

Product: INDUSTRIAL ENGINE  
Model: C2.2 INDUSTRIAL ENGINE G43  
Configuration: C2.2 Industrial Engine G4300001-UP

## Disassembly and Assembly C1.7 and C2.2 Industrial Engines

Media Number -M0067512-03

Publication Date -01/09/2015

Date Updated -23/01/2018

i06564021

# Flywheel - Remove and Install

SMCS - 1156-010

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7573	Lifting Bracket	1
B	-	Guide Stud (M10 x 1.25 by 80 mm)	2

### Start By:

- Remove the electric starting motor. Refer to Disassembly and Assembly, "Electric Starting Motor - Remove and Install" for the correct procedure.
- Remove the primary speed/timing sensor. Refer to Disassembly and Assembly, "Primary Engine Speed/Timing Sensor - Remove and Install" for the correct procedure.

---

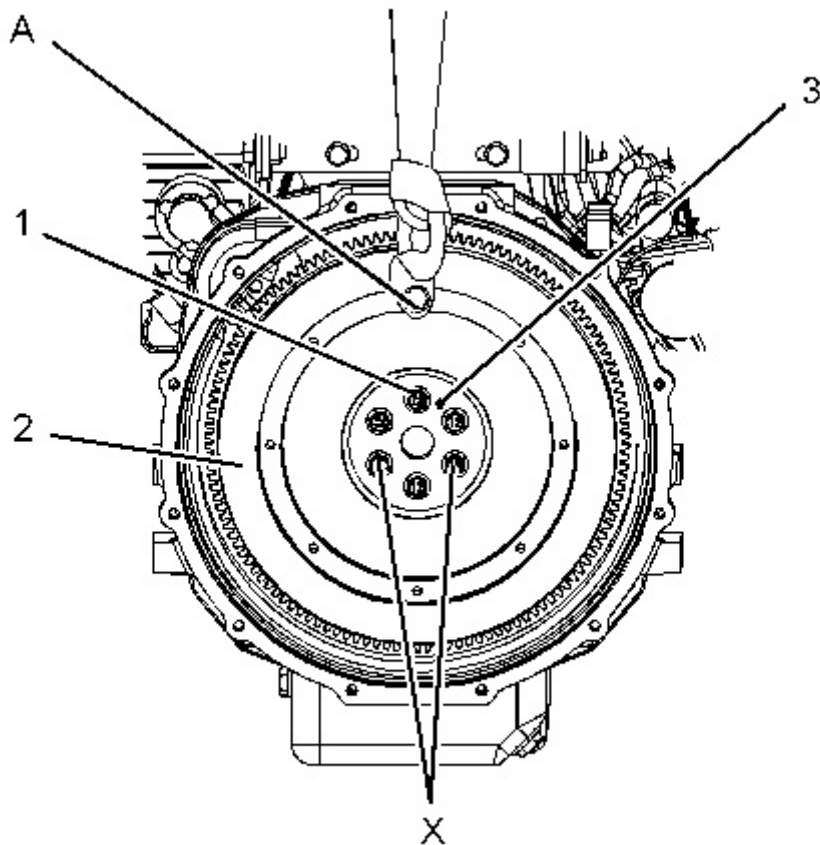
### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

---

---



---

Illustration 1

g03795183

1. Install Tooling (A) and a suitable lifting device to flywheel (2). The weight of the flywheel is approximately 42 kg (93 lb).
2. Remove two bolts (1) from Positions (X) on the flywheel.
3. Install Tooling (B) in Positions (X) on the flywheel.
4. Remove the remaining bolts (1) and remove flywheel (2).

**Note:** A roll pin (3) is located between the crankshaft and the flywheel.

5. Inspect ring gear (4) and flywheel (2) for wear or damage. If the ring gear or the flywheel is worn or damaged, use new parts for replacement.
-

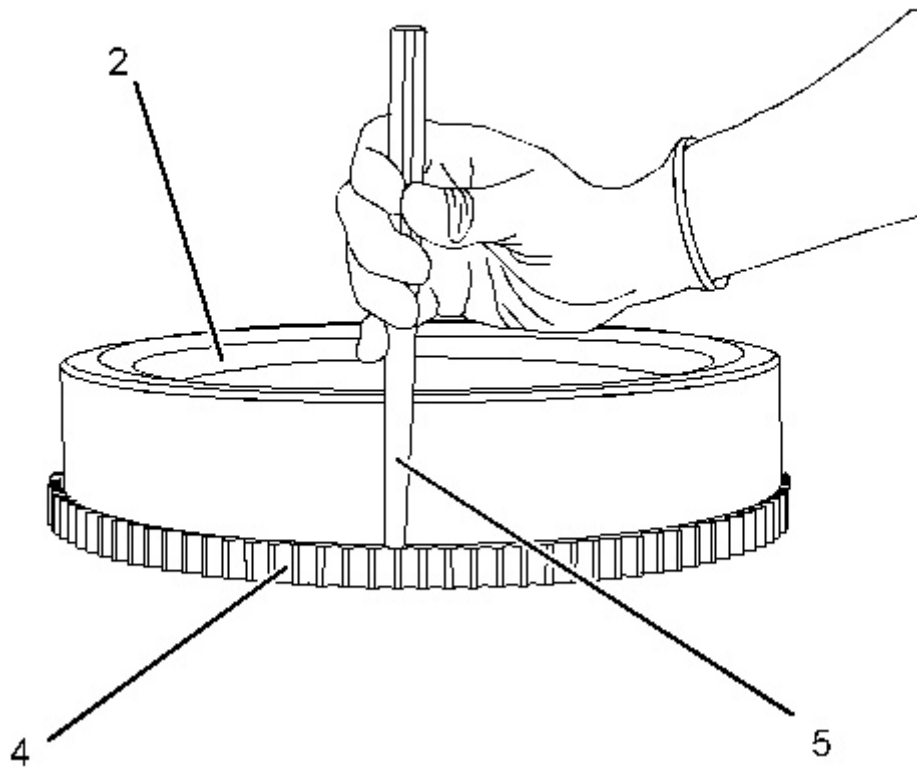


Illustration 2

g03795192

6. To remove ring gear (4) from flywheel (2), place the flywheel on a suitable support. Use a hammer and a punch (5) to remove the ring gear from the flywheel.

## Installation Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7573	Lifting Bracket	1
B	-	Guide Stud (M10 x 1.25 by 80 mm)	2

### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

# WARNING

Always wear protective gloves when handling parts that have been heated.

