

12.V-belt

A: REMOVAL

NOTE:

When replacing a single part, perform the work with the engine assembly installed to body.

1. GASOLINE ENGINE MODEL

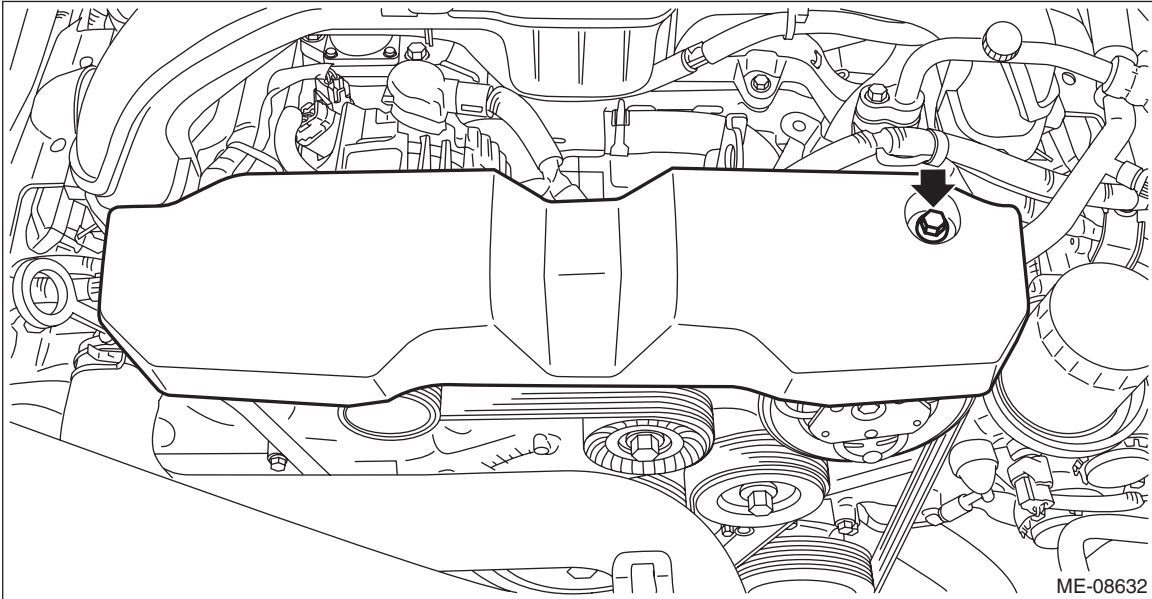
- V-belt

1) When working on the vehicle

NOTE:

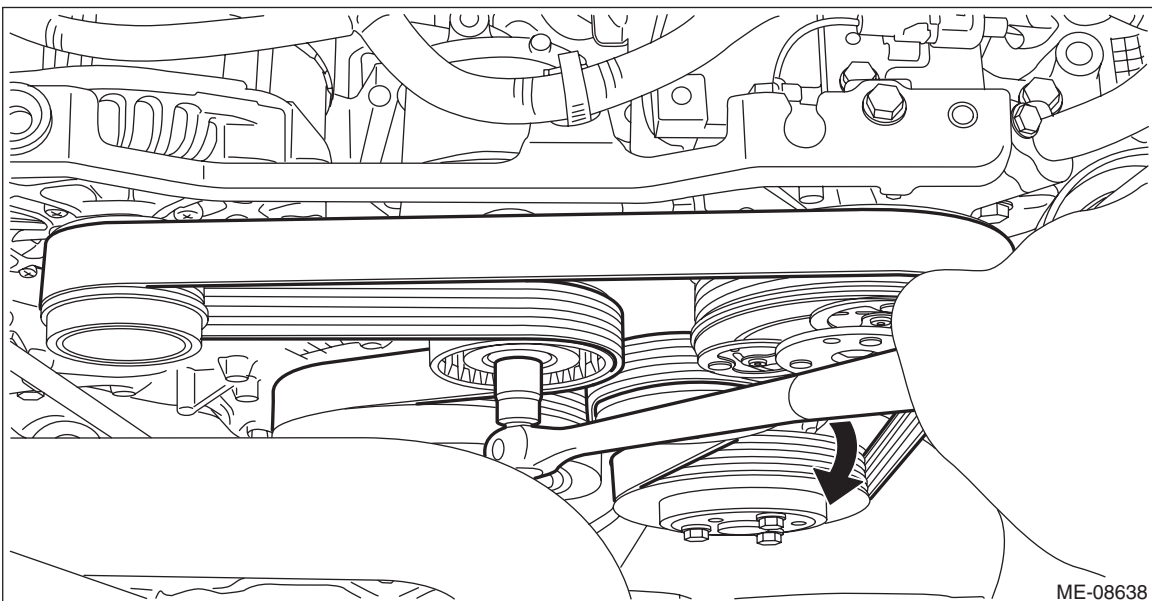
When working on the vehicle, perform the following steps also.

(1) Remove the V-belt covers.



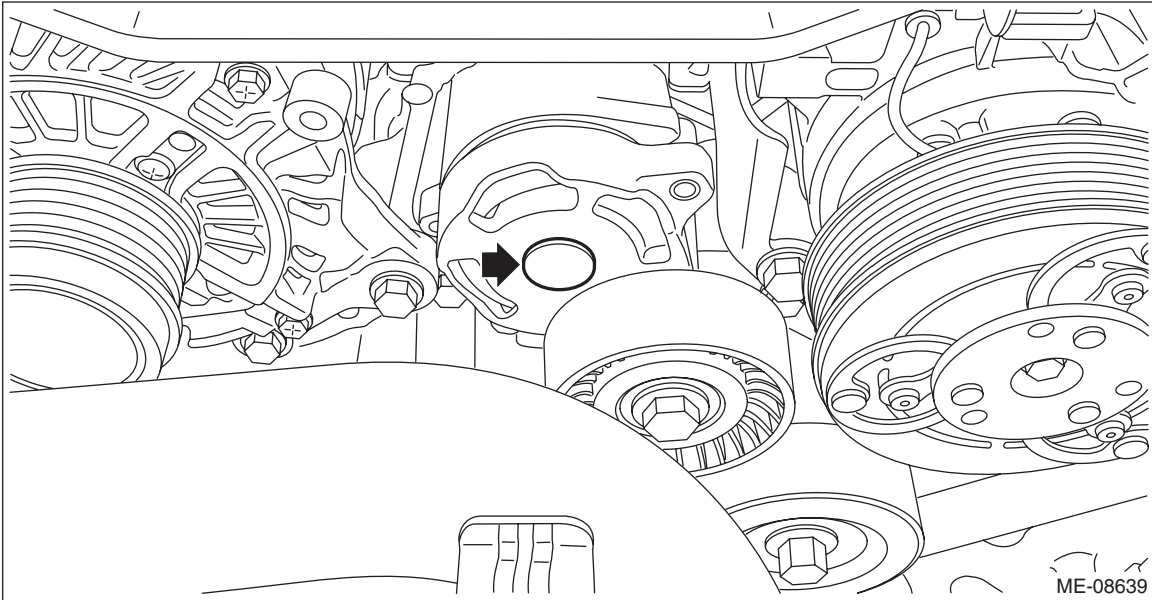
(2) Remove the air intake duct. <Ref. to IN(H4DO(w/o HEV))-13, REMOVAL, Air Intake Duct.>

2) Attach the tool to the V-belt tensioner assembly, and rotate the tool clockwise to loosen and remove the V-belt.

