

## **11. CRANKSCASE/CRANKSHAFT/ BALANCE SHAFT**

---

**MX'er SYSTEM**

---

### **CRANKCASE/CRANKSHAFT/BALANCE SHAFT**

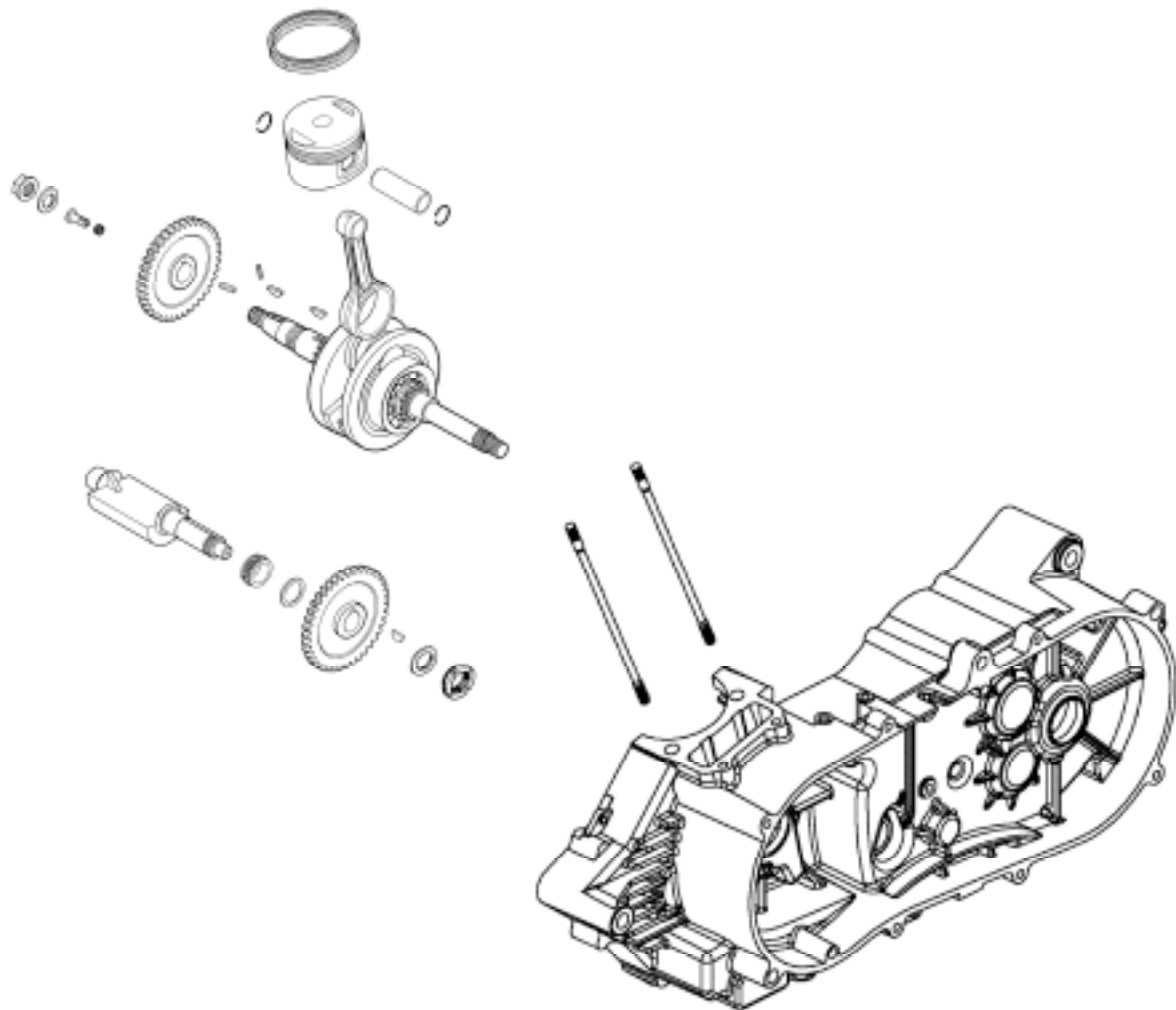
---

SERVICE INFORMATION .....	11- 2
TROUBLESHOOTING .....	11- 2
CRANKCASE SEPARATION .....	11- 3
CRANKSHAFT INSPECTION.....	11- 4
CRANKCASE/BALANCE SHAFT ASSEMBLY .....	11- 5

