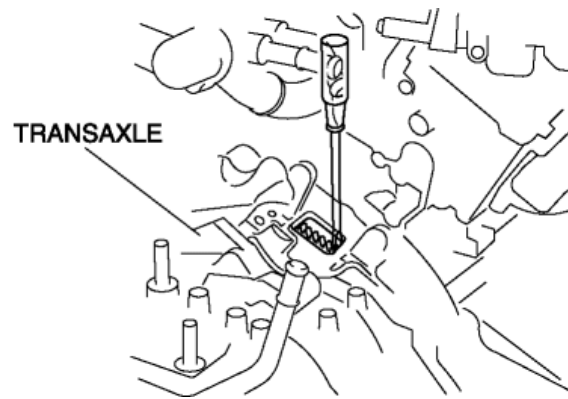
N·m {kgf·m, ft·lbf}

1	Drive belt auto tensioner
2	Crankshaft pulley lock bolt (See Crankshaft Pulley Lock Bolt Removal Note.) (See Crankshaft Pulley Lock Bolt Installation Note.)
3	Crankshaft pulley (See Crankshaft Pulley Removal Note.) (See Crankshaft Pulley Installation Note.)
4	Front oil seal (See Front Oil Seal Removal Note.)

	(See Front Oil Seal Installation Note.)
5	Cylinder head cover (LH) (See Cylinder Head Cover Removal Note.) (See Cylinder Head Cover Installation Note.)
6	Cylinder head cover (RH) (See Cylinder Head Cover Removal Note.) (See Cylinder Head Cover Installation Note.)
7	Cylinder head cover oil seal (LH) (See Cylinder Head Cover Oil Seal Removal Note.) (See Cylinder Head Cover Oil Seal Installation Note.)
8	Cylinder head cover oil seal (RH) (See Cylinder Head Cover Oil Seal Removal Note.) (See Cylinder Head Cover Oil Seal Installation Note.)
9	No.3 engine mount bracket (See Engine Front Cover and No.3 Engine Mount Bracket Removal Note.) (See Engine Front Cover and No.3 Engine Mount Bracket Installation Note.)
10	Engine front cover (See Engine Front Cover and No.3 Engine Mount Bracket Removal Note.) (See Engine Front Cover and No.3 Engine Mount Bracket Installation Note.)
11	OCV component (LH) (See OCV Component Removal Note.) (See OCV Component Installation Note.)
12	OCV component (RH) (See OCV Component Removal Note.) (See OCV Component Installation Note.)
13	Chain tensioner (See Timing Chain Component Removal Note.)
14	Timing chain component (See Timing Chain Component Installation Note.)

Crankshaft Pulley Lock Bolt Removal Note

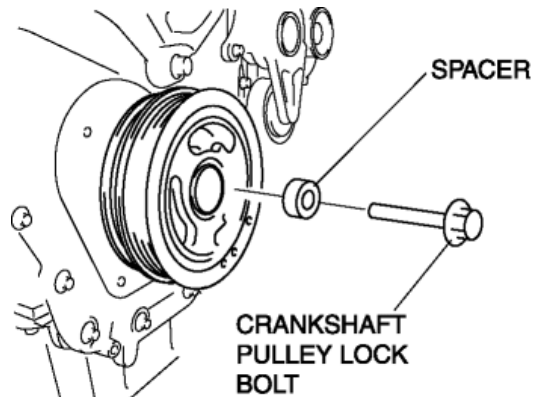
1. Remove the starter. (See [STARTER REMOVAL/ INSTALLATION \[MZI 3.7 V6\] .](#))
2. Set a flathead screwdriver to the drive plate in the position indicated in the figure to lock the crankshaft rotation.



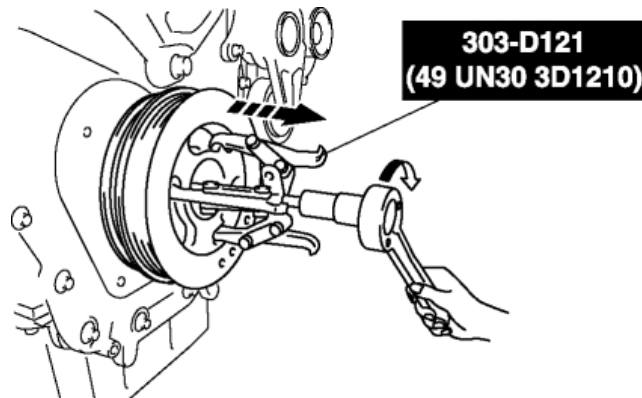
3. Remove the crankshaft pulley lock bolt and washer.

Crankshaft Pulley Removal Note

1. Remove the washer from the crankshaft pulley lock bolt, install a suitable spacer (thickness: **approx. 14 mm { 0.55 in }**, diameter: **approx. 30 mm { 1.2 in }**), (similar to front shock absorber lower nut) to the crankshaft pulley lock bolt, and install the crankshaft pulley lock bolt to the crankshaft.



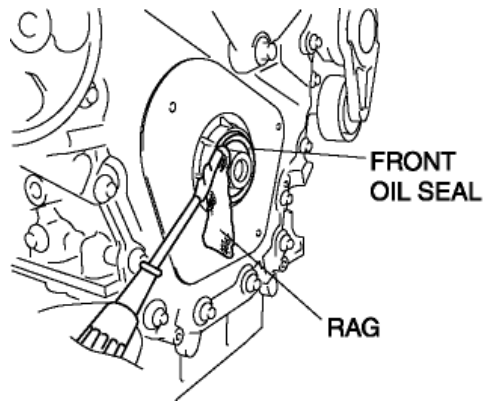
2. Remove the crankshaft pulley using the **SST**.



3. Remove the crankshaft pulley lock bolt and spacer.

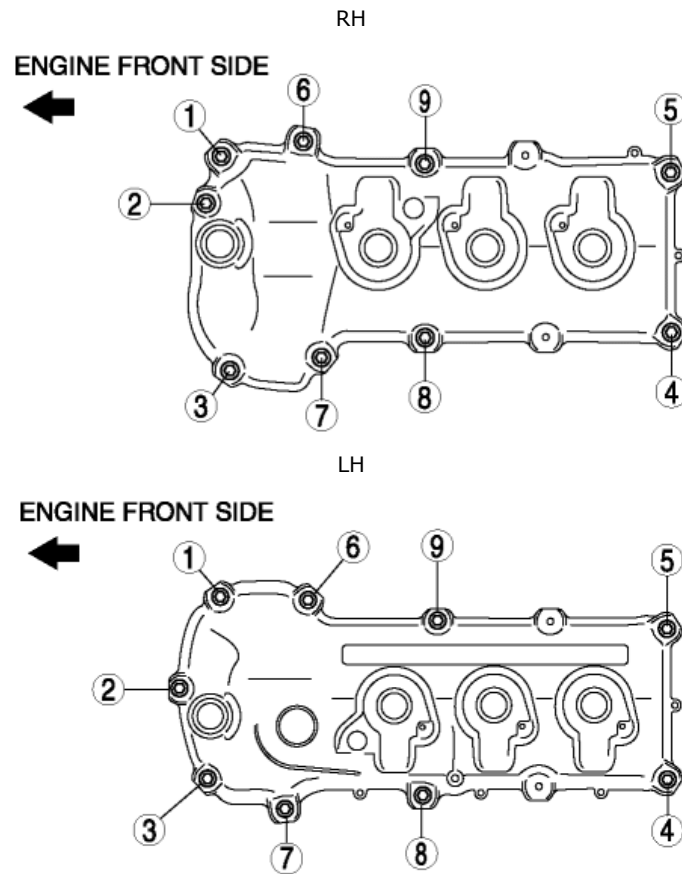
Front Oil Seal Removal Note

1. Remove the front oil seal using a flathead screwdriver as shown.



Cylinder Head Cover Removal Note

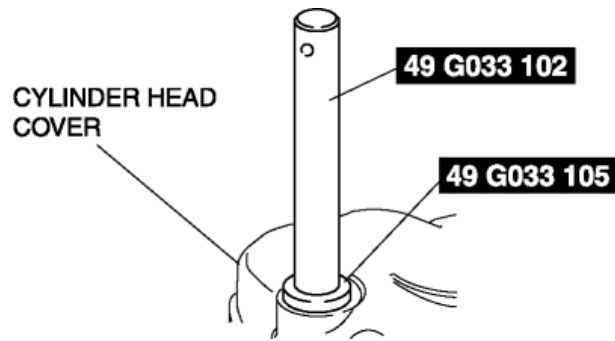
1. Remove the cylinder head cover bolts in the order shown.



Cylinder Head Cover Oil Seal Removal Note

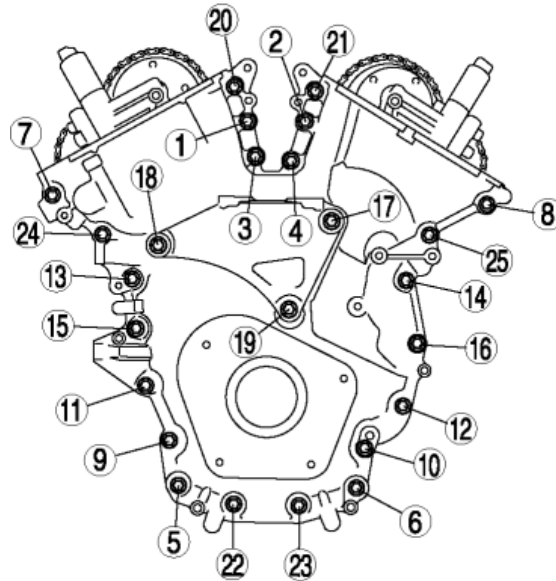
NOTE:

- Inspect the OCV attachment hole seal. Remove the any damaged seal.
1. Tap the OCV attachment hole seal using the SSTs and hammer.

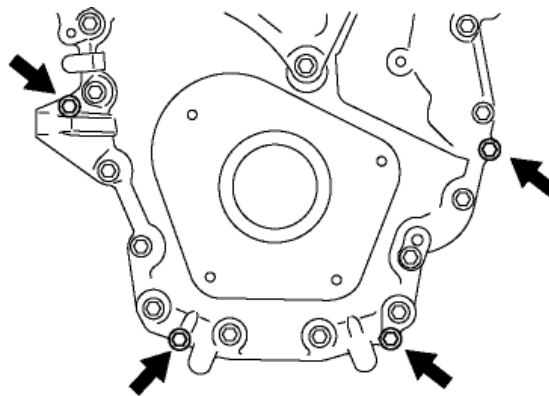


Engine Front Cover and No.3 Engine Mount Bracket Removal Note

1. Loosen the engine front cover and No.3 engine mount bracket bolts in the order shown in the figure.



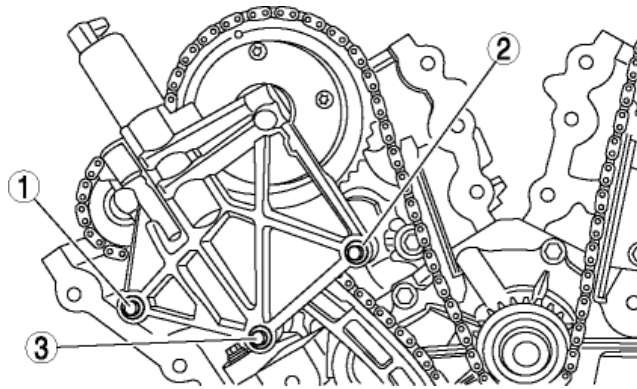
2. Install 4 of the engine front cover bolts (finger tightened) into the 4 threaded holes in the engine front cover.
 - a. Tighten the bolts one turn at a time in a criss-cross pattern until the engine front cover-to-cylinder block seal is released.