---

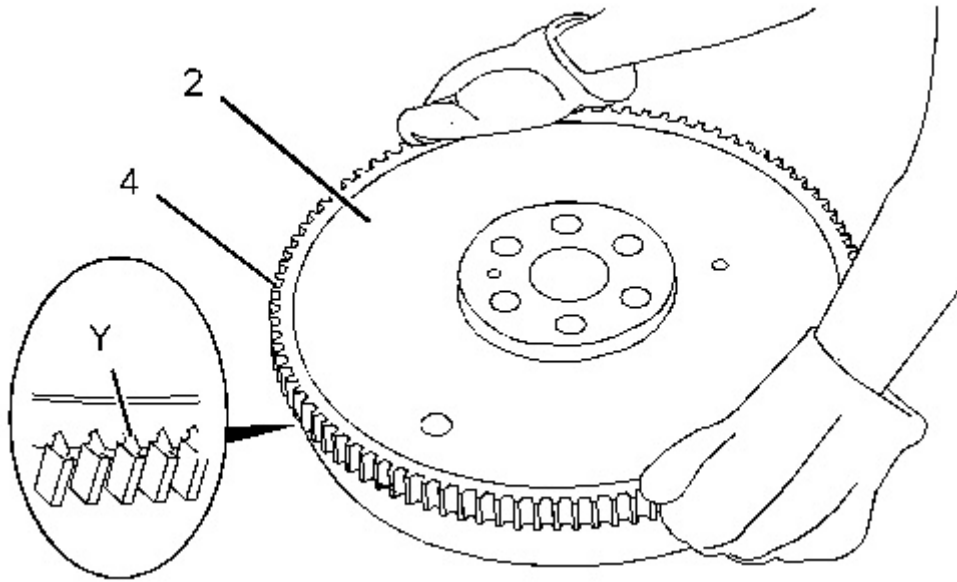


Illustration 3

g03795238

1. If the ring gear was removed, follow Steps 1.a through 1.c to install ring gear (4) to flywheel (2).
    - a. Identify the orientation of the new ring gear to install the ring gear correctly onto the flywheel.

**Note:** The chamfered side of Gear Teeth (Y) must face toward the starting motor when the flywheel is installed. The chamfered will ensure the correct engagement of the starting motor.
    - b. Heat ring gear (4) in an oven to a maximum temperature of 150°C (302°F) prior to installation.

**Note:** Do not use a torch to heat the ring gear.
    - c. Ensure that ring gear (4) orientation is correct and quickly install the ring gear onto flywheel (2).
-

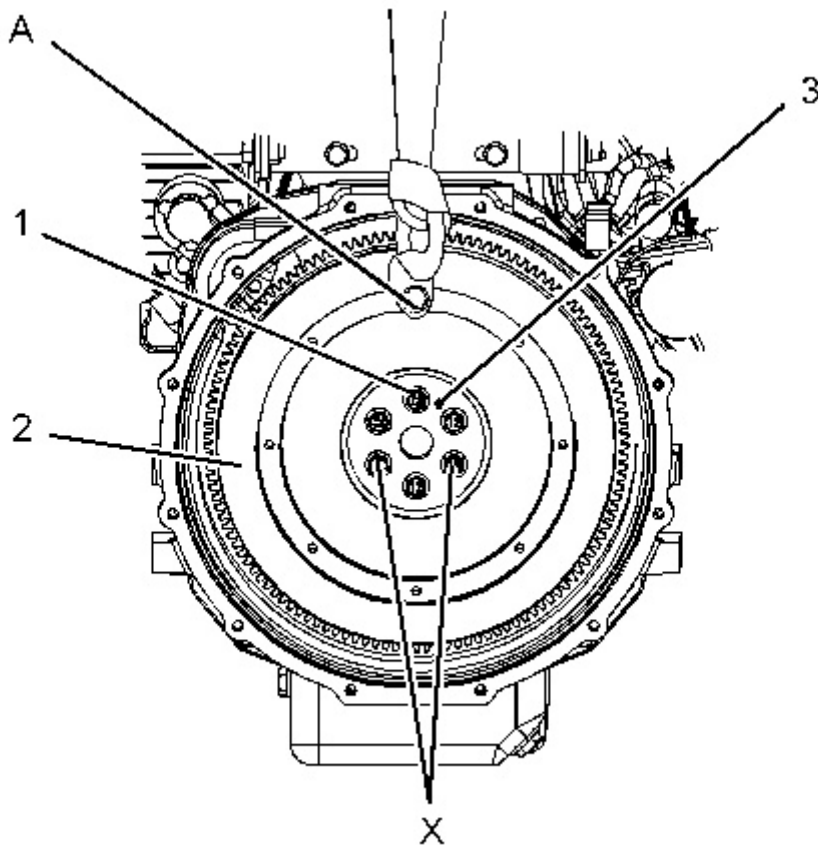


Illustration 4

g03795183

2. Thoroughly clean the flywheel housing. Inspect the crankshaft rear seal for leaks. If crankshaft rear seal has any oil leaks, replace the crankshaft rear seal. Refer to Disassembly and Assembly, "Crankshaft Rear Seal - Remove and Install" for the correct procedure.
3. Install Tooling (B) to Positions (X) in the crankshaft.
4. Install Tooling (A) and a suitable lifting device to flywheel (2). The weight of the flywheel is approximately 42 kg (93 lb).
5. Position flywheel (2) onto Tooling (B).

Ensure that roll pin (3) is installed to the crankshaft and that the roll pin is free from damage. Align the hole in the flywheel with the roll pin in the crankshaft.

6. Install bolts (1) finger tight.
7. Remove Tooling (B) and install the two remaining bolts (1).
8. Use a suitable tool to prevent flywheel (2) from rotating. Tighten bolts (1) to a torque of 74 N·m (54 lb ft).
9. Remove Tooling (A) and the lifting device from the flywheel.

**End By:**

- a. Install the primary speed/timing sensor. Refer to Disassembly and Assembly, "Primary Engine Speed/Timing Sensor - Remove and Install" for the correct procedure.
  - b. Install the electric starting motor. Refer to Disassembly and Assembly, "Electric Starting Motor - Remove and Install" for the correct procedure.
-

Product: INDUSTRIAL ENGINE  
Model: C2.2 INDUSTRIAL ENGINE G43  
Configuration: C2.2 Industrial Engine G4300001-UP

## **Disassembly and Assembly C1.7 and C2.2 Industrial Engines**

Media Number -M0067512-03

Publication Date -01/09/2015

Date Updated -23/01/2018

i06061496

# **Crankshaft Rear Seal - Remove and Install**

SMCS - 1161-010

S/N - G431-UP

S/N - J261-UP

## **Removal Procedure**

### **Start By:**

- a. Remove the flywheel housing. Refer to Disassembly and Assembly, "Flywheel housing- Remove and Install" for the correct procedure.

