

# 11. CRANKCASE/CRANKSHAFT

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## CRANKCASE/CRANKSHAFT

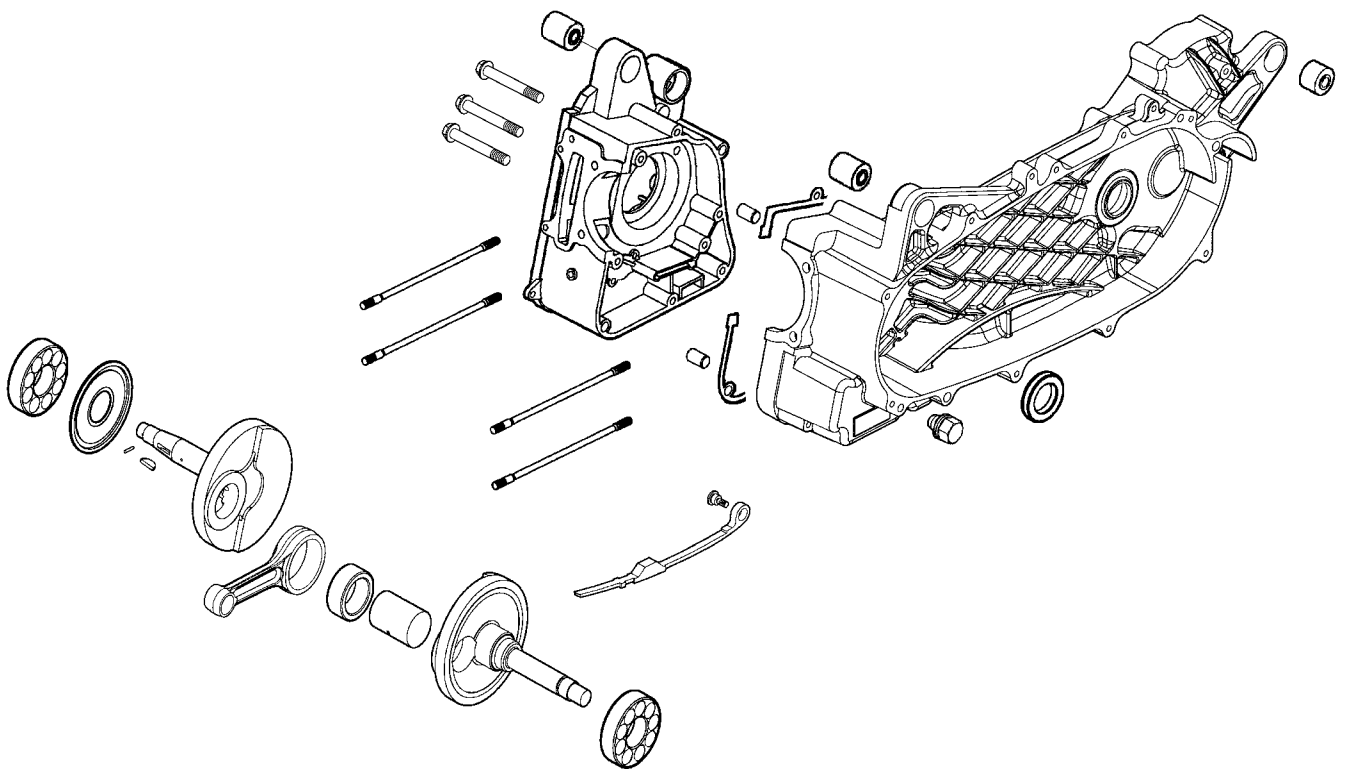
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## SCHEMATIC DRAWING



# 11. CRANKCASE/CRANKSHAFT

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- This section covers crankcase separation to service the crankshaft. The engine must be removed for this operation.
- When separating the crankcase, never use a driver to pry the crankcase mating surfaces apart forcibly to prevent damaging the mating surfaces.
- When installing the crankcase, do not use an iron hammer to tap it.
- The following parts must be removed before separating the crankcase.
  - Cylinder head (⇒chapter 6)
  - Cylinder/piston (⇒chapter 7)
  - Right crankcase cover/drive and driven pulley (⇒chapter 8)
  - A.C. generator/starter clutch (⇒chapter 10)
  - Rear wheel/rear shock absorber (⇒chapter 15)
  - Starter motor (⇒chapter 18)
  - Oil pump (⇒chapter 4)