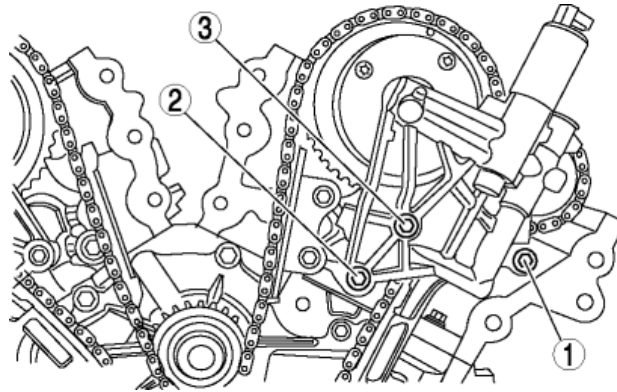
- b. Remove the engine front cover.

OCV Component Removal Note

1. Loosen the OCV component bolts in the order shown in the figure.



LH

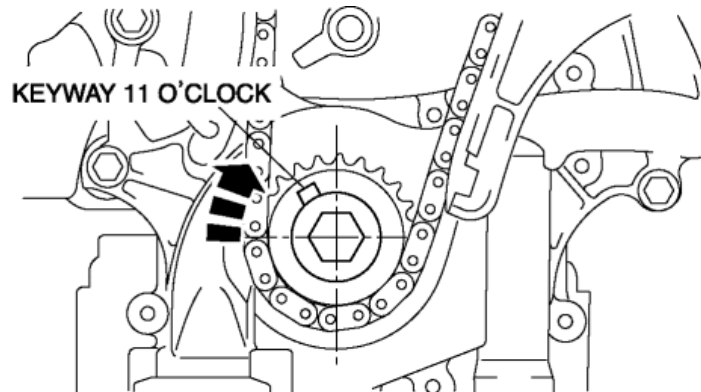


Timing Chain Component Removal Note

CAUTION:

- When removing the timing chain and marking the timing marks on the chain, mark the camshaft timing chain as well.

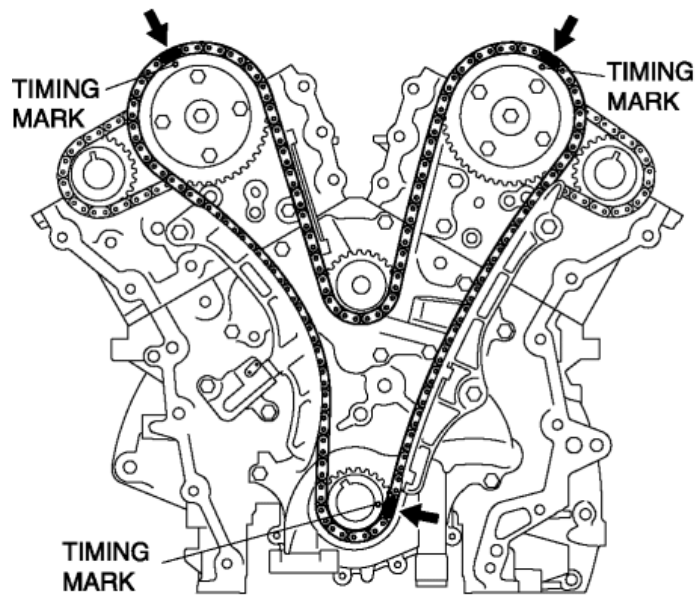
1. Turn the crankshaft clockwise so that the crankshaft keyway is in the 11 o'clock position. (This will position the No.1 cylinder at TDC.)



NOTE:

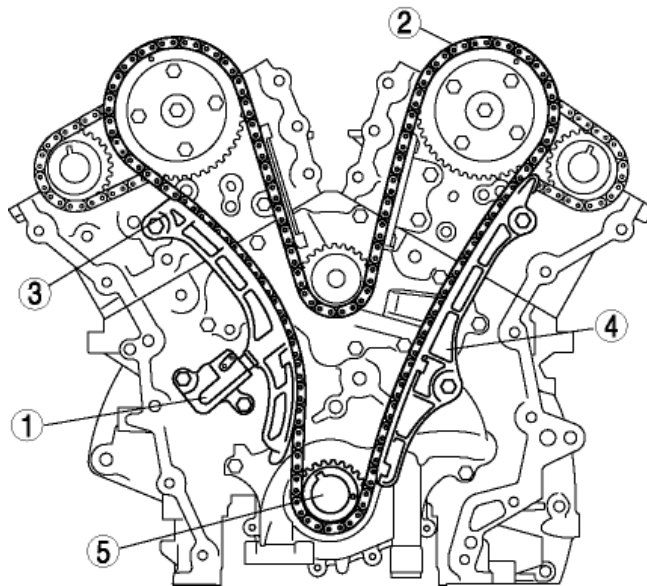
- Verify that there are timing marks in three locations (Yellow 1, Black 2) on the timing chain. If any timing marks are missing, mark the timing chain.
- When marking the crankshaft sprocket side timing chain, change the mark color.
- When the timing chain is replaced with a new one, mark the new timing chain at the same positions as the removed timing chain.

2. Mark the timing chain at the position of each timing sprocket timing mark.



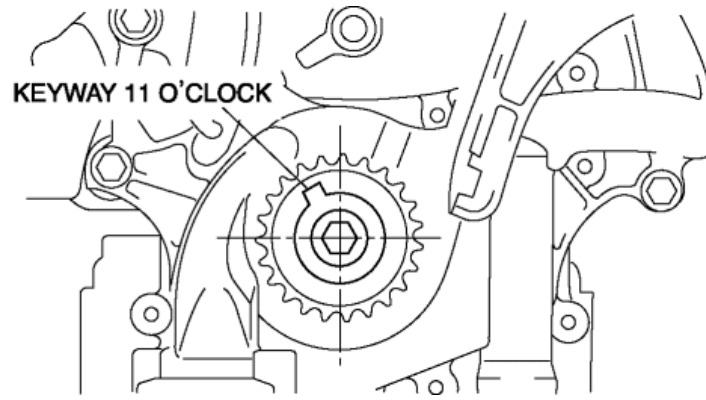
3. Remove the timing chain in the following order.

- a. Chain tensioner
- b. Timing chain
- c. Tensioner arm
- d. Chain guide
- e. Crankshaft sprocket



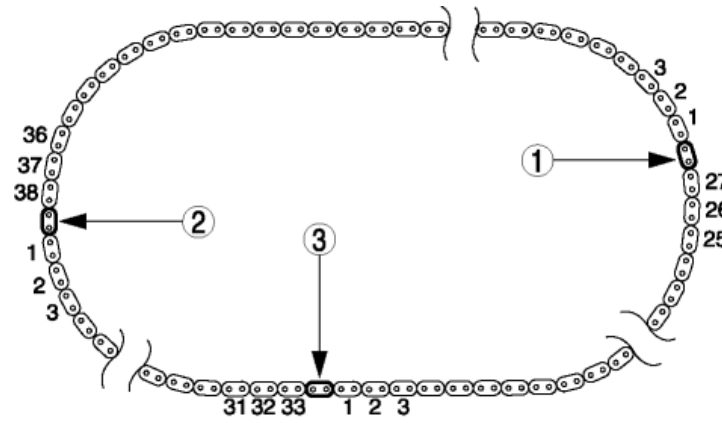
Timing Chain Component Installation Note

1. Verify that the crankshaft keyway is at 11 o'clock position.



NOTE:

- Of the three marked locations on the timing chain, align the mark that has a different color to the crankshaft sprocket side timing mark.
2. If the timing marks on the timing chain are not evident, place timing marks on the timing chain using an indelible ink marker.



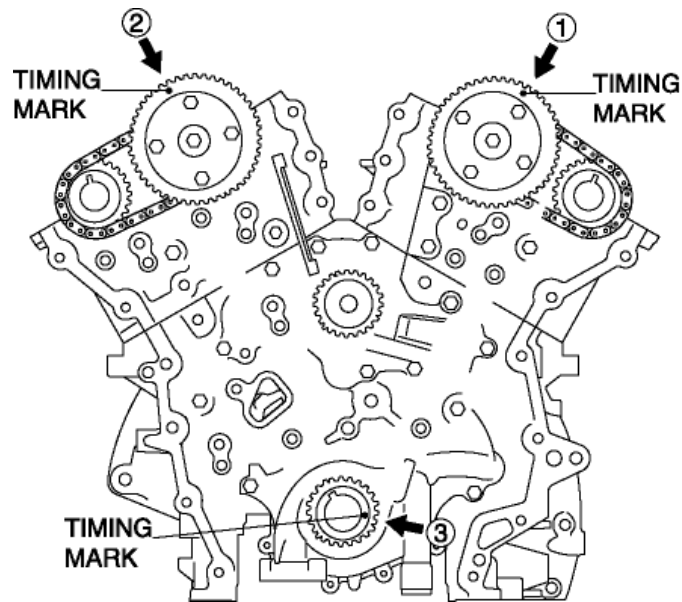
NOTE:

- The marked external links are not included in the count.
- When marking the crankshaft sprocket side timing chain (No.3), change the mark color.

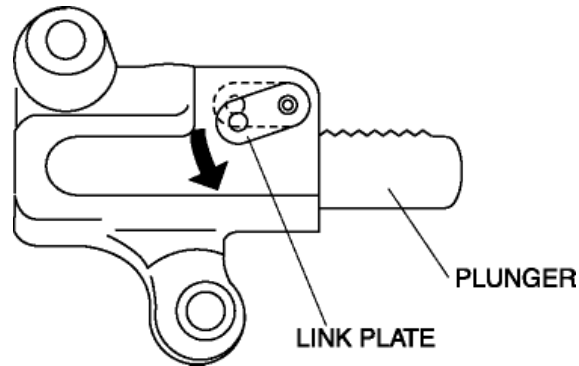
The number of external links

- No.1—2 : 38
- No.2—3 : 33
- No.3—1 : 27

3. Place alignment marks on the timing chain corresponding to each of the alignment marks on the timing sprocket.



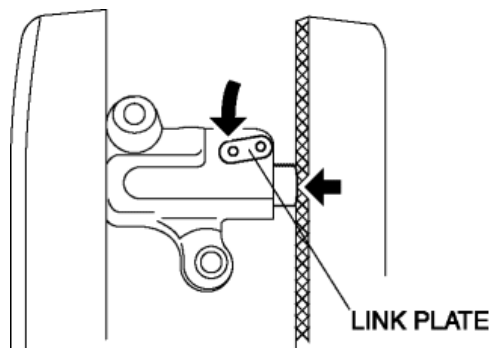
4. Push down the link plate of the timing chain tensioner and release the plunger lock.



