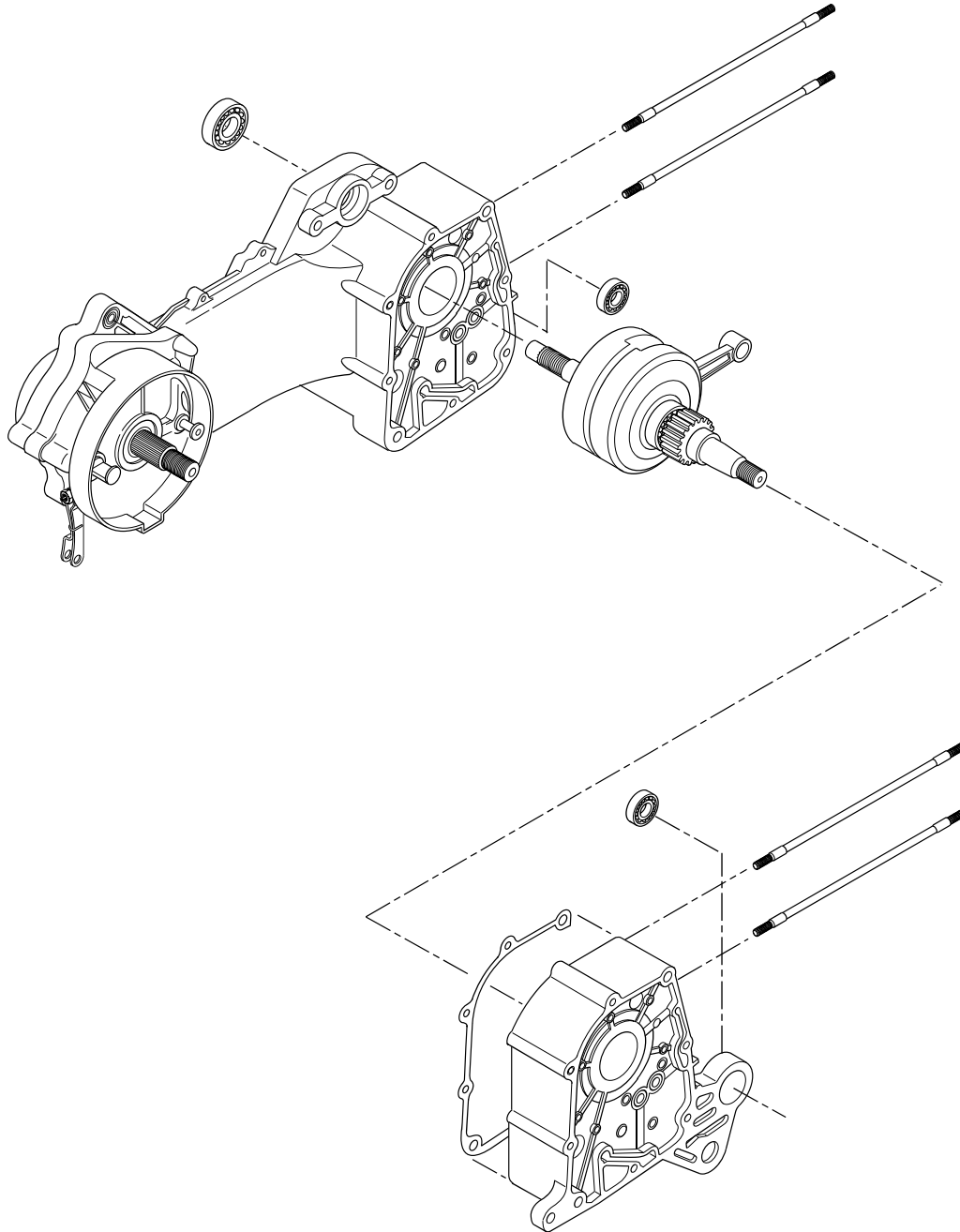


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## 11. The Crankcase and the Crankshaft