### SPECIFICATIONS

	Item	Standard (mm)	Service Limit (mm)
Crankshaft	Connecting rod big end side clearance	0.15~0.35	0.6
	Connecting rod big end radial clearance	0.~0.008	0.05
	Runout	—	0.10

### TORQUE VALUES

Crankcase bolt	7.8~10.8N-m
Cam chain tensioner slipper bolt	7.8~11.8N-m

### TROUBLESHOOTING

#### Excessive engine noise

- Excessive bearing play
- Excessive crankpin bearing play
- Worn piston pin and piston pin hole

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## CRANKCASE SEPARATION

Remove the three right crankcase attaching bolts.

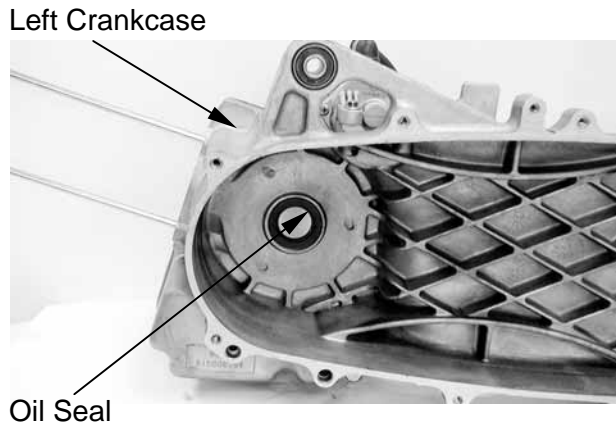
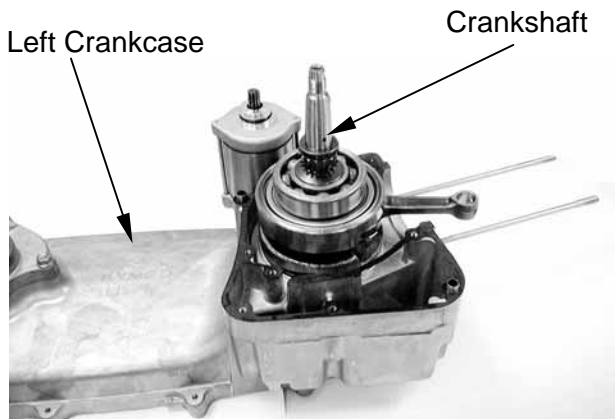
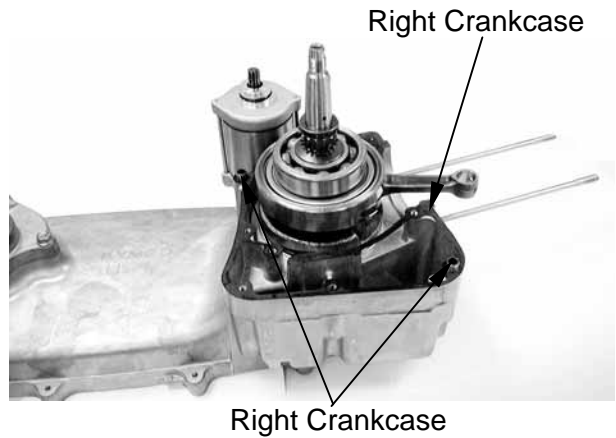
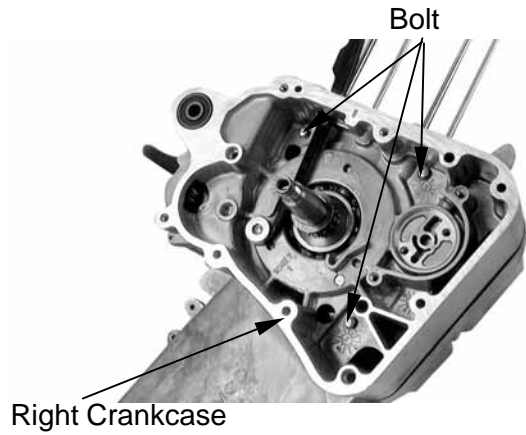
Place the crankcase with the left crankcase down and remove the right crankcase from the left crankcase.

