

11. ALTERNATOR/STARTER CLUTCH

COMPONENT LOCATION

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COMPONENT LOCATION



SERVICE INFORMATION

GENERAL

- This section covers service of the alternator stator, flywheel and starter clutch. All service can be done with the engine installed in the frame.
- Refer to procedures for alternator stator inspection (page 16-6).
- Refer to procedures for starter motor servicing (page 18-6).

SPECIFICATIONS

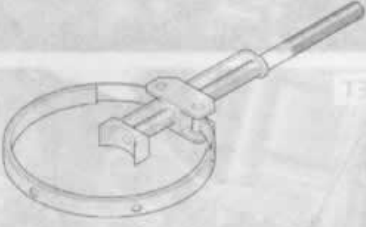
Unit: mm (in)		
ITEM	STANDARD	SERVICE LIMIT
Starter driven gear boss O.D.	51.699 – 51.718 (2.0354 – 2.0361)	51.684 (2.0348)

TORQUE VALUES

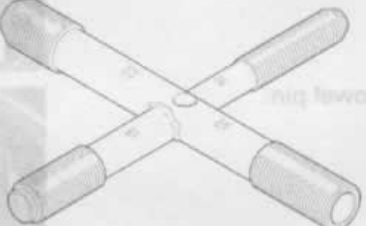
Alternator wire clamp socket bolt	9 N·m (0.9 kgf·m, 6.5 lbf·ft)	
Starter one-way clutch outer socket bolt	16 N·m (1.6 kgf·m, 12 lbf·ft)	Apply a locking agent to the threads
Flywheel flange bolt	113 N·m (11.5 kgf·m, 83 lbf·ft)	Apply oil to the threads
Alternator stator mounting socket bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	

TOOL

Flywheel holder
07725-0040000



Rotor puller
07733-0020001



TROUBLESHOOTING

Engine does not turn

- Faulty starter clutch
- Damaged reduction gear/shaft



STATOR REMOVAL

Remove the alternator wire grommet from the stator cover.

Remove the socket bolt and stator wire clamp.

ALTERNATOR COVER REMOVAL

Remove the following:

- Left side cover (page 3-4)
- Left crankcase rear cover (page 8-4)
- Starter motor (page 18-6)

Disconnect the alternator 3P (Natural) connector.



The alternator cover (stator) is magnetically attached to the flywheel, be careful during removal.

Remove the alternator cover SH bolts and alternator cover.

The engine oil will run out when the alternator cover is removed. Set a clean oil pan under the engine and add the recommended oil to the specified level after installation.



Remove the gasket and dowel pin.

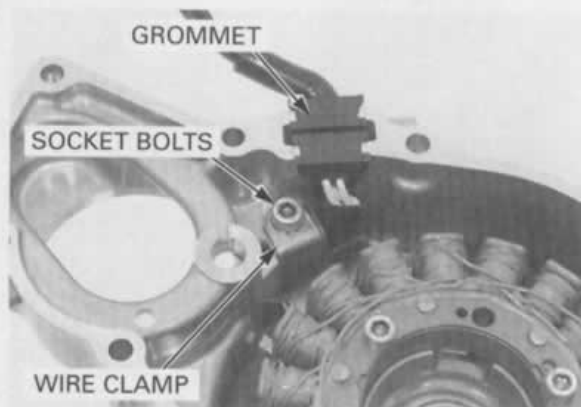


STATOR

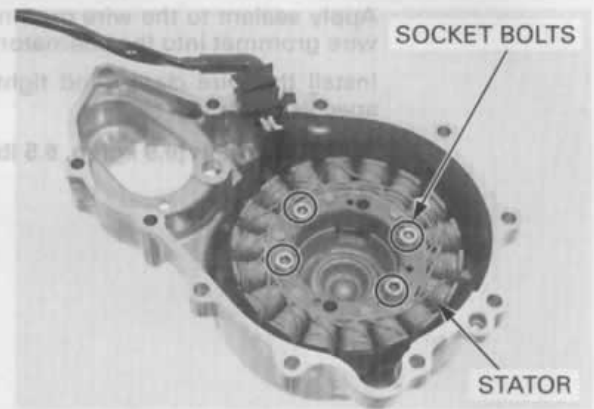
REMOVAL

Remove the alternator wire grommet from the alternator cover.