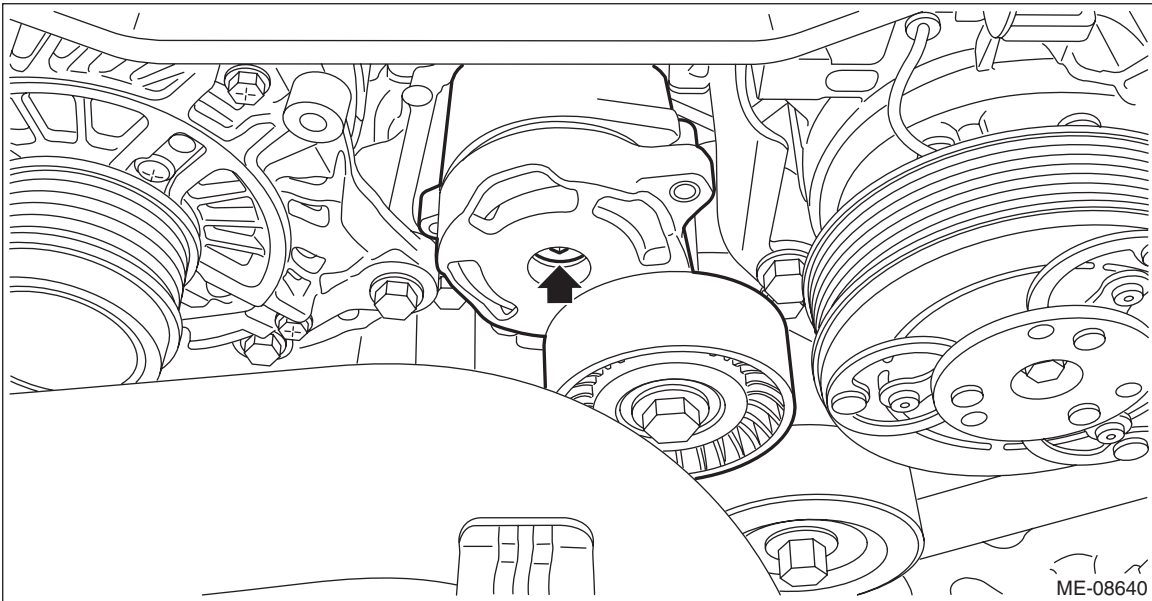


- **V-belt tensioner assembly and idler pulley**

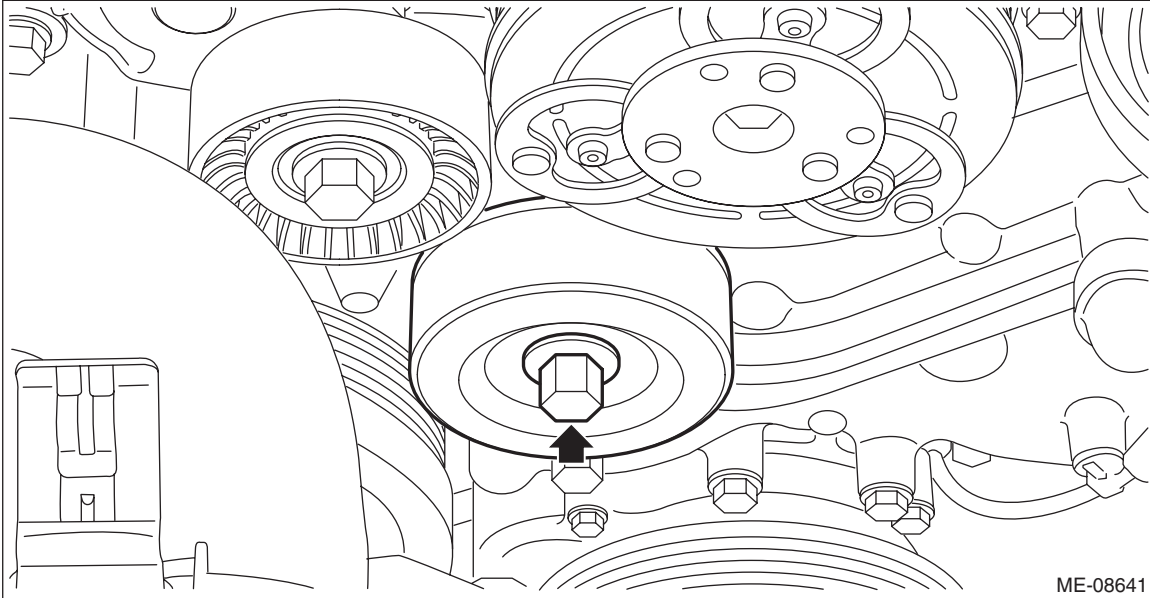
- 1) Remove the V-belts.
- 2) Remove the cap from V-belt tensioner assembly.



- 3) Remove the bolt securing the V-belt tensioner assembly to the generator bracket, and remove the V-belt tensioner assembly.



- 4) Remove the bolts which secure the idler pulley to the chain cover, and remove the idler pulley.



2. HEV MODEL

• V-belt tensioner assembly and V-belt

- 1) When working on the vehicle

NOTE:

When working on the vehicle, perform the following steps also.

- (1) Turn the ignition switch to OFF.

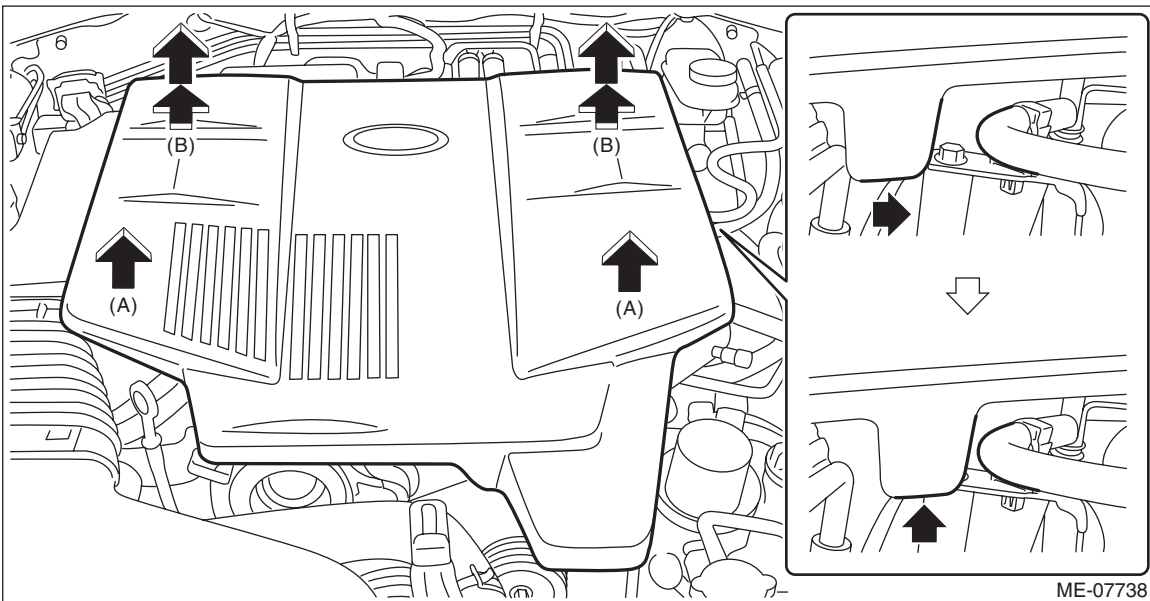
- (2) Remove the collector cover.

1. Carefully pull up the front of collector cover at two positions (A).

2. Carefully pull up the rear of collector cover at two positions (B) while moving it backward.

NOTE:

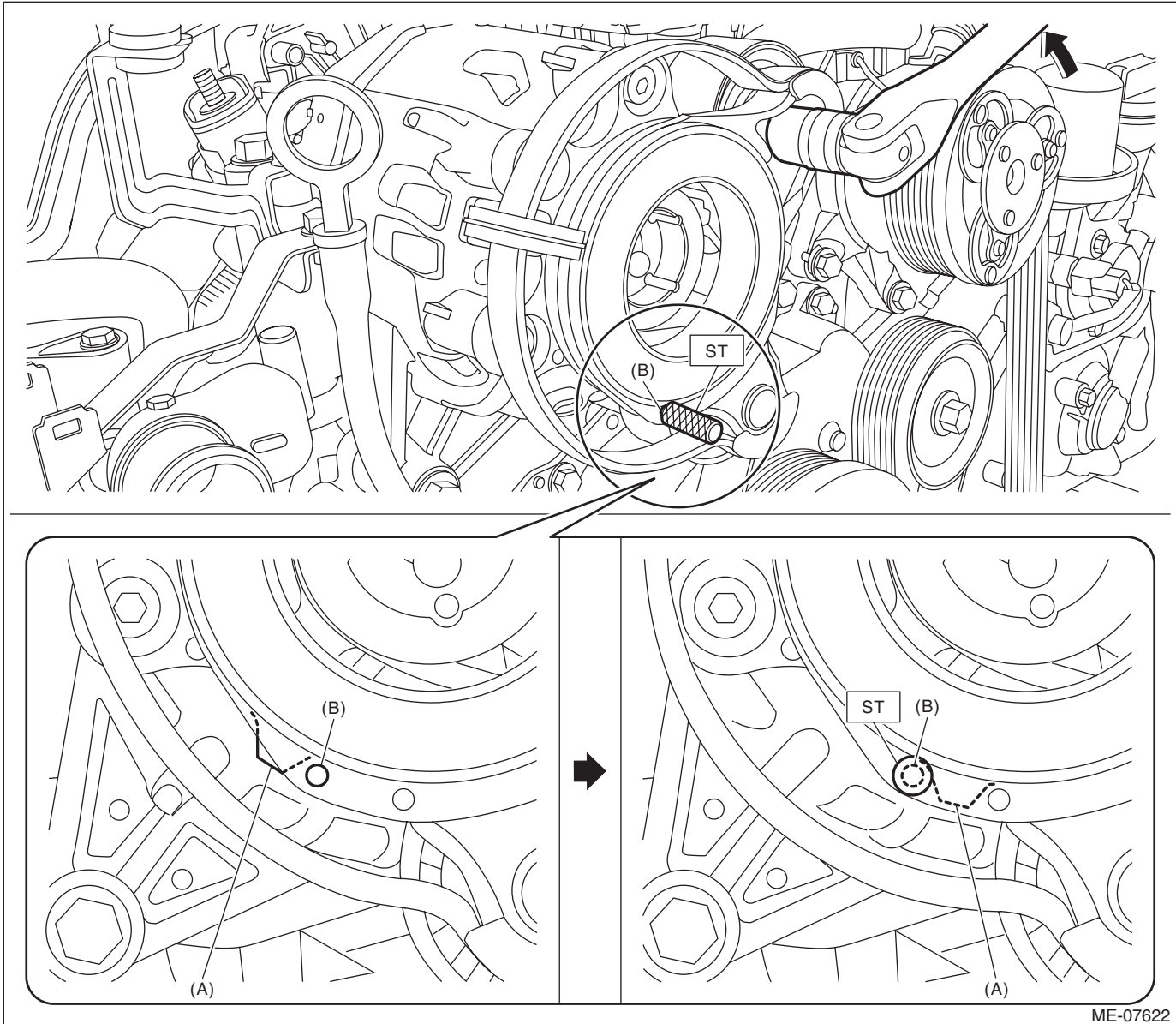
Be careful not to contact the fuel delivery tube when moving the collector cover rearward.



2) Prepare for removing the V-belt tensioner assembly. (The V-belt is not damaged.)

(1) Set the tool on the arm lever No. 1, turn the tool counterclockwise until the protrusion (A) of the arm lever No. 1 moves to the position shown in the figure, and insert the ST into the stopper pin hole (B) on the arm lever No. 2.

ST 499267300 STOPPER PIN



ME-07622

V-belt

MECHANICAL

3) Prepare for removing the V-belt tensioner assembly. (The V-belt is damaged.)

NOTE:

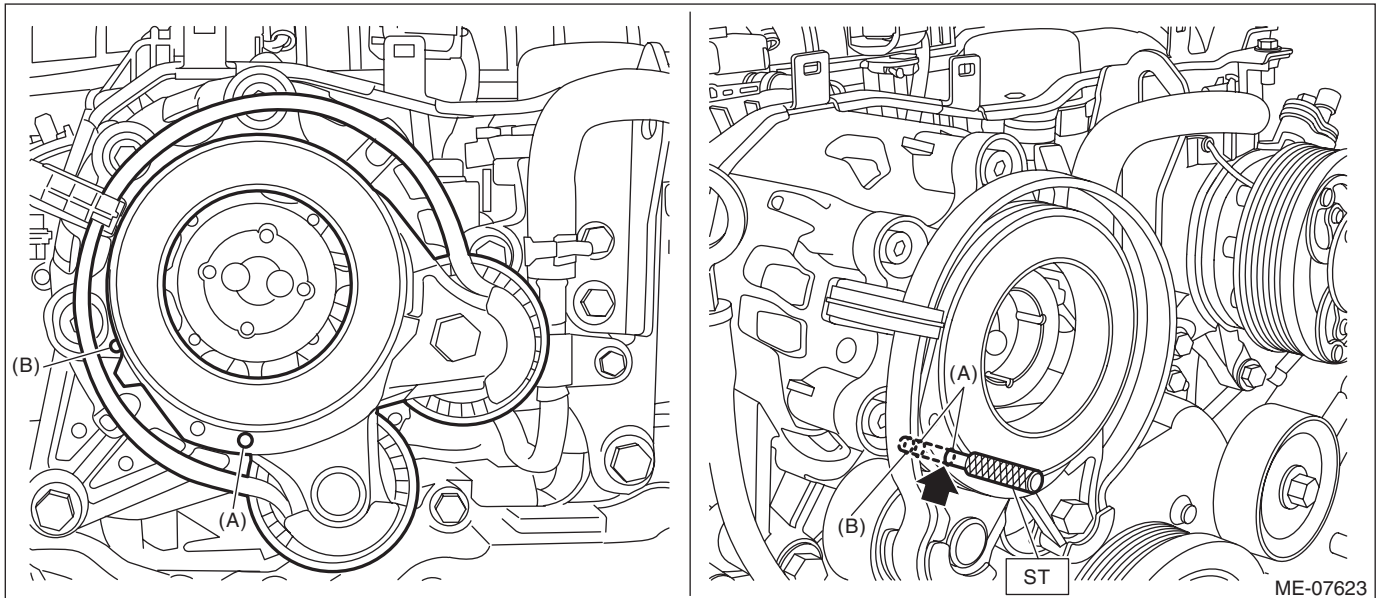
This operation requires 2 pieces of ST: STOPPER PIN (499267300).

