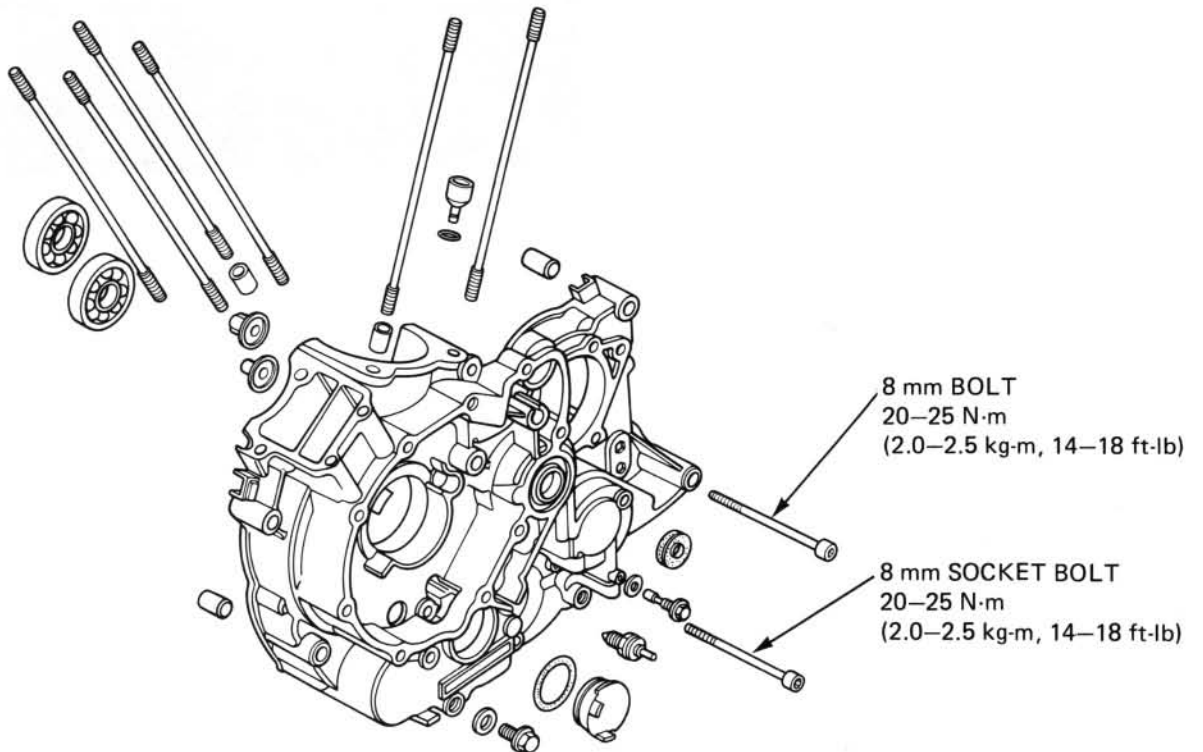
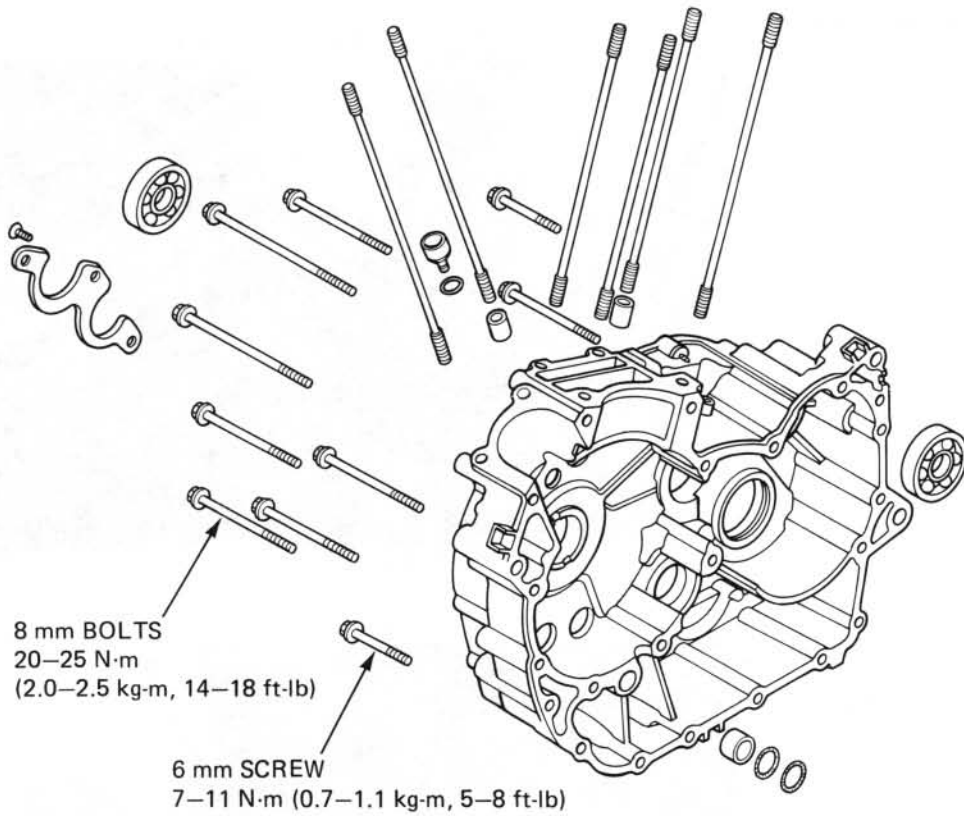