- \* • Never use a driver to pry the crankcase mating surfaces apart.

Remove the gasket and dowel pins.

Remove the crankshaft from the left crankcase.

Remove the oil seal from the left crankcase.



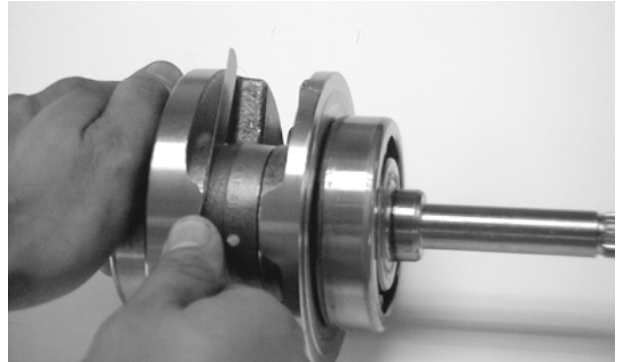
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### CRANKSHAFT INSPECTION

Measure the connecting rod big end side clearance.

**Service Limit:** 0.6mm replace if over



Measure the connecting rod small end I.D.

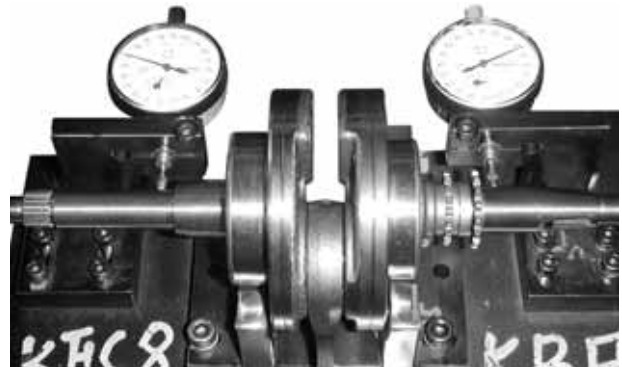
**Service Limit:** 17.06mm replace if over



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Measure the crankshaft runout.

**Service Limit:** 0.10mm replace if over

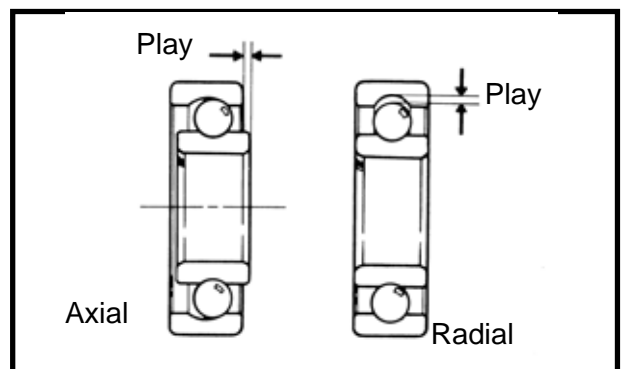


Measure the crankshaft bearing play.