---

### **NOTICE**

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

---

---

### **NOTICE**

**Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.**

**Dispose of all fluids according to local regulations and mandates.**

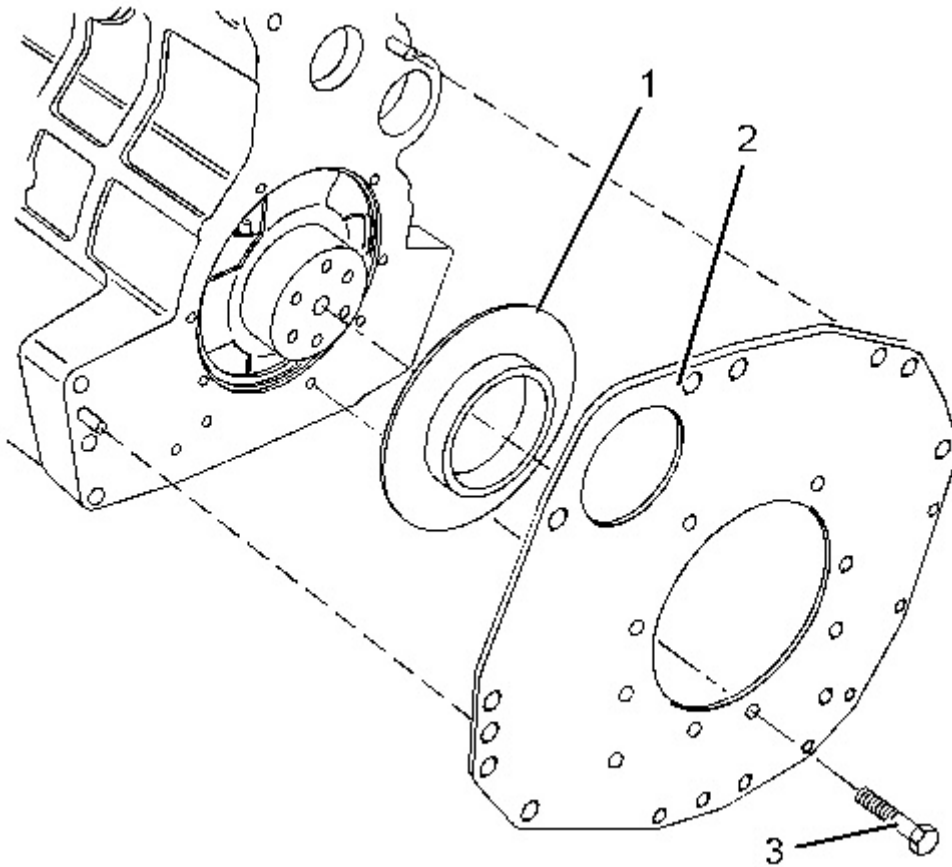


Illustration 1

g03338351

1. Remove bolts (3) and remove the back plate (2) from the cylinder block.
2. Remove crankshaft rear seal (1) from the cylinder block. Discard the crankshaft oil seal.

## Installation Procedure

Table 1

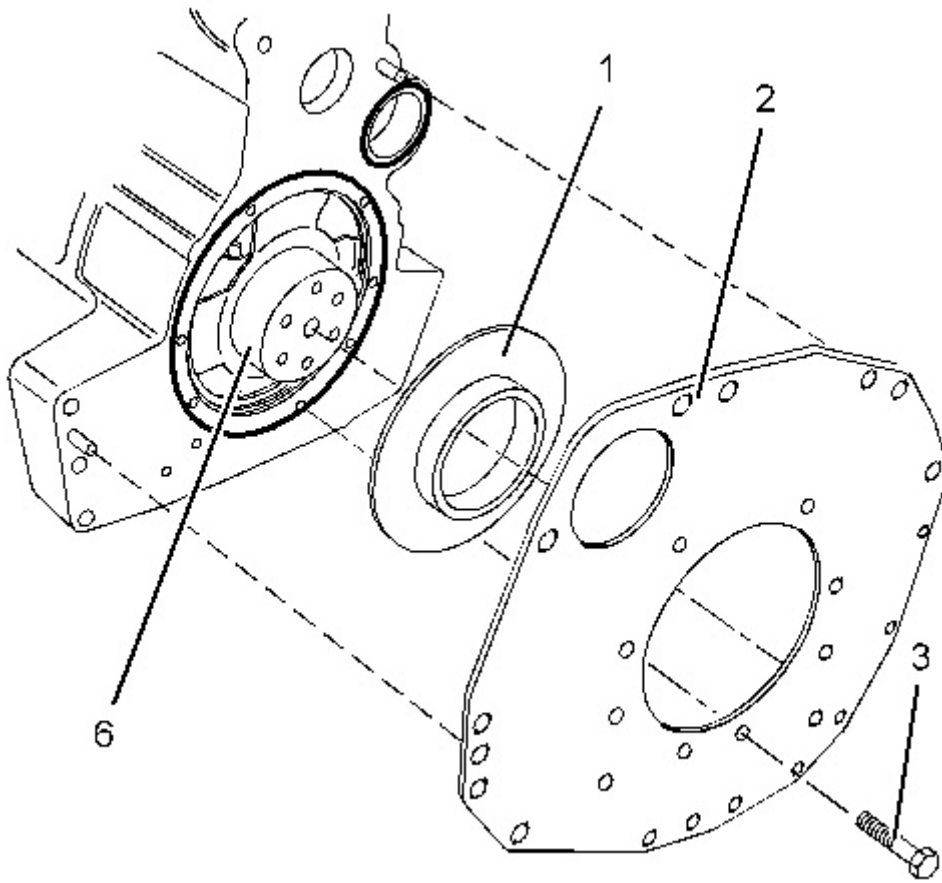
Required Tools			
Tool	Part Number	Part Description	Qty
A	4C-9612	Silicone Sealant	1

### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**





---

Illustration 2

g03338352

---

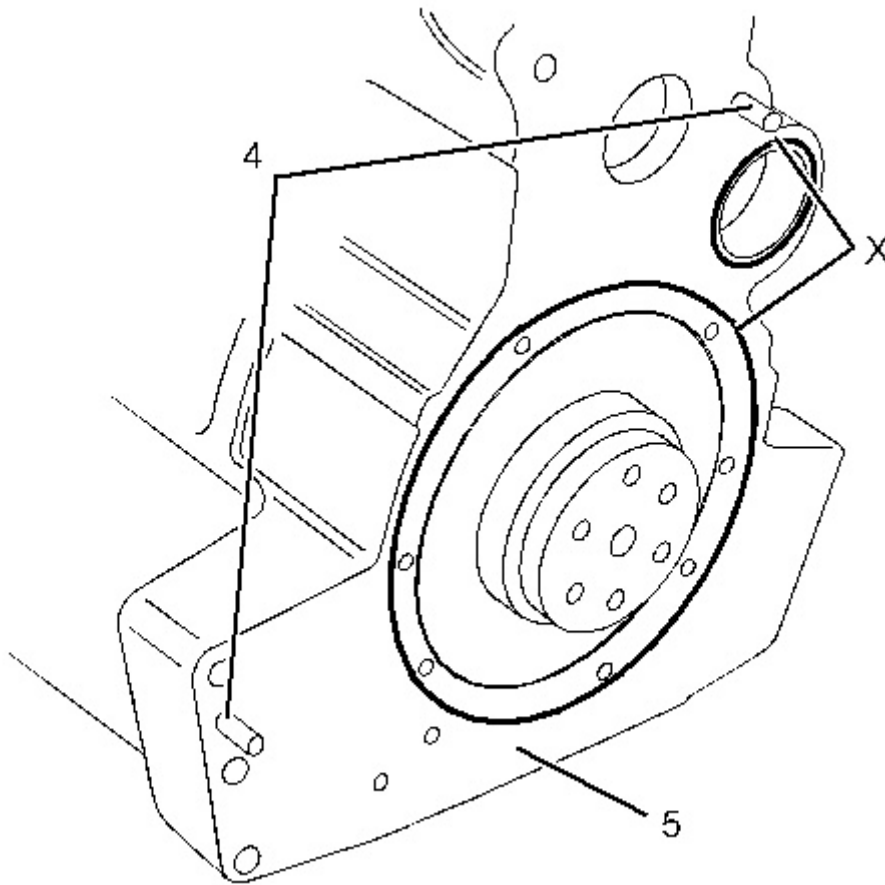


Illustration 3

g03338637

1. Ensure that the gasket surface of cylinder block (5) is clean and free from damage. Inspect dowels (4). If the dowels are damaged, replace the dowels.
2. Apply a continuous bead of Tooling (A) to the rear face of cylinder block (5) in Positions (X).
3. Ensure that the gasket surface of the back plate (2) is clean and free from damage.
4. Ensure that crankshaft flange (6) is clean and free from damage. Reclaiming a crankshaft flange that has a worn seal surface, or a damaged seal surface by installing a wear sleeve. Refer to Disassembly and Assembly, "Crankshaft Wear Sleeve (Rear) - Remove and Install" for the correct procedure.
5. Apply clean engine lubricating oil to the flange of crankshaft (6) around the running surface of crankshaft rear seal.
6. Align a new crankshaft rear seal (1) with the flange of crankshaft (6). Carefully install crankshaft rear seal (1) onto the crankshaft flange.
7. Align the back plate (2) to dowels (4). Install the back plate (2) and install bolts (3) to cylinder block (5) hand tight.
8. Tighten bolts (3) to a torque of 78 N·m (57 lb ft).

**End By:**

- a. Install the flywheel housing. Refer to Disassembly and Assembly, "Flywheel Housing - Remove and Install" for the correct procedure.
-

Product: INDUSTRIAL ENGINE  
Model: C2.2 INDUSTRIAL ENGINE G43  
Configuration: C2.2 Industrial Engine G4300001-UP

## **Disassembly and Assembly C1.7 and C2.2 Industrial Engines**

Media Number -M0067512-03

Publication Date -01/09/2015

Date Updated -23/01/2018

i06843962

# **Crankshaft Wear Sleeve (Rear) - Remove and Install**

SMCS - 1161-010-ZV

## **Removal Procedure**

### **Start By:**

- a. Remove the crankshaft rear seal. Refer to Disassembly and Assembly, "Crankshaft Rear Seal - Remove and Install" for the correct procedure.

---

### **NOTICE**

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

---

**Note:** Wear sleeves are used to reclaim worn seal surfaces or damaged seal surfaces. Wear sleeves are not original equipment.

---

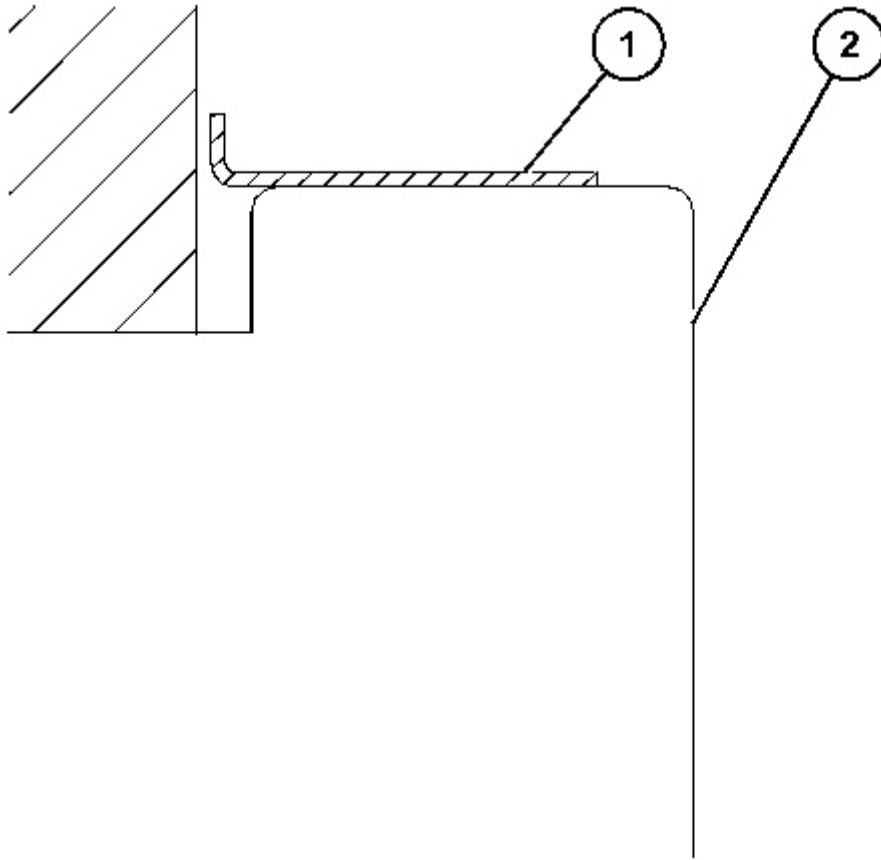


Illustration 1

g06044741

Sectional view of the crankshaft and of the wear sleeve

1. Use a sharp tool to score a deep line across crankshaft wear sleeve (1).

**Note: Take care to avoid damaging the crankshaft.**

2. Insert a thin blade between crankshaft wear sleeve (1) and crankshaft (2) below the scored line. The crankshaft wear sleeve will separate along the line.
3. Remove crankshaft wear sleeve (1) from crankshaft (2).

## Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-8846	Liquid Gasket	1

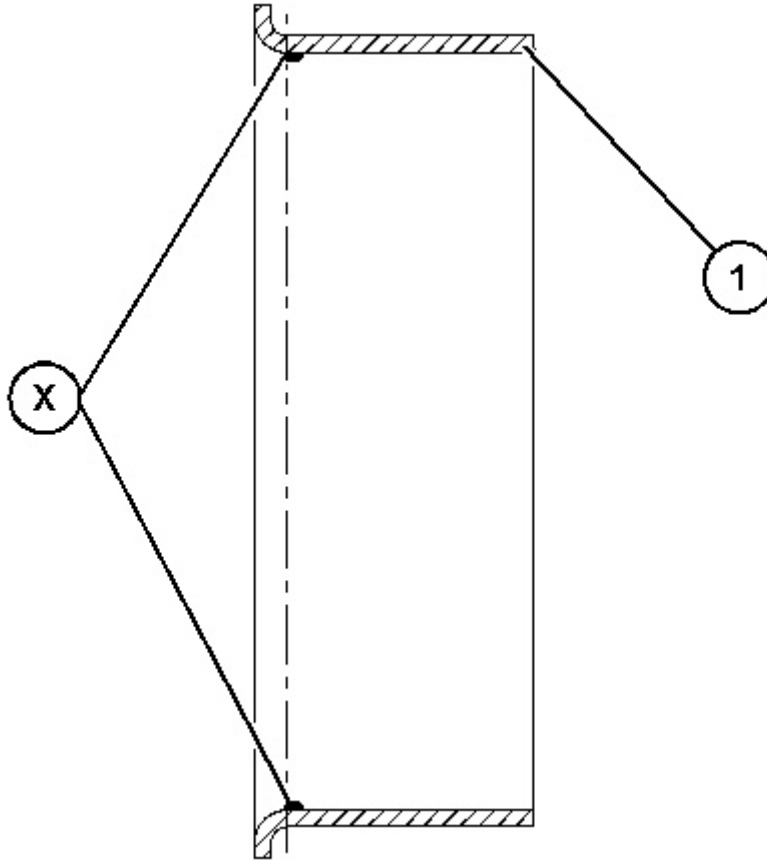
### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

---

1. Ensure that the palm of the crankshaft is thoroughly clean and dry. Remove any areas of raised damage.
- 



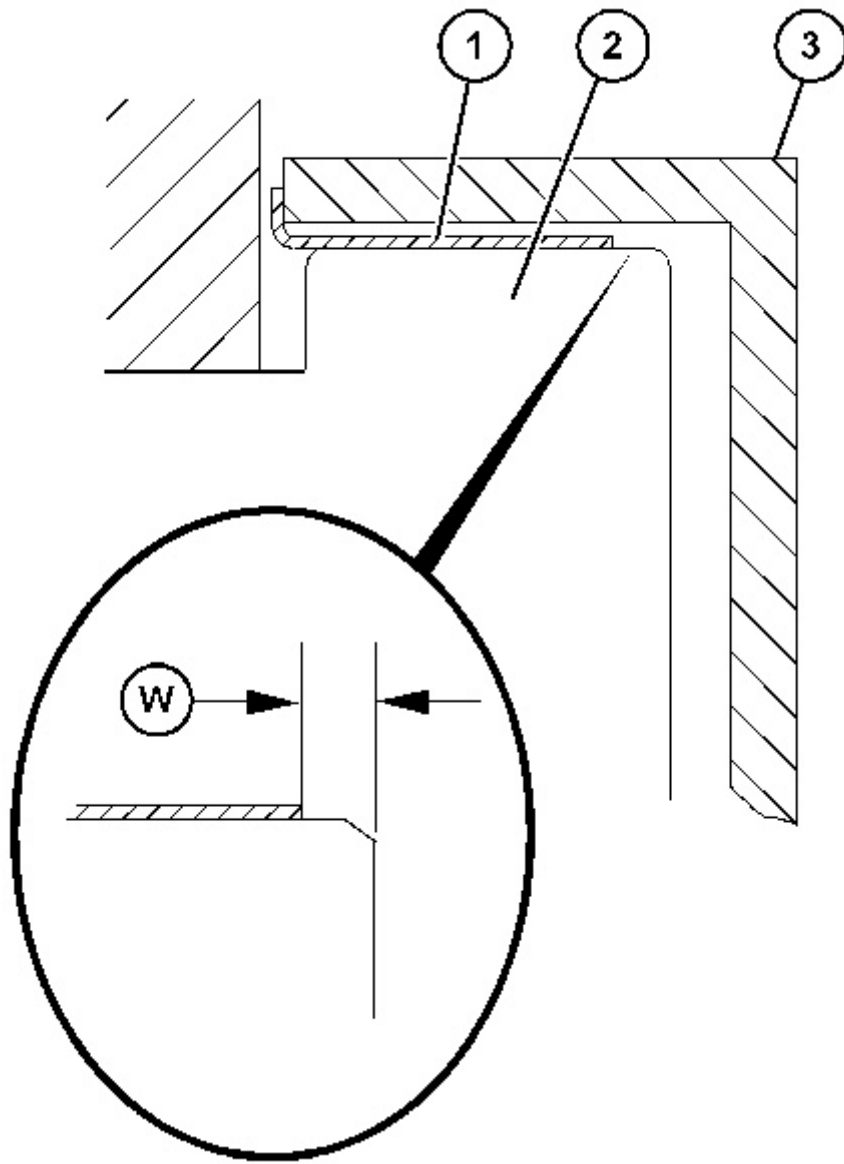
---

Illustration 2

g06044752

Sectional view of the wear sleeve

2. Apply a small continuous bead of Tooling (A) to the inner surface of crankshaft wear sleeve (1) at Position X. Apply the bead of Tooling (A) 5.00 mm (0.2 inch) from the flange end of the crankshaft wear sleeve.
-