CRANKCASE



12. CRANKCASE

SERVICE INFORMATION	12-1
CRANKCASE SEPARATION	12-2
CRANKCASE ASSEMBLY	12-4

SERVICE INFORMATION

- To service the connecting rods, crankshafts and transmission, the crankcase must be separated.

TORQUE VALUES

8 mm bolt:	20–25 N·m (2.0–2.5 kg·m, 14–18 ft·lb)
8 mm socket head bolt:	20–25 N·m (2.0–2.5 kg·m, 14–18 ft·lb)
6 mm bearing set plate screw:	7–11 N·m (0.7–1.1 kg·m, 5–8 ft·lb) (Apply LOCTITE® to the threads)
10 mm special bolt:	35–45 N·m (3.5–4.5 kg·m, 25–33 ft·lb)

TOOL

Special	
Shaft holder	07923–6890101

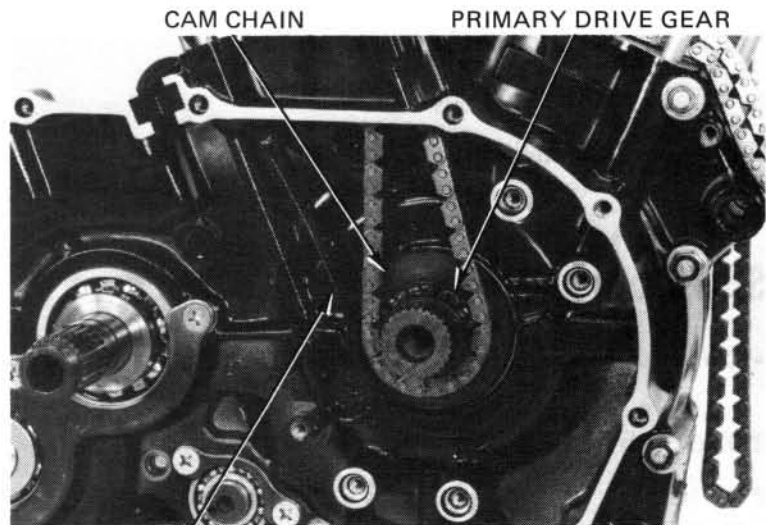
CRANKCASE

CRANKCASE SEPARATION

The following parts must be removed before disassembling the crankcase.