NOTE:

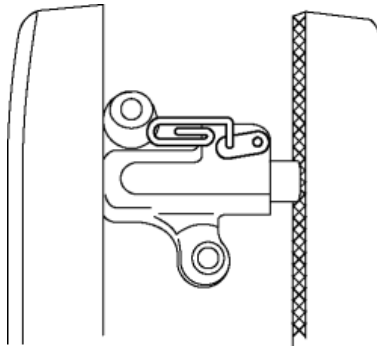
- The plunger should retract with minimal force. If binding occurs, remove the chain tensioner from the vise and reset it in the vise.

5. Secure the chain tensioner using a vice attached with a soft base, and slowly press the plunger back shown in the figure while pressing down the link plate.



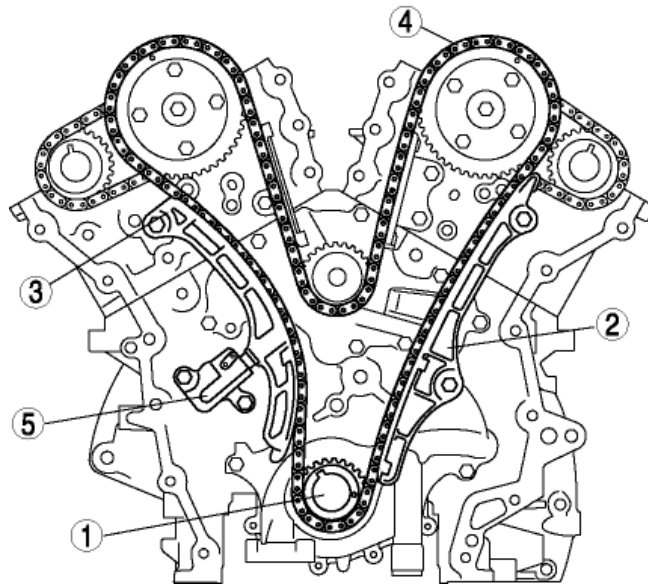
6. Release the pressure slightly from the plunger, and move the plunger back and forth 2—3 mm { 0.08—0.11 in } .

7. Insert an **approx. 1.5 mm { 0.059 in }** thick wire or paper clip where the link plate hole and the tensioner body hole overlap to fix the link plate and lock the plunger.



8. Install the timing chain in the following order.

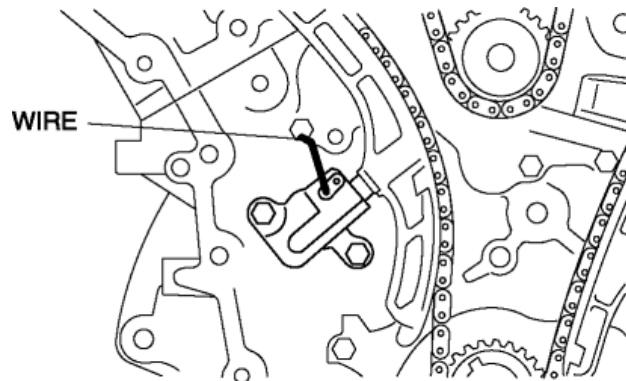
- a. Crankshaft sprocket
- b. Chain guide
- c. Tensioner arm
- d. Timing chain
- e. Chain tensioner



Tightening torque

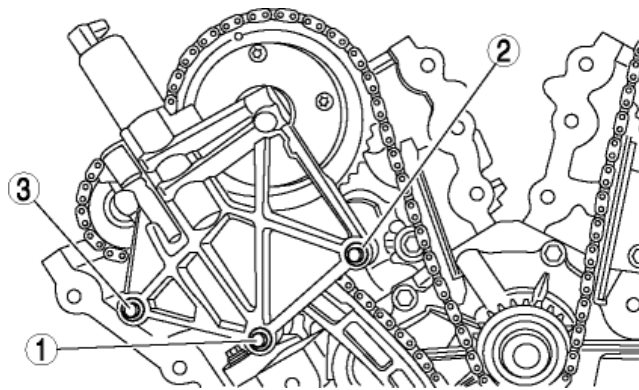
- 9—11 N·m { 92—112 kgf·cm, 80—97 in·lbf }

9. Remove the retaining wire.

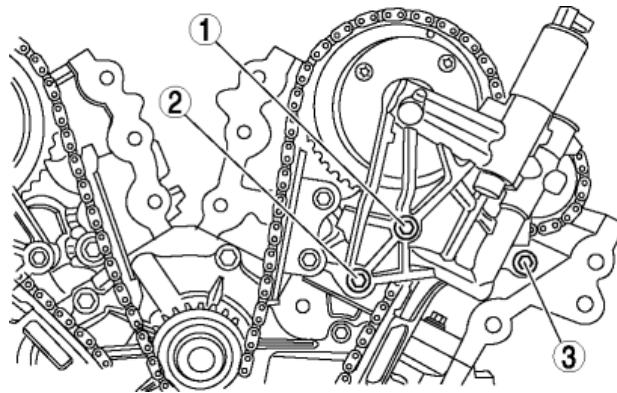


OCV Component Installation Note

1. Tighten the OCV component bolts in the order shown in the figure.



LH

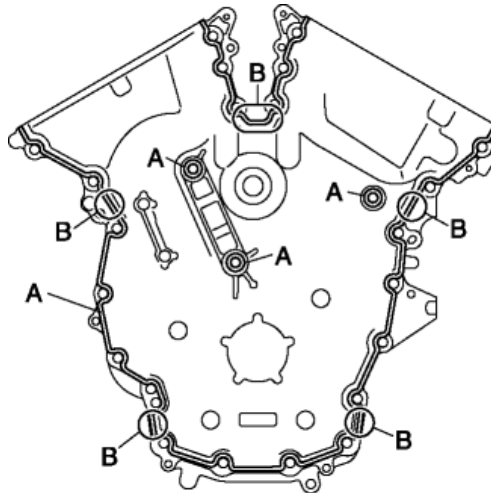


Tightening torque

- 9—11 N·m { 92—112 kgf·cm, 80—97 in·lbf }

Engine Front Cover and No.3 Engine Mount Bracket Installation Note

1. Apply the silicon sealant (Loctite 5900) to the engine front cover shown in the figure.



Silicon sealant thickness

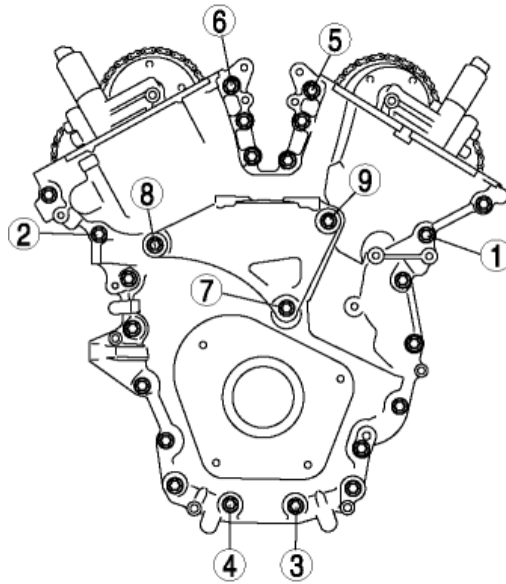
- A: 2.5—3.5 mm {0.10—0.13 in}
- B: 5.0—6.0 mm {0.20—0.23 in}

2. Install the engine front cover and No.3 engine mount bracket.

- a. Tighten the engine front cover and No.3 engine mount bracket bolts in 4 steps in the order shown in the figure.

CAUTION:

- Install the engine front cover and No.3 engine mount bracket before the applied silicone sealant starts to harden.



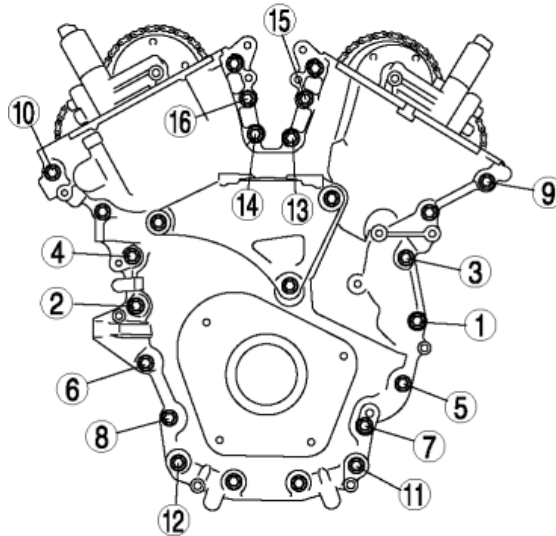
Tightening torque

Step	Installation position	Tightening torque
1	1—6	10 N·m {102 kgf·cm, 89 in·lbf}
2	7—9	15 N·m {1.5 kgf·m, 11 ft·lbf}
3	1—6	20—28 N·m {2.1—2.8 kgf·m, 15—20 ft·lbf}
4	7—9	70—80 N·m {7.2—8.1 kgf·m, 52—59 ft·lbf}

b. Tighten the engine front cover bolts in the order in 2 steps in the order shown in the figure.

CAUTION:

- Install the engine front cover bolts within 60 min of applying the silicone sealant.

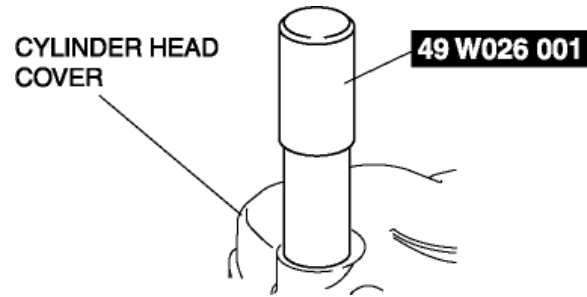


Tightening torque

- Tighten to 10 N·m {102 kgf·cm, 89 in·lbf}.
- Tighten to 20—28 N·m {2.1—2.8 kgf·m, 15—20 ft·lbf}.