- (1) Turn the arm lever until the stopper pin hole (A) of the arm lever No. 2 is aligned with the stopper pin hole (B) of the housing, and insert the ST through the stopper pin hole (A) of the arm lever No. 2 into the end of the stopper pin hole (B) of the housing.

CAUTION:

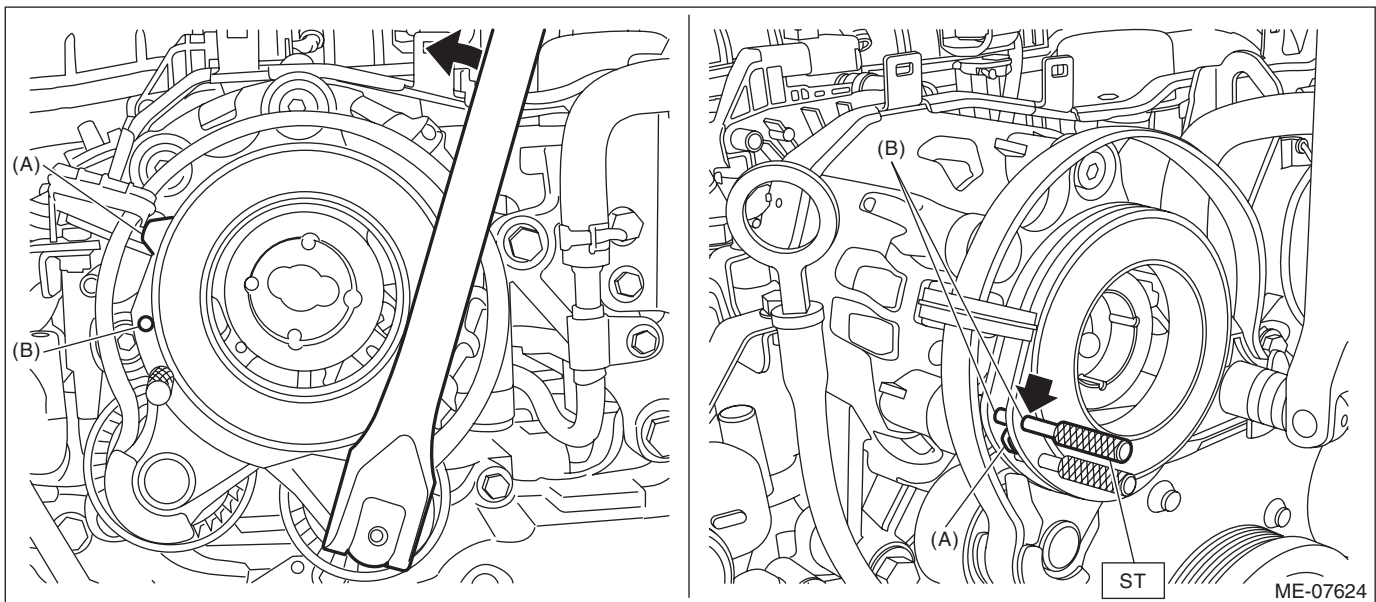
Be sure to insert the ST into the end of the stopper pin hole (B) of the housing. If the ST is not inserted to the end, the ST may accidentally come off in the next procedure, resulting in an injury.

ST 499267300 STOPPER PIN

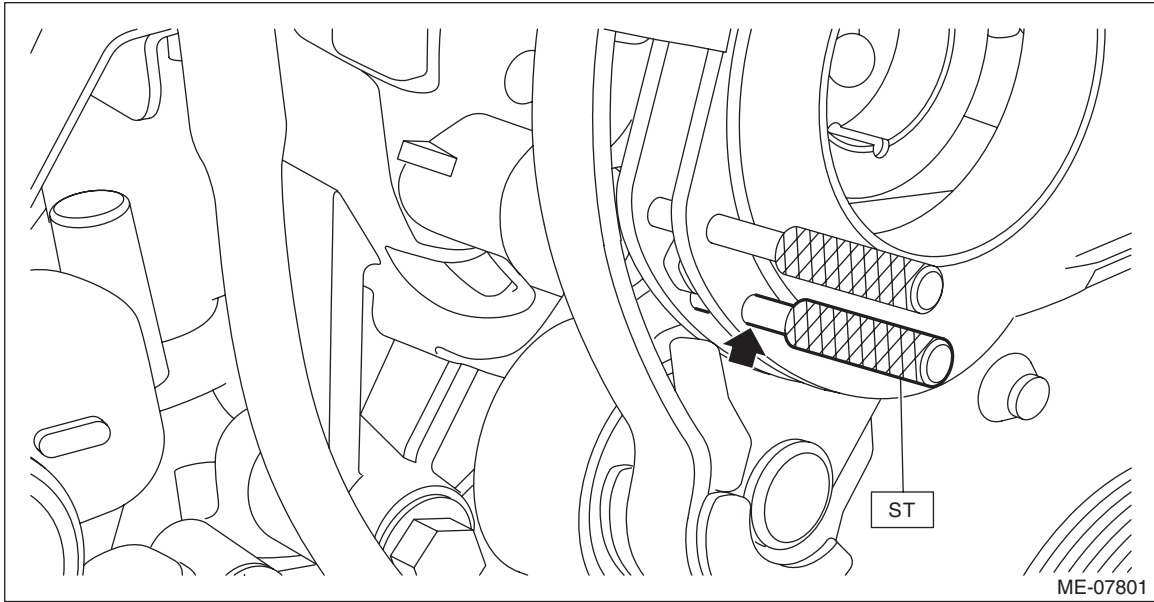


- (2) Set the tool on the arm lever No. 1, turn the tool counterclockwise until the protrusion (A) of the arm lever No. 1 moves to the position shown in the figure, and insert the ST into the stopper pin hole (B) on the arm lever No. 2.

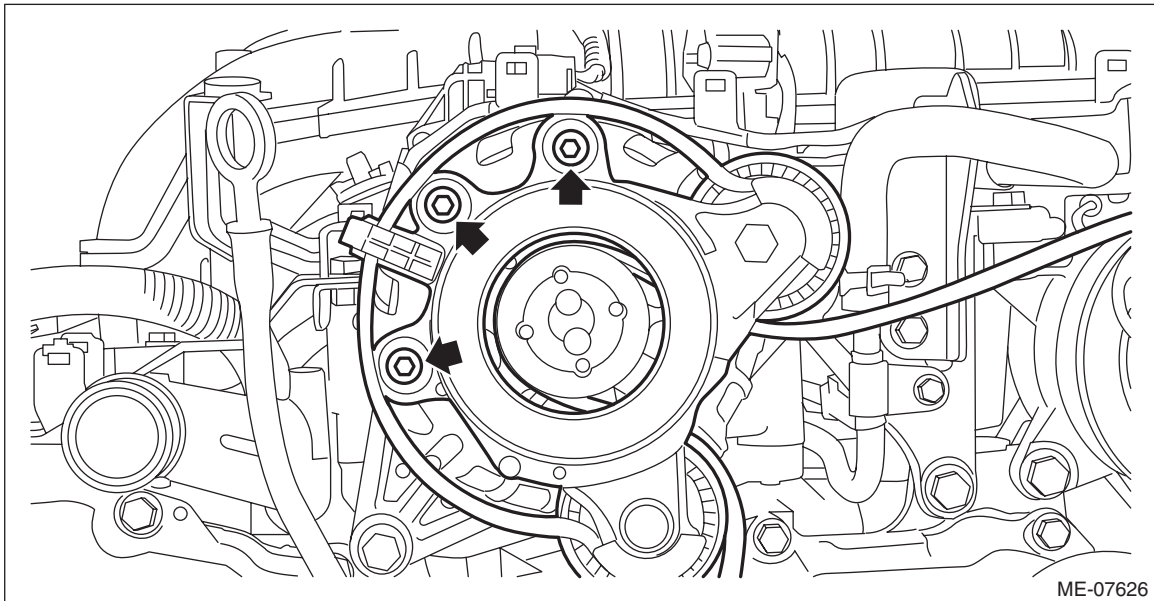
ST 499267300 STOPPER PIN



- (3) Remove the ST inserted in procedure (1).
ST 499267300 STOPPER PIN



- 4) Remove the V-belt tensioner assembly and remove the V-belt.