- Oil pump (Refer to section 2)
- Water pump and water pipes (Refer to section 6)
- Clutch (Refer to section 7)
- Gearshift linkage (Refer to section 8)
- Alternator rotor/starter clutch (Refer to section 9)
- Cylinder heads (Refer to section 10)
- Cylinders/pistons (Refer to section 11)
- Starter motor (Refer to section 20)

Remove the cam chain tensioners, cam chains and primary drive gear.



CAM CHAIN

PRIMARY DRIVE GEAR

CAM CHAIN IDLE GEAR

Remove the mainshaft, countershaft and shift drum bearing holders by removing the respective screws.



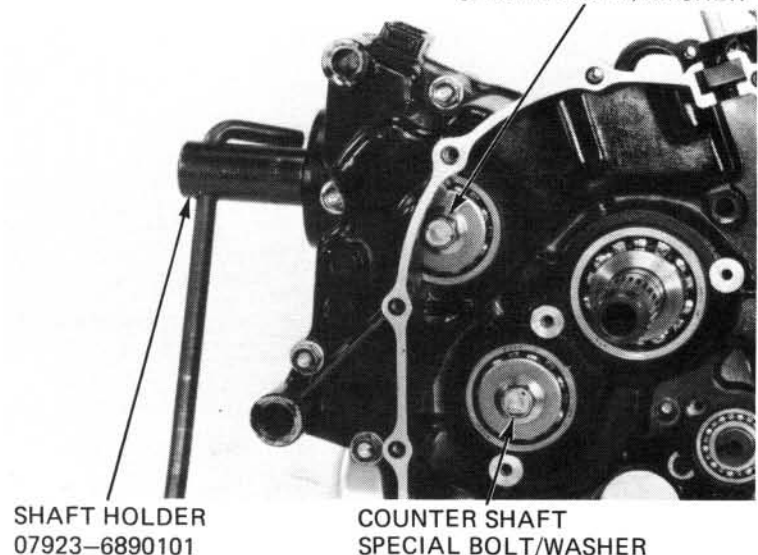
SHIFT DRUM
BEARING SET PLATE

M & C SHAFT
BEARING SET PLATE

OUTPUT SHAFT
SPECIAL BOLT/WASHER

Install the Shaft Holder on the output gear shaft.

Remove the special bolts and washers holding the countershaft and final drive shaft.



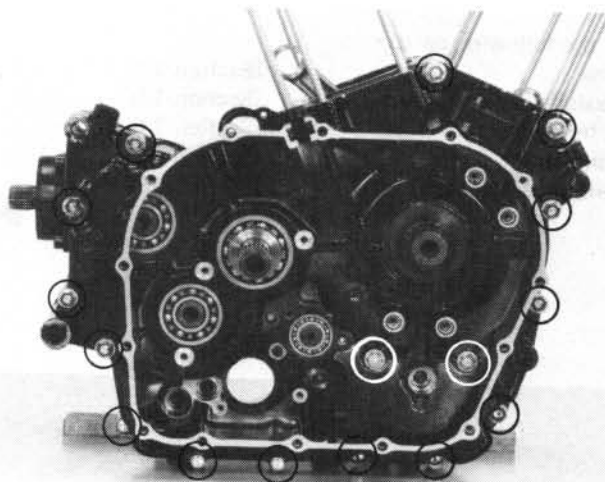
SHAFT HOLDER
07923-6890101

COUNTER SHAFT
SPECIAL BOLT/WASHER

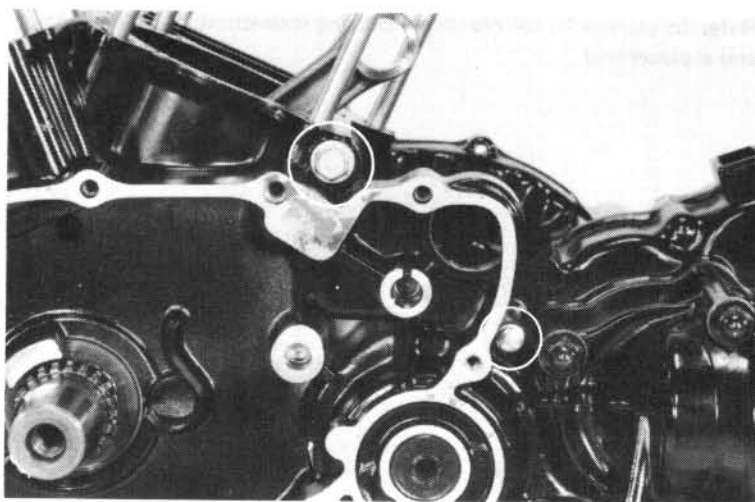
Remove the right crankcase 8 mm and 6 mm bolts.