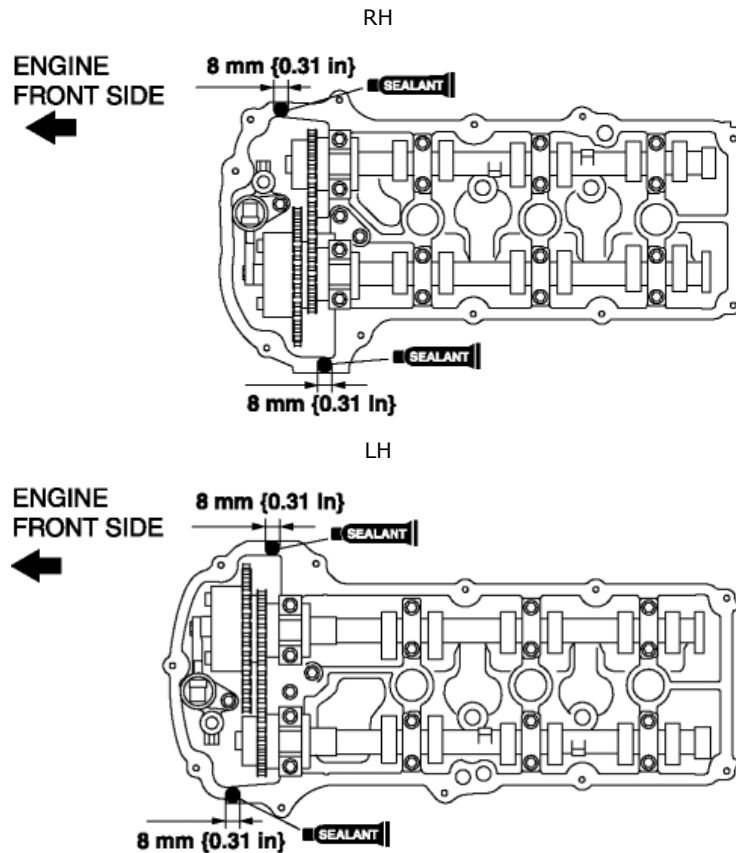
NOTE:

- Installation of new seal is only required if damaged seal were removed during disassembly of the engine.
1. Push the OCV attachment hole seal slightly in by hand.
 2. Tap the OCV attachment hole seal using the **SST** and hammer.



Cylinder Head Cover Installation Note

1. Apply silicone sealant (Loctite 5900) to the mating faces as shown.



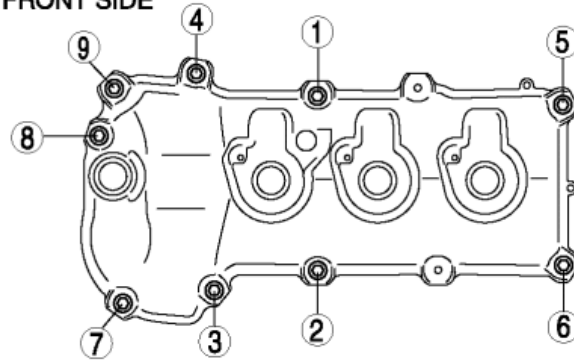
2. Install the cylinder head cover with a new gasket.
3. Tighten the bolts in the order as shown.

CAUTION:

- Install the cylinder head cover before the applied silicone sealant starts to harden.

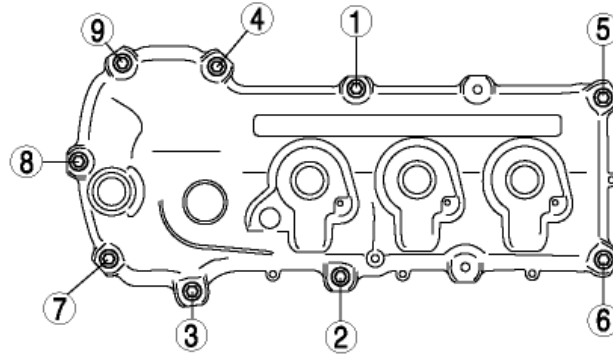
RH

ENGINE FRONT SIDE



LH

ENGINE FRONT SIDE



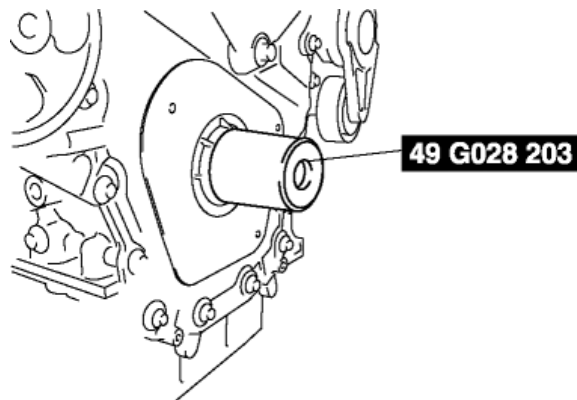
Tightening torque

- 9—11 N·m { 92—112 kgf·cm, 80—97 in·lbf }

Front Oil Seal Installation Note

NOTE:

- Apply clean engine oil to the front oil seal bore in the engine front cover.
1. Push the front oil seal slightly in by hand.
 2. Tap the front oil seal in evenly using the **SST** and a hammer.



Substitution SST

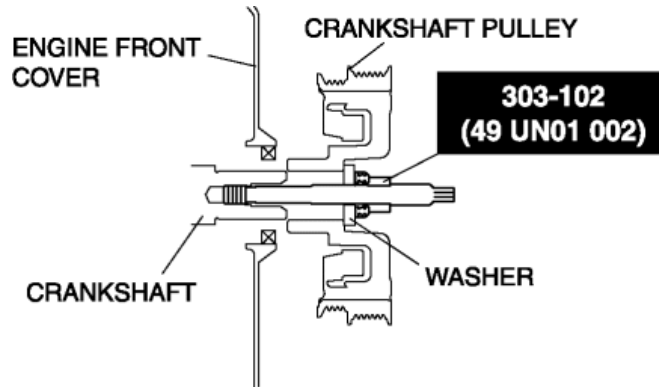
- **49 G028 203**
Outer diameter: 58—70 mm {2.3—2.7 in}
Inner diameter: 56—58 mm {2.21—2.28 in}
Tube with board thickness 2 mm {0.08 in} or more

Crankshaft Pulley Installation Note

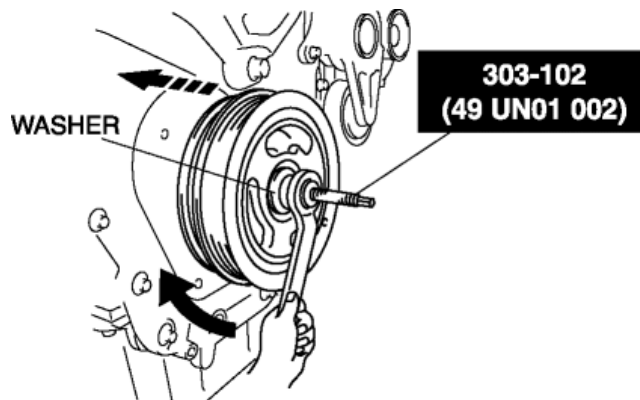
NOTE:

- Lubricate the contact surface (exterior area of inner diameter) of the front oil seal with clean engine oil.

1. Install the crankshaft pulley, washer, and **SST** to the crankshaft.

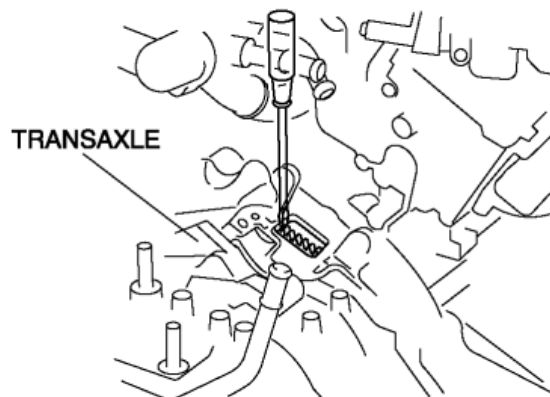


2. Tighten the **SST** nut and install the crankshaft pulley.



Crankshaft Pulley Lock Bolt Installation Note

1. Set a flathead screwdriver to the drive plate in the position indicated in the figure to lock the crankshaft rotation.



2. Tighten the new crankshaft pulley lock bolt in four steps.

- Tighten to **140 N·m { 14 kgf·m, 103 ft·lbf }**.
- Loosen **360 °** (one full turn) in reverse order.
- Tighten to **47—53 N·m { 4.8—5.4 kgf·m, 35—39 ft·lbf }**.
- Tighten **85 °—95 °**.

3. Install the starter. (See [STARTER REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)

2012 - Mazda6 - Engine

TIMING CHAIN REMOVAL/ INSTALLATION [MZI 3.7 V6]

WARNING:

- Fuel vapor is hazardous. It can very easily ignite, causing serious injury and damage. Always keep sparks and flames away from fuel.
- Fuel line spills and leakage are dangerous. Fuel can ignite and cause serious injuries or death and damage. Fuel can also irritate skin and eyes. To prevent this, always complete the "Fuel Line Safety Procedure". (See [BEFORE SERVICE PRECAUTION \[MZI 3.7 V6\]](#).)
- Continuous exposure to USED engine oil has caused skin cancer in laboratory mice. Protect your skin by washing with soap and water immediately after working with engine oil.

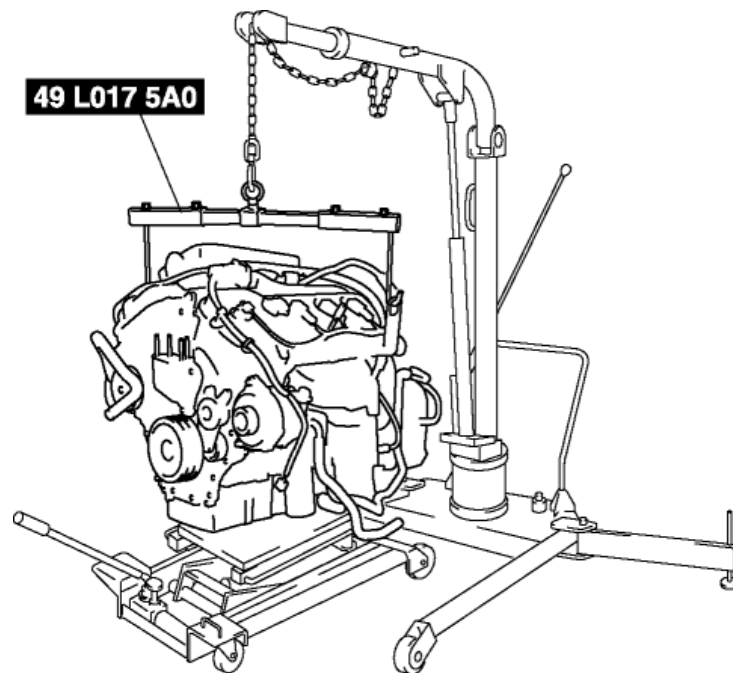
NOTE:

- The following procedure "TIMING CHAIN REMOVAL/INSTALLATION" is performed after the engine and transaxle component is removed from the vehicle. (See [ENGINE REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)

1. Drain the engine oil. (See [ENGINE OIL REPLACEMENT \[MZI 3.7 V6\]](#).)
2. Remove the engine and transaxle component. (See [ENGINE REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
3. Secure the engine and transaxle component using a hoist and the **SST**.

WARNING:

- Protect and stabilize the lowered engine and transaxle component with crossties to prevent injury or damage due to roll over.