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# 11. The Crankcase and the Crankshaft

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## Important Points

- The chapter gives instructions related to the crankshaft and dismantling the crankcase. Before striking, it's necessary to take the engine apart.
- Complete the following work before taking the crankcase apart. Remove the following:
  - The cylinder head (refer to Chapter 7)
  - The cylinder and the piston (refer to Chapter 8)
  - The driving plate and the driven plate (refer to Chapter 9)
  - AC generator (refer to Chapter 14)
  - The carburetor and the air filter (refer to Chapter 14)
  - The rear wheel and the rear buffer (refer to Chapter 13)
  - The starting motor (refer to Chapter 16)
  - The oil pump (refer to Chapter 4)

## Tech Criteria

	Item	Normal size	Max. Service Allowance
Crankshaft	The clearance of the both sides of the big end of the connecting rod	0.10-0.35	0.55
	The clearance of X-Y directions of the journal of the big end of the connecting rod	0-0.008	0.05
	Run out		0.10

Torque:

Crankcase bolt 0.9kg/m 7ft lbs

Bolt for the chain adjusting guide lever cam 1.0kg/m 8ft lbs

## Troubleshooting

### Abnormal noise from the engine

- The crankshaft bearing is getting slack
  - The crankshaft pin bearing is becoming loose
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# 11. The Crankcase and the Crankshaft

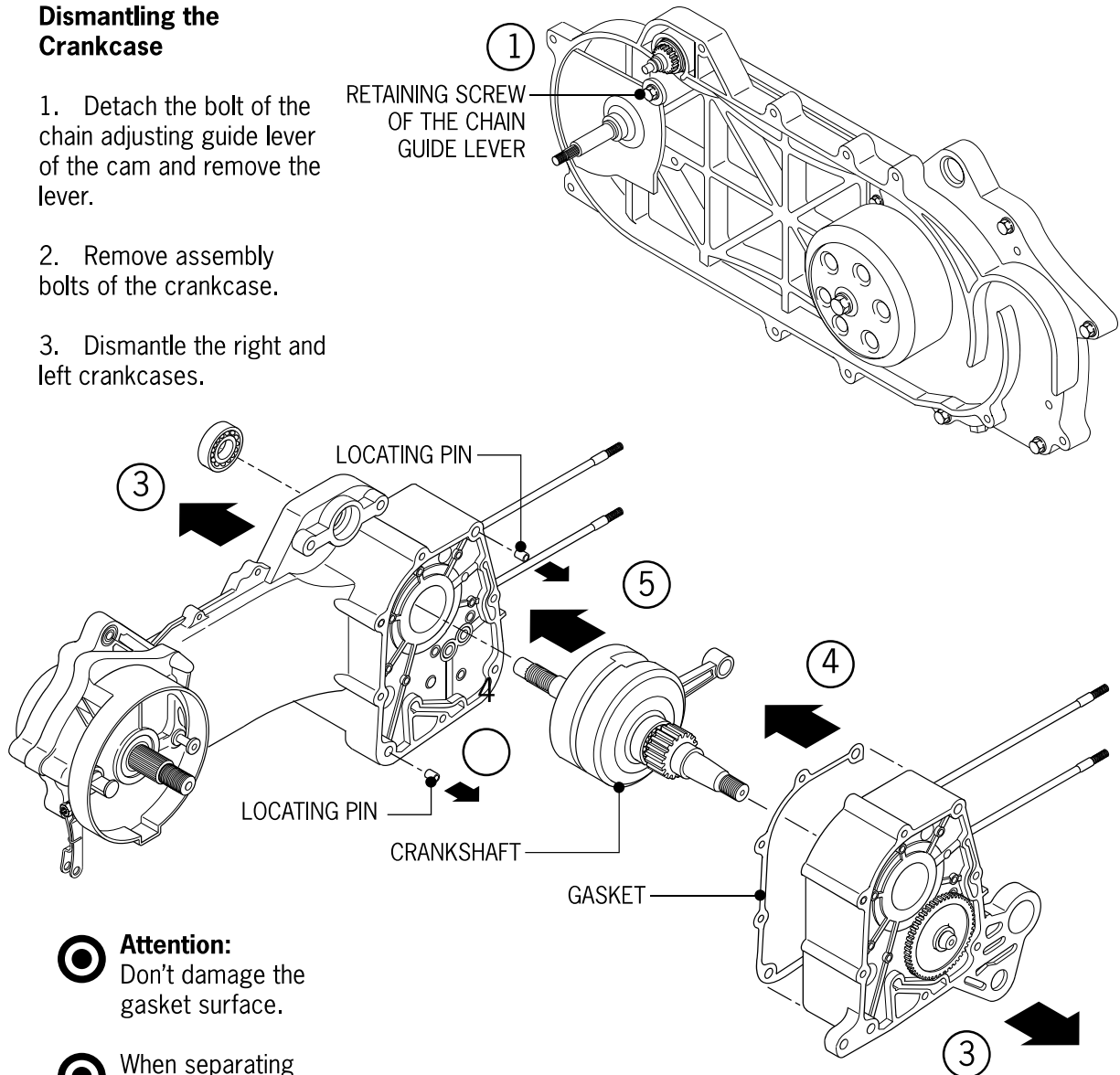
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## Dismantling the Crankcase

