

## 12. V-belt

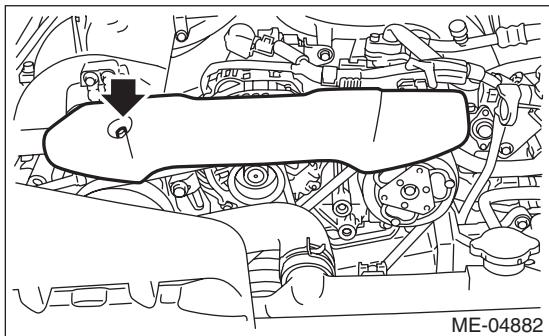
### A: REMOVAL

NOTE:

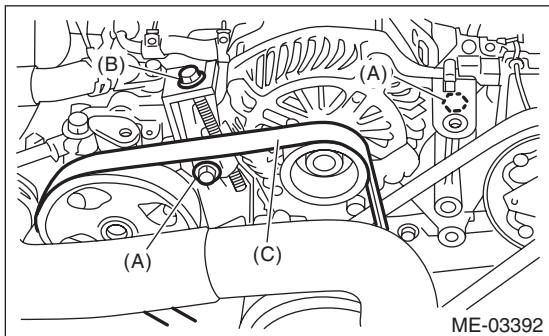
When replacing a single part, perform the work with the engine installed to body.

#### 1. FRONT SIDE BELT

- 1) Remove the V-belt covers.

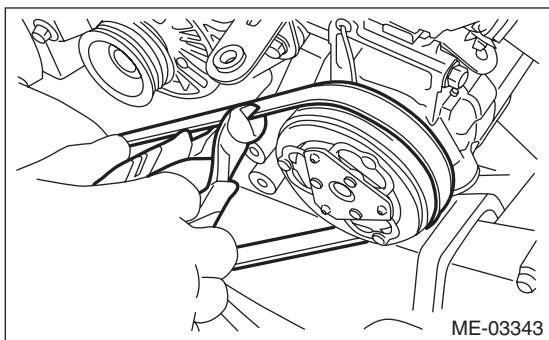


- 2) Remove the air intake duct. <Ref. to IN(H4SO)-8, REMOVAL, Air Intake Duct.>
- 3) Loosen the bolt (A).
- 4) Loosen the slider bolt (B).
- 5) Remove the front side belt (C).



#### 2. REAR SIDE BELT

- 1) Remove the front side belts. <Ref. to ME(H4SO)-39, FRONT SIDE BELT, REMOVAL, V-belt.>
- 2) Cut the rear side belt with a wire cutter, etc., and discard.



### B: INSTALLATION

#### 1. FRONT SIDE BELT

CAUTION:

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

- 1) Wipe off any dust, oil and water on the groove of each pulley with cloth.
- 2) Install the front side belt (C), and adjust the slider bolt (B) so as to obtain the specified belt tension. <Ref. to ME(H4SO)-45, INSPECTION, V-belt.>
- 3) Tighten the bolt (A).
- 4) Tighten the slider bolt (B).

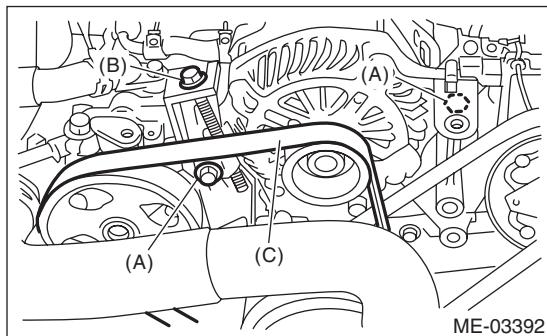
**Tightening torque:**

**Bolt (A)**

**25 N·m (2.5 kgf-m, 18.4 ft-lb)**

**Slider bolt (B)**

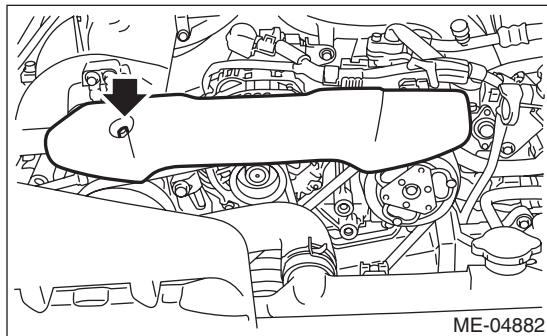
**8 N·m (0.8 kgf-m, 5.9 ft-lb)**



- 5) Install the air intake duct. <Ref. to IN(H4SO)-8, INSTALLATION, Air Intake Duct.>
- 6) Install the V-belt cover.