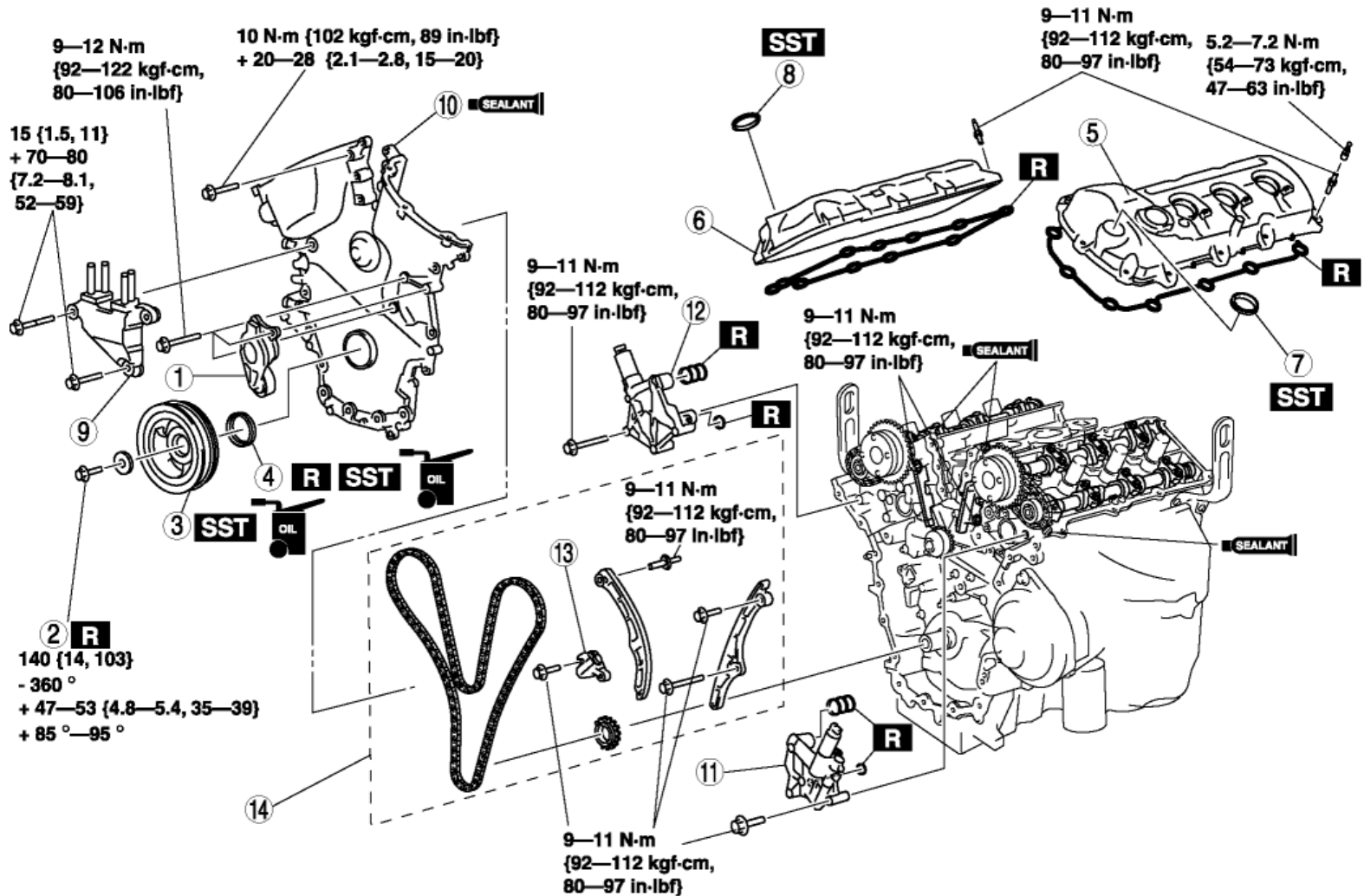


4. Remove the dynamic chamber and throttle body as a single unit. (See [INTAKE-AIR SYSTEM REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
5. Remove the ignition coils. (See [IGNITION COIL REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
6. Remove the dipstick.
7. Remove the power steering oil pump drive belt. (See [DRIVE BELT REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
8. Remove the power steering oil pump. (See [POWER STEERING OIL PUMP REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)
9. Remove in the order indicated in the table.
10. Install in the reverse order of removal.

11. Start the engine and:

- Inspect the runout and contact on the pulley and belt.
- Inspect for engine oil, engine coolant, ATF, power steering fluid and fuel leakage.
- Verify the ignition timing, idle speed and idle mixture. (See [ENGINE TUNE-UP \[MZI 3.7 V6\]](#).)
- Engine accessories operation.

12. Perform a road test.



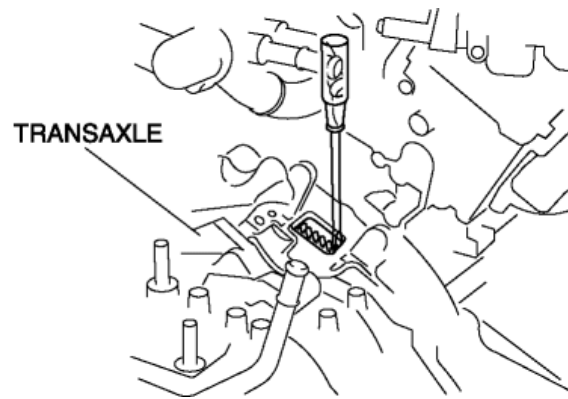
N·m {kgf·m, ft·lbf}

1	Drive belt auto tensioner
2	Crankshaft pulley lock bolt (See Crankshaft Pulley Lock Bolt Removal Note.) (See Crankshaft Pulley Lock Bolt Installation Note.)
3	Crankshaft pulley (See Crankshaft Pulley Removal Note.) (See Crankshaft Pulley Installation Note.)
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	(See Front Oil Seal Installation Note.)
5	Cylinder head cover (LH) (See Cylinder Head Cover Removal Note.) (See Cylinder Head Cover Installation Note.)
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13	Chain tensioner (See Timing Chain Component Removal Note.)
14	Timing chain component (See Timing Chain Component Installation Note.)

Crankshaft Pulley Lock Bolt Removal Note

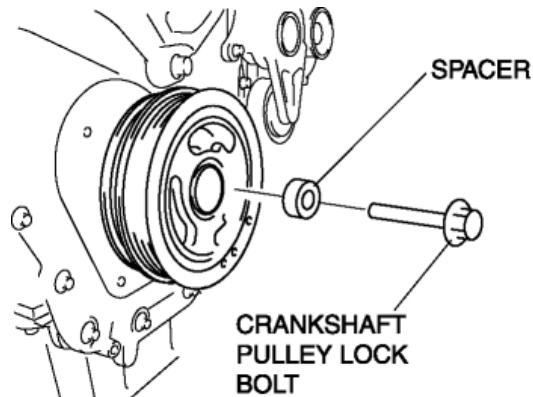
1. Remove the starter. (See [STARTER REMOVAL/ INSTALLATION \[MZI 3.7 V6\] .](#))
2. Set a flathead screwdriver to the drive plate in the position indicated in the figure to lock the crankshaft rotation.



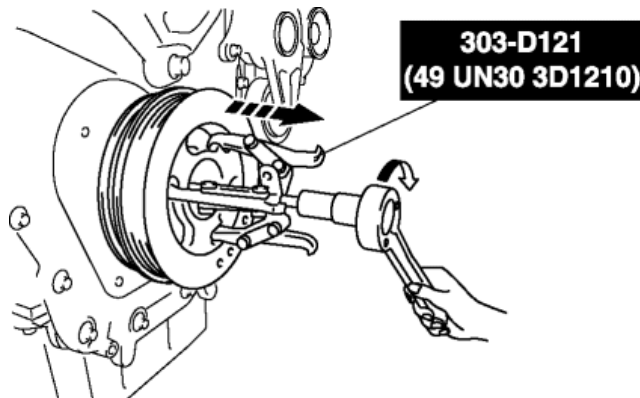
3. Remove the crankshaft pulley lock bolt and washer.

Crankshaft Pulley Removal Note

1. Remove the washer from the crankshaft pulley lock bolt, install a suitable spacer (thickness: **approx. 14 mm { 0.55 in }**, diameter: **approx. 30 mm { 1.2 in }**), (similar to front shock absorber lower nut) to the crankshaft pulley lock bolt, and install the crankshaft pulley lock bolt to the crankshaft.



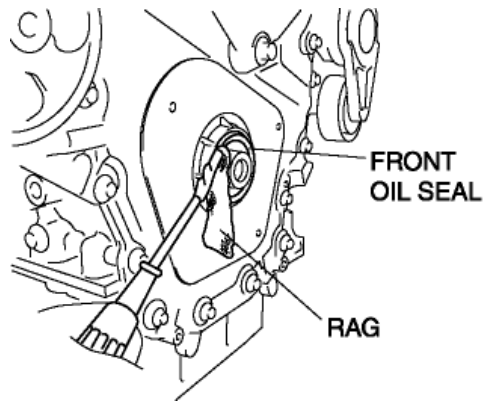
2. Remove the crankshaft pulley using the SST.



3. Remove the crankshaft pulley lock bolt and spacer.

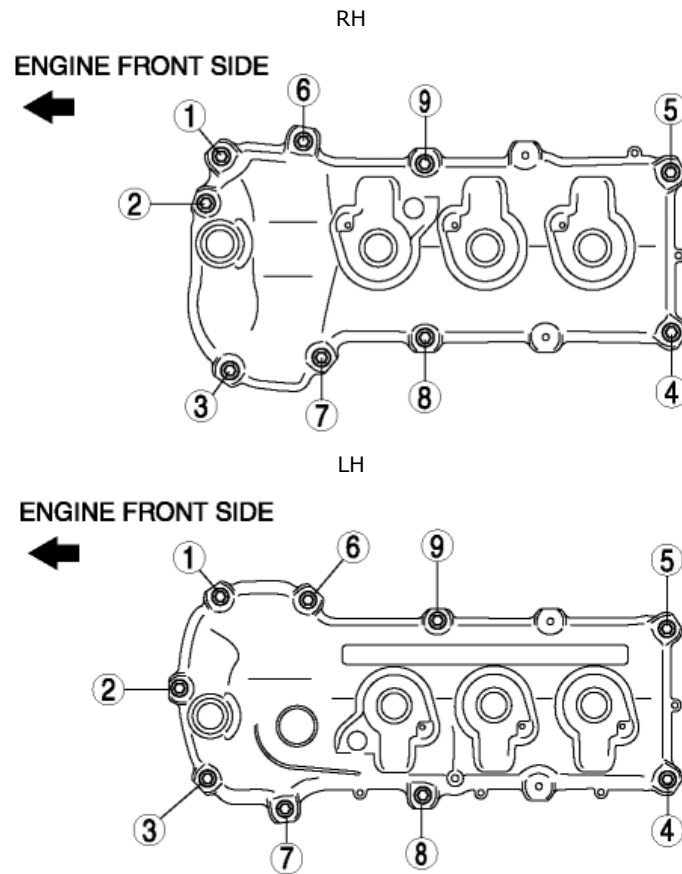
Front Oil Seal Removal Note

1. Remove the front oil seal using a flathead screwdriver as shown.



Cylinder Head Cover Removal Note

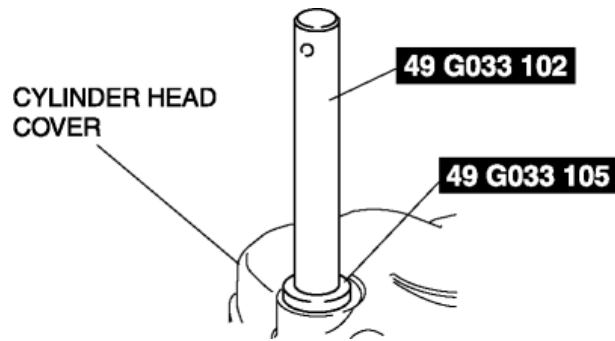
1. Remove the cylinder head cover bolts in the order shown.



