

# **10. A.C. GENERATOR/STARTER CLUTCH**

---

---

## **A.C. GENERATOR/STARTER CLUTCH**

---

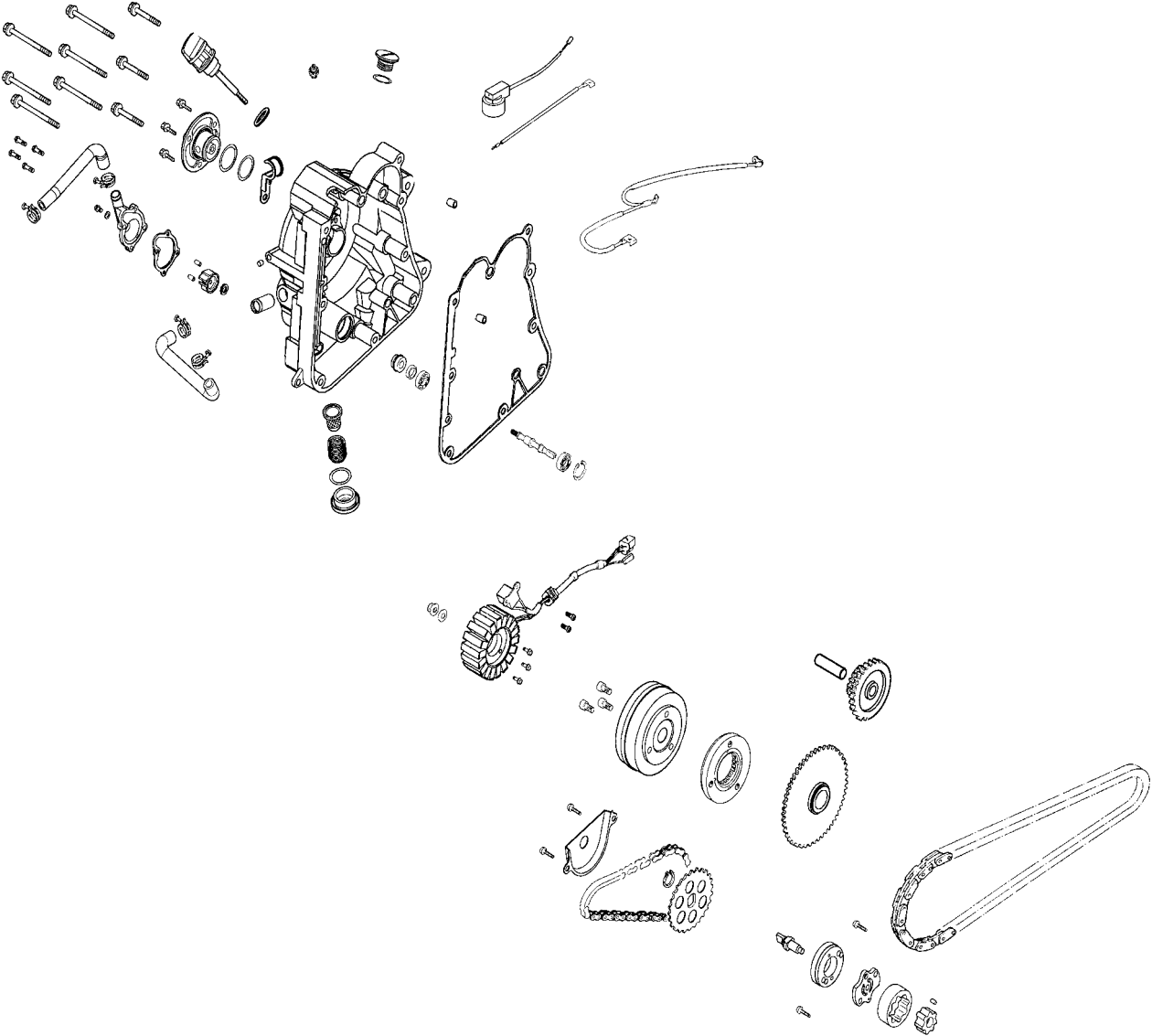
SCHEMATIC DRAWING-----	10-1
SERVICE INFORMATION-----	10-2
TROUBLESHOOTING -----	10-2
RIGHT CRANKCASE COVER REMOVAL-----	10-3
STATOR REMOVAL-----	10-3
FLYWHEEL REMOVAL-----	10-4
STARTER CLUTCH -----	10-4
FLYWHEEL INSTALLATION -----	10-8
STATOR INSTALLATION -----	10-9
RIGHT CRANKCASE COVER INSTALLATION -----	10-9