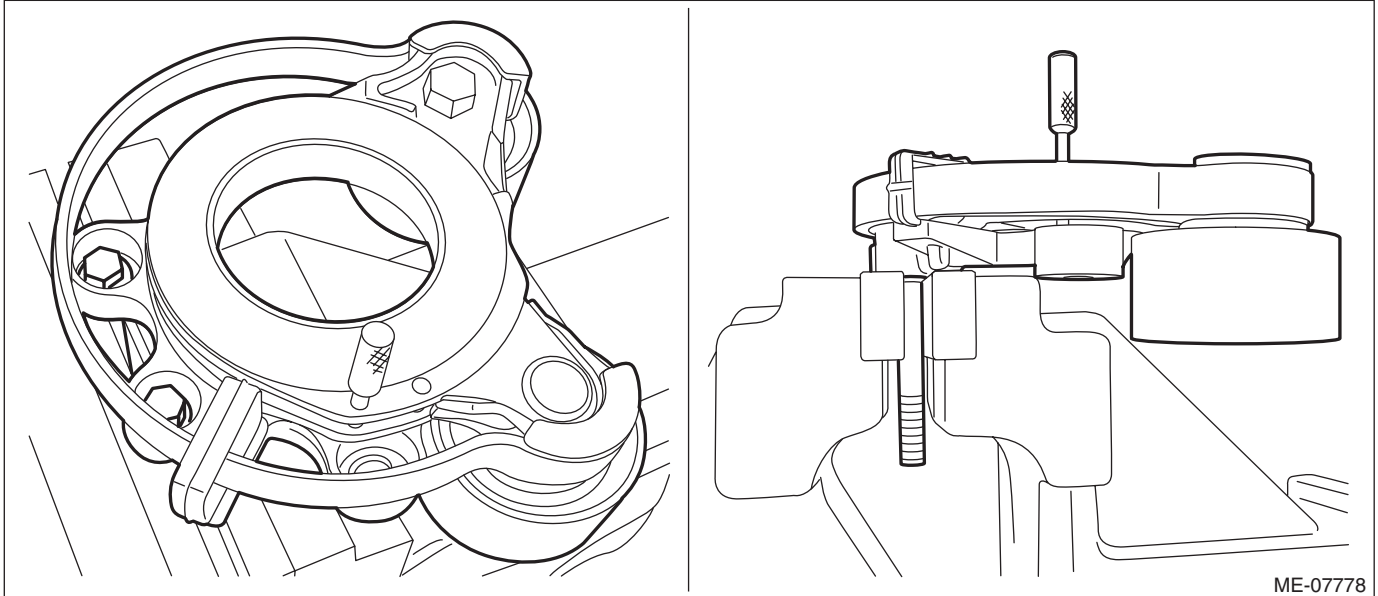
V-belt

MECHANICAL

5) The V-belt tensioner assembly is replaced.

NOTE:

- When replacing the V-belt tensioner assembly, also perform the following steps.
- This procedure is required to prepare 1 more piece of ST: STOPPER PIN (499267300).
 - (1) Using a bolt (M8) of suitable length, secure the V-belt tensioner assembly on a vise.

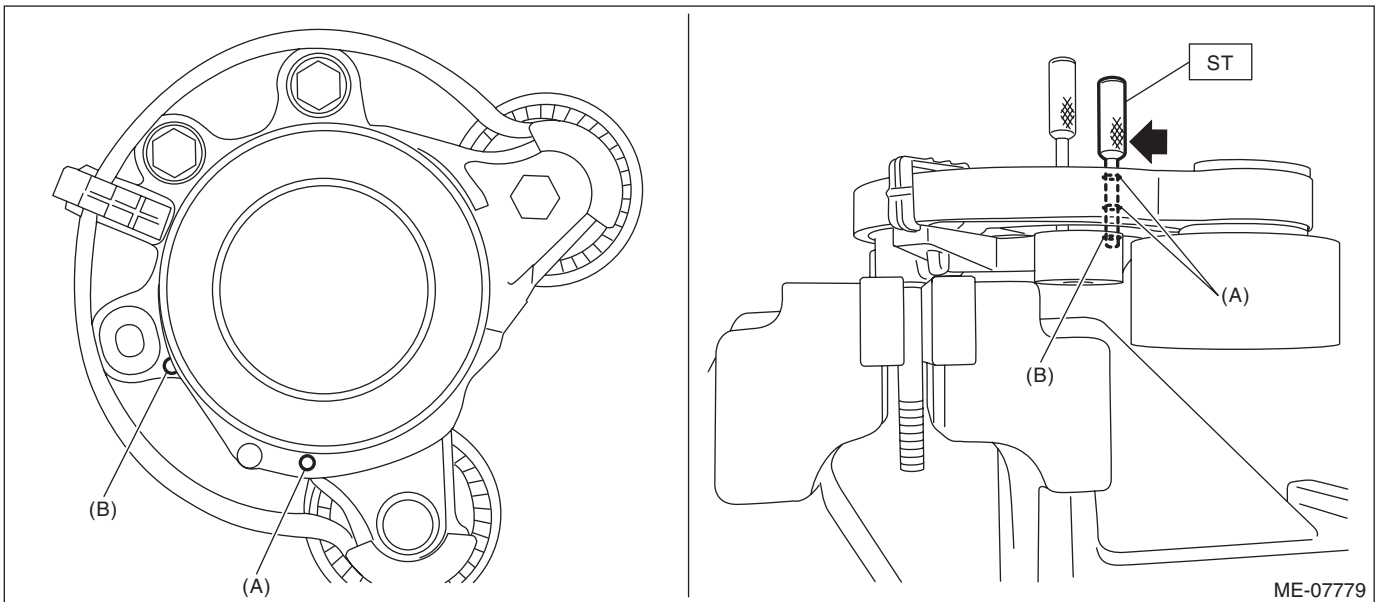


(2) Turn the arm lever until the stopper pin hole (A) of the arm lever No. 2 is aligned with the stopper pin hole (B) of the housing, and insert the ST through the stopper pin hole (A) of the arm lever No. 2 into the end of the stopper pin hole (B) of the housing.

CAUTION:

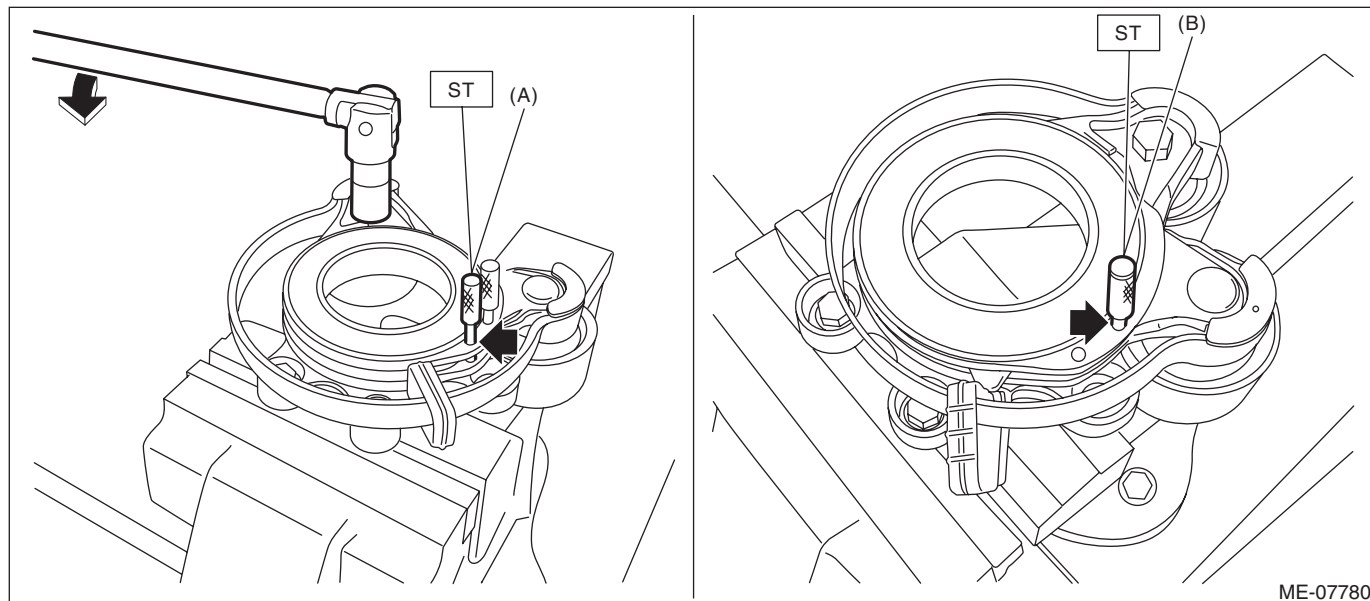
Be sure to insert the ST into the end of the stopper pin hole (B) of the housing. If the ST is not inserted to the end, the ST may accidentally come off in the next procedure, resulting in an injury.

ST 499267300 STOPPER PIN



(3) Set the tool on the arm lever No. 1, turn the tool counterclockwise a little, remove the ST (A) from the arm lever No. 2, and remove the ST (B) inserted in step (2).

ST 499267300 STOPPER PIN



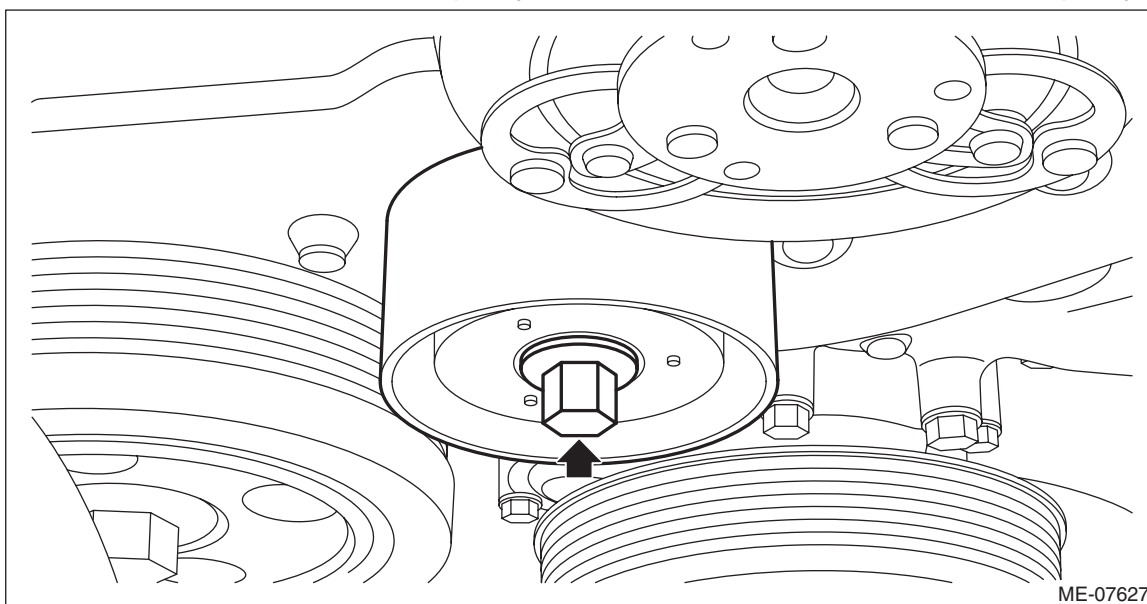
• Idler pulley

1) Loosen the V-belt, and remove the V-belt from the idler pulley.

NOTE:

- Refer to “V-belt tensioner assembly and V-belt” for the loosening procedure of V-belt.
- It is not necessary to remove the V-belt tensioner assembly and the V-belt from ISG.