Cylinder Head Cover Oil Seal Removal Note

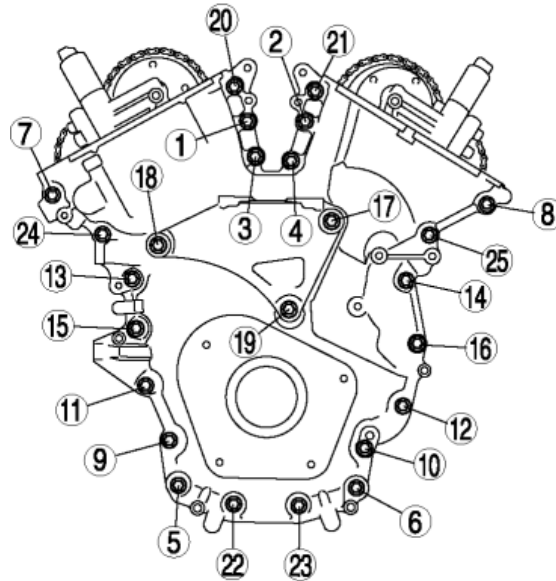
NOTE:

- Inspect the OCV attachment hole seal. Remove the any damaged seal.
1. Tap the OCV attachment hole seal using the SSTs and hammer.

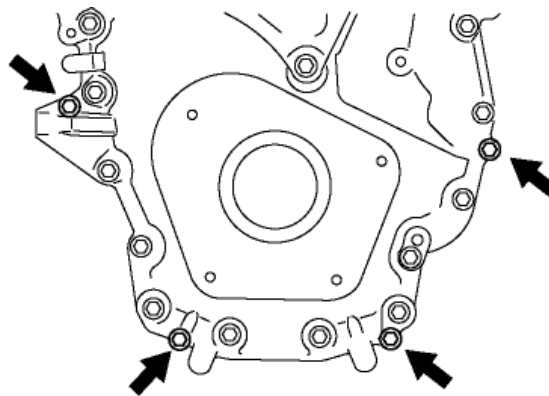


Engine Front Cover and No.3 Engine Mount Bracket Removal Note

1. Loosen the engine front cover and No.3 engine mount bracket bolts in the order shown in the figure.



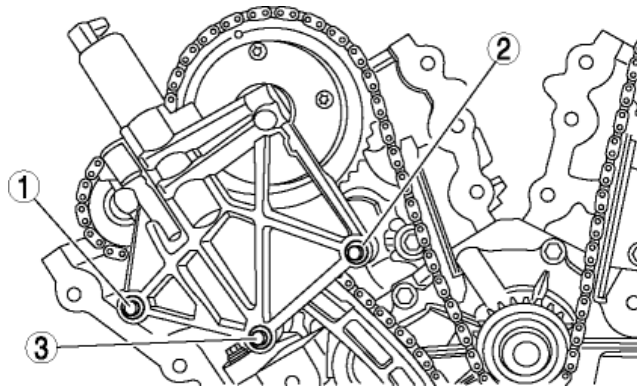
2. Install 4 of the engine front cover bolts (finger tightened) into the 4 threaded holes in the engine front cover.
 - a. Tighten the bolts one turn at a time in a criss-cross pattern until the engine front cover-to-cylinder block seal is released.



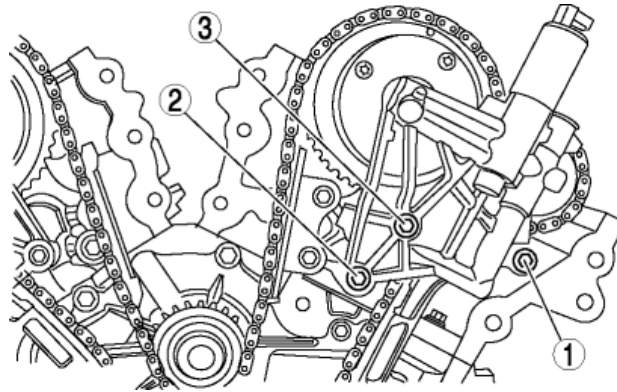
- b. Remove the engine front cover.

OCV Component Removal Note

1. Loosen the OCV component bolts in the order shown in the figure.



LH

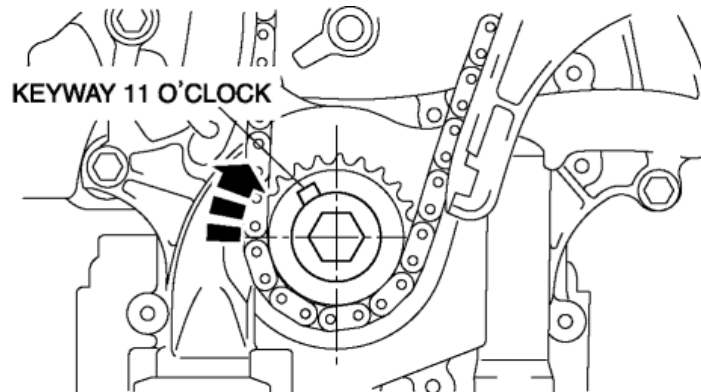


Timing Chain Component Removal Note

CAUTION:

- When removing the timing chain and marking the timing marks on the chain, mark the camshaft timing chain as well.

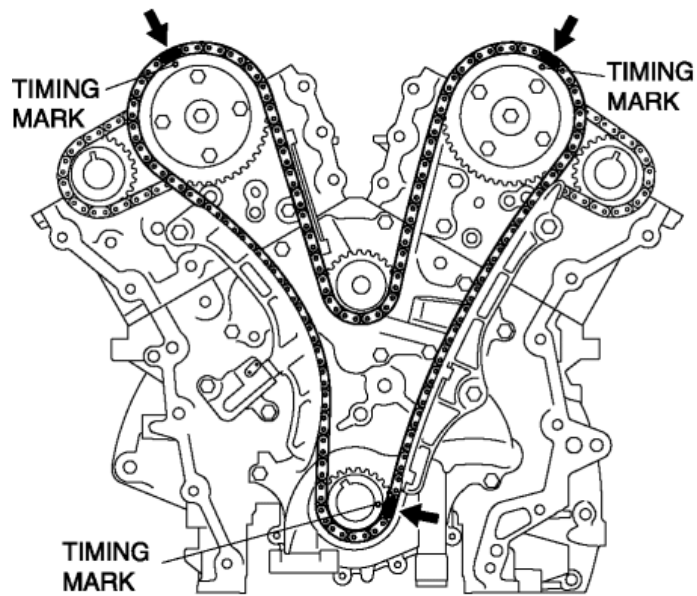
1. Turn the crankshaft clockwise so that the crankshaft keyway is in the 11 o'clock position. (This will position the No.1 cylinder at TDC.)



NOTE:

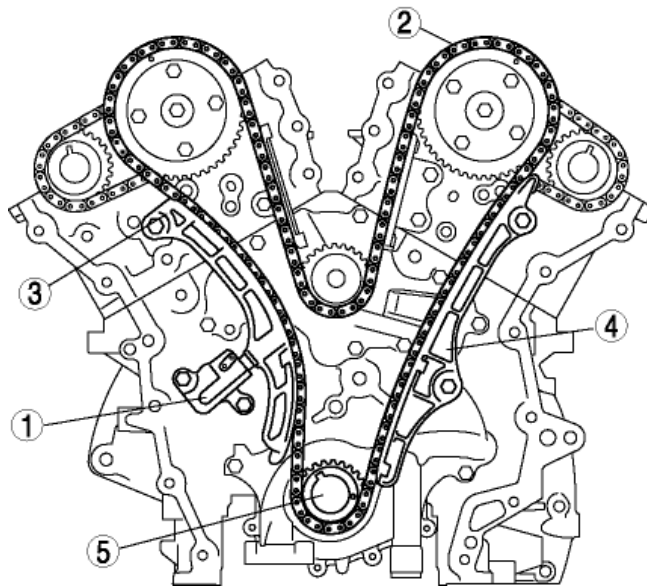
- Verify that there are timing marks in three locations (Yellow 1, Black 2) on the timing chain. If any timing marks are missing, mark the timing chain.
- When marking the crankshaft sprocket side timing chain, change the mark color.
- When the timing chain is replaced with a new one, mark the new timing chain at the same positions as the removed timing chain.

2. Mark the timing chain at the position of each timing sprocket timing mark.



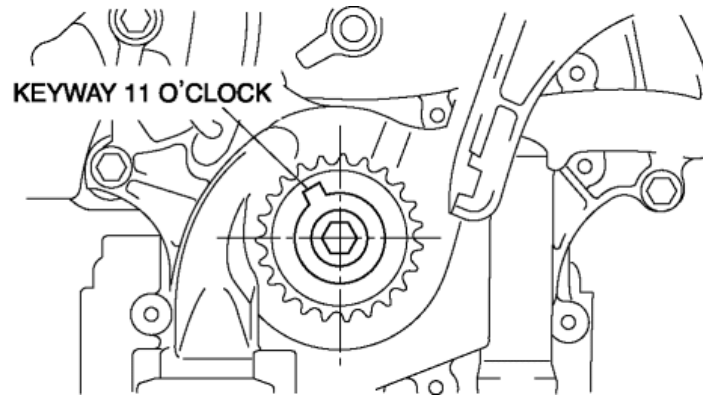
3. Remove the timing chain in the following order.

- a. Chain tensioner
- b. Timing chain
- c. Tensioner arm
- d. Chain guide
- e. Crankshaft sprocket



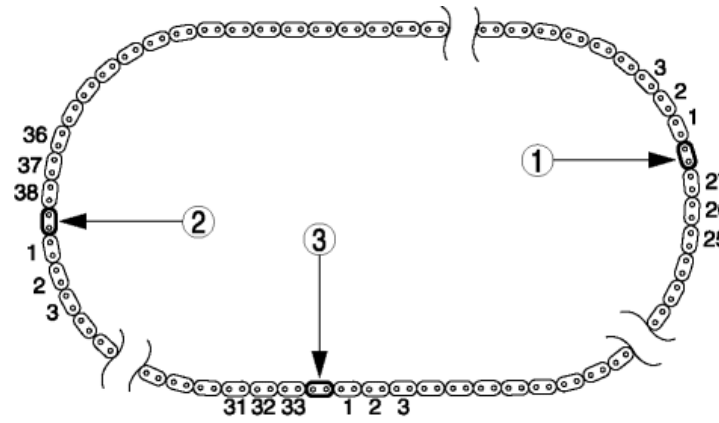
Timing Chain Component Installation Note

1. Verify that the crankshaft keyway is at 11 o'clock position.



NOTE:

- Of the three marked locations on the timing chain, align the mark that has a different color to the crankshaft sprocket side timing mark.
2. If the timing marks on the timing chain are not evident, place timing marks on the timing chain using an indelible ink marker.