**Tightening torque:**

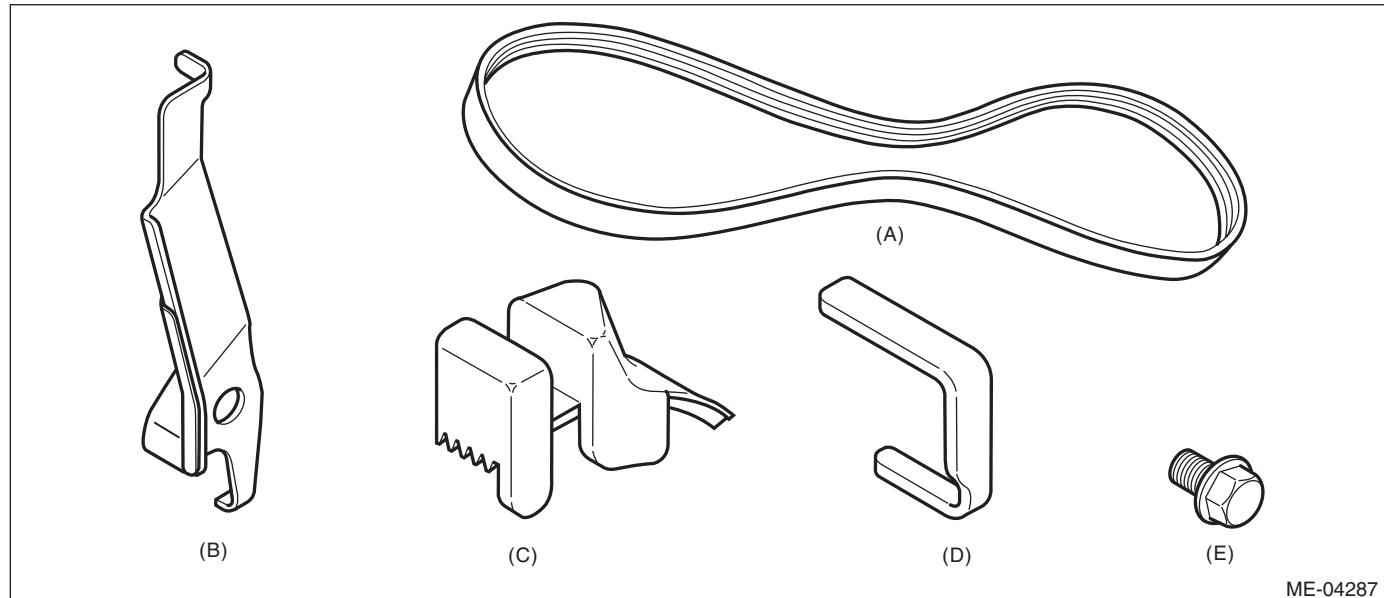
**13 N·m (1.3 kgf-m, 9.6 ft-lb)**



## 2. REAR SIDE BELT

### CAUTION:

- Do not re-use the rear side belt.
- Be careful not to let oil, grease or coolant contact a new rear side belt.
- Be careful not to rub the belt end surface with bare hands; exposed core may cause injury.
- To install the rear side belt, always use the provided tools (belt stopper, belt guide, belt guide holder, and bolt).