**Service Limits:**

Axial : 0.20mm replace if over

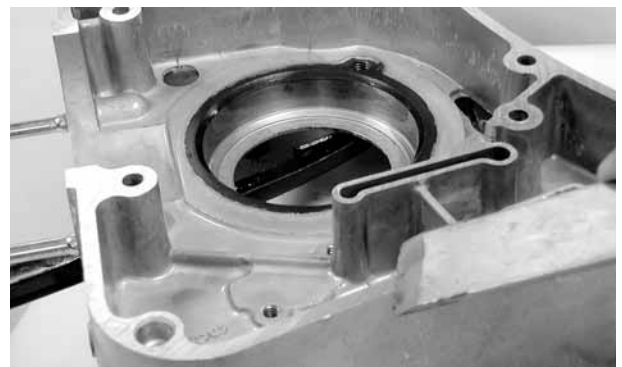
Radial : 0.05mm replace if over



## CRANKCASE ASSEMBLY

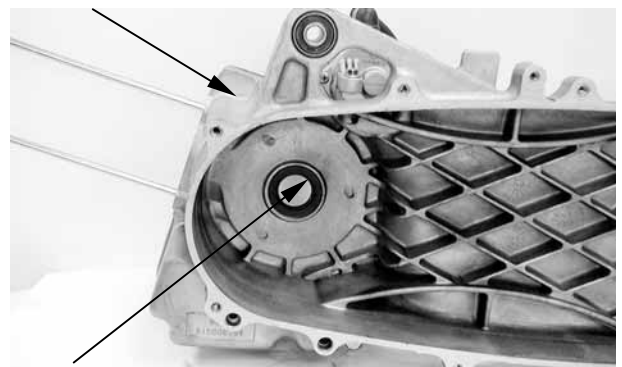
Clean off all gasket material from the crankcase mating surfaces.

- \* • Avoid damaging the crankcase mating surfaces.



Install a new oil seal into the left crankcase.

Left Crankcase

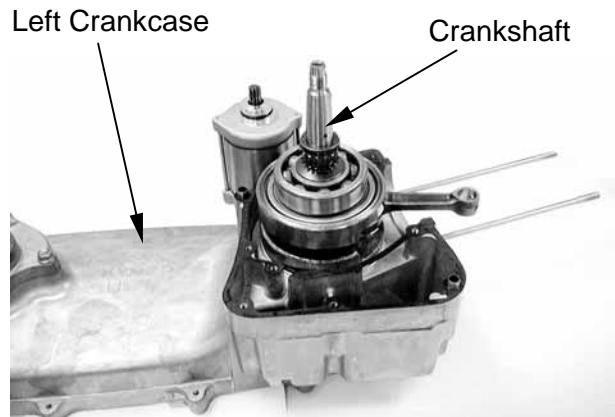


Oil Seal

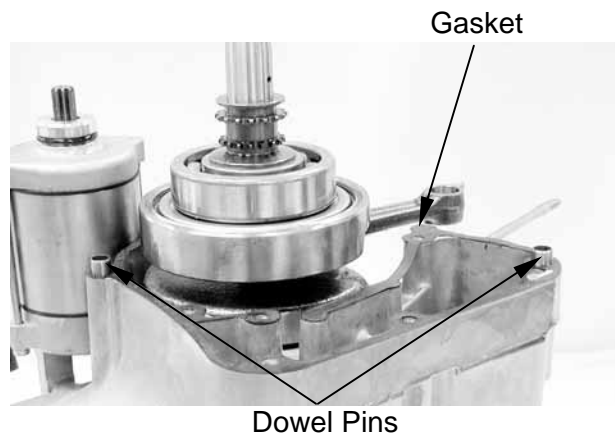
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Place the left crankcase down and install the crankshaft into the left crankcase.

- \*
  - Avoid damaging the oil seal.
  - Apply grease to the lip of the oil seal.

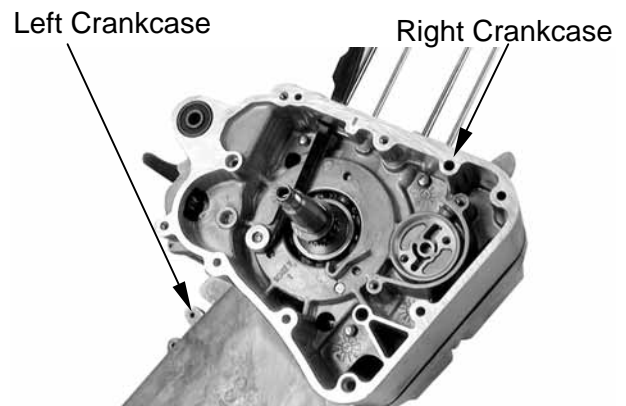


Install the two dowel pins and a new gasket.



Place the right crankcase over the crankshaft and onto the left crankcase.

- \*
  - Install the right crankcase squarely and do not tap it with an iron or plastic hammer.



Install and tighten the right and left crankcase attaching bolts.

**Torque:** 7.8~10.8N-m