2) Remove the bolts which secure the idler pulley to the chain cover, and remove the idler pulley.



B: INSTALLATION

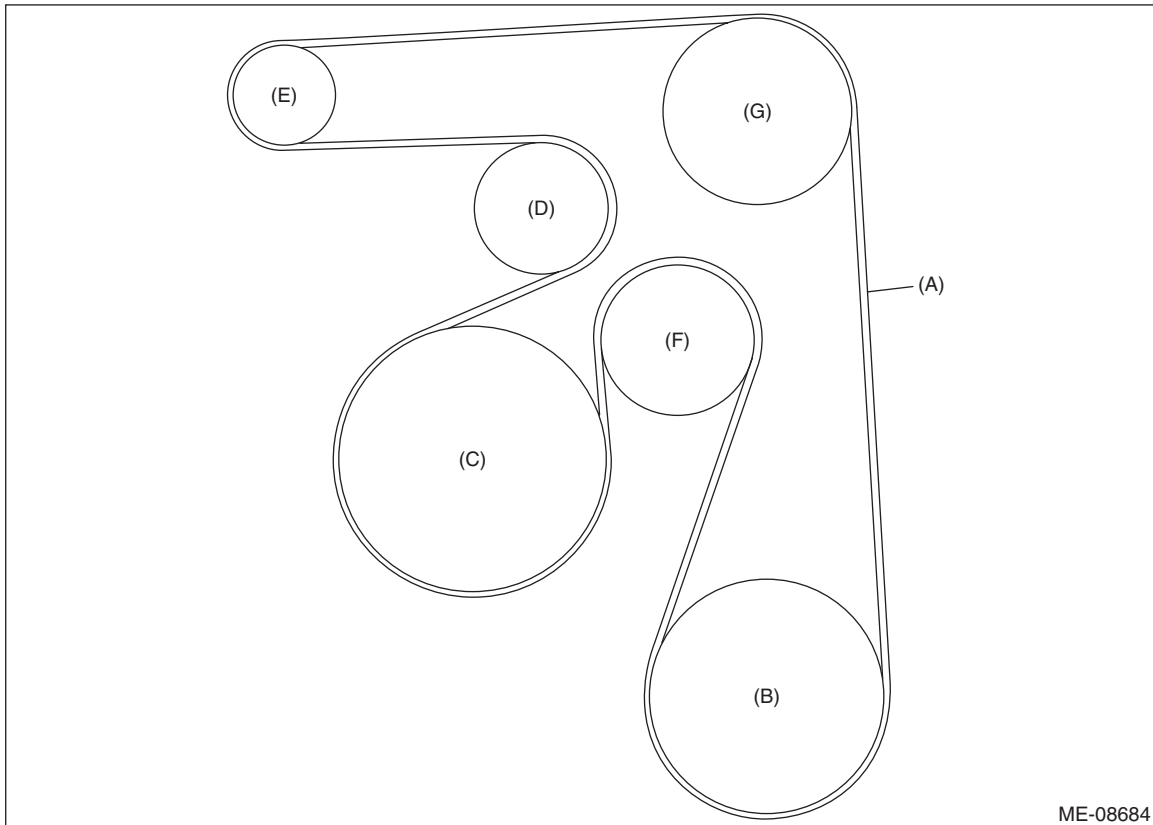
1. GASOLINE ENGINE MODEL

- **V-belt**

Install in the reverse order of removal.

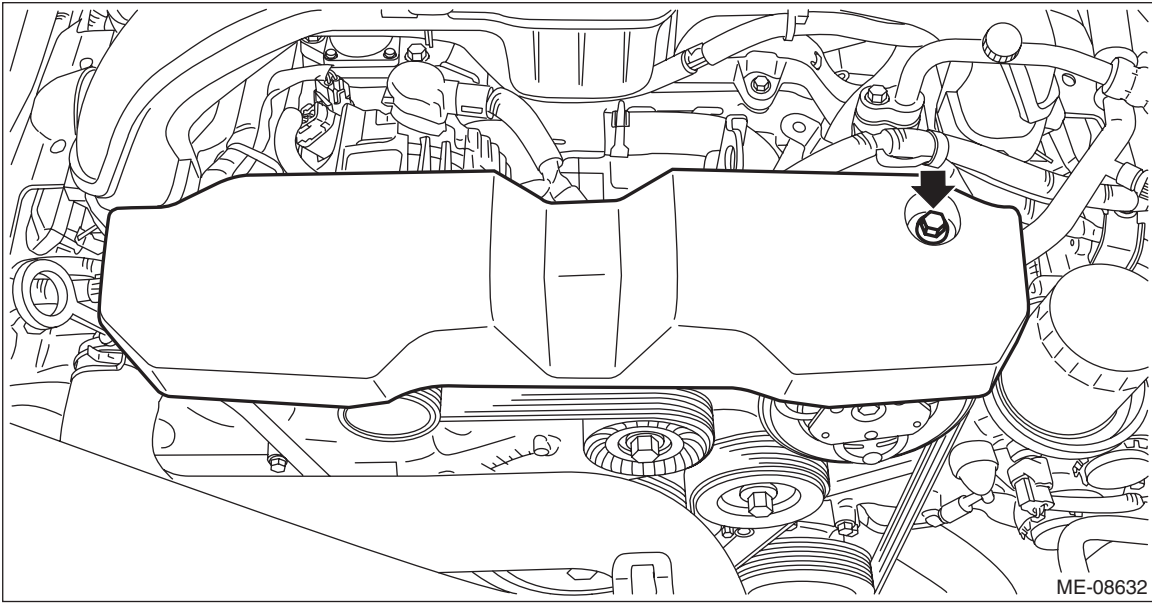
CAUTION:

- **When reusing the V-belt, wipe off dust and water with cloth.**
- **Do not use the V-belt if there is any oil, grease or coolant on the belt.**
- **Be careful not to rub the V-belt end surface with bare hands; exposed core may cause injury.**
- **Wipe off any dust, oil and water on the groove of each pulley with cloth.**



- | | | |
|-----------------------|---------------------------|---------------------------|
| (A) V-belt | (D) V-belt tensioner ASSY | (G) A/C compressor pulley |
| (B) Water pump pulley | (E) Generator pulley | |
| (C) Crank pulley | (F) Idler pulley | |

Tightening torque:
6.4 N·m (0.7 kgf-m, 4.7 ft-lb)

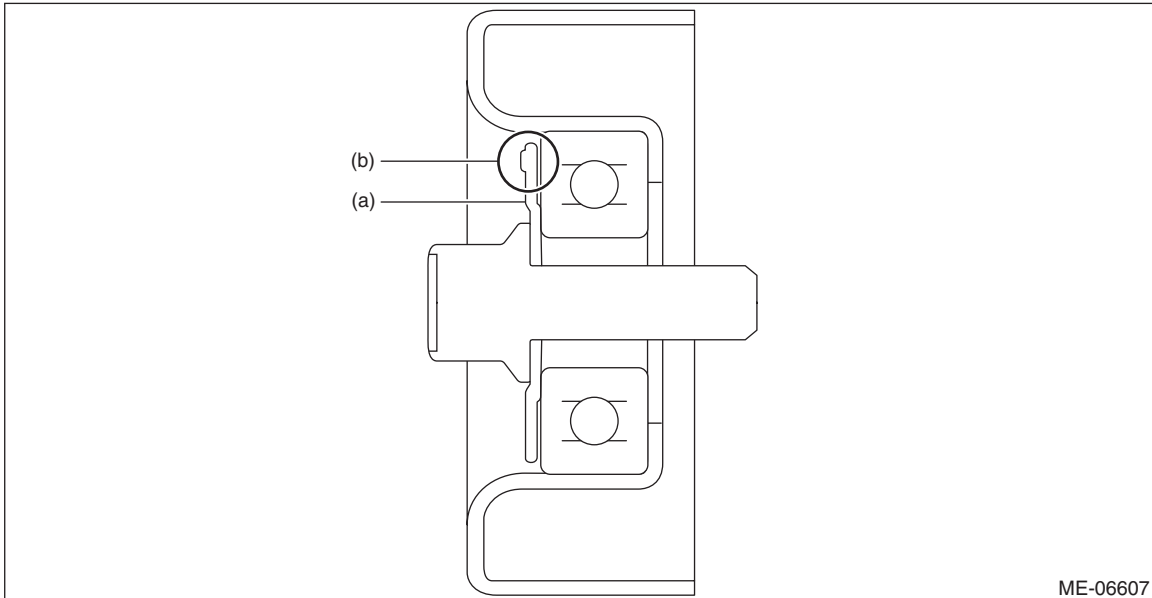


- **V-belt tensioner assembly and idler pulley**

1) Install the idler pulley to the chain cover.

NOTE:

When installing the idler pulley, be careful of the idler pulley cover direction.



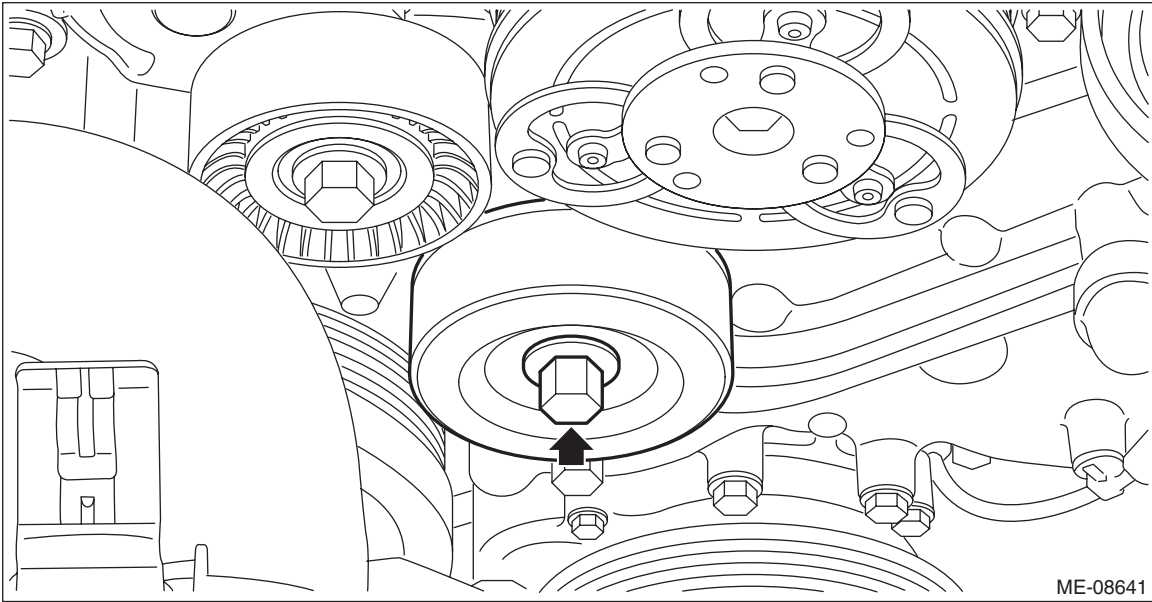
(a) Idler pulley cover

(b) Protrusion (3 places)