(A) Rear side belt  
(B) Belt stopper

(C) Belt guide  
(D) Belt guide holder

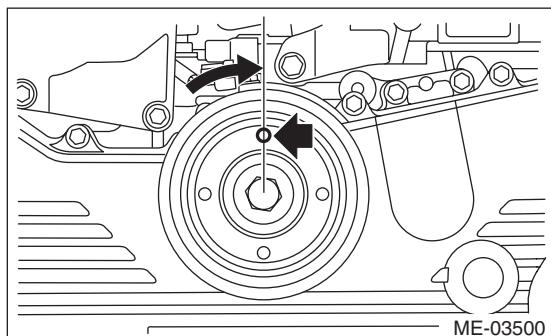
(E) Bolt

ME-04287

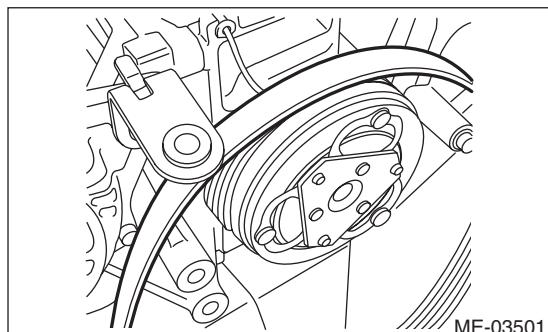
- 1) Wipe off any dust, oil and water on the groove of each pulley with cloth.
- 2) Wipe off any oil, water, dirt, and rust on the front of the crank pulley with cloth.
- 3) Slowly turn the crank pulley clockwise so that the service hole of the crank pulley comes around the top.

### CAUTION:

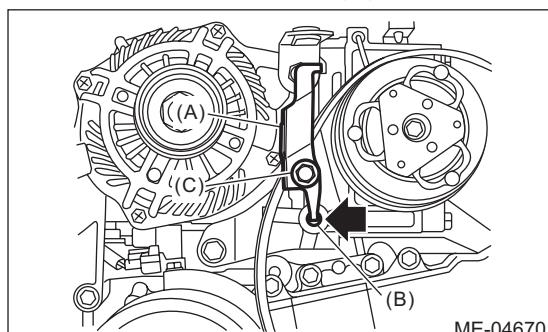
Do not turn the crank pulley counterclockwise.



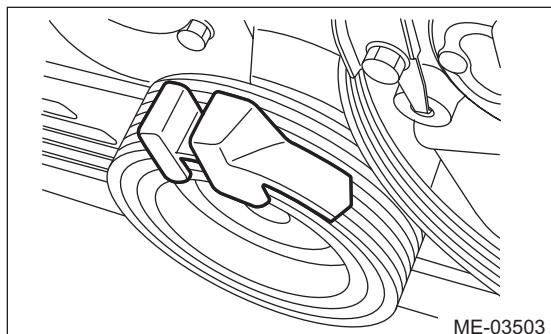
- 4) Hook a new rear side belt on the A/C compressor pulley.



- 5) As shown in the figure, insert the claw of the belt stopper (A) to the lower hole (B) of the compressor bracket, then attach with bolt (C).



6) Place the belt guide while aligning it with the belt line of the crank pulley on the front side belt side.

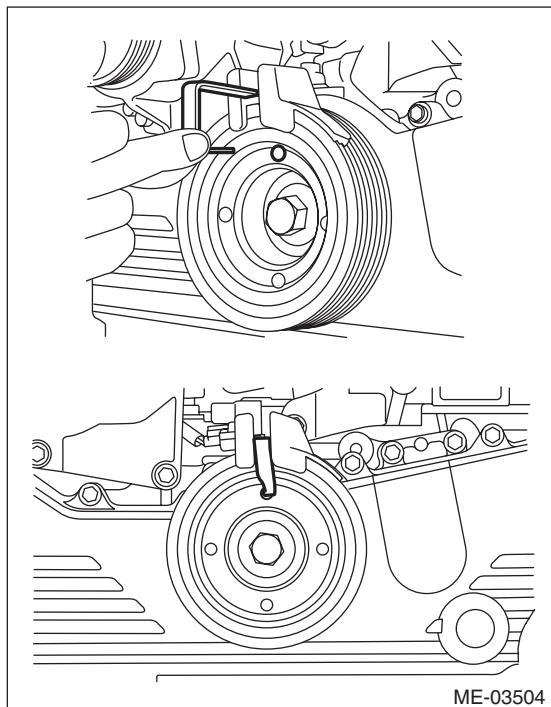


ME-03503

7) Insert the belt guide holder into the service hole of the crank pulley so that the belt guide comes in between.