**10**

**10. A.C. GENERATOR/STARTER CLUTCH**

---

**SCHEMATIC DRAWING**



## 10. A.C. GENERATOR/STARTER CLUTCH

---

### SERVICE INFORMATION

#### GENERAL INSTRUCTIONS

- All servicing operations and inspections in this section can be made with the engine installed.
- Drain the coolant before removing the right crankcase cover.
- Be careful not to drain the coolant when the engine temperature is high. (Perform this operation when the engine is cold.)
- Drain the coolant into a clean container.
- Drain the engine oil into a clean container before removing the right crankcase cover.
- When the right crankcase cover is installed, fill with the recommended engine oil and coolant. Then, bleed air from the water jacket.

#### SPECIFICATIONS

Engine oil: SAE15W/40#  
API-SJ

Oil capacity at change: 0.9 liter

Coolant: distilled water + coolant concentrate

#### SPECIAL TOOLS

Flywheel puller                    E003  
Flywheel holder                    E021

#### SPECIFICATIONS

Item	Standard (mm)	Service Limit (mm)
Starter driven gear I.D.	22.026~22.045	22.15mm
Starter driven gear O.D.	42.195~42.208	41.5mm

#### TORQUE VALUES

Flywheel nut : 53.9~63.7N-m

#### TROUBLESHOOTING

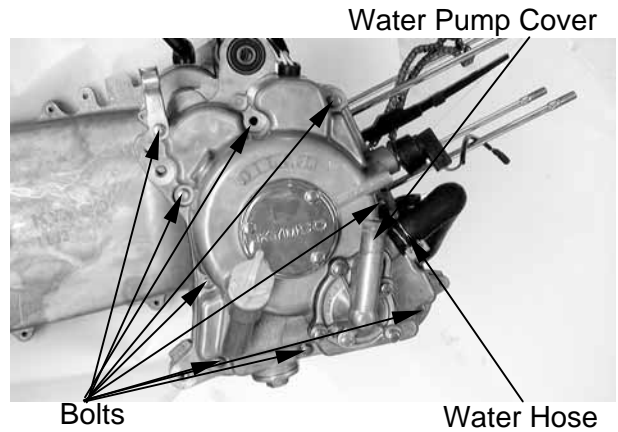
Refer to page 1-19 for A.C. generator troubleshooting.

##### **Starter motor rotates but engine does not start**

- Faulty starter clutch
- Starter motor rotates reversely
- Weak battery

### RIGHT CRANKCASE COVER REMOVAL

Disconnect the water hoses from the water pump cover. (⇒chapter 5)  
 Disconnect the water hoses from the right crankcase cover.  
 Remove the nine bolts attaching the right crankcase cover and the cover.  
 Remove right crankcase cover.

