
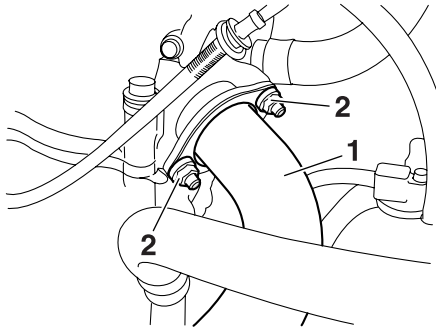


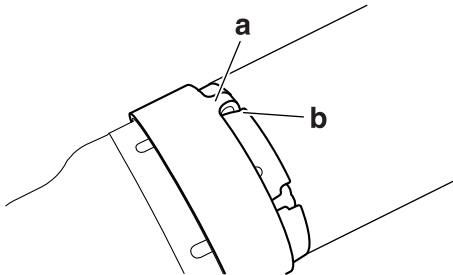
- 4. Install:
 - Gasket **New**
 - Exhaust pipe "1"
- 5. Tighten:
 - Nuts (exhaust pipe) "2"

	Exhaust pipe nut 20 Nm (2.0 m·kgf, 14 ft·lbf)
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- 6. Install:
 - Clamp

TIP _____
Slide the clamp onto the end of the muffler and insert the projection "a" of the clamp into a slot "b" in the muffler. Tighten the clamp after installing the muffler.



EAS23760

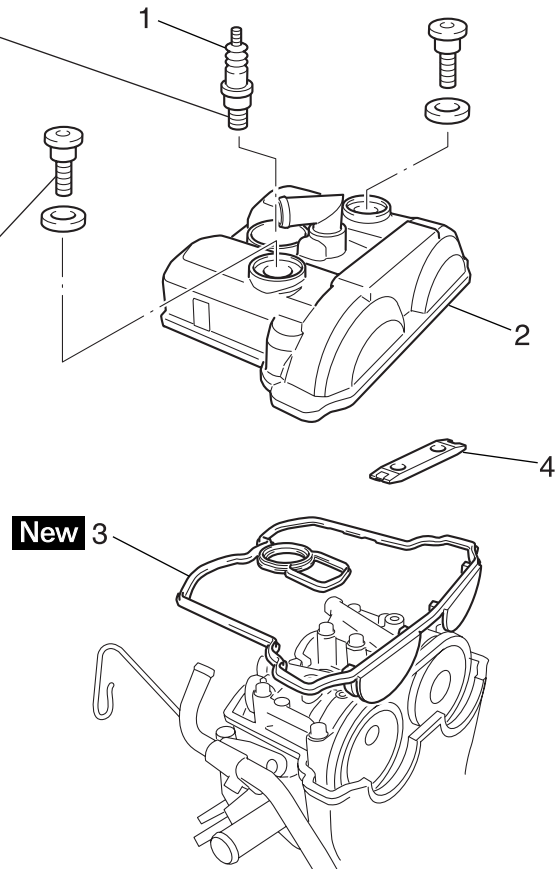
CAMSHAFTS

Removing the cylinder head cover



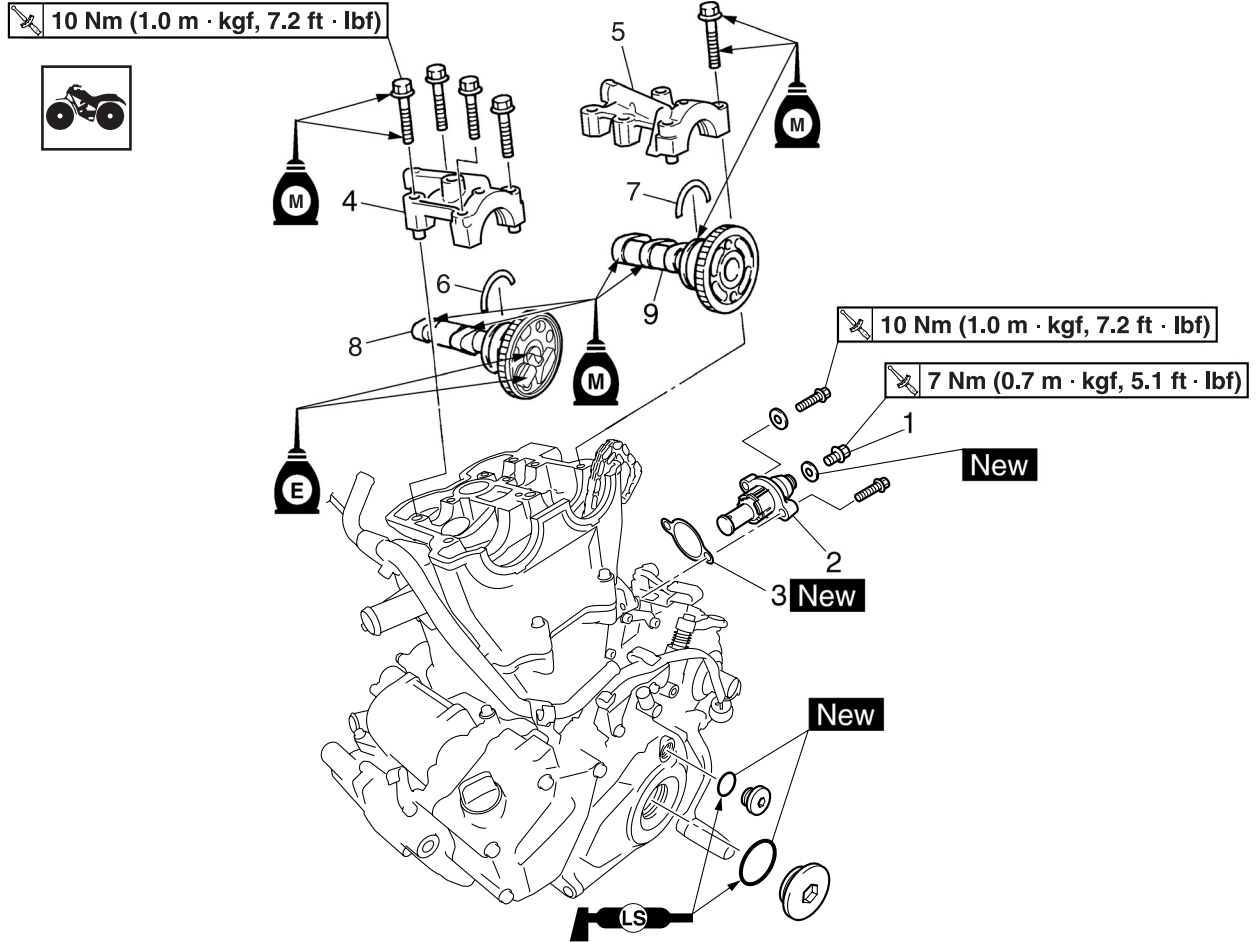
13 Nm (1.3 m · kgf, 9.4 ft · lbf)