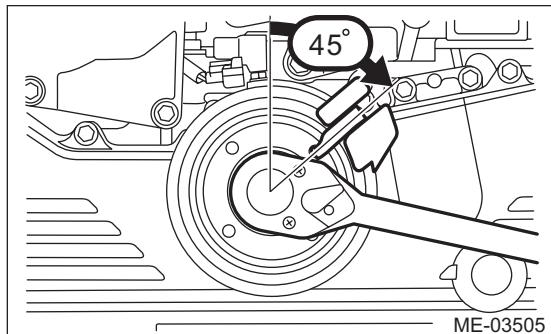
**NOTE:**

Place the belt guide holder with the longer side up.



ME-03504

8) Slowly turn the crank pulley clockwise until the belt guide comes to approximately 45°.

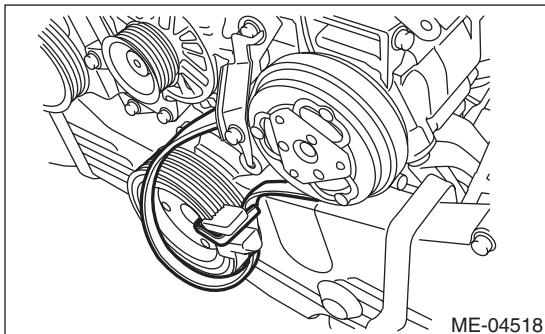


ME-03505

9) Place the rib surface of the rear side belt into the crank pulley groove, so that the rear side belt comes in between the belt guide holder.

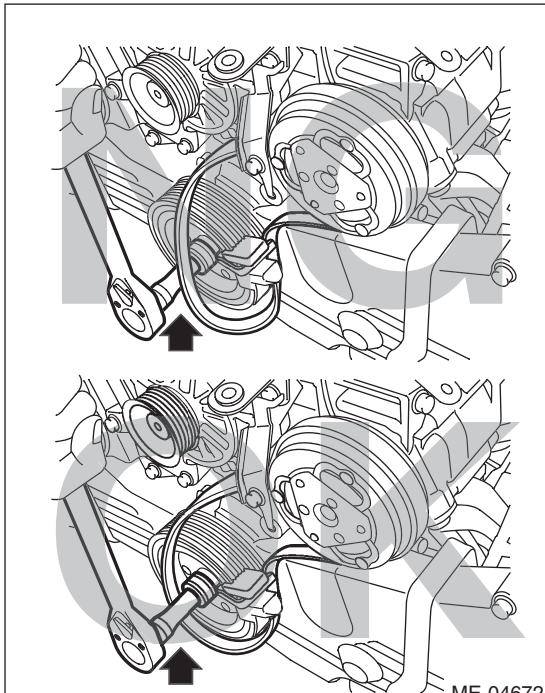
**CAUTION:**

**When it is difficult to place the rear side belt to the crank pulley groove, pull out the belt guide holder half way, then place the rear side belt into the groove so that it comes in between the belt guide holder.**



ME-04518

10) Place the tool through the loop of the rear side belt, and set on the crank pulley bolt.