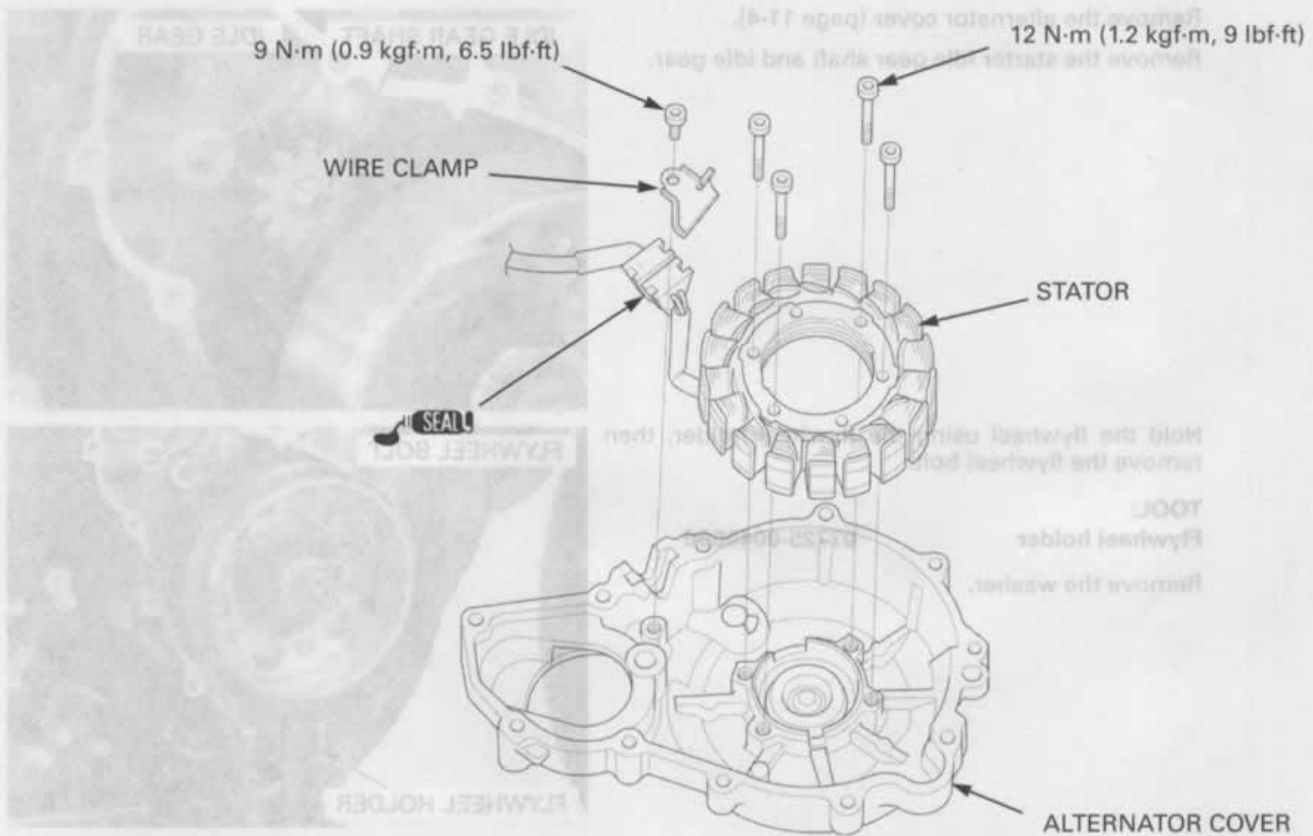
Remove the socket bolt and stator wire clamp.



Remove the socket bolts and stator.



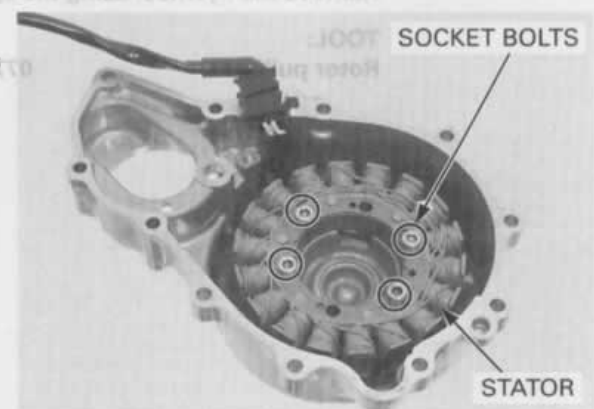
INSTALLATION



Install the stator into the alternator cover.