NOTE:

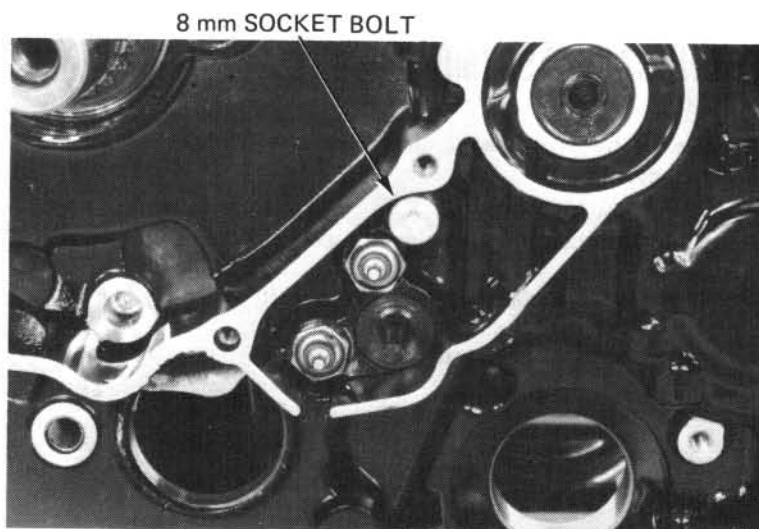
To prevent a distorted crankcase, loosen the bolts in a crisscross pattern in 2-3 steps.



Remove the left crankcase 8 mm and 6 mm bolts.



Remove the 8 mm socket head bolt.

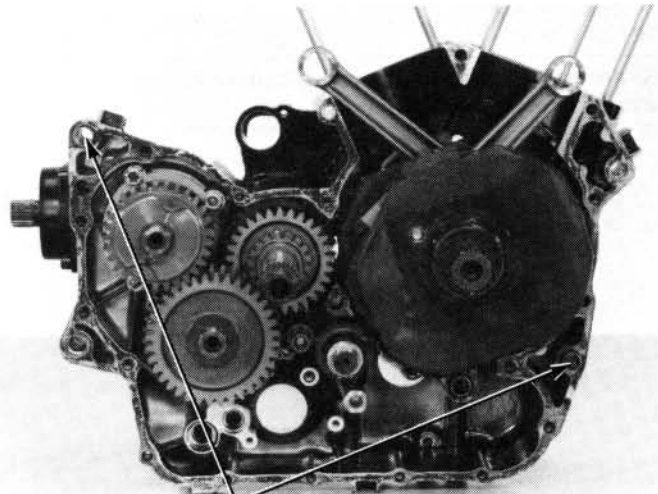


CRANKCASE

Separate the crankcase. Remove the dowel pins.

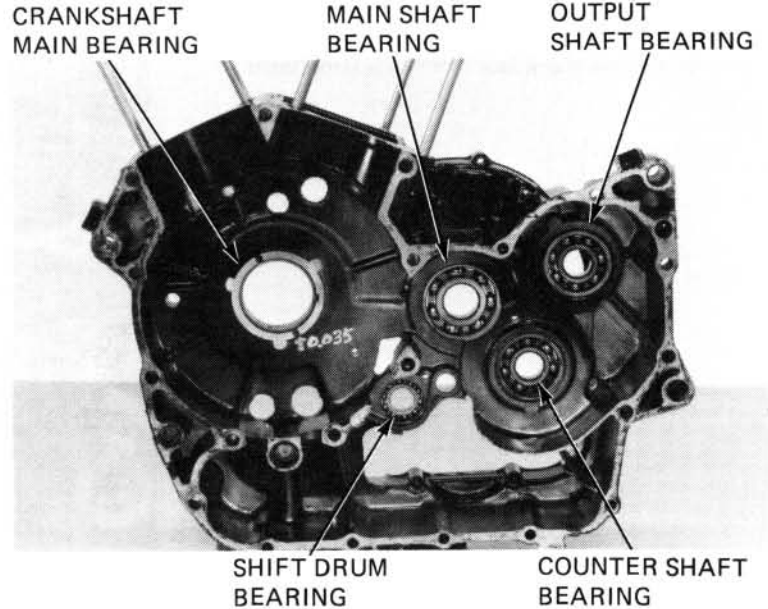
Remove the following parts:

- Oil jets (Section 11)
- Crankshaft/connecting rods (Section 13)
- Shift forks/drum (Section 13)
- Transmission (Section 13)
- Output gear assembly (Section 13)



DOWEL PINS

Refer to section 13 for crankcase bearing inspection and replacement.



CRANKSHAFT
MAIN BEARING

MAIN SHAFT
BEARING

OUTPUT
SHAFT BEARING

SHIFT DRUM
BEARING

COUNTER SHAFT
BEARING

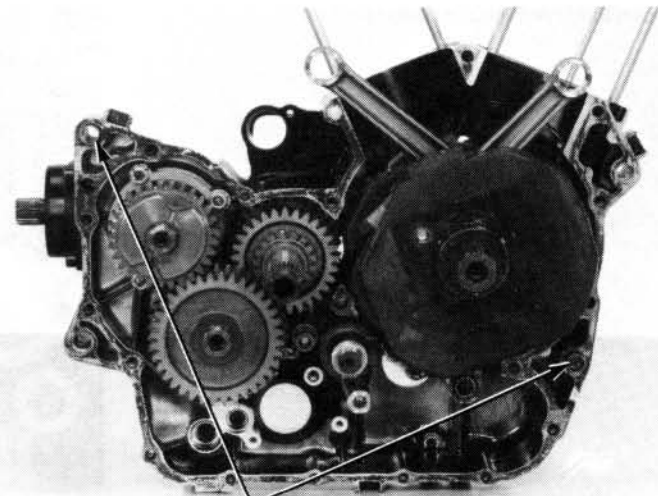
CRANKCASE ASSEMBLY

Remove all traces of gasket mating surfaces from the crankcase halves.

Apply liquid sealant to the mating surfaces.

Install the dowel pins in the left crankcase half.

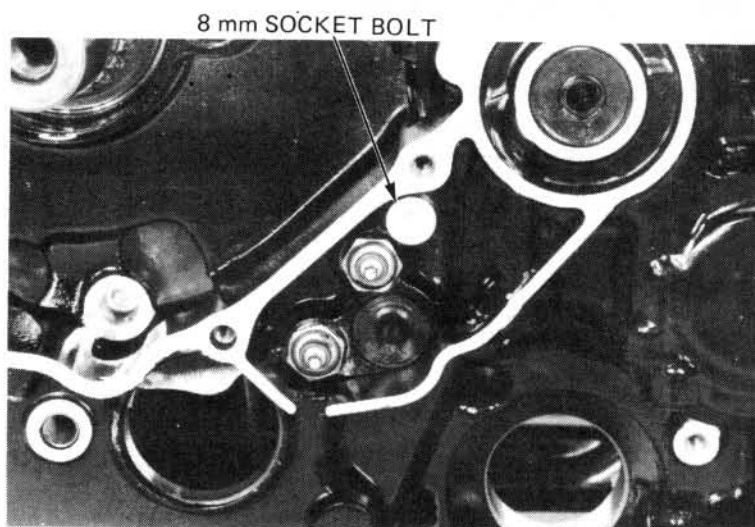
Assemble the crankcase halves.



DOWEL PINS

Tighten the left crankcase 8 mm socket head bolt to the specified torque.