---

Illustration 3

g06044759

Sectional view of the crankshaft, the wear sleeve, and the installation tool

---

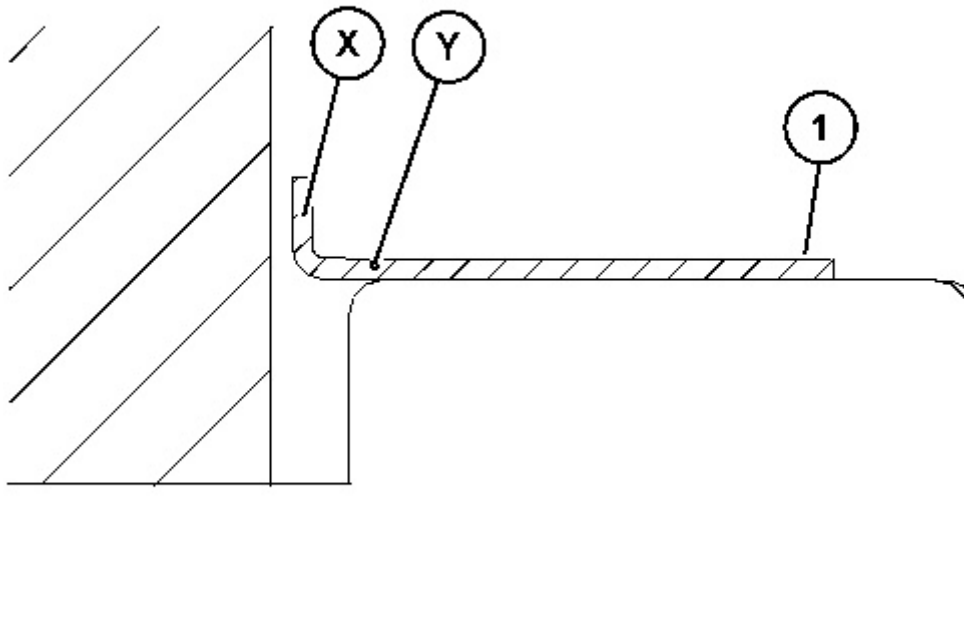


Illustration 4

g06045368

Sectional view of the crankshaft and of the wear sleeve showing tear off groove (Y)

3. Align crankshaft wear sleeve (1) with crankshaft (2). Position installation tool (3) that is provided with the crankshaft wear sleeve over the crankshaft. Use a hammer to drive the crankshaft wear sleeve onto the crankshaft. Ensure that Dimension (W) is 7.5 mm (0.295 inch).

**Note:** Dimension (W) is the distance from the edge of the crankshaft wear sleeve from the rear face of the crankshaft.

4. Remove installation tool (3).
5. If necessary, cut flange (X) of wear sleeve (1) and use long nose pliers to tear the flange along the tear off Groove (Y).
6. Ensure that crankshaft wear sleeve (1) has no rough edges.

**End By:**

- a. Install a new crankshaft rear seal. Refer to Disassembly and Assembly, "Crankshaft Rear Seal - Remove and Install" for the correct procedure.



Product: INDUSTRIAL ENGINE  
Model: C2.2 INDUSTRIAL ENGINE G43  
Configuration: C2.2 Industrial Engine G4300001-UP

## **Disassembly and Assembly C1.7 and C2.2 Industrial Engines**

Media Number -M0067512-03

Publication Date -01/09/2015

Date Updated -23/01/2018

i06061520

# **Flywheel Housing - Remove and Install**

SMCS - 1157-010

S/N - G431-UP

S/N - J261-UP

## **Removal Procedure**

### **Start By:**

- a. Remove the primary engine speed/timing sensor. Refer to Disassembly and Assembly, "Primary Engine Speed/Timing Sensor - Remove and Install" for the correct procedure.
- b. Remove the clean emissions module. Refer to Disassembly and Assembly, "Clean Emissions Module - Remove and Install" for the correct procedure.
- c. Remove the flywheel. Refer to Disassembly and Assembly, "Flywheel - Remove and Install" for the correct procedure.