Install and tighten the stator mounting socket bolts to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

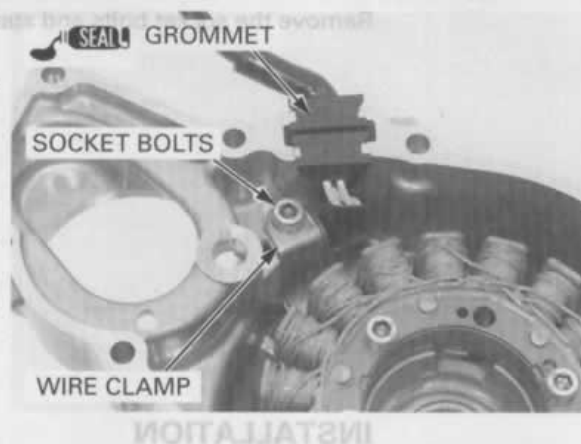


ALTERNATOR/STARTER CLUTCH

Apply sealant to the wire grommet, then install the wire grommet into the alternator groove securely.

Install the wire clamp and tighten the bolt to the specified torque.

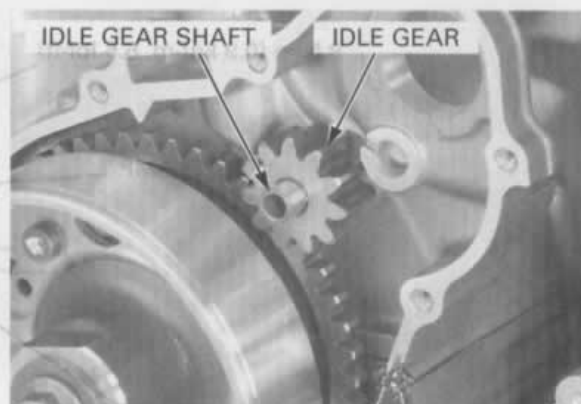
TORQUE: 9 N·m (0.9 kgf·m, 6.5 lbf·ft)



FLYWHEEL REMOVAL

Remove the alternator cover (page 11-4).

Remove the starter idle gear shaft and idle gear.



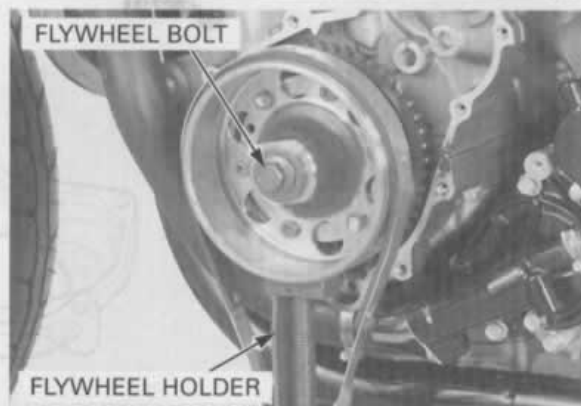
Hold the flywheel using the flywheel holder, then remove the flywheel bolt.

TOOL:

Flywheel holder

07725-0040000

Remove the washer.

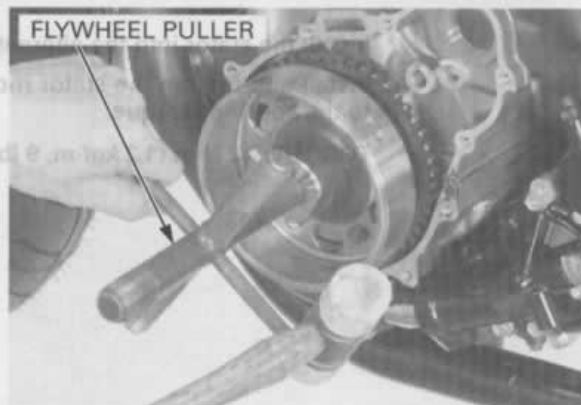


Remove the flywheel using the special tool.