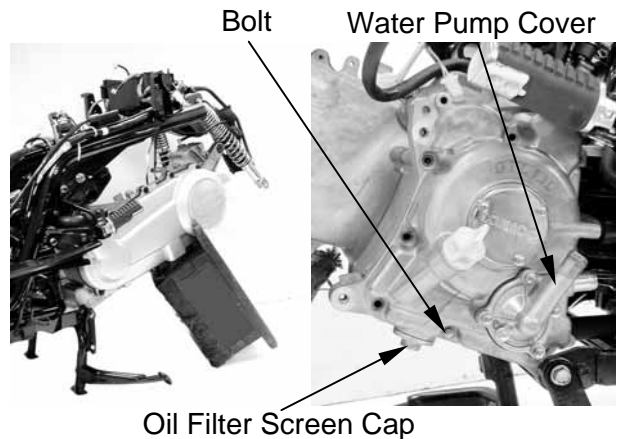


### RIGHT CRANKCASE COVER REMOVAL(ENGINE INSTALLED)

Remove met-in box and frame body cover. (⇒2-6)  
 Disconnect the water hoses from the water pump cover. (⇒chapter 5)  
 Disconnect the water hoses from the right crankcase cover. (⇒chapter 5)  
 Disconnect A.C. generator wire coupler and oil pressure switch wire. (⇒chapter 5)  
 Remove the eight bolts attaching the right crankcase cover and the cover.  
 Remove the left and right rear shock absorber lower mount bolts. (⇒chapter 5)



Elevate the back of engine as possible by placing a suitable stand under the back of engine.  
 Remove the bolt between water pump cover and oil filter screen cap.  
 Remove right crankcase cover.

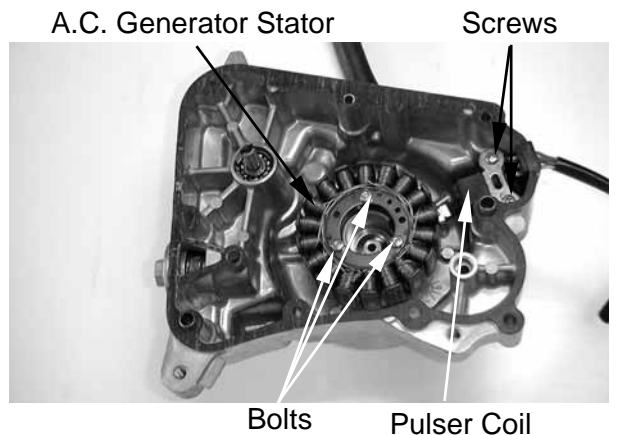


\* Support the machine securely so there is no danger of it falling over.

### STATOR REMOVAL

Remove the two pulser coil attaching screws and the pulser coil.  
 Remove the three A.C. generator stator bolts and the stator.

\* When removing the pulser coil and stator, be careful not to damage them to avoid shorted or broken wire.



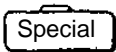
## 10. A.C. GENERATOR/STARTER CLUTCH

Remove the oil through and spring.

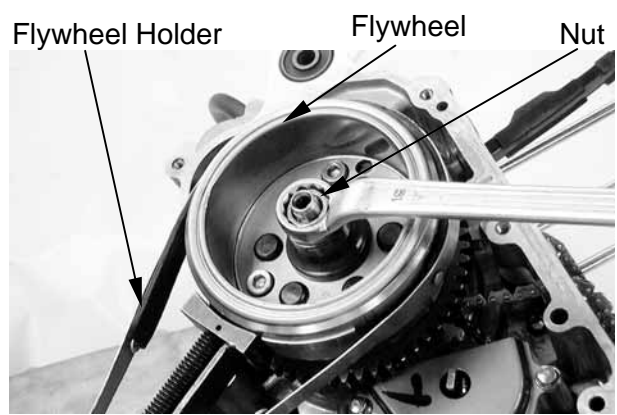


### FLYWHEEL REMOVAL

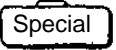
Hold the flywheel with a flywheel holder and remove the flywheel nut and washer.



Flywheel holder E021



Remove the flywheel with a flywheel puller.



Flywheel puller E003



### STARTER CLUTCH

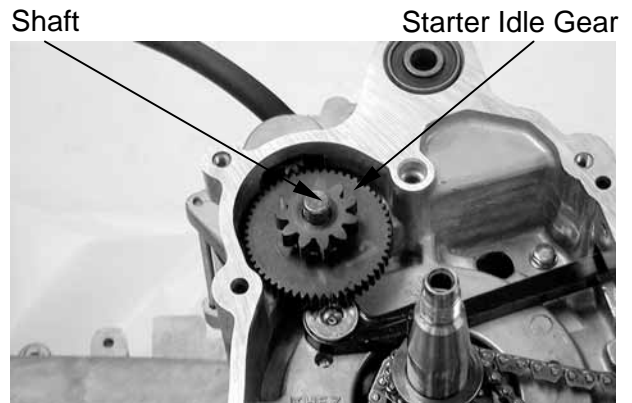
#### REMOVAL

Remove the starter driven gear.



