

11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

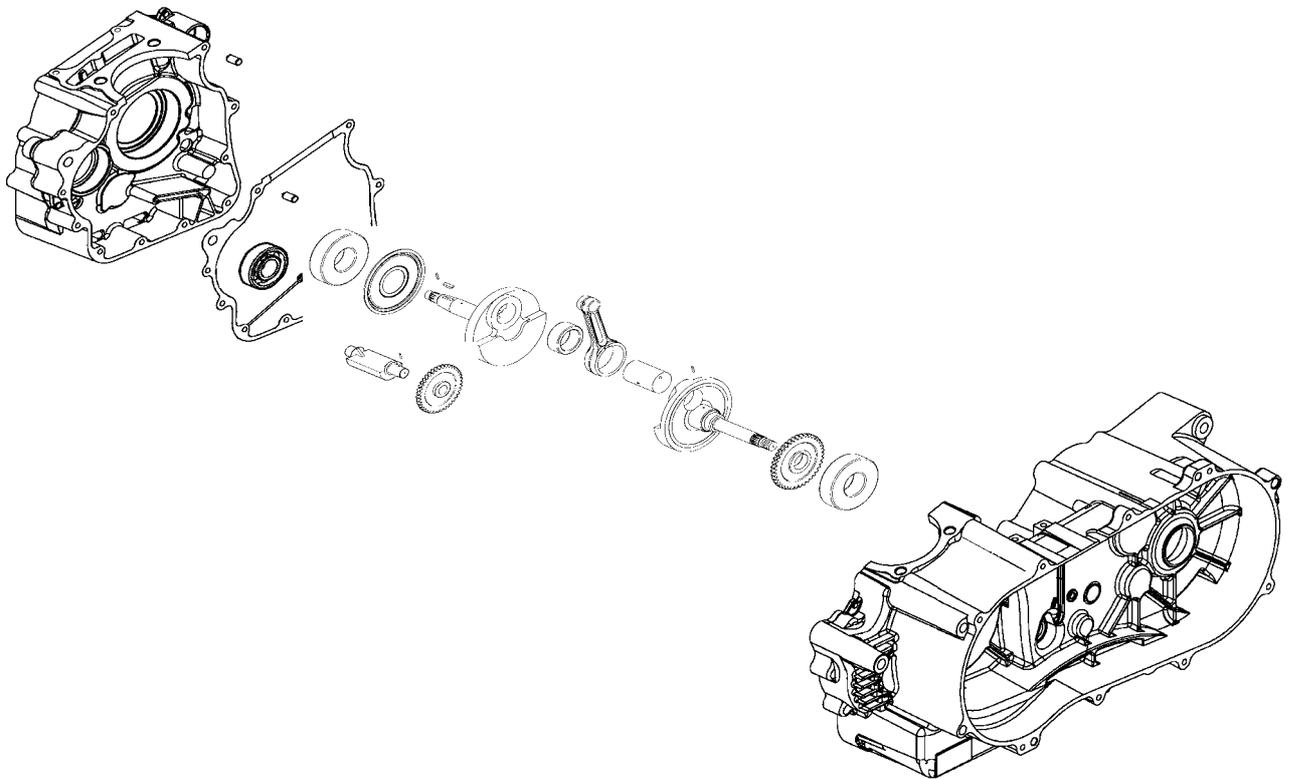
MXU 250

CRANKCASE/CRANKSHAFT/BALANCE SHAFT

SERVICE INFORMATION-----	11- 2
TROUBLESHOOTING-----	11- 2
CRANKCASE/CRANKSHAFT/BALANCE SHAFT-----	11- 3

11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

MXU 250



11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

MXU 250

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 (⇒Chapter 7)
 - Cylinder/piston (⇒Chapter 8)
 - Drive and driven pulleys (⇒Chapter 9)
 - A.C. generator (⇒Chapter 16)
 - Starter clutch (⇒Chapter 18)
 - Oil pump (⇒Chapter 4)