---

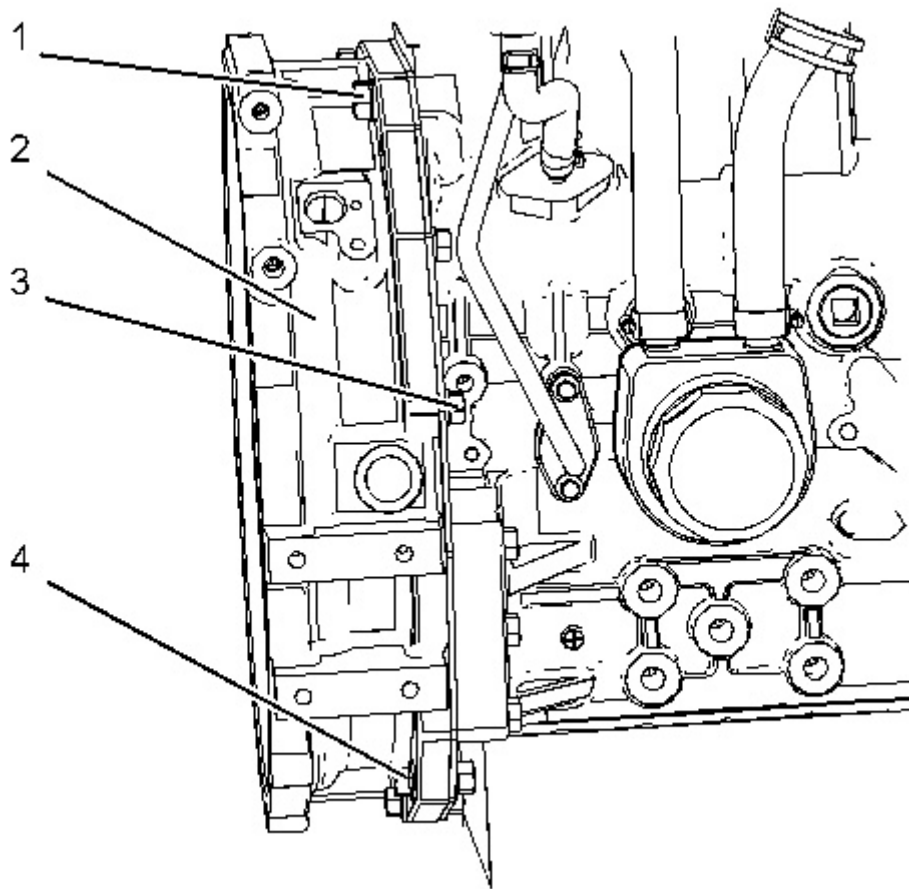
### **NOTICE**

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

---

---

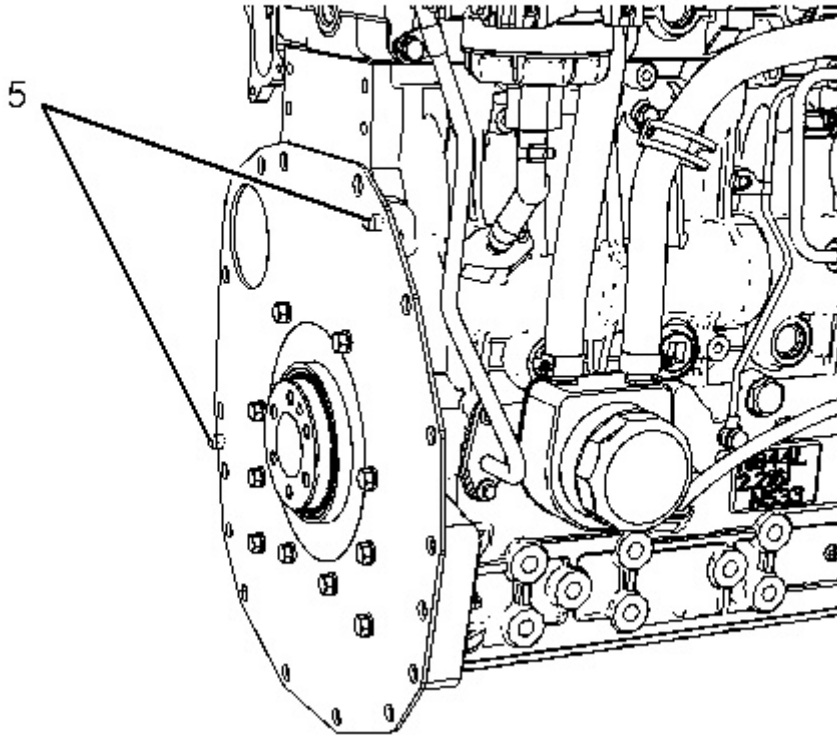


---

Illustration 1

g03795678

---



---

Illustration 2

g03795709

1. Use a suitable tooling in order to support the engine.
2. Install a suitable lifting device to the flywheel housing. Support the weight of the housing. The weight of the flywheel housing is approximately 30 kg (66 lb).
3. Remove bolts (1) from flywheel housing (2).
4. Remove bolts (3) from flywheel housing (2).
5. Remove nuts and bolts (4) from flywheel housing (2).
6. Use the lifting device to remove flywheel housing (2) from the engine.
7. If necessary, remove dowel (5) and dowel (3) from the cylinder block. Do not remove the dowels unless the dowels are damaged.

## Installation Procedure

---

### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

- 
1. Use a suitable lifting device to align flywheel housing (2) to dowels (5) and install the flywheel housing. The weight of the flywheel housing is approximately 30 kg (66 lb).
  2. Install bolts (1) and bolts (3) finger tight.
  3. Install nuts and bolts (4) finger tight.
  4. Tighten bolts (1) to a torque of 78 N·m (57.5 lb ft).
  5. Tighten bolts (3) to a torque of 44 N·m (32 lb ft).
  6. Tighten nuts and bolts (4) to a torque of 44 N·m (32 lb ft).
  7. Remove the lifting device from flywheel housing (2).

**End By:**

- a. Install the flywheel. Refer to Disassembly and Assembly, "Flywheel - Install" for the correct procedure.
  - b. Install the primary engine speed/timing sensor. Refer to Disassembly and Assembly, "Primary Engine Speed/Timing Sensor - Remove and Install" for the correct procedure.
  - c. Install the clean emissions module. Refer to Disassembly and Assembly, "Clean Emissions Module- Remove and Install" for the correct procedure.
-

Product: INDUSTRIAL ENGINE  
Model: C2.2 INDUSTRIAL ENGINE G43  
Configuration: C2.2 Industrial Engine G4300001-UP

## Disassembly and Assembly C1.7 and C2.2 Industrial Engines

Media Number -M0067512-03

Publication Date -01/09/2015

Date Updated -23/01/2018

i06062313

# Crankshaft Pulley - Remove and Install

SMCS - 1205-010

## Removal Procedure

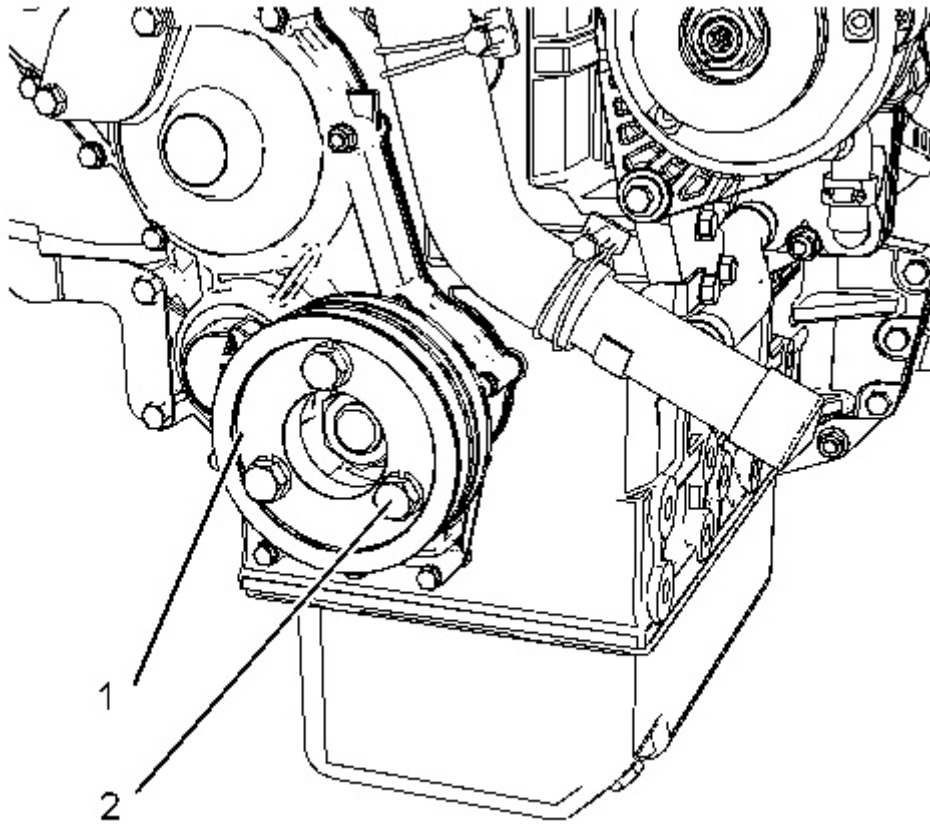
### Start By:

- a. Remove the V-belt. Refer to Disassembly and Assembly, "V-Belts - Remove and Install" for the correct procedure.