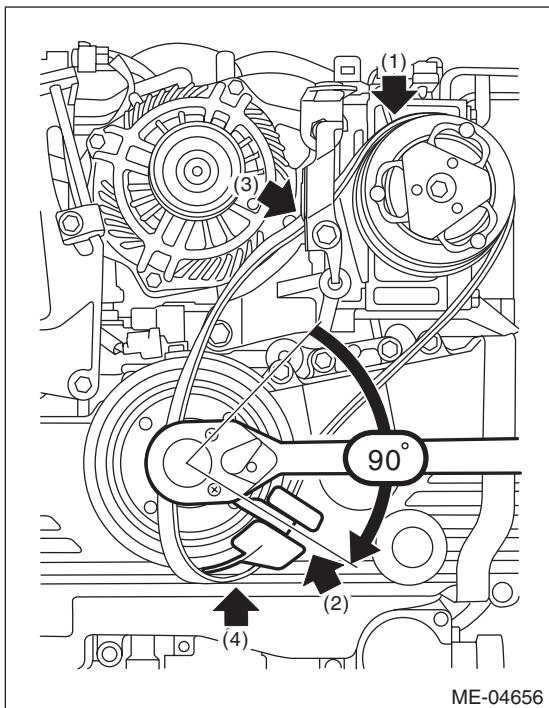
ME-04672

## MECHANICAL

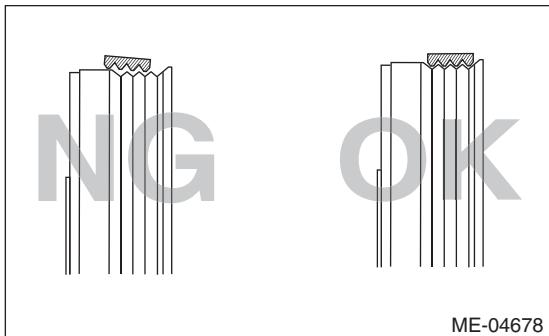
11) While checking the following, slowly turn the crank pulley approximately 90° clockwise so that the belt guide comes to the position shown in the figure.

**CAUTION:**

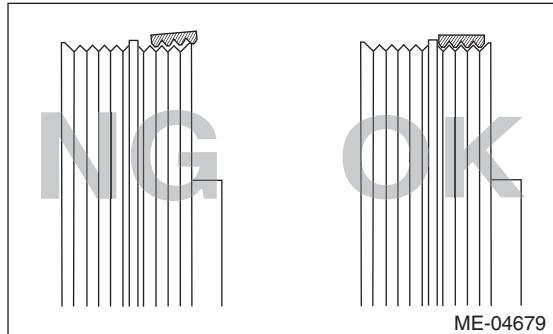
**When turning the crank pulley, always make sure that the belt guide is not off from the crank pulley groove.**



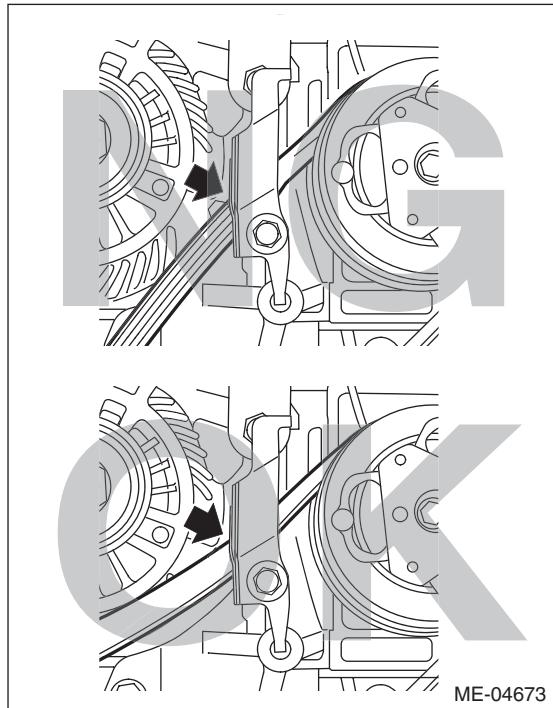
(1) The rib of the rear side belt is securely placed on the groove of the A/C compressor pulley.



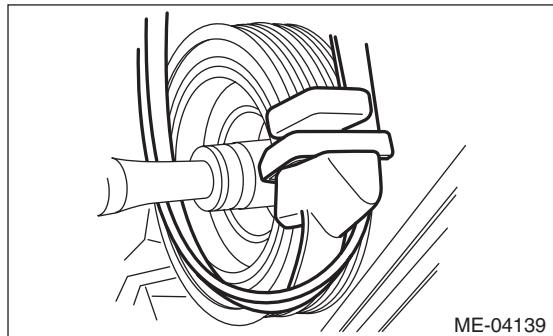
(2) The rib of the rear side belt is securely placed on the groove of the crank pulley.