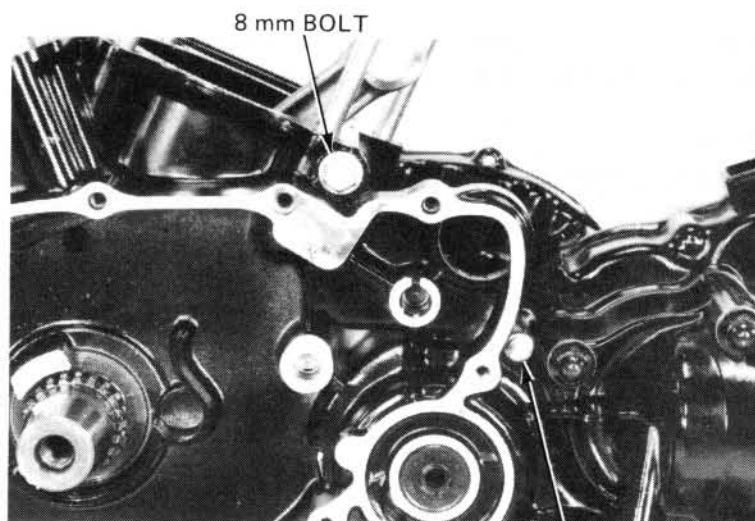
TORQUE: 20–25 N·m (2.0–2.5 kg·m, 14–18 ft·lb)



NEW Tighten the left crankcase 8 mm hex head bolt to the specified torque.

TORQUE: 20–25 N·m (2.0–2.5 kg·m, 14–18 ft·lb)

Tighten the 6 mm bolt to the standard torque.



6 mm BOLT

Tighten the right crankcase 8 mm bolts in the sequence shown in 2-3 steps, to the specified torque.

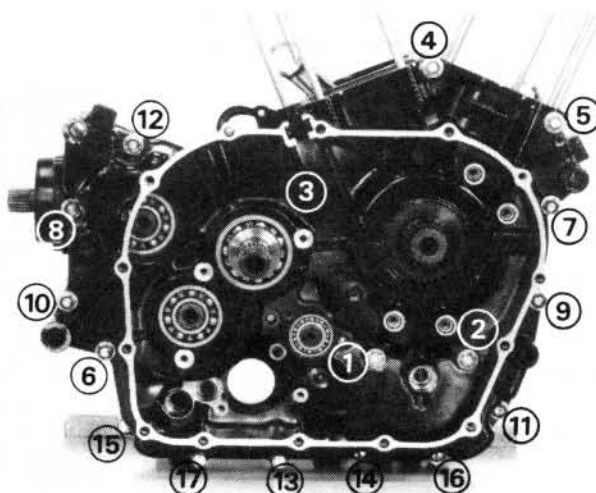
TORQUE: 20–25 N·m (2.0–2.5 kg·m, 14–18 ft·lb)

NOTE:

The bolts 1 through 12 are 8 mm.

Tighten the 6 mm bolts in 2-3 steps to the standard torque.

TORQUE: 8–12 N·m (0.8–1.2 kg·m, 6–9 ft·lb)



NEW

CRANKCASE

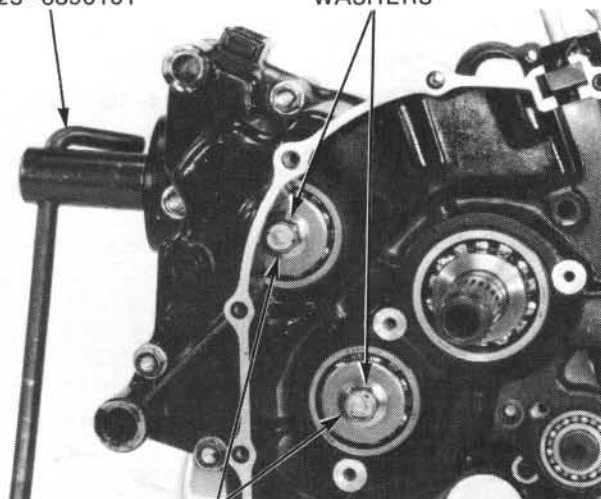
Install the Shaft Holder on the side gear output shaft.