## 11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

---

MX'er SYSTEM



# 11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

**MX'er SYSTEM**

## SERVICE INFORMATION

### GENERAL INSTRUCTIONS

- This section covers crankcase separation to service the crankshaft. The engine must be removed for this operation.
- The following parts must be removed before separating the crankcase.
  - ☐Cylinder head (⇒ Section 7)
  - ☐Cylinder/piston (⇒ Section 8)
  - ☐Drive and driven pulleys (⇒ Section 9)
  - ☐A.C. generator (⇒ Section 4)
  - ☐Carburetor/air cleaner (⇒ Section 5)
  - ☐Starter motor (⇒ Section 16)
  - ☐Oil pump (⇒ Section 4)

### SPECIFICATIONS

	Item	Standard (mm)	Service Limit (mm)
Crankshaft	Connecting rod big end side clearance	0.10_ 0.35	0.55
	Connecting rod big end radial clearance	0_ 0.008	0.05
	Run out	□	0.10

### TORQUE VALUES

Crankcase bolt	0.8_	1.2kgf-m
Cam chain tensioner slipper bolt	0.8_	1.2kgf-m
Cam chain cover bolt	0.8_	1.2kgf-m

### TROUBLESHOOTING

**Excessive engine noise**

Excessive bearing play

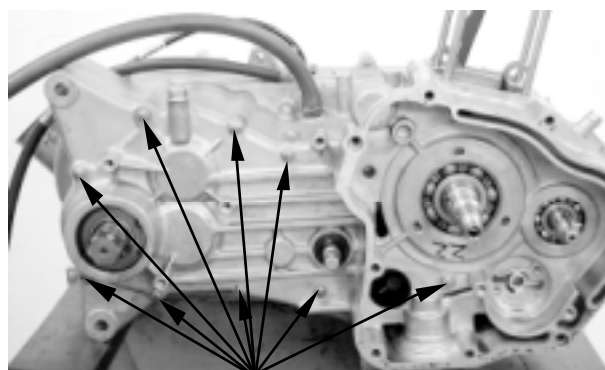
# 11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

MX'er SYSTEM

## CRANKCASE SEPARATION

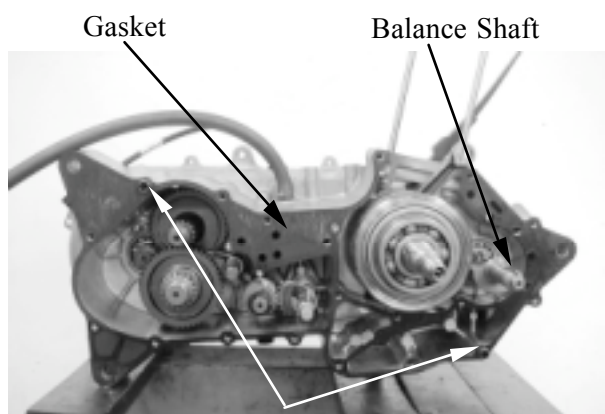
Remove the left and right crankcase attaching bolts. (Section 10)  
Separate the left and right crankcase halves.

\* Do not damage the crankcase gasket surface.



Crankcase Bolts

Remove the gasket and dowel pins.

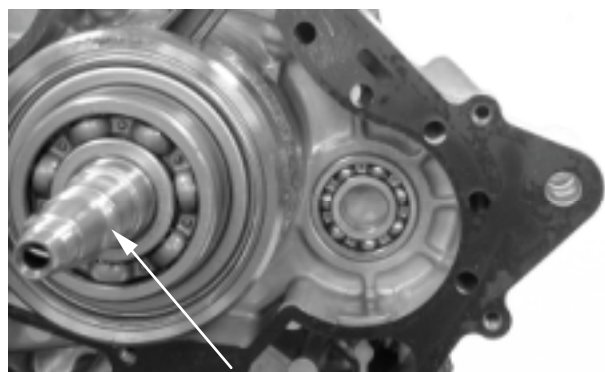


Gasket

Balance Shaft

Dowel Pins

Remove balance shaft from the left crankcase.



Crankshaft

# 11. CRANKSCASE/CRANKSHAFT/ BALANCE SHAFT

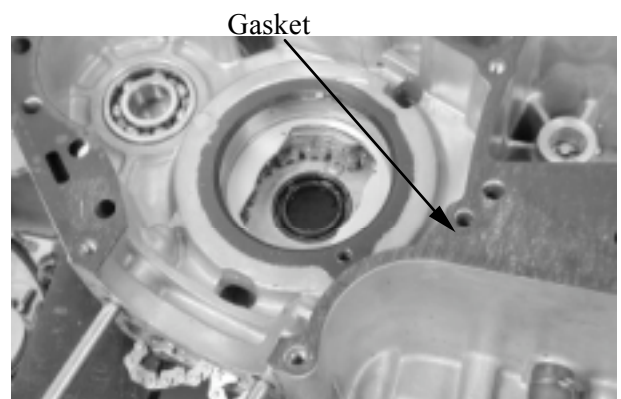
**MX'er SYSTEM**

Remove the crankshaft and cam chain from the left crankcase.



Clean off all gasket material from the crankcase mating surfaces.

- \* Avoid damaging the crankcase mating surfaces.



## CRANKSHAFT INSPECTION

Measure the connecting rod small end I.D.

**Service Limit:** 15.06 mm replace if over



Measure the connecting rod big end side clearance.

**Service Limit:** 0.55mm replace if over



# 11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

**MX'er SYSTEM**

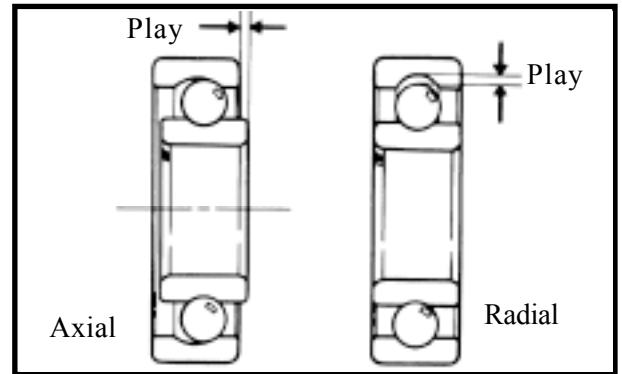
Turn the crankshaft bearings and check for excessive play.

Measure the crankshaft bearing play.

**Service Limit:**

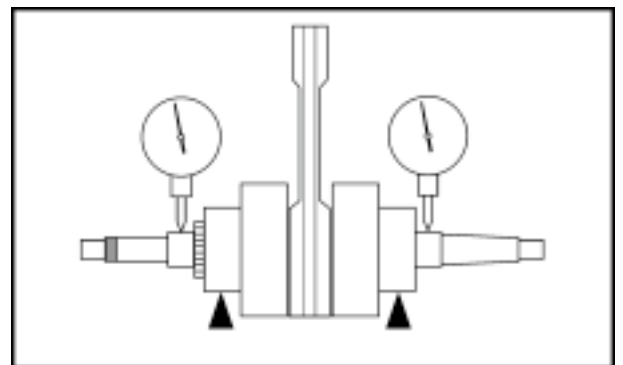
Axial : 0.20mm replace if over

Radial : 0.05mm replace if over



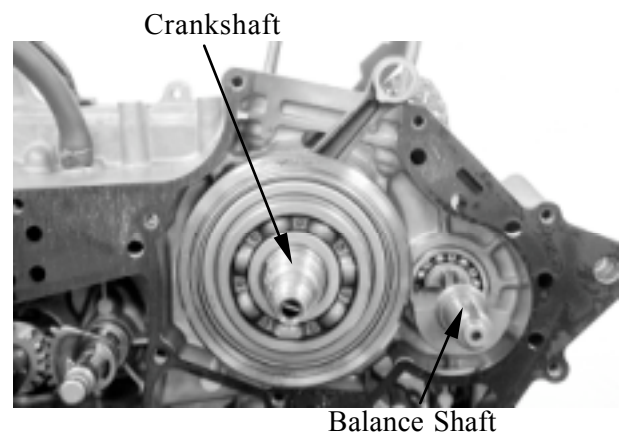
Measure the crankshaft run out.

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



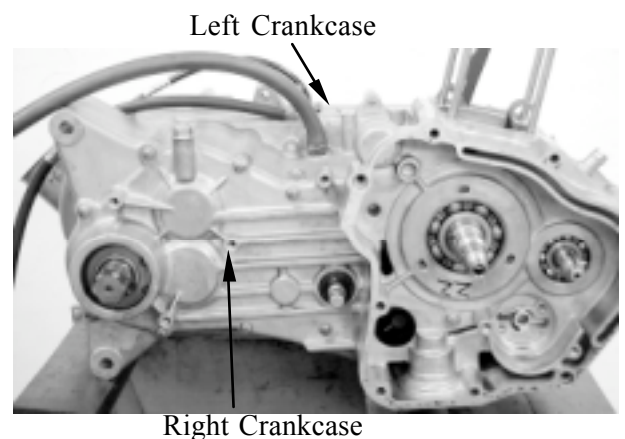
## CRANKCASE/BALANCE SHAFT ASSEMBLY

Install the cam chain into the left crankcase.  
Install the crankshaft and balance shaft into the left crankcase.



Install the right and left crankcase.(10-8)

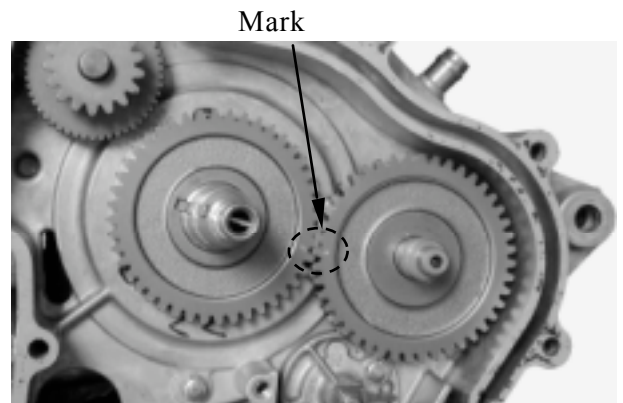
Tighten crankcase attach bolts.



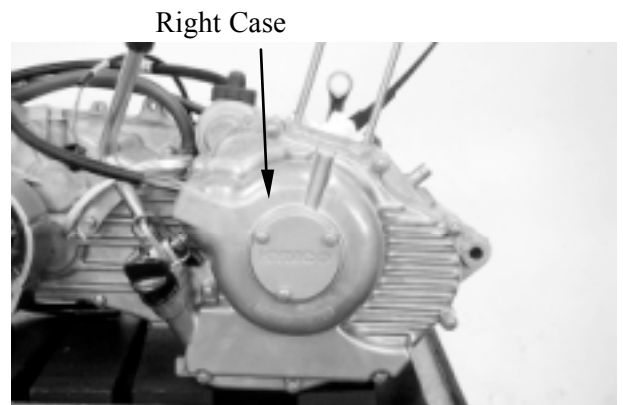
## 11. CRANKSCASE/CRANKSHAFT/ BALANCE SHAFT

**MX'er SYSTEM**

Align the mark on the balance gear with the mark on the crankshaft gear.



Install the right and left case cover.



Install the cylinder.