TOOL:

Rotor puller

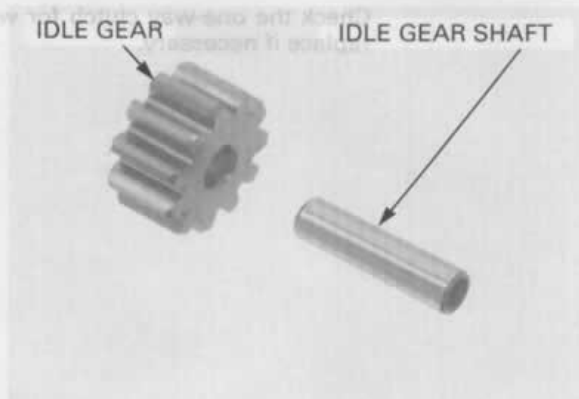
07733-0020001



Remove the woodruff key.



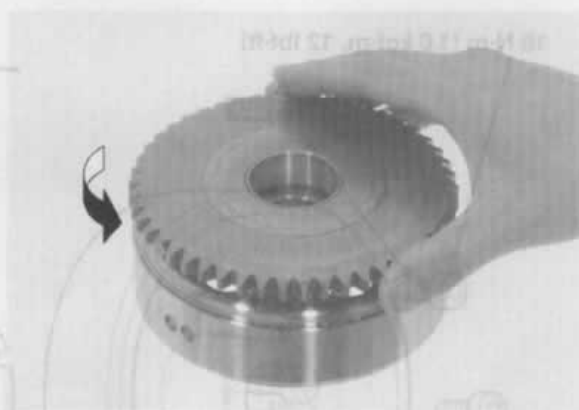
Check the starter idle gear and shafts for wear or damage.



STARTER CLUTCH

INSPECTION

Check the operation of the one-way clutch by turning the driven gear. You should be able to turn the driven gear counterclockwise smoothly, but the gear should not turn clockwise.



DISASSEMBLY

Remove the starter driven gear by turning it counterclockwise.

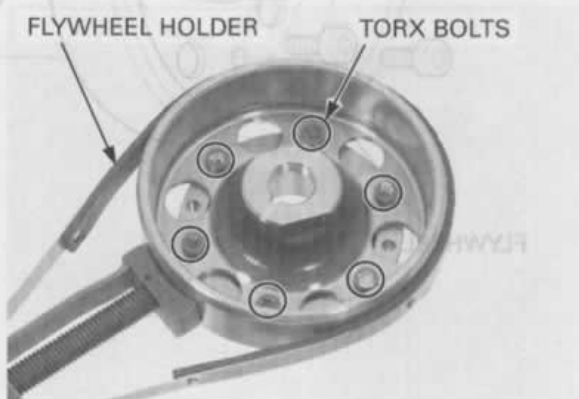
Hold the flywheel with a flywheel holder, and remove the starter clutch mounting socket bolts.

TOOL:

Flywheel holder

07725-0040000

Remove the starter one-way clutch assembly.

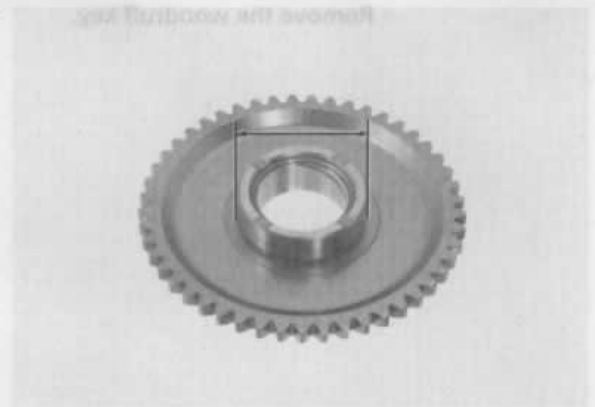


ALTERNATOR/STARTER CLUTCH

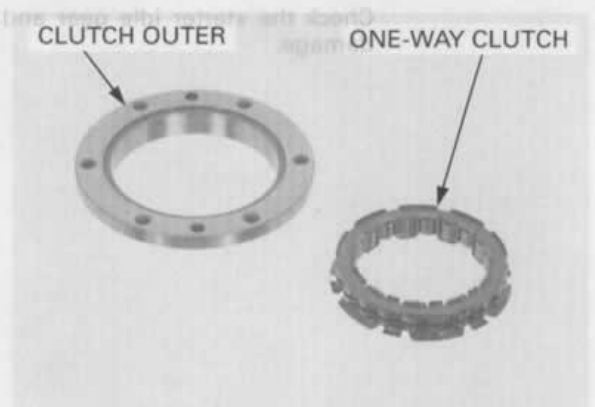
Check the starter driven gear for abnormal wear or damage.