10 Nm (1.0 m · kgf, 7.2 ft · lbf)



Order	Job/Parts to remove	Q'ty	Remarks
	Seat		Refer to "GENERAL CHASSIS" on page 4-1.
	Fuel tank cover		Refer to "GENERAL CHASSIS" on page 4-1.
	Left side cover		Refer to "GENERAL CHASSIS" on page 4-1.
	Right side cover		Refer to "GENERAL CHASSIS" on page 4-1.
1	Spark plug	1	
2	Cylinder head cover	1	
3	Cylinder head cover gasket	1	
4	Timing chain guide (top side)	1	
			For installation, reverse the removal procedure.

Removing the camshafts

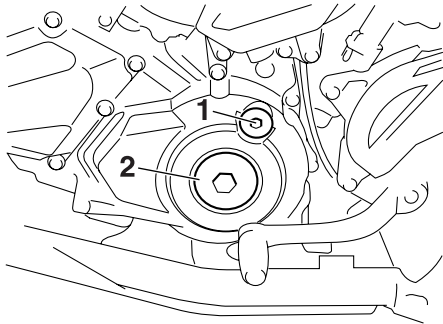


Order	Job/Parts to remove	Q'ty	Remarks
1	Tensioner cap bolt	1	
2	Timing chain tensioner	1	
3	Gasket	1	
4	Exhaust camshaft cap	1	
5	Intake camshaft cap	1	
6	Clip	1	
7	Clip	1	
8	Exhaust camshaft	1	
9	Intake camshaft	1	
			For installation, reverse the removal procedure.

EAS23810

REMOVING THE CAMSHAFTS

1. Remove:
 - Timing mark accessing screw "1"
 - Crankshaft end accessing screw "2"



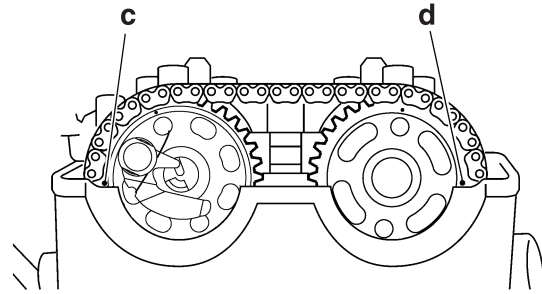
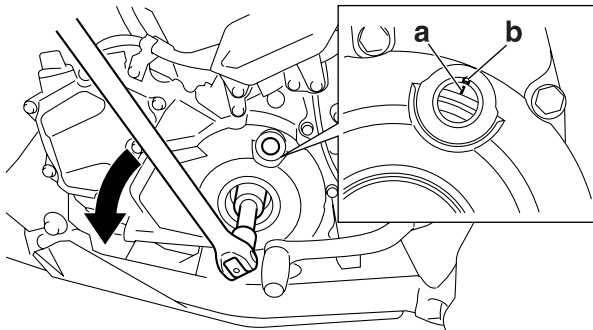
2. Align:
 - "I" mark on the generator rotor (with the stationary pointer on the generator rotor cover)



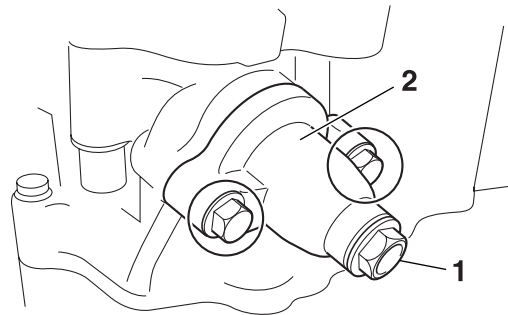
- a. Turn the crankshaft counterclockwise.
- b. When piston is at TDC on the compression stroke, align the "I" mark "a" on the generator rotor with the stationary pointer "b" on the generator rotor cover.