V-belt

MECHANICAL

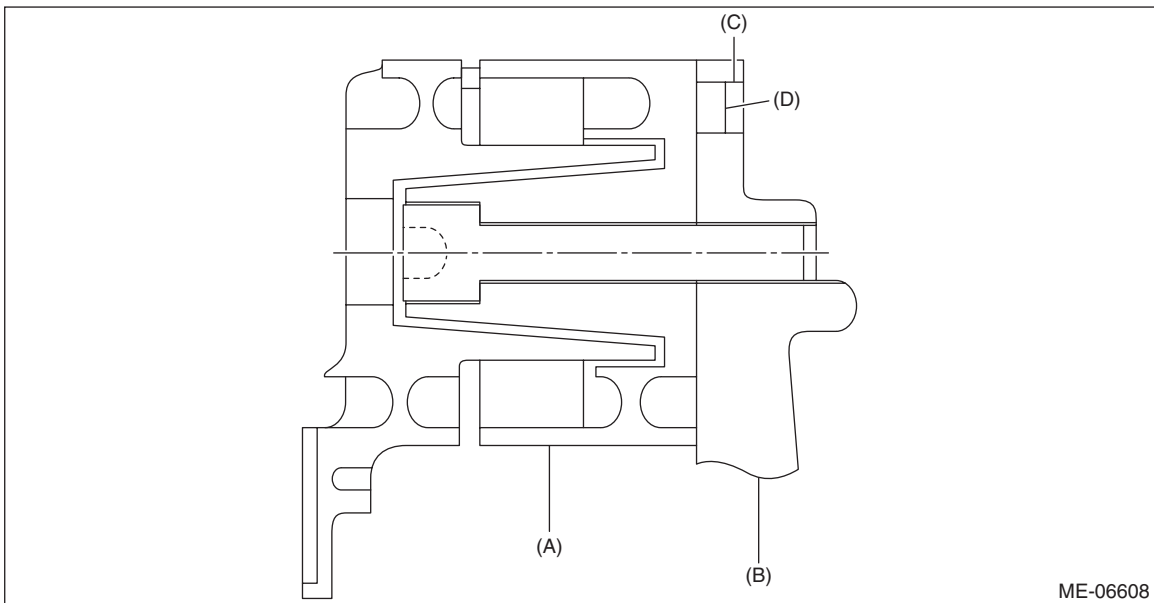
Tightening torque:
36 N·m (3.7 kgf-m, 26.6 ft-lb)



2) Install the V-belt tensioner assembly onto the generator bracket.

NOTE:

When installing the V-belt tensioner assembly, insert the protrusion of V-belt tensioner assembly into the hole for preventing rotation at the generator bracket.

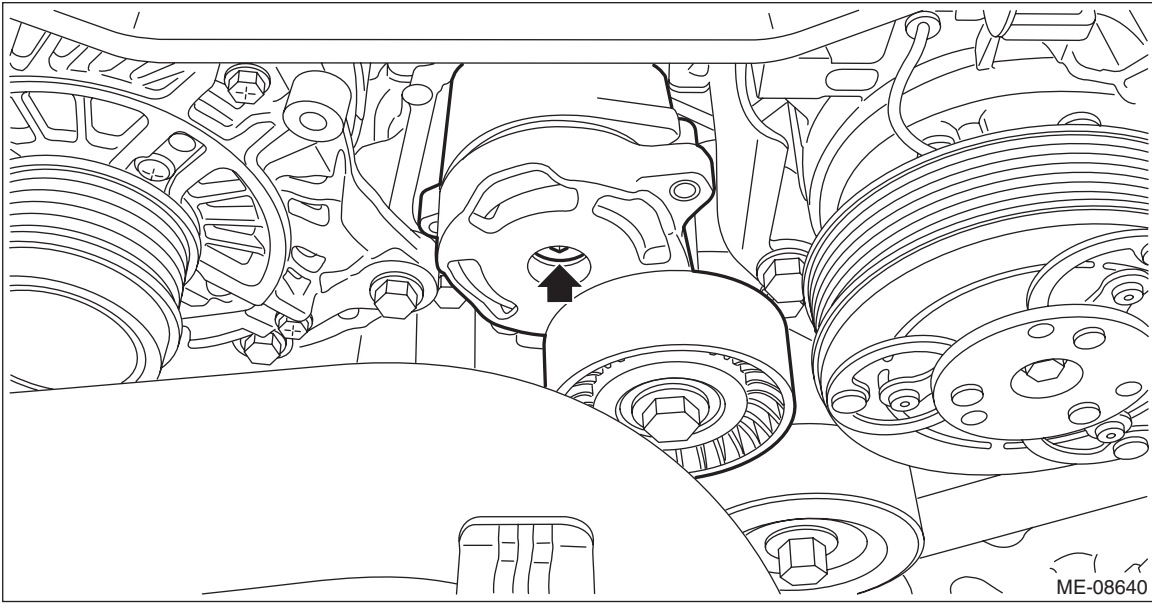


(A) V-belt tensioner ASSY
(B) Generator bracket

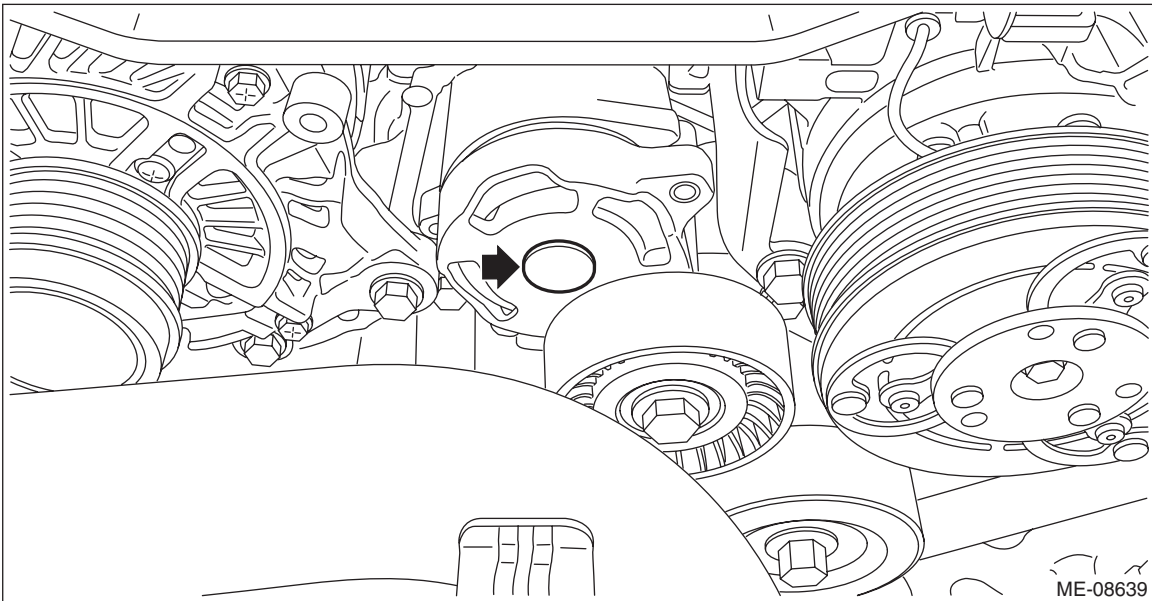
(C) Hole to prevent rotation

(D) Protrusion portion

Tightening torque:
25 N·m (2.5 kgf-m, 18.4 ft-lb)



3) Install the cap to the V-belt tensioner assembly.



4) Install the V-belts.

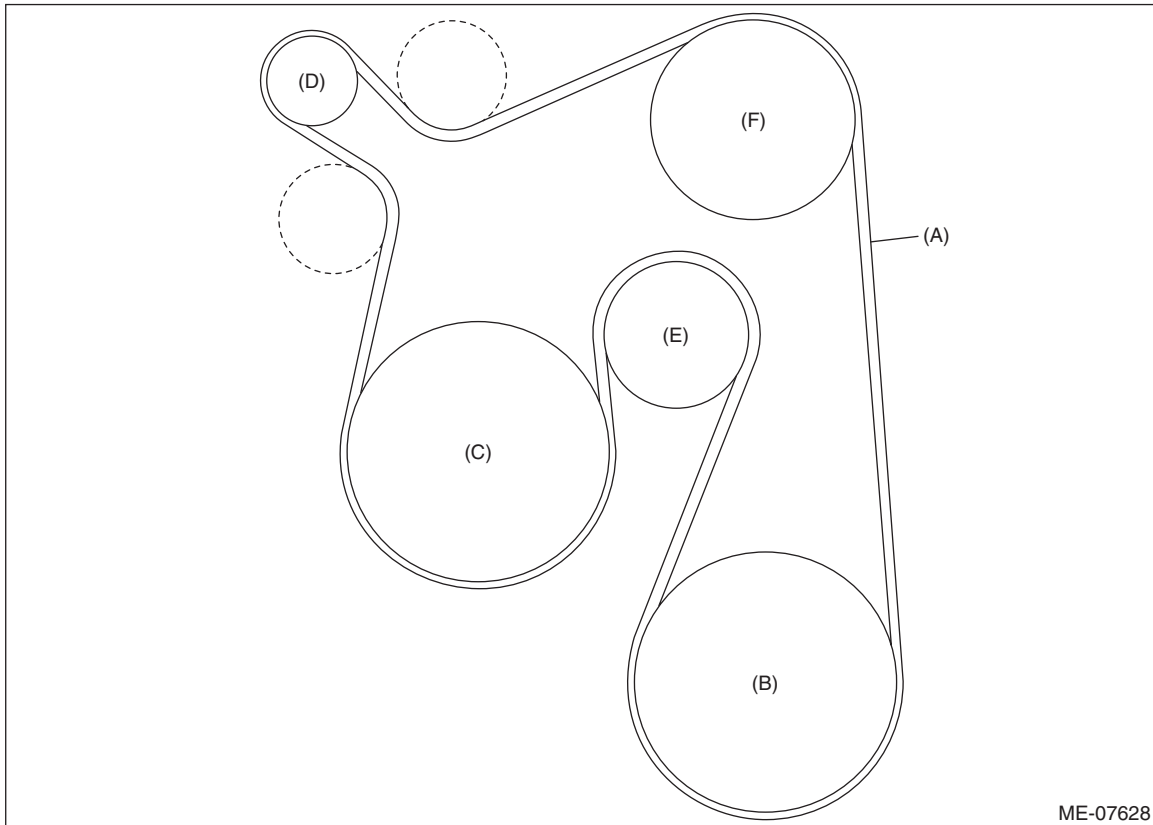
2. HEV MODEL

• V-belt tensioner assembly and V-belt

1) Set the V-belt as shown in the figure.