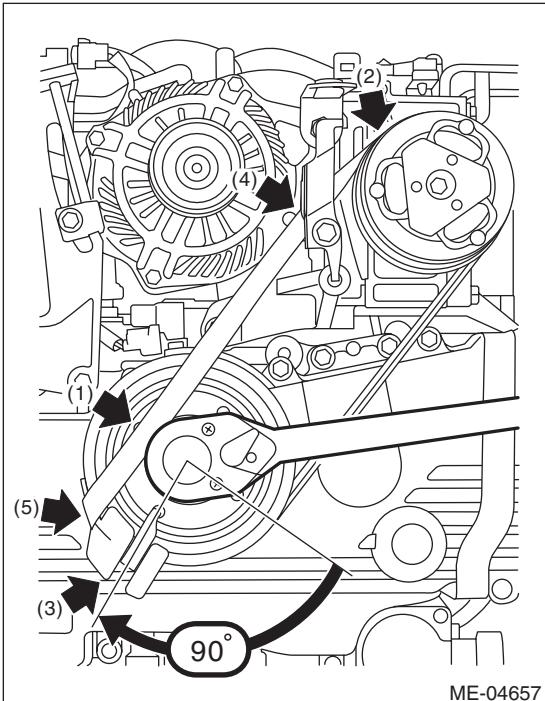
(3) The surface of the rear side belt is held by the belt stopper.



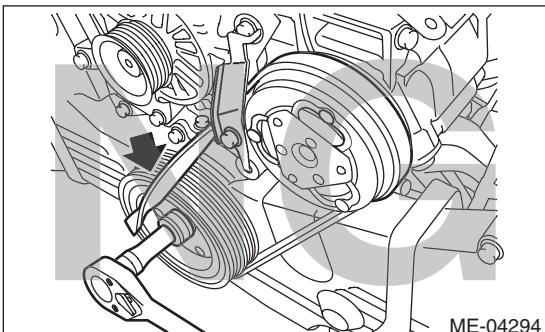
(4) The rear side belt is securely placed on the belt guide.



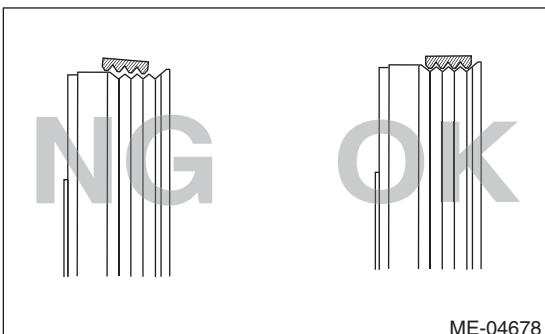
12) While checking the following, slowly turn the crank pulley approximately 90° clockwise so that the belt guide comes to the position shown in the figure.



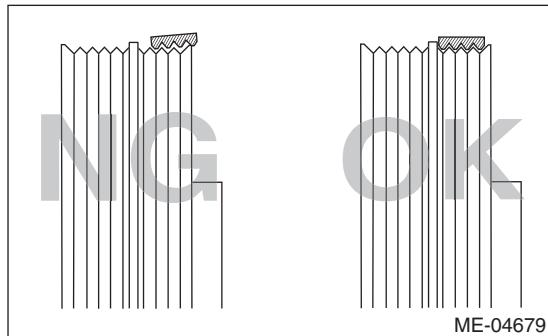
(1) The rear side belt is not twisted.



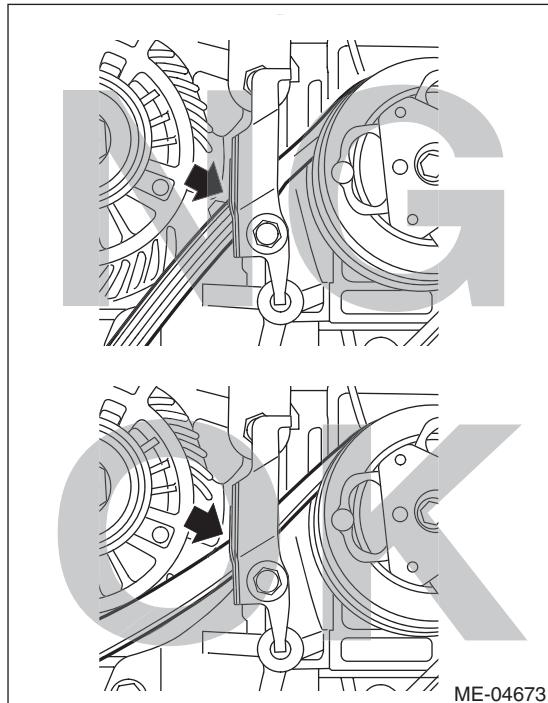
(2) The rib of the rear side belt is securely placed on the groove of the A/C compressor pulley.



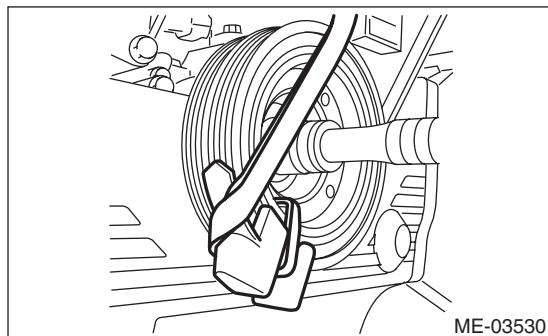
(3) The rib of the rear side belt is securely placed on the groove of the crank pulley.



(4) The surface of the rear side belt is held by the belt stopper.



(5) The rear side belt is securely placed on the belt guide.



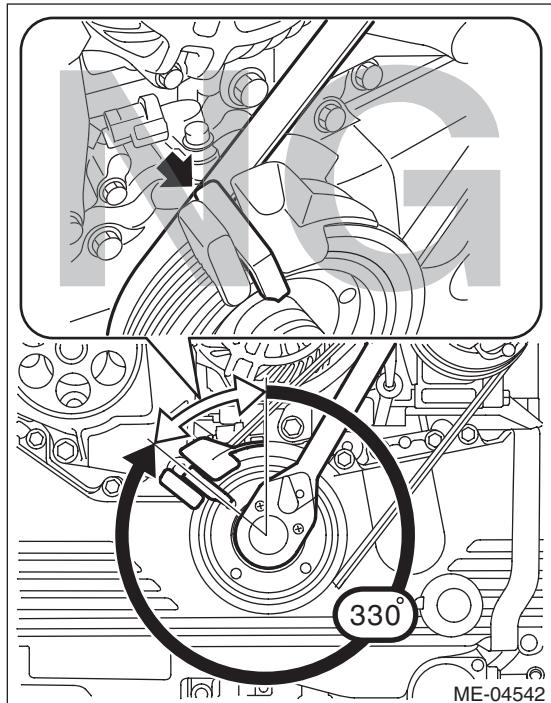
## V-belt

### MECHANICAL

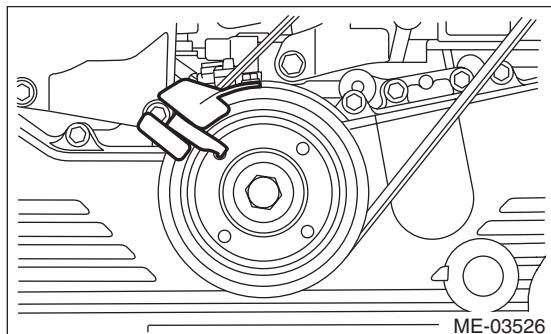
13) Slowly turn the crank pulley clockwise, and install the rear side belt.

#### CAUTION:

Be careful that the total of procedures 8), 11), 12) and 13) does not exceed 330°; failure to do so may cause damage to the rear side belt and fall of the belt guide holder.



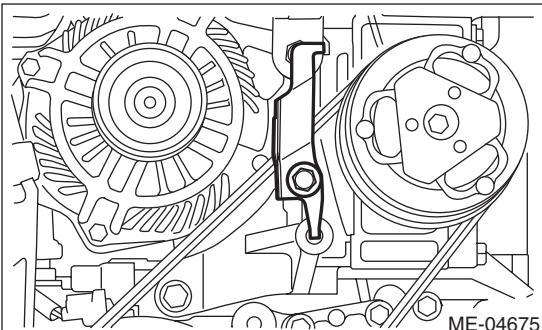
14) Remove the belt guide and belt guide holder from the crank pulley.



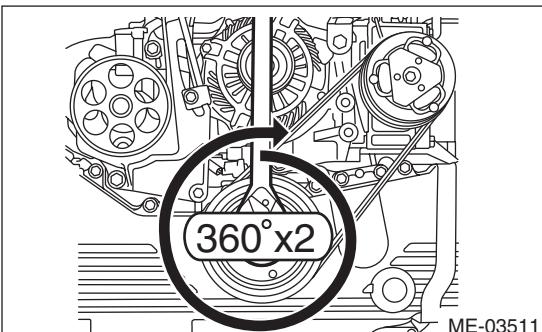
15) Remove the belt stopper from the compressor bracket.

#### CAUTION:

Always remove the belt stopper; failure to do so may cause smoke, fire, or belt cutting.



16) Make sure that the belt rib is securely installed on the groove of each pulley, then turn the crank pulley slowly, twice in the clockwise direction, to seat the rear side belt properly.



17) Discard the provided tools (belt stopper, belt guide, belt guide holder, and bolt) that are used.

18) Install the front side belt. <Ref. to ME(H4SO)-39, FRONT SIDE BELT, INSTALLATION, V-belt.>

## C: INSPECTION

### 1. FRONT SIDE BELT

#### CAUTION:

Check and adjust the front side belt tension so that it is within the specified range. Using the belt with a tension out of the specified range may result in a fault such as the following:

- If the front side belt tension is higher, unexpected force is generated at the power steering oil pump, generator and crankshaft bearing, causing abnormal noise due to abnormal wear of the bearing.
- If the front side belt tension is lower, the front side belt and crank pulley slip, causing abnormally high temperature on the crank pulley due to frictional heat. If this condition repeatedly occurs, the front side belt may abnormally wear, causing abnormal noise, front side belt damage or crank pulley damage.

- 1) Replace the front side belt, if crack, fraying or wear is found.
- 2) Check the front side belt tension and adjust it if necessary by changing the generator installing position.

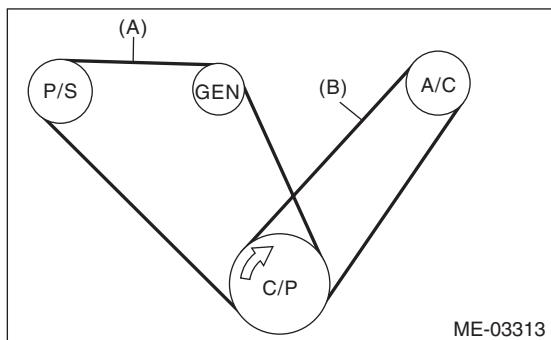
#### Front side belt tension (with belt tension gauge):

##### When installing new parts

640 — 780 N (65 — 80 kgf, 144 — 175 lbf)

##### At inspection

490 — 640 N (50 — 65 kgf, 110 — 144 lbf)



(A) Front side belt

(B) Rear side belt

C/P Crank pulley

GEN Generator pulley

P/S Power steering oil pump pulley

A/C A/C compressor pulley

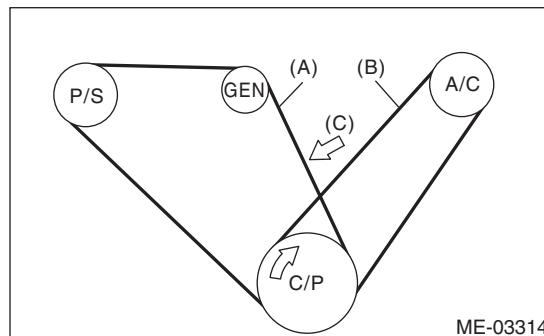
#### Front side belt tension (without belt tension gauge):

##### When installing new parts

7 — 9 mm (0.276 — 0.354 in)

##### At inspection

9 — 11 mm (0.354 — 0.433 in)



(A) Front side belt

(B) Rear side belt

(C) 98 N (10 kgf, 22 lbf)

C/P Crank pulley

GEN Generator pulley

P/S Power steering oil pump pulley

A/C A/C compressor pulley

### 2. REAR SIDE BELT

Replace the rear side belt, if crack, fraying or wear is found, or noise is emitted.

#### NOTE:

For the rear side belt, a stretch type belt is used, and therefore, it is not necessary to check deflection nor tension.