TIP

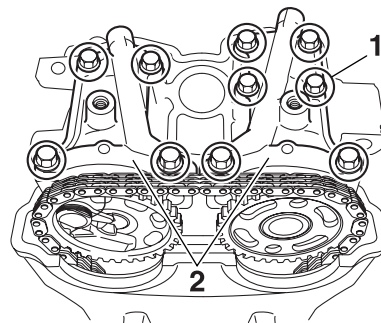
- In order to be sure that the piston is at the TDC, the punch mark "c" on the exhaust camshaft sprocket and the punch mark "d" on the intake camshaft sprocket must align with the cylinder head mating surface, as shown in the illustration.
- TDC on the compression stroke can be found when the camshaft lobes are turned away from each other.



3. Loosen:
 - Tensioner cap bolt "1"
4. Remove:
 - Timing chain tensioner "2"
 - Timing chain tensioner gasket



5. Remove:
 - Camshaft cap bolts "1"
 - Camshaft caps "2"



ECA13720

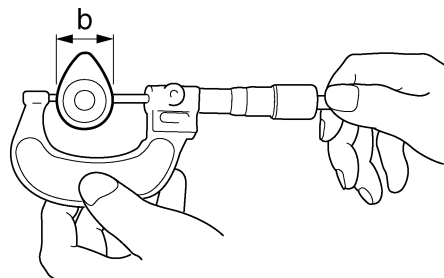
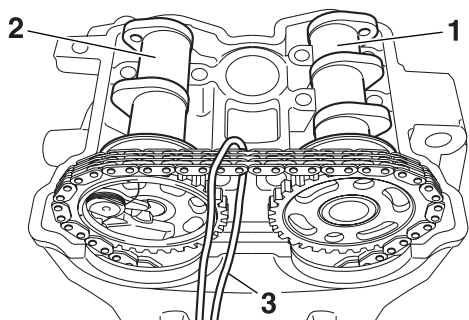
NOTICE

To prevent damage to the cylinder head, camshafts or camshaft caps, loosen the camshaft cap bolts in stages and in a criss-cross pattern, working from the outside in.

6. Remove:
 - Intake camshaft "1"
 - Exhaust camshaft "2"

TIP

To prevent the timing chain from falling into the crankcase, fasten it with a wire "3".



EAS23850

CHECKING THE CAMSHAFTS

1. Check:
 - Camshaft lobes
Blue discoloration/pitting/scratches → Replace the camshaft.
2. Measure:
 - Camshaft lobe dimensions “a” and “b”
Out of specification → Replace the camshaft.



Camshaft lobe dimension limit

Intake “a”
30.100–30.200 mm (1.1850–1.1890 in)

Limit
30.000 mm (1.1811 in)

Intake “b”
22.450–22.550 mm (0.8839–0.8878 in)

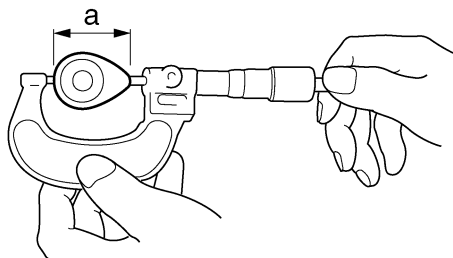
Limit
22.350 mm (0.8799 in)

Exhaust “a”
30.950–31.050 mm (1.2185–1.2224 in)

Limit
30.850 mm (1.2146 in)

Exhaust “b”
22.494–22.594 mm (0.8856–0.8895 in)

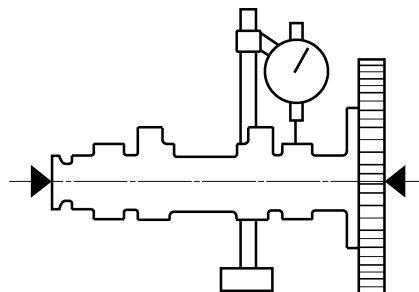
Limit
22.394 mm (0.8817 in)



3. Measure:
 - Camshaft runout
Out of specification → Replace.



Camshaft runout limit
0.030 mm (0.0012 in)



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4. Measure:
 - Camshaft-journal-to-camshaft-cap clearance
Out of specification → Measure the camshaft journal diameter.



Camshaft-journal-to-camshaft-cap clearance
0.028–0.062 mm (0.0011–0.0024 in)
Limit
0.080 mm (0.0032 in)

- a. Install the camshaft into the cylinder head (without the camshaft caps).
- b. Position strip of Plastigauge® “1” onto the camshaft journal as shown.
- c. Install the clip and camshaft caps.