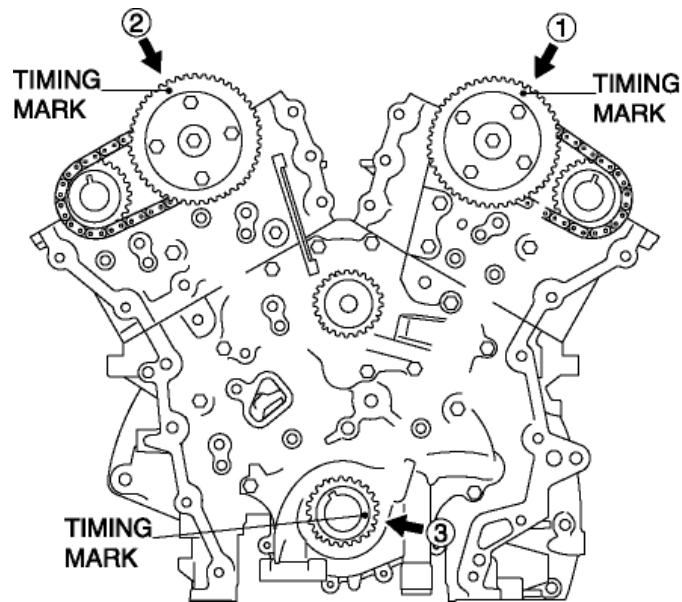
NOTE:

- The marked external links are not included in the count.
- When marking the crankshaft sprocket side timing chain (No.3), change the mark color.

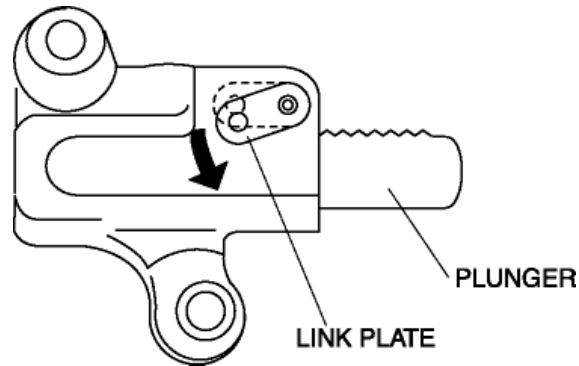
The number of external links

- No.1—2 : 38
- No.2—3 : 33
- No.3—1 : 27

3. Place alignment marks on the timing chain corresponding to each of the alignment marks on the timing sprocket.



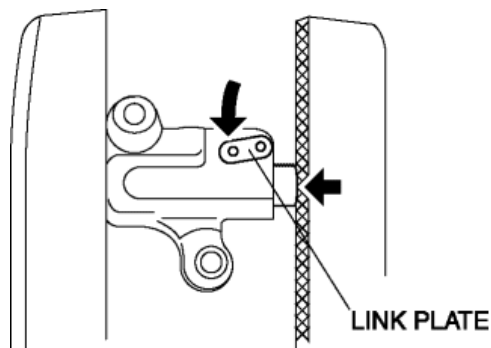
4. Push down the link plate of the timing chain tensioner and release the plunger lock.



NOTE:

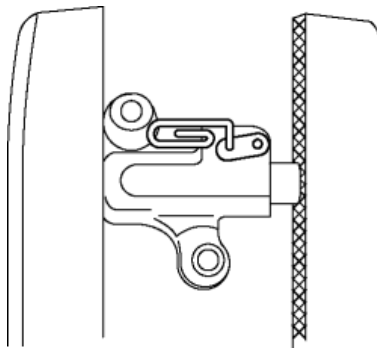
- The plunger should retract with minimal force. If binding occurs, remove the chain tensioner from the vise and reset it in the vise.

5. Secure the chain tensioner using a vice attached with a soft base, and slowly press the plunger back shown in the figure while pressing down the link plate.



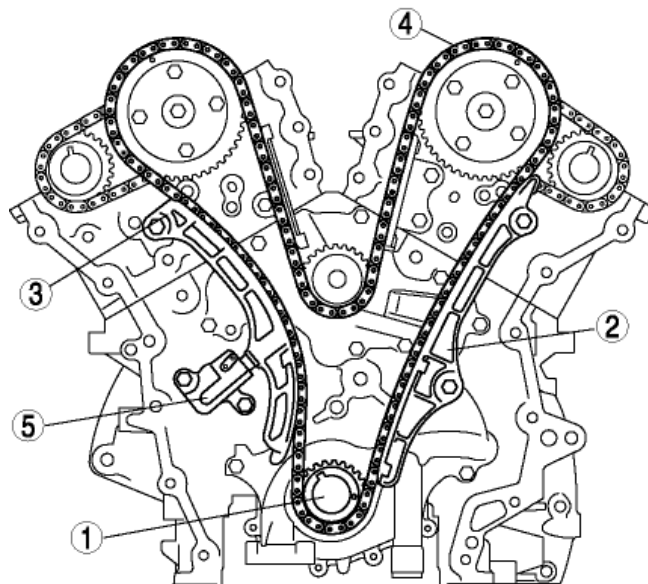
6. Release the pressure slightly from the plunger, and move the plunger back and forth 2—3 mm { 0.08—0.11 in } .

7. Insert an **approx. 1.5 mm { 0.059 in }** thick wire or paper clip where the link plate hole and the tensioner body hole overlap to fix the link plate and lock the plunger.



8. Install the timing chain in the following order.

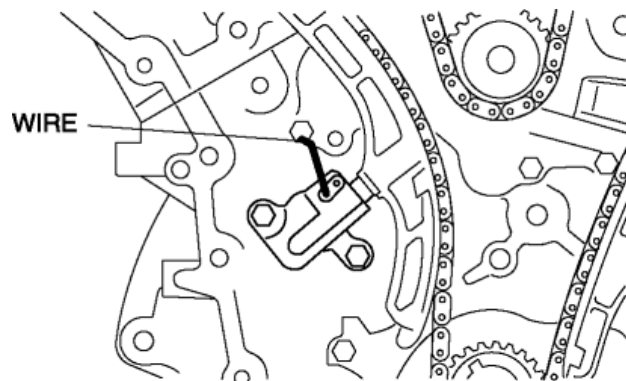
- a. Crankshaft sprocket
- b. Chain guide
- c. Tensioner arm
- d. Timing chain
- e. Chain tensioner



Tightening torque

- 9—11 N·m { 92—112 kgf·cm, 80—97 in·lbf }

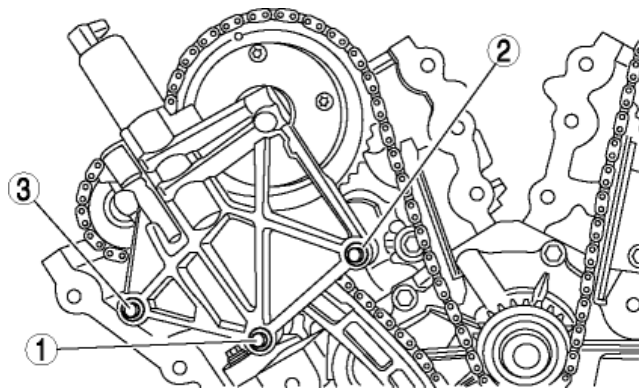
9. Remove the retaining wire.



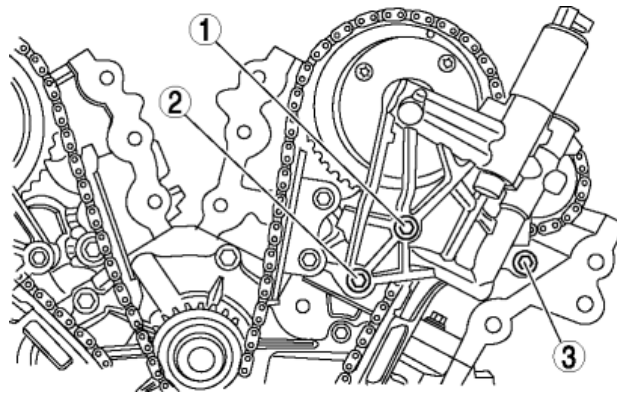
OCV Component Installation Note

1. Tighten the OCV component bolts in the order shown in the figure.

RH



LH

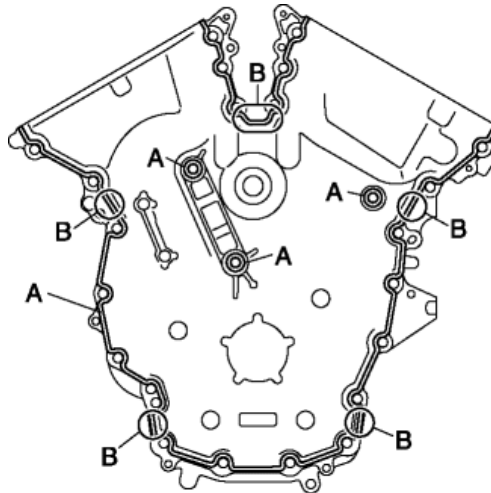


Tightening torque

- 9—11 N·m { 92—112 kgf·cm, 80—97 in·lbf }

Engine Front Cover and No.3 Engine Mount Bracket Installation Note

1. Apply the silicon sealant (Loctite 5900) to the engine front cover shown in the figure.



Silicon sealant thickness

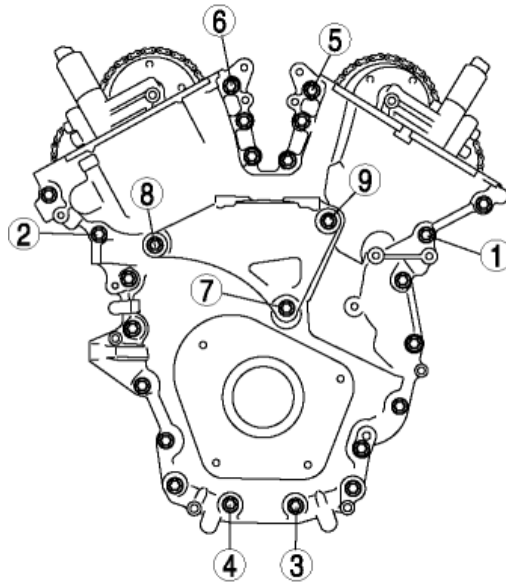
- A: 2.5—3.5 mm {0.10—0.13 in}
- B: 5.0—6.0 mm {0.20—0.23 in}

2. Install the engine front cover and No.3 engine mount bracket.

- a. Tighten the engine front cover and No.3 engine mount bracket bolts in 4 steps in the order shown in the figure.

CAUTION:

- Install the engine front cover and No.3 engine mount bracket before the applied silicone sealant starts to harden.