Measure the starter driven gear boss O.D.

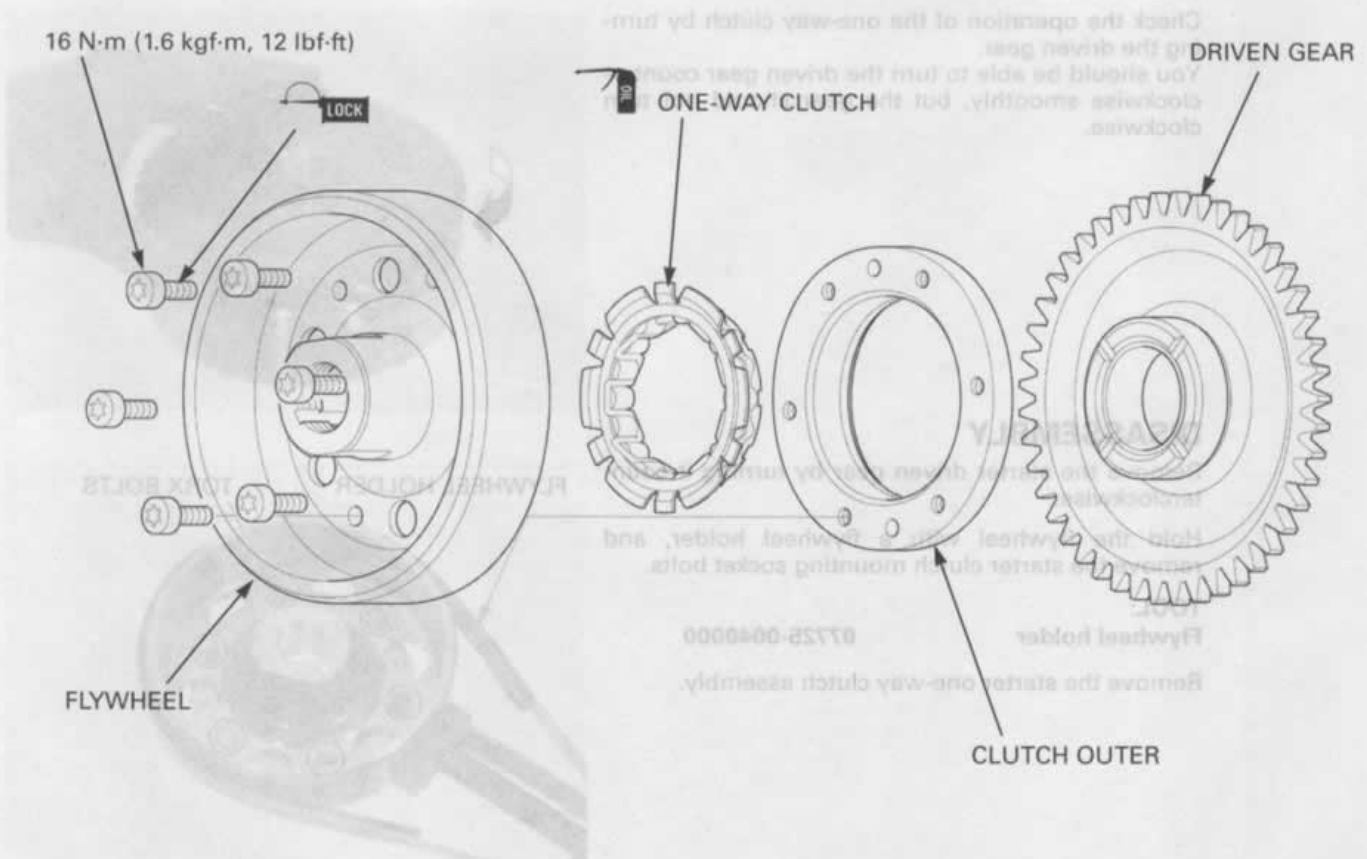
SERVICE LIMIT: 51.684 mm (2.0348 in)



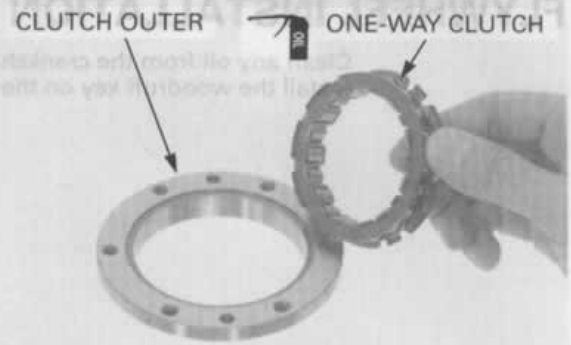
Check the one-way clutch for wear or damage and replace if necessary.