1. Detach the bolt of the chain adjusting guide lever of the cam and remove the lever.

2. Remove assembly bolts of the crankcase.

3. Dismantle the right and left crankcases.



**Attention:**  
Don't damage the gasket surface.

**When separating the crankcases, don't use a screwdriver to pry them apart.**

4. Remove the gasket and the locating pin.

5. Remove the crankshaft from the crankcase.


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# 11. The Crankcase and the Crankshaft

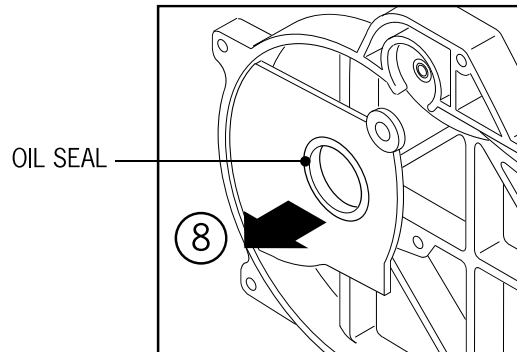
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7. Scrape the gasket away from the joint surfaces.

 **Attention:** be sure not to scratch the joint surfaces.

8. Remove the oil seal from the left crankcase.

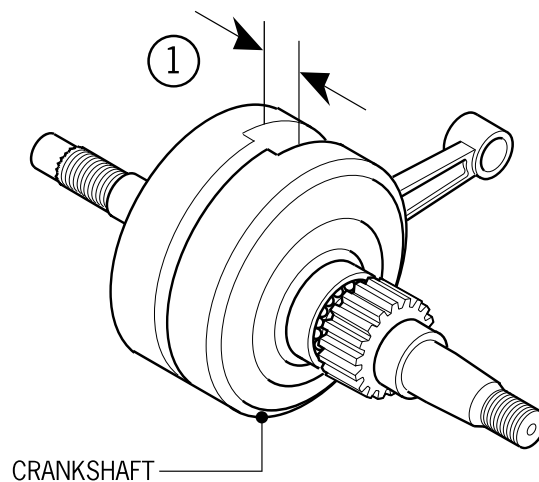
9. Remove the oil seal from the right crankcase.



## The Crankshaft

1. Measure the left and right clearance between both sides of the big end of the connecting rod.

*Maximum service allowance:  
Replace when it goes beyond  
0.55mm (.02 in.).*



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## 11. The Crankcase and the Crankshaft

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2. Check the clearance of the journal of the big end of the connecting rod in X-Y directions.