SPECIFICATIONS

Unit: mm (in)

	Item	Standard	Service Limit
Crankshaft	Connecting rod big end side clearance	0.05 ~ 0.4 (0.002 ~ 0.016)	0.6 (0.024)
	Connecting rod big end radial clearance	0 ~ 0.008 (0 ~ 0.00032)	0.05 (0.002)
	Run out	—	0.1 (0.004)

TORQUE VALUES

Crankcase bolt	1 kgf-m (10 Nm, 7.2 lbf-ft)
Cam chain tensioner slipper bolt	1 kgf-m (10 Nm, 7.2 lbf-ft)
Cam chain cover bolt	1 kgf-m (10 Nm, 7.2 lbf-ft)

TROUBLESHOOTING

Excessive engine noise
Excessive bearing play

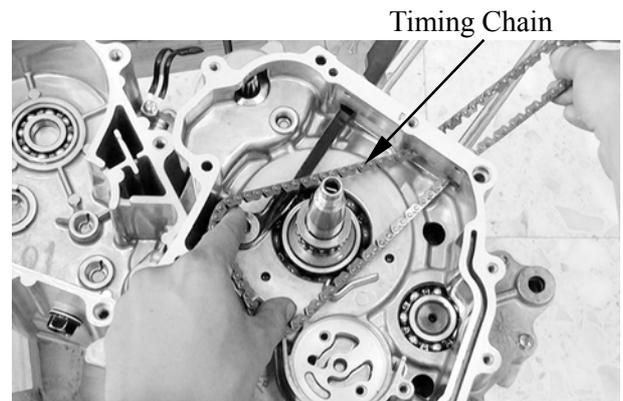
11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

MXU 250

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REMOVAL

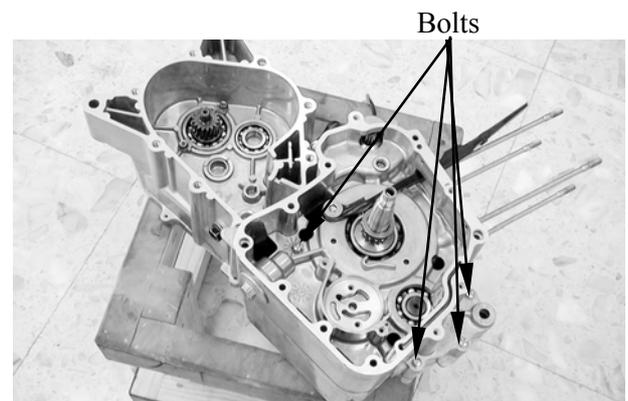
Remove the timing chain from right crankcase.



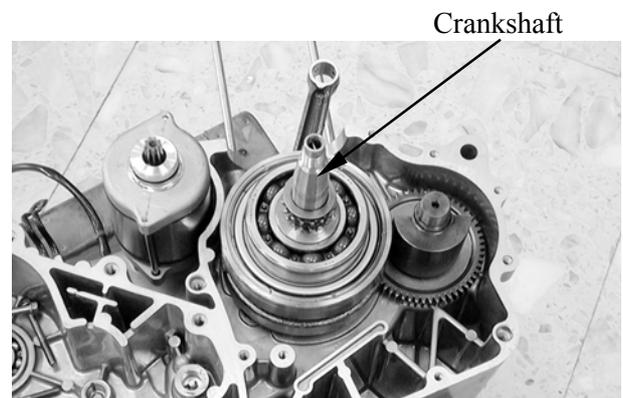
Remove the left and right crankcase attaching bolts.
Separate the left and right crankcase halves.

* Do not damage the crankcase gasket surface.

Remove the gasket and dowel pins.



Remove the crankshaft from the left crankcase.

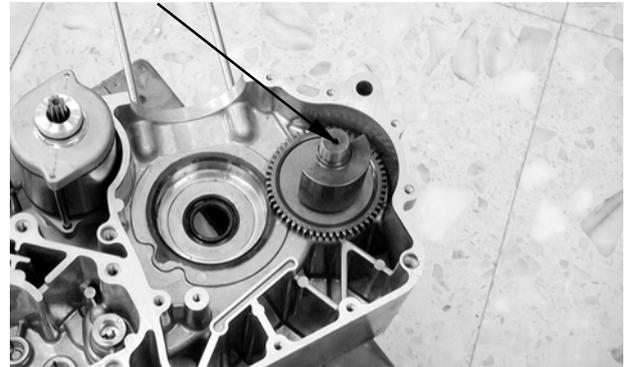


11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

MXU 250

Remove balance shaft from the left crankcase.

Balance Shaft



Clean off all gasket material from the crankcase mating surfaces.

* Avoid damaging the crankcase mating surfaces.



Inspect the balance shaft gear teeth.
Burr/chips/roughness/wear → Replace.



11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

MXU 250

CRANKSHAFT INSPECTION

Inspect the crankshaft gear teeth.
Burr/chips/roughness/wear → Replace.

Measure the connecting rod small end I.D.

Service Limit (replace if over):
17.06 mm (0.6824 in)

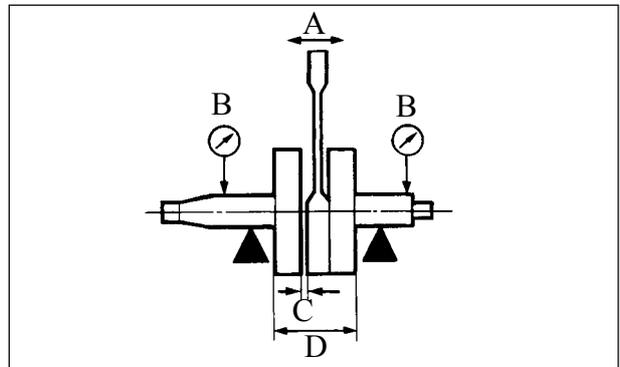


Measure the connecting rod small end free play (A).

Out of specification:
0.8 ~ 1 mm (0.032 ~ 0.04 in)
→ Replace the crankshaft.

Measure the crankshaft run out (B).

Service Limit (replace if over):
0.1 mm (0.004 in)



Measure the connecting rod big end side clearance (C).

Service Limit (replace if over):
0.6 mm (0.024 in)

Measure the crank width (D).

Out of specification:
55.15 ~ 55.2 mm (2.206 ~ 2.208 in)
→ Replace the crankshaft.

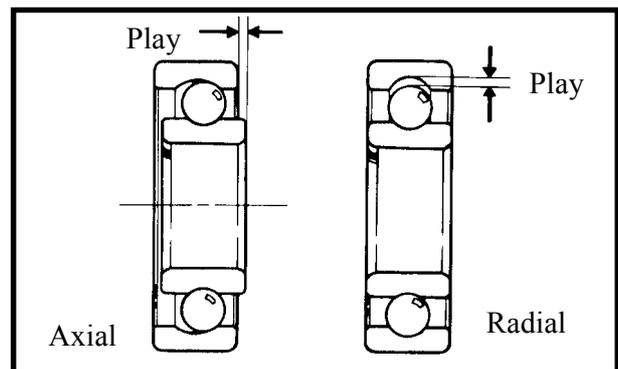
Turn the crankshaft bearings and check for excessive play.

Measure the crankshaft bearing play.

Service Limit (replace if over):

Axial : 0.2 mm (0.008 in)

Radial : 0.05 mm (0.002 in)



11. CRANKCASE/CRANKSHAFT/ BALANCE SHAFT

MXU 250

CRANKCASE/BALANCER INSTALLATION

Install the balance shaft and crankshaft into the left crankcase.

- * Align the mark on the balance shaft with the mark on the crankshaft.

Install the dowel pins and new gasket.
Install the right crankcase and tighten the crankcase attach bolts.
Install the timing chain.