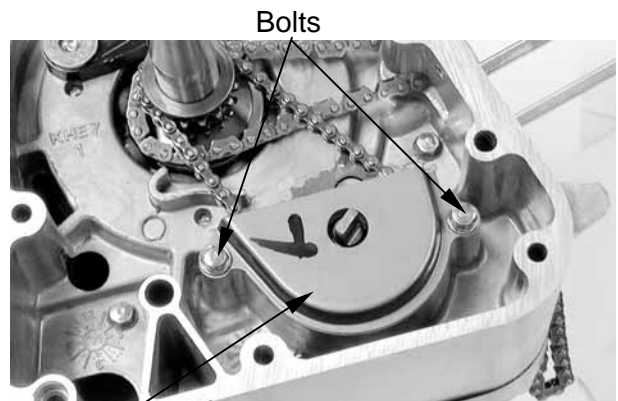
## 10. A.C. GENERATOR/STARTER CLUTCH

Remove the starter idle gear and shaft.

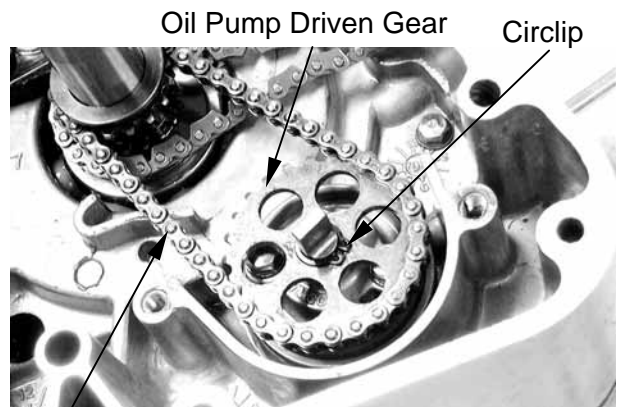


### OIL PUMP REMOVAL

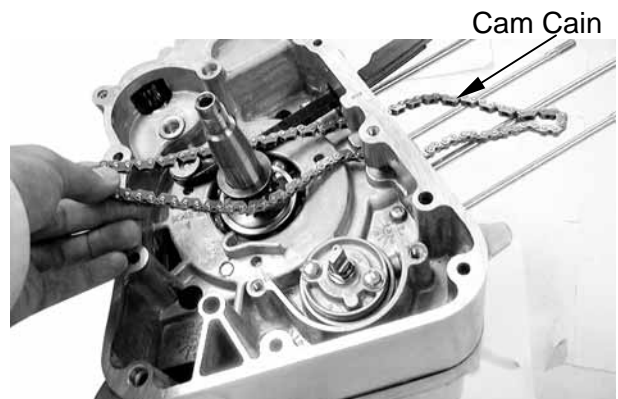
Remove the attaching bolts and oil separator cover.



Pry the circlip off and remove the oil pump driven gear, then remove the oil pump drive chain.

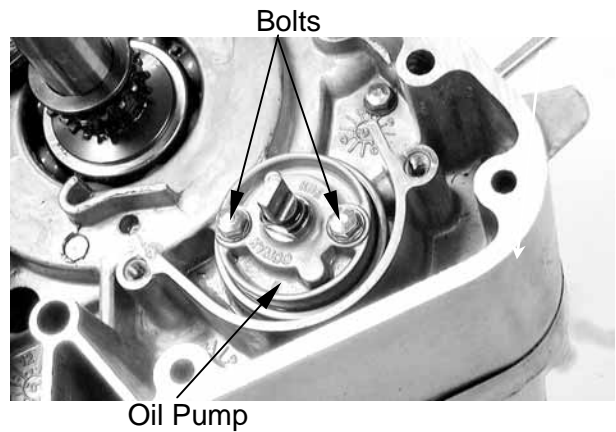


Remove the cam chain.