Table 1

Required Tools			
Tool	Part Number	Description	Qty
A	8S-2264	Puller	1
	-	Bolt	3

---

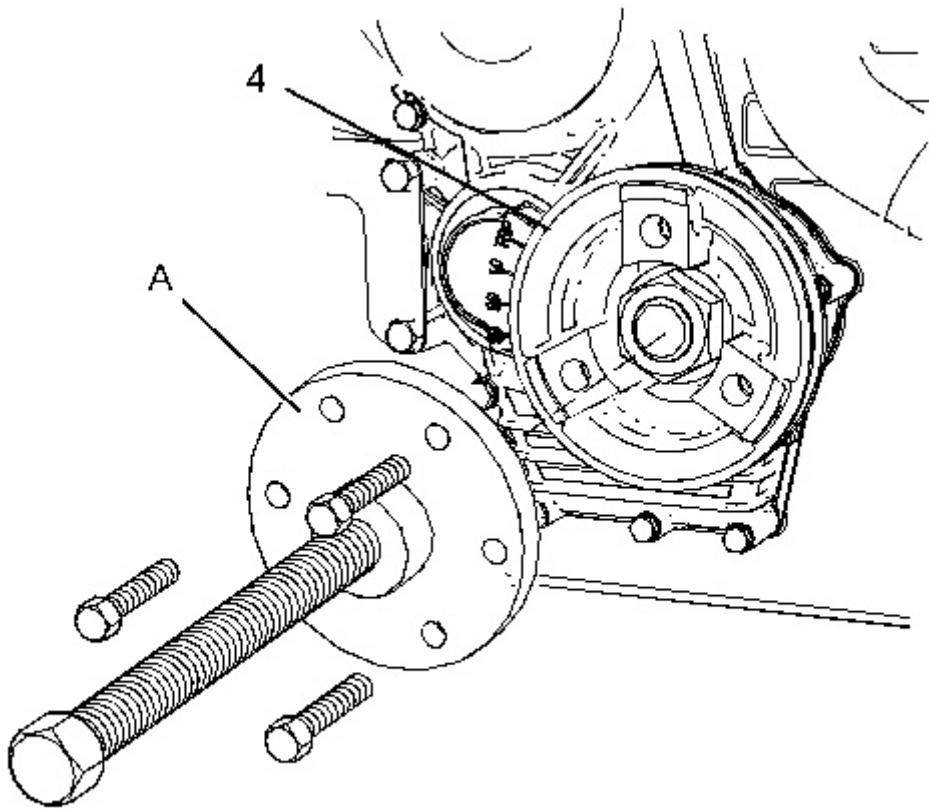


---

Illustration 1

g03796018

---

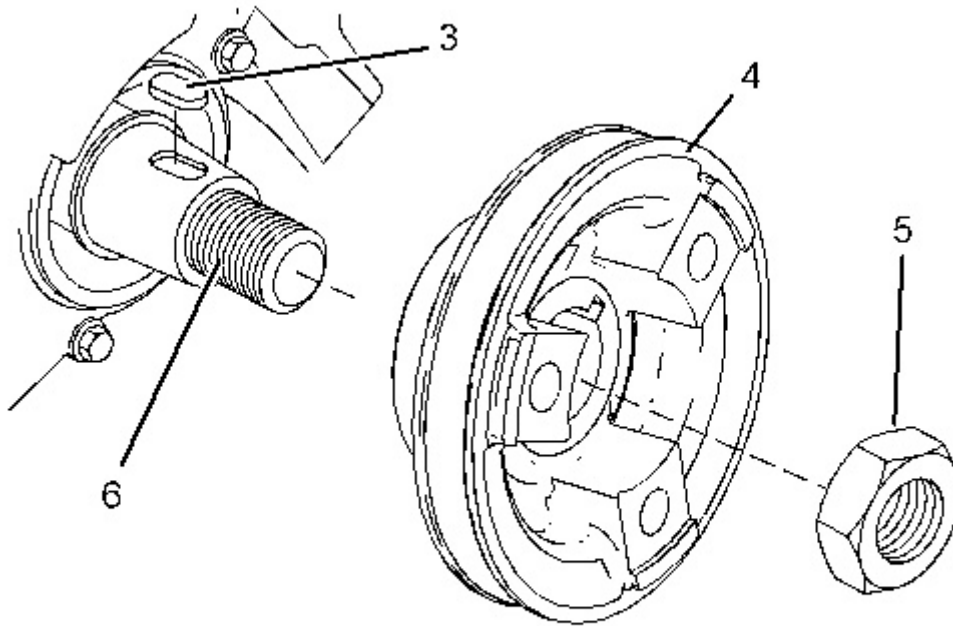


---

Illustration 2

g03796050

---



---

Illustration 3

g03796048

1. Remove bolts (2) from outer pulley (1). Remove outer pulley (1) from engine assembly.
2. Loosen nut (5).

**Note:** Do not remove the nut at this time.

3. Install Tooling (A) to crankshaft pulley (5). Use Tooling (A) in order to remove crankshaft pulley (5) from crankshaft (6).
4. Remove Tooling (A).
5. Remove nut (5).
6. Remove pulley (4) from crankshaft (6).
7. Remove woodruff key (3) from crankshaft (6).

## Installation Procedure

---



Thank you so much for reading.  
Please click the “Buy Now!”  
button below to download the  
complete manual.



After you pay.

You can download the most  
perfect and complete manual in  
the world immediately.

Our support email:

[ebooklibonline@outlook.com](mailto:ebooklibonline@outlook.com)