CAUTION:

- When reusing the V-belt, wipe off dust and water with cloth.
- Do not use the V-belt if there is any oil, grease or coolant on the belt.
- Be careful not to rub the V-belt end surface with bare hands; exposed core may cause injury.
- Wipe off any dust, oil and water on the groove of each pulley with cloth.



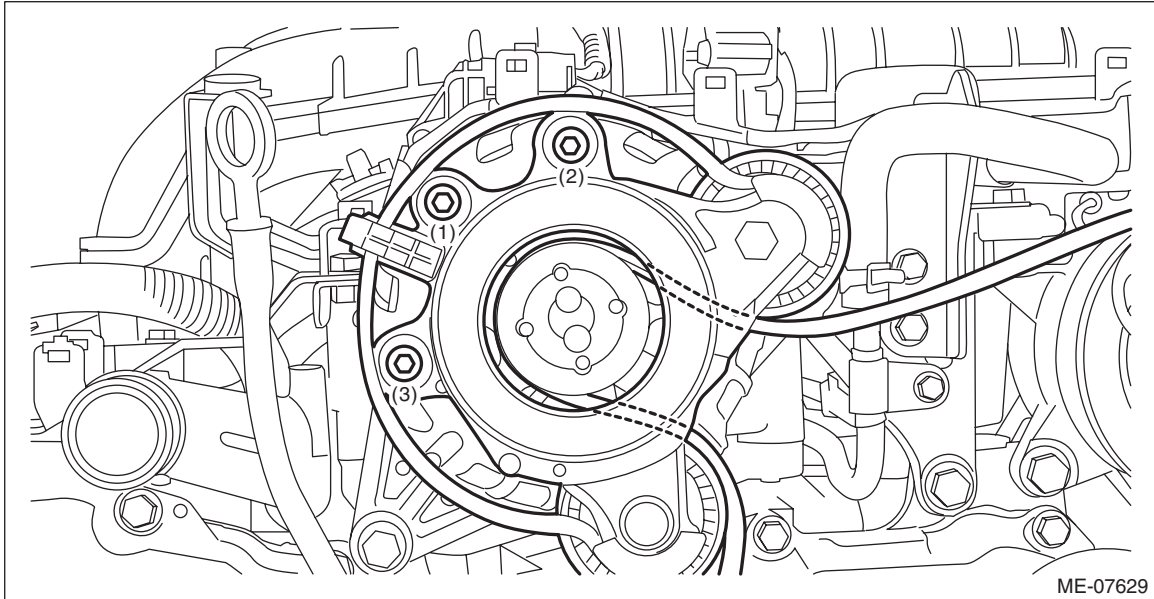
- | | | |
|-----------------------|------------------|---------------------------|
| (A) V-belt | (C) Crank pulley | (E) Idler pulley |
| (B) Water pump pulley | (D) ISG pulley | (F) A/C compressor pulley |

2) Set the V-belt tensioner assembly in the position shown in the figure, and temporarily tighten the bolts that hold the V-belt tensioner assembly.

3) Tighten the bolts which hold the V-belt tensioner assembly in the numerical order shown in the figure.

Tightening torque:

25 N·m (2.5 kgf-m, 18.4 ft-lb)



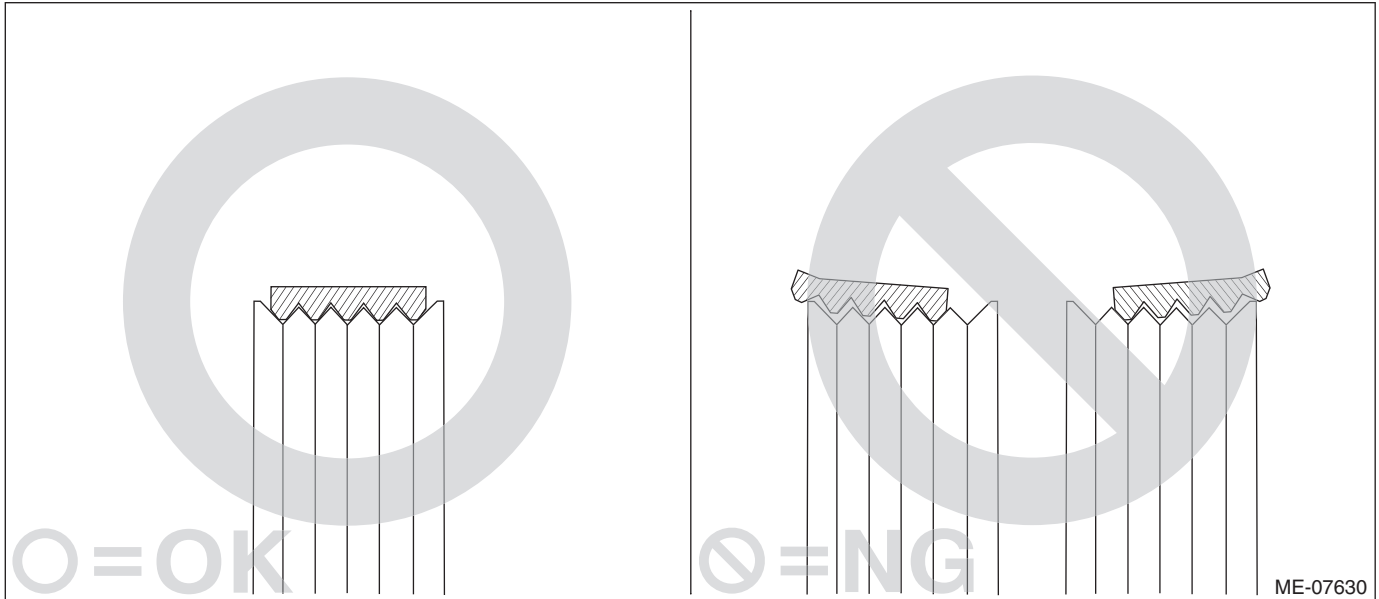
V-belt

MECHANICAL

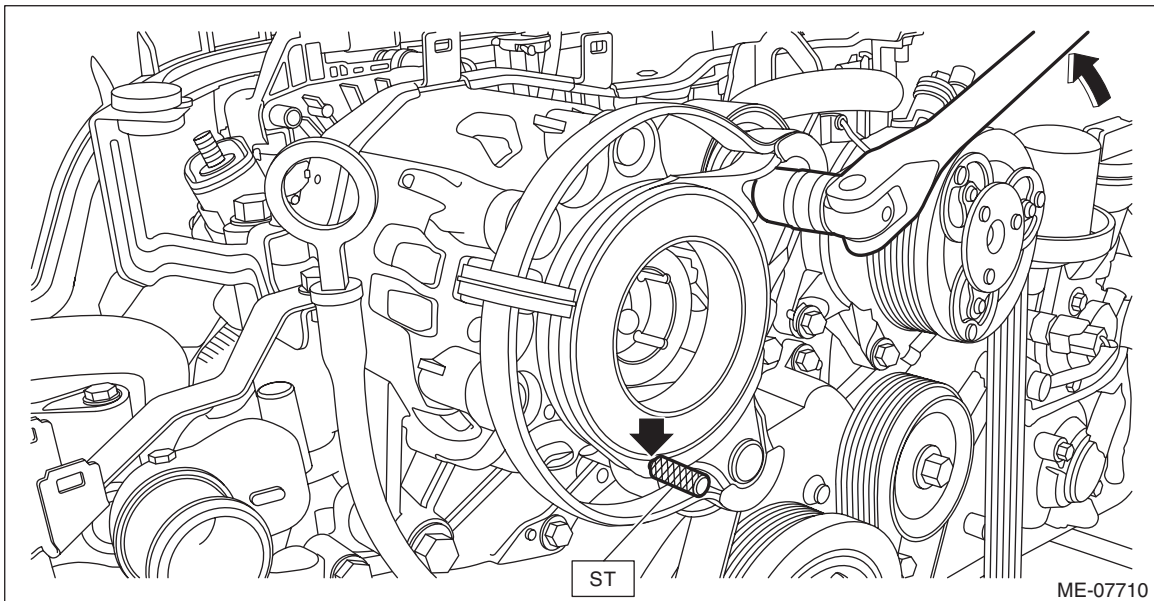
4) Set the tool on the arm lever No. 1, turn the tool counterclockwise a little, and remove the ST from the arm lever No. 2.

NOTE:

Before removing the ST, check that the V-belt ribs are securely placed on the rib grooves for each pulley.



ST 499267300 STOPPER PIN



5) When working on the vehicle

NOTE:

When working on the vehicle, perform the following steps also.