Install the washers and 10 mm special bolts on the countershaft and output shaft. Tighten the bolts.

TORQUE: 35–45 N·m (3.5–4.5 kg·m, 25–33 ft·lb)

SHAFT HOLDER
07923–6890101

WASHERS



10 mm SPECIAL BOLTS

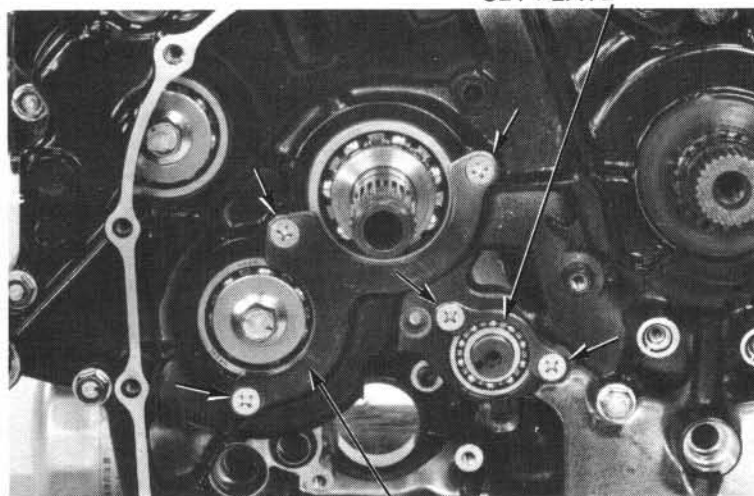
SHIFT DRUM BEARING
SET PLATE

Install the bearing holders with the 6 mm screws.

TORQUE: 7–11 N·m (0.7–1.1 kg·m, 5–8 ft·lb)

NOTE:

Apply Loctite® to the threads of the 6 mm screws.



SHAFT BEARING
SET PLATE

PRIMARY DRIVE
GEAR

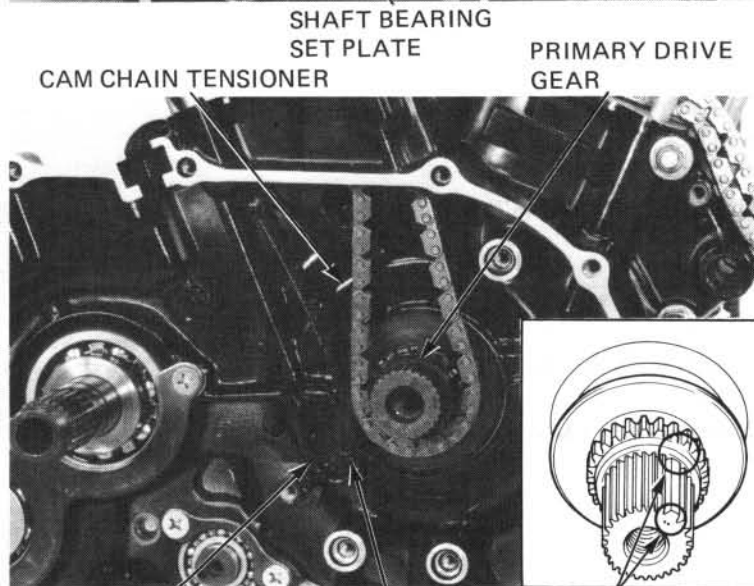
Install the primary drive gear on the crankshaft with the flat on the drive gear aligned with the flat on the crankshaft splines.

Install the cam chain over the drive gear.

Install the lower end of the cam chain tensioner slipper in the holder securely.

Install the following parts:

- Starter motor (Section 20)
- Cylinders/pistons (Section 11)
- Cylinder heads (Section 10)
- Oil pump (Section 2)
- Gearshift linkage (Section 8)
- Water pump/water pipes (Section 6)
- Clutch (Section 7)
- Starter clutch/alternator (Section 9)



HOLDER

TENSIONER
SLIPPER

ALIGNING
POSITION