*Maximum service allowance:  
Replace when it goes beyond 0.05mm  
(.002 in.).*

3. Measure the run-out of the crankshaft.

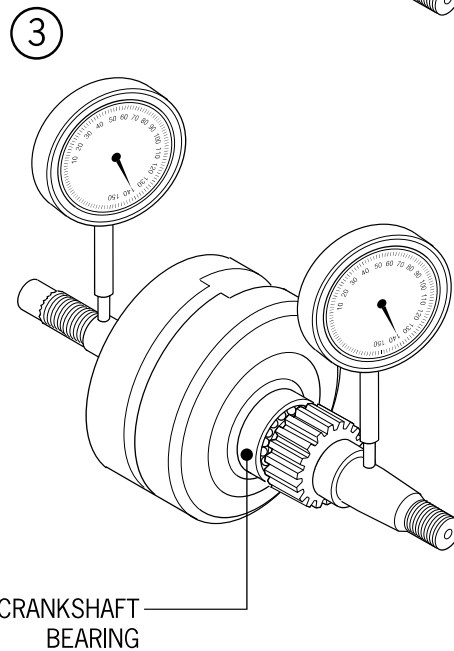
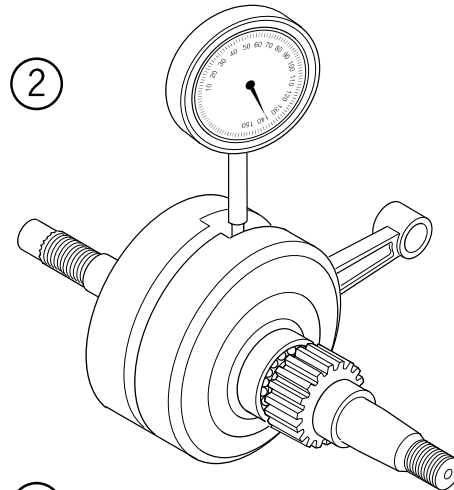
*Maximum service allowance;  
Replace when it goes beyond 0.10mm  
(.004 in.).*

4. Check if there is any abnormal noise and looseness when the crankshaft bearing revolves. Replace totally if any abnormal noise/looseness is detected.

### Assembling the Crankcase

1. Use the following tools to install the oil seal of the crankcase:

- Bearing outer race driver
- Bearing outer race 32x35mm  
(1.26 in. x 1.38 in.)