# 10. A.C. GENERATOR/STARTER CLUTCH

Remove the two oil pump bolts to remove the oil pump.

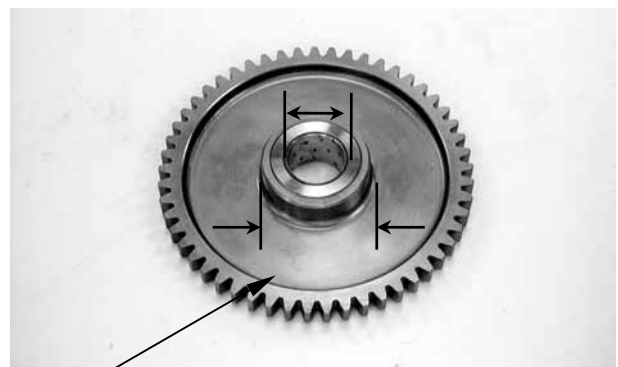


### INSPECTION

Inspect the starter driven gear for wear or damage.  
Measure the starter driven gear I.D. and O.D.

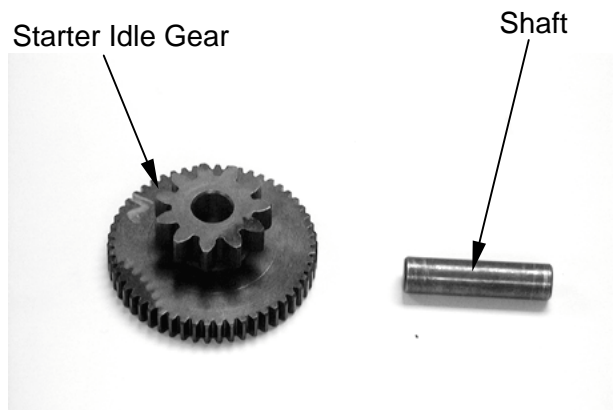
#### Service Limits:

- I.D. : 22.15mm replace if over
- O.D. : 41.50mm replace if below



Starter Driven Gear

Inspect the starter idle gear and shaft for wear or damage.



Inspect the starter one-way clutch for wear or damage.

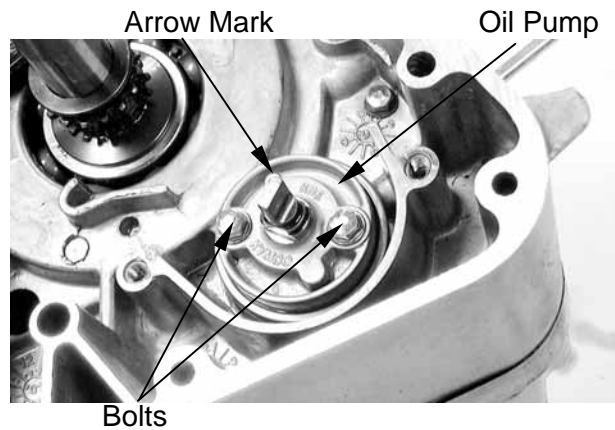


Starter One-way Clutch

# 10. A.C. GENERATOR/STARTER CLUTCH

## INSTALLATION

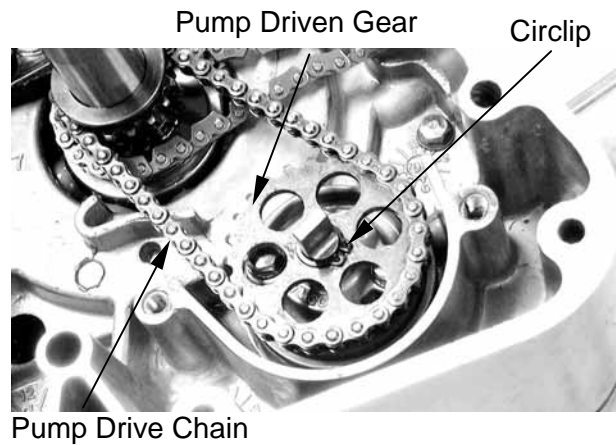
Install oil pump and tighten the two bolts.  
 Make sure that the pump shaft rotates freely.  
 The arrow of oil pump is upside.