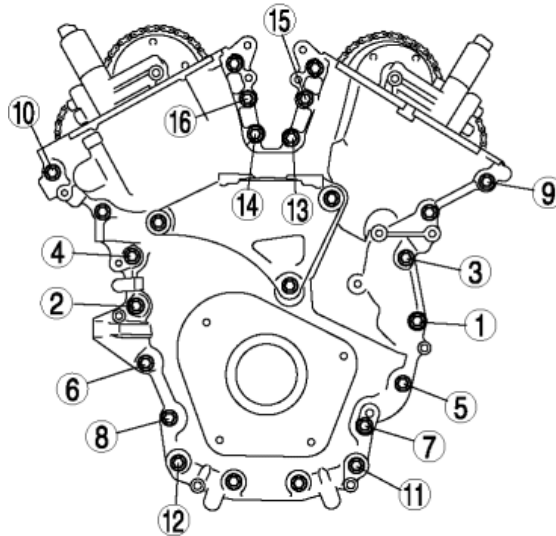
Tightening torque

Step	Installation position	Tightening torque
1	1—6	10 N·m {102 kgf·cm, 89 in·lbf}
2	7—9	15 N·m {1.5 kgf·m, 11 ft·lbf}
3	1—6	20—28 N·m {2.1—2.8 kgf·m, 15—20 ft·lbf}
4	7—9	70—80 N·m {7.2—8.1 kgf·m, 52—59 ft·lbf}

b. Tighten the engine front cover bolts in the order in 2 steps in the order shown in the figure.

CAUTION:

- Install the engine front cover bolts within 60 min of applying the silicone sealant.

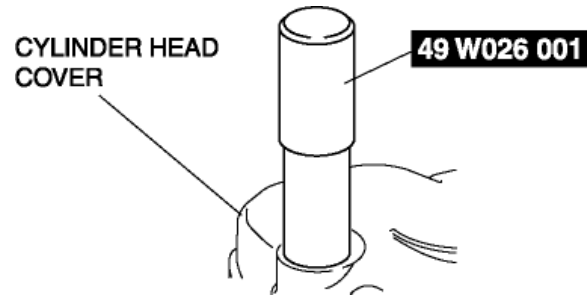


Tightening torque

- Tighten to 10 N·m {102 kgf·cm, 89 in·lbf}.
- Tighten to 20—28 N·m {2.1—2.8 kgf·m, 15—20 ft·lbf}.

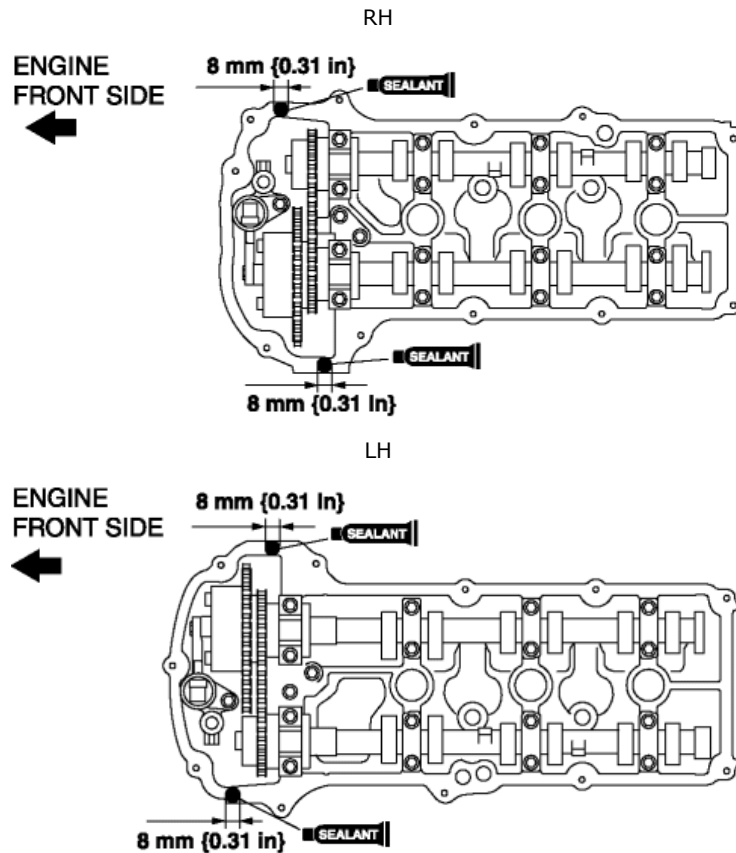
NOTE:

- Installation of new seal is only required if damaged seal were removed during disassembly of the engine.
1. Push the OCV attachment hole seal slightly in by hand.
 2. Tap the OCV attachment hole seal using the **SST** and hammer.



Cylinder Head Cover Installation Note

1. Apply silicone sealant (Loctite 5900) to the mating faces as shown.



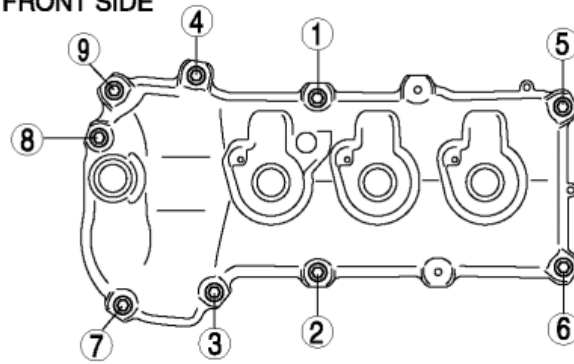
2. Install the cylinder head cover with a new gasket.
3. Tighten the bolts in the order as shown.

CAUTION:

- Install the cylinder head cover before the applied silicone sealant starts to harden.

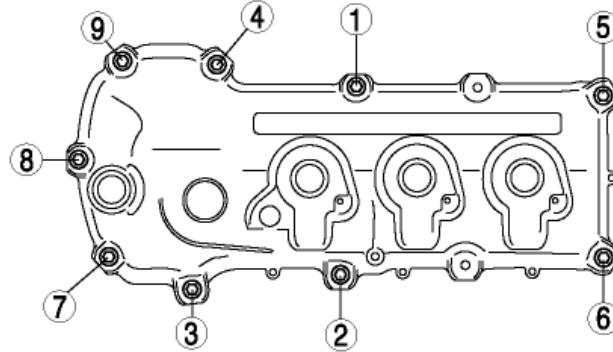
RH

ENGINE FRONT SIDE



LH

ENGINE FRONT SIDE



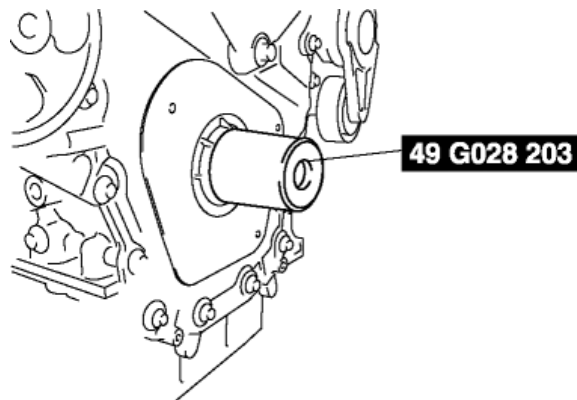
Tightening torque

- 9—11 N·m { 92—112 kgf·cm, 80—97 in·lbf }

Front Oil Seal Installation Note

NOTE:

- Apply clean engine oil to the front oil seal bore in the engine front cover.
1. Push the front oil seal slightly in by hand.
 2. Tap the front oil seal in evenly using the **SST** and a hammer.



Substitution SST

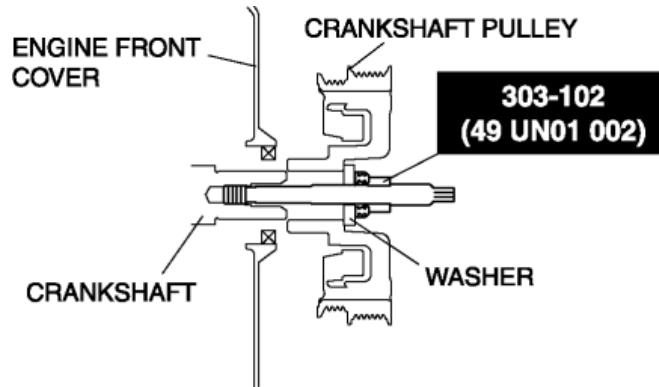
- **49 G028 203**
Outer diameter: 58—70 mm {2.3—2.7 in}
Inner diameter: 56—58 mm {2.21—2.28 in}
Tube with board thickness 2 mm {0.08 in} or more

Crankshaft Pulley Installation Note

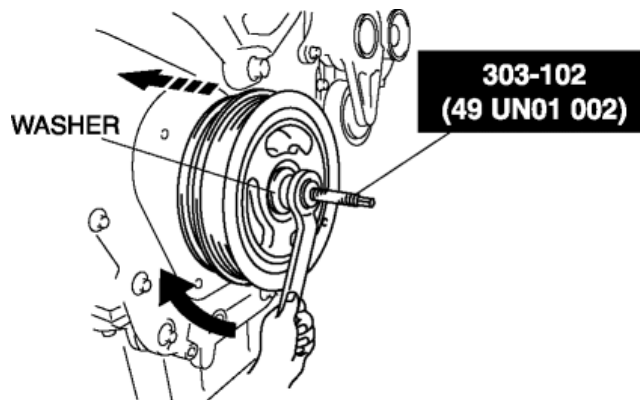
NOTE:

- Lubricate the contact surface (exterior area of inner diameter) of the front oil seal with clean engine oil.

1. Install the crankshaft pulley, washer, and **SST** to the crankshaft.

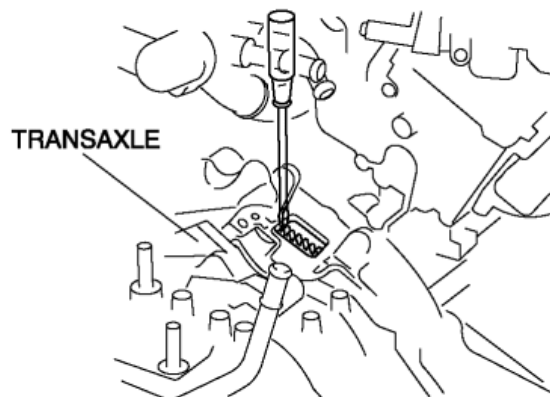


2. Tighten the **SST** nut and install the crankshaft pulley.



Crankshaft Pulley Lock Bolt Installation Note

1. Set a flathead screwdriver to the drive plate in the position indicated in the figure to lock the crankshaft rotation.



2. Tighten the new crankshaft pulley lock bolt in four steps.

- a. Tighten to **140 N·m { 14 kgf·m, 103 ft·lbf }**.
- b. Loosen **360 °** (one full turn) in reverse order.
- c. Tighten to **47—53 N·m { 4.8—5.4 kgf·m, 35—39 ft·lbf }**.
- d. Tighten **85 °—95 °**.

3. Install the starter. (See [STARTER REMOVAL/ INSTALLATION \[MZI 3.7 V6\]](#).)