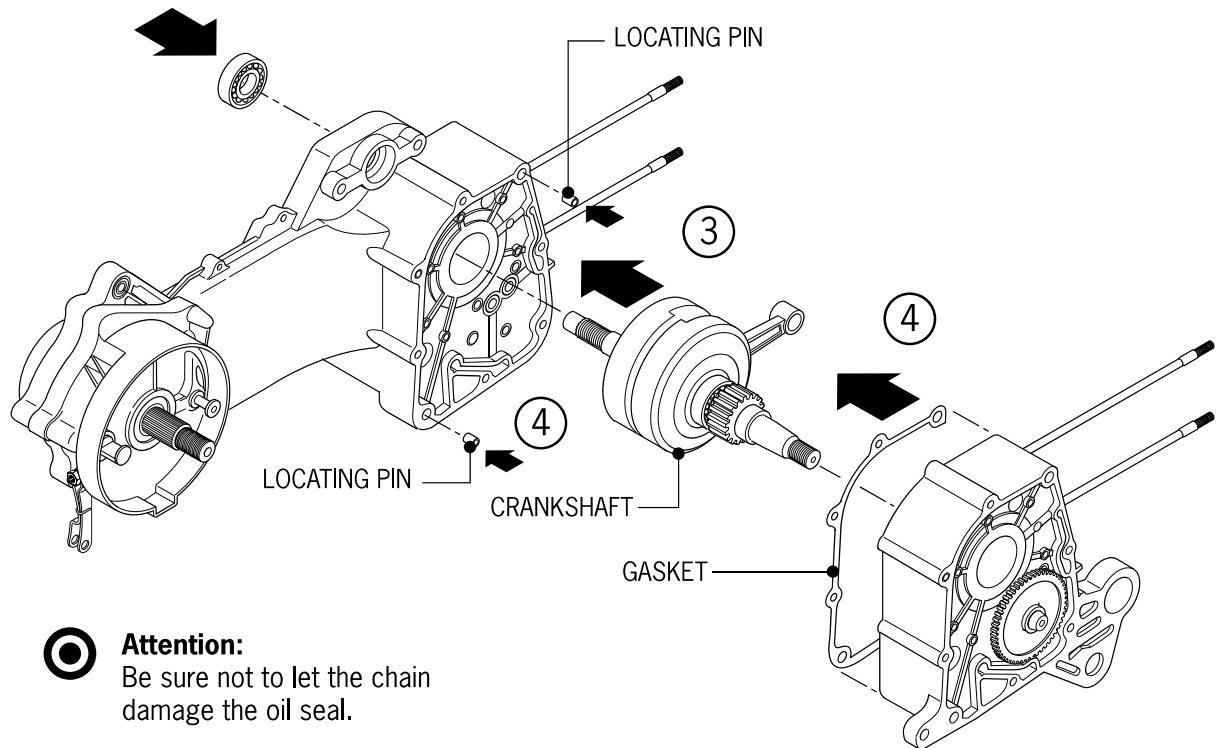


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## 11. The Crankcase and the Crankshaft

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2. Install the cam chain into the left crankcase.
3. Assemble the crankshaft into the left crankcase.



**Attention:**

Be sure not to let the chain damage the oil seal.

4. Put the new locating pin and the gasket onto the left crankcase.



**Attention:**

Keep the left crankcase downward to assemble with the right crankcase.

5. Tighten the bolts of the crankcase.

*Torque: 0.9kg/m 7ft lbs*

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## 11. The Crankcase and the Crankshaft

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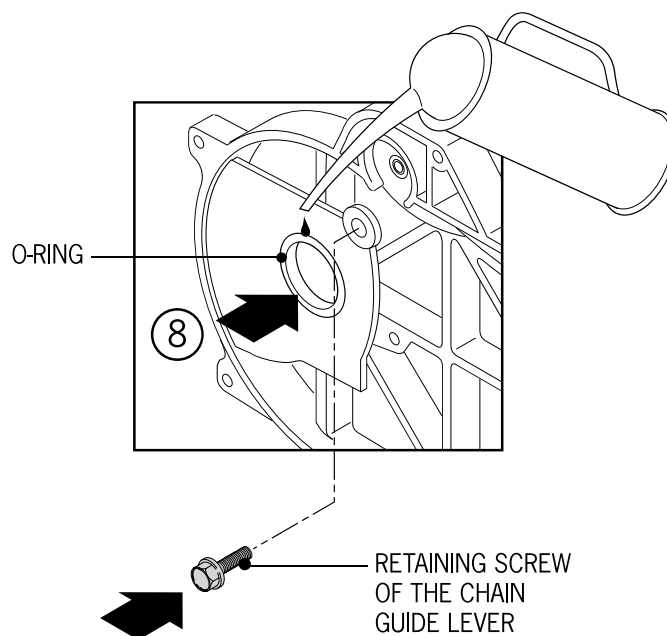
6. Install the cam chain adjusting lever.

7. Install the o-ring onto the bolt of the chain adjusting lever.

8. Coat the o-ring with oil, and then lock it.

*Torque: 1.0kg/m 8ft lbs*

⊙ Attention:  
Be sure to put the o-ring into the groove.



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## **11. The Crankcase and the Crankshaft**

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