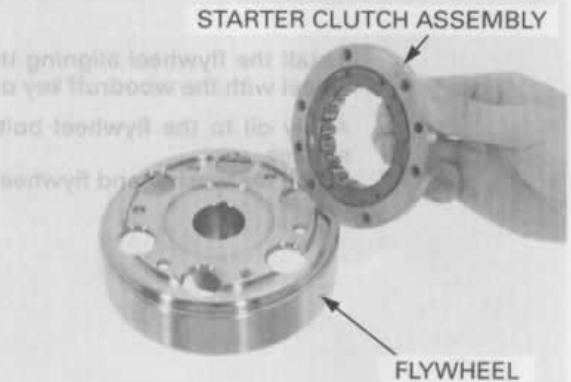
ASSEMBLY



Apply engine oil to the one-way clutch contacting surfaces.
Install the one-way clutch into the starter clutch outer with the flange side facing out.



Install the starter one-way clutch assembly onto the flywheel.



Apply a locking agent to the starter clutch outer mounting socket bolt threads.
Hold the flywheel with a flywheel holder, and tighten the starter clutch mounting socket bolts.

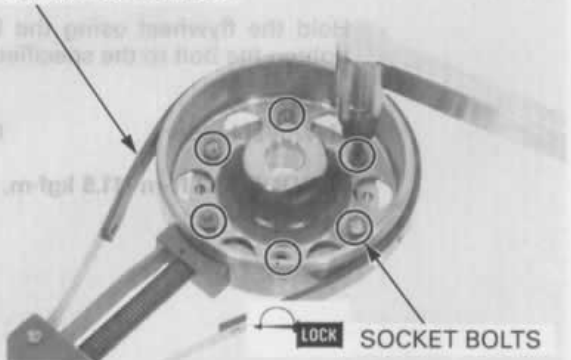
TOOL:

Flywheel holder

07725-0040000

TORQUE: 16 N·m (1.6 kgf·m, 12 lbf·ft)

FLYWHEEL HOLDER



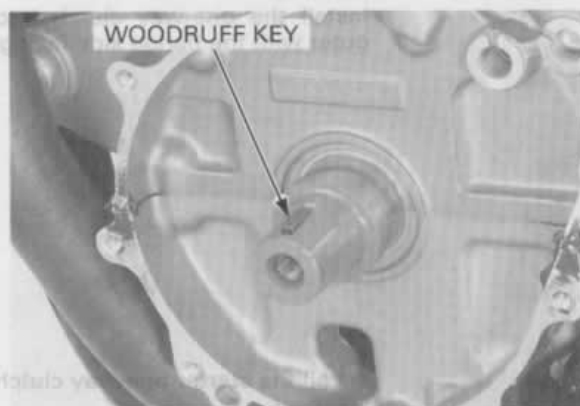
Install the starter driven gear into the one-way clutch while turning it counterclockwise.

Recheck the one-way clutch operation.
You should be able to turn the driven gear counterclockwise smoothly, but the gear should not turn clockwise.



FLYWHEEL INSTALLATION

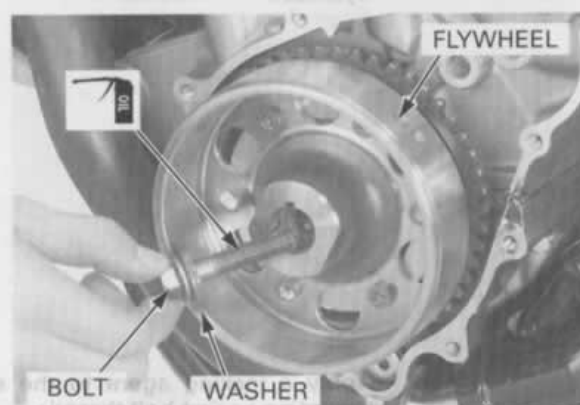
Clean any oil from the crankshaft taper.
Install the woodruff key on the crankshaft.



Install the flywheel aligning the key way in the flywheel with the woodruff key on the crankshaft.

Apply oil to the flywheel bolt threads and seating surface.

Install the washer and flywheel bolt.



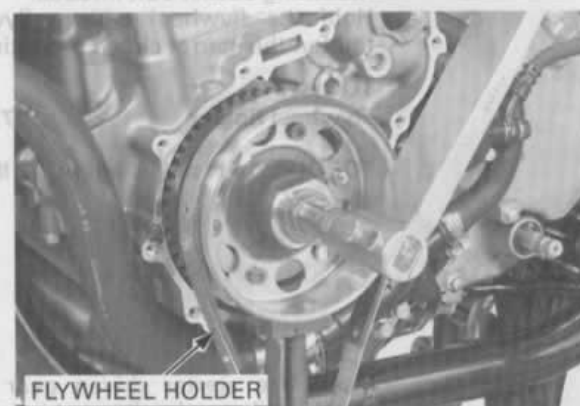
Hold the flywheel using the flywheel holder, then tighten the bolt to the specified torque.

TOOL:

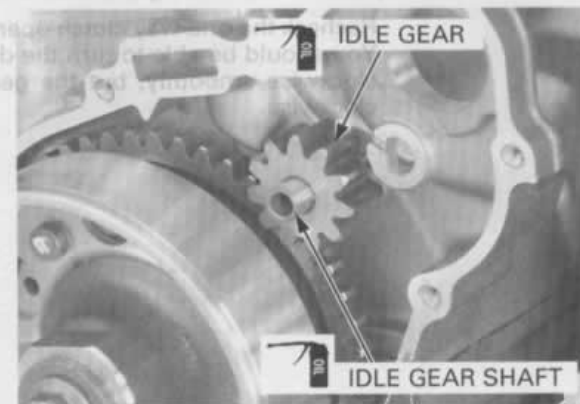
Flywheel holder

07725-0040000

TORQUE: 113 N·m (11.5 kgf·m, 83 lbf·ft)

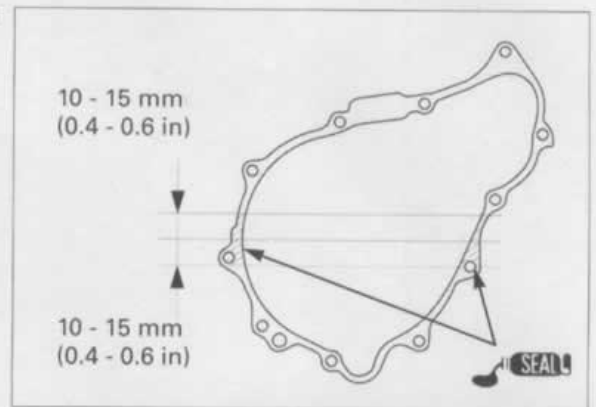


Install the starter idle gear and idle gear shaft.

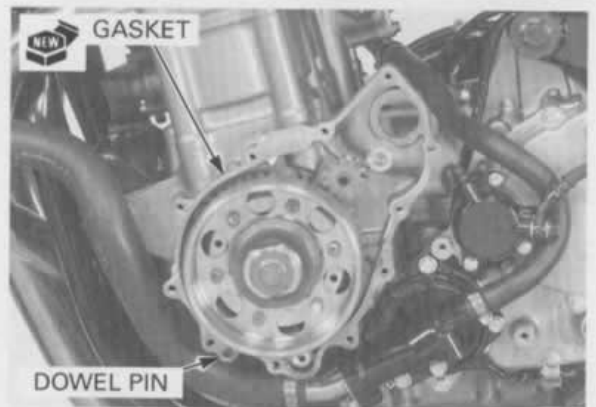


ALTERNATOR COVER INSTALLATION

Apply sealant to the mating surface of the crankcase as shown.



Install the dowel pin and new gasket.



The alternator cover (stator) is magnetically attached to the flywheel, be careful during installation.

Install the alternator cover.

Install and tighten the bolts securely.



Route the alternator wire properly (page 1-23).

Connect the alternator 3P (Natural) connector.

Install the following:

- Starter motor (page 18-13)
- Left crankcase rear cover (page 8-12)
- Left side cover (page 3-4)