Install cam chain.

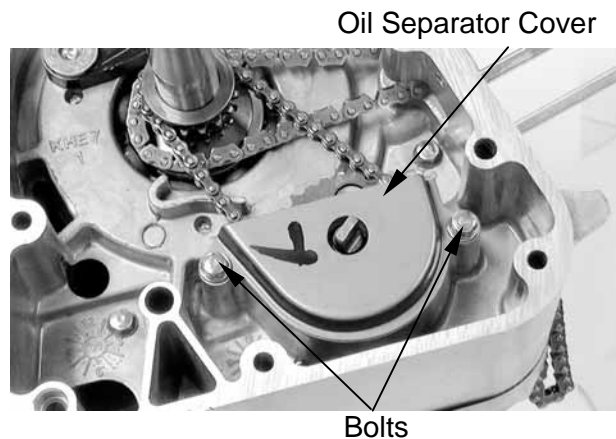


Install the pump drive chain and driven gear, then set the circlip securely on the pump shaft.



Install the oil separator cover properly.

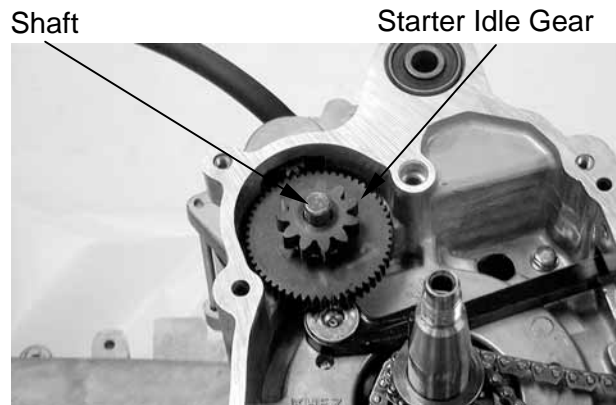
\* Fit the tab of the separator cover into the slit in the separator.



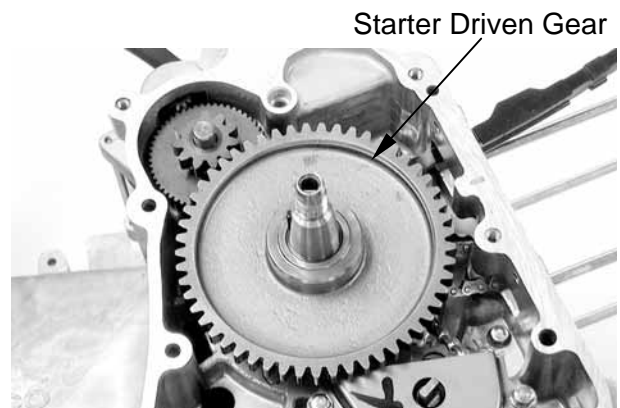


# 10. A.C. GENERATOR/STARTER CLUTCH

Install the starter idle gear and shaft.



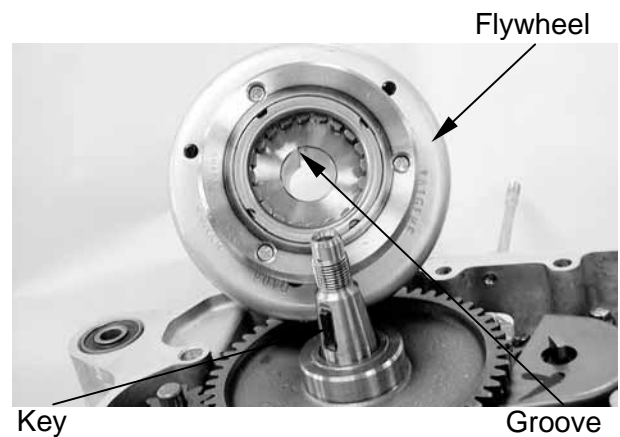
Install the starter driven gear onto the crankshaft.