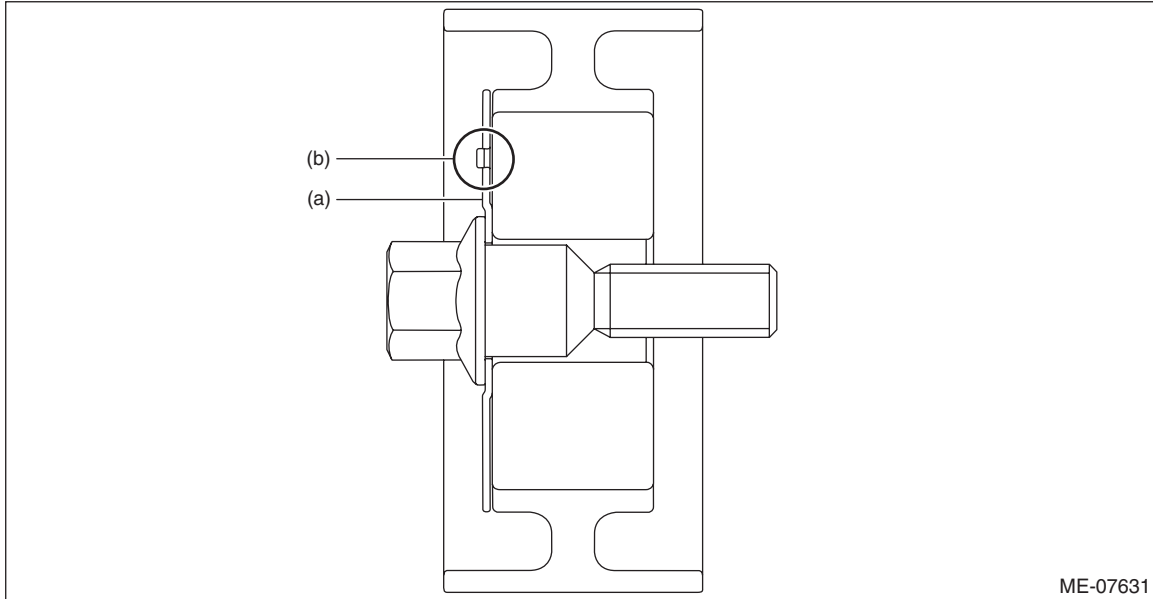
(1) Install the collector cover.

• **Idler pulley**

Install in the reverse order of removal.

NOTE:

When installing the idler pulley, be careful of the idler pulley cover direction.



(a) Idler pulley cover

(b) Protrusion (3 places)

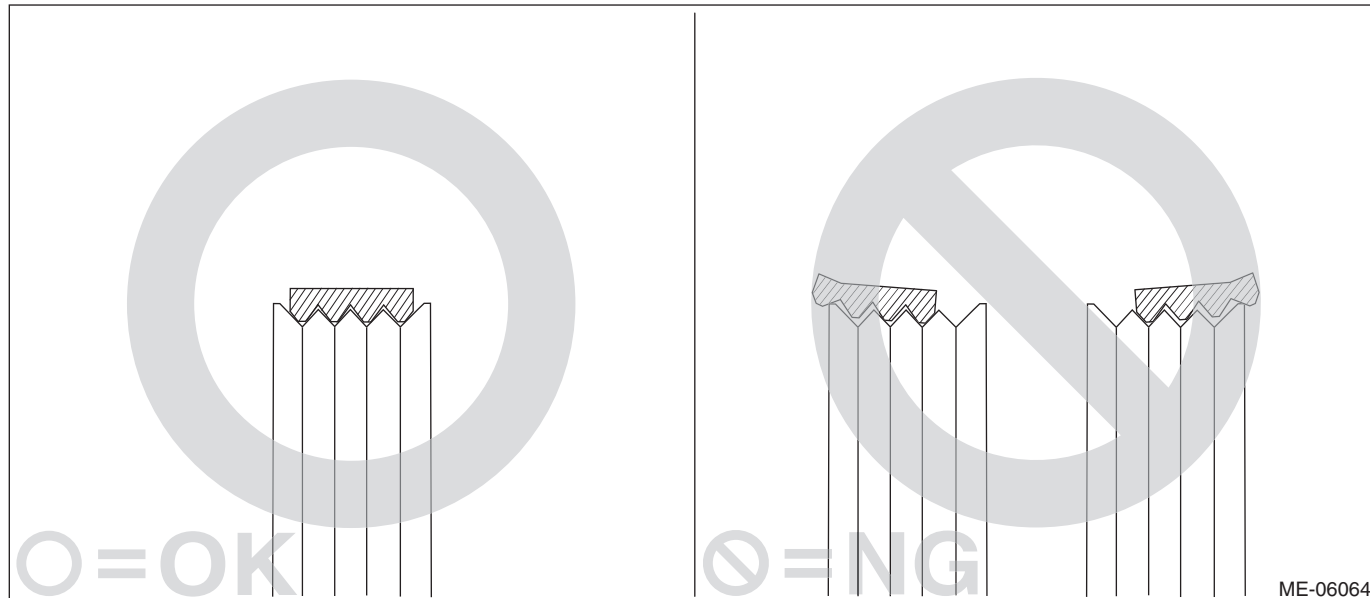
Tightening torque:

36 N·m (3.7 kgf-m, 26.6 ft-lb)

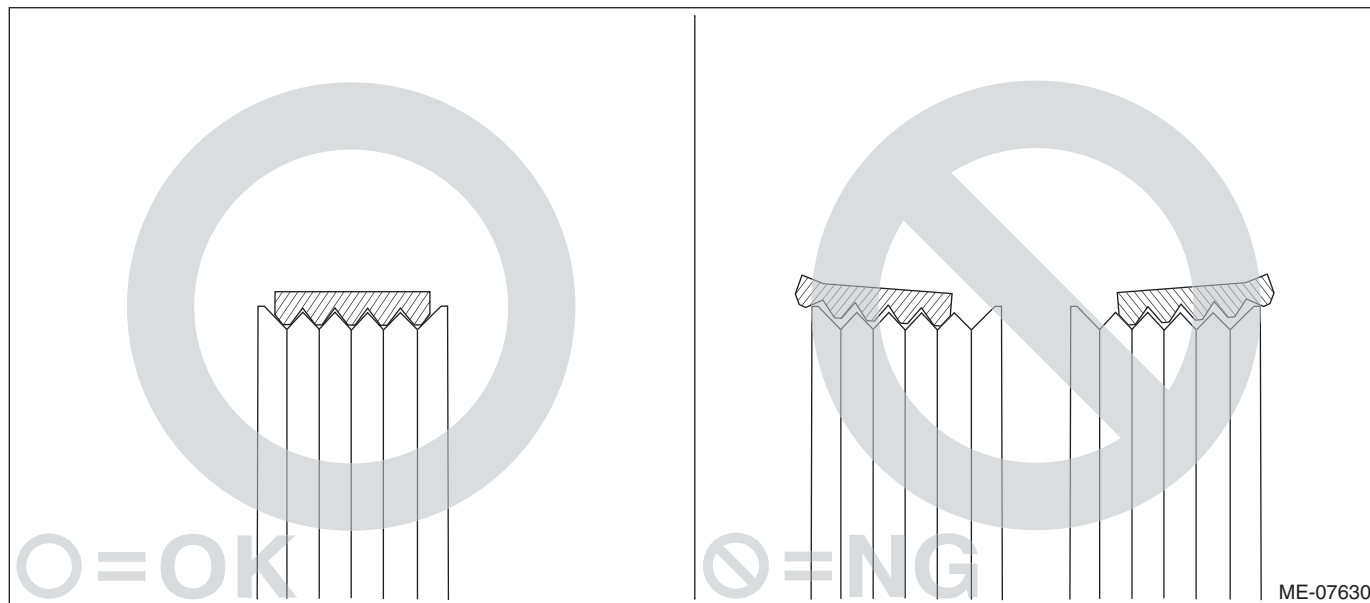
C: INSPECTION

- 1) Check the V-belt for cracks, tear or wear.
- 2) Check the V-belt tensioner assembly and idler pulley for deformation, cracks or other damages.
- 3) Check that the V-belt ribs are securely placed on the rib grooves for each pulley.

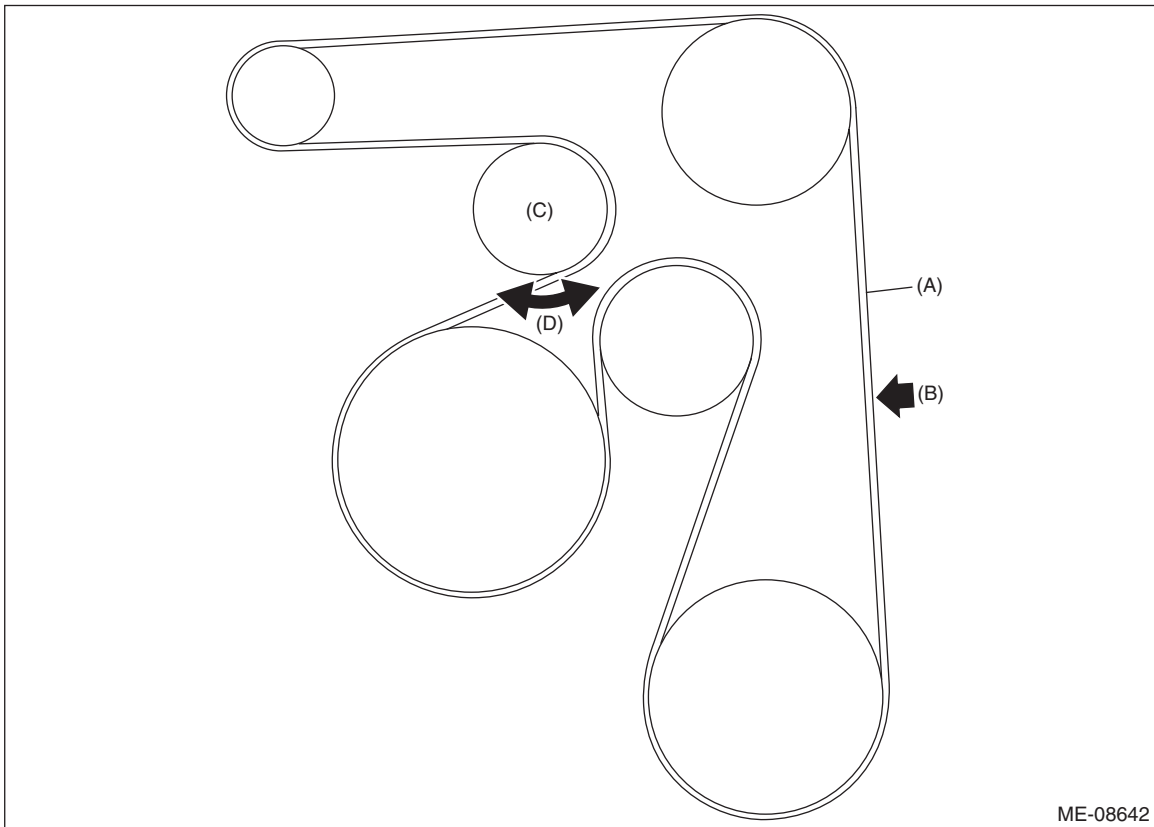
- Gasoline engine model



- HEV model



4) Check that the V-belt tensioner assembly (C) moves in the direction of arrow (D), when the V-belt (A) is pushed and released by the area indicated by the arrow (B). (Gasoline engine model)



ME-08642

5) Start the engine and confirm that the V-belt rotates smoothly and no abnormal noise is emitted.