## FLYWHEEL INSTALLATION

Install the flywheel onto the crankshaft by aligning the key on the crankshaft with the groove in the flywheel.

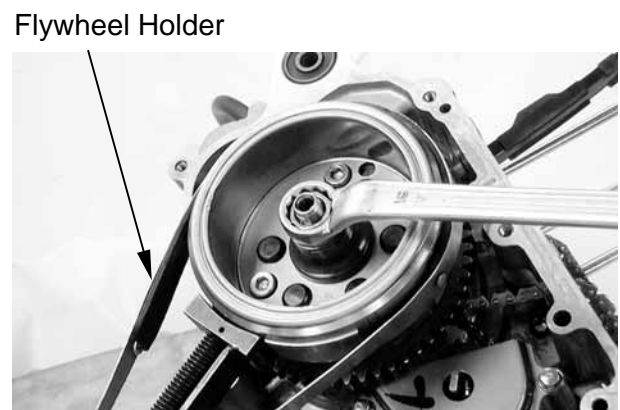
- \* 
  - Before installation, check and make sure that the inside of the flywheel is not contaminated.



Install washer and nut.  
 Hold the flywheel with the flywheel holder and tighten the flywheel nut.  
**Torque:** 53.9~63.7N-m  
 remove the flywheel nut and washer.

Special

Flywheel holder                      E021



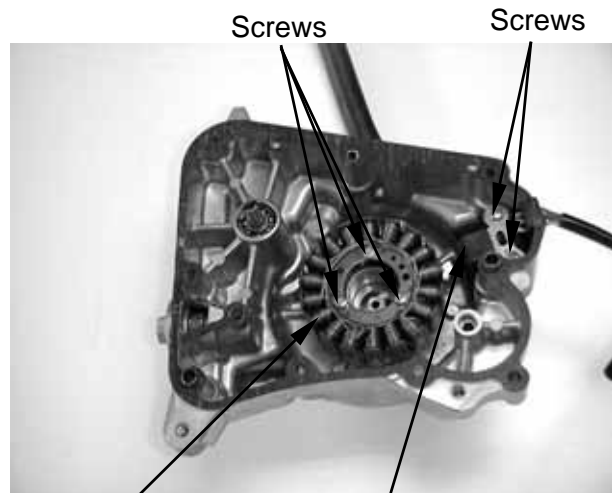
## STATOR INSTALLATION

Install the A.C. generator stator on the right crankcase cover and secure it with the three bolts.

Install the pulser coil on the right crankcase cover and secure it with the two screws.

Install the wire grommet in the groove in the right crankcase cover securely.

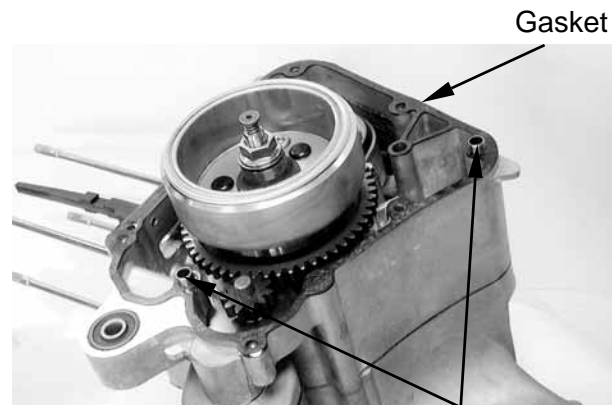
\* Be sure to route the stator wire under the pulser coil.



A.C. Generator Stator Pulser Coil

## RIGHT CRANKCASE COVER INSTALLATION

Install the two dowel pins and a new gasket.



Dowel Pins Right Crankcase Cover

Install the right crankcase cover over the crankcase, aligning the water pump shaft groove with the oil pump shaft.



Water Pump Shaft Oil Pump Shaft

Tighten the nine right crankcase cover bolts. Connect the water hoses to the right crankcase cover and water pump cover. Add the recommended engine oil. (⇒4-3) Fill the cooling system with the specified coolant. (⇒3-9)

\* Be sure to bleed air from the water jacket after filling the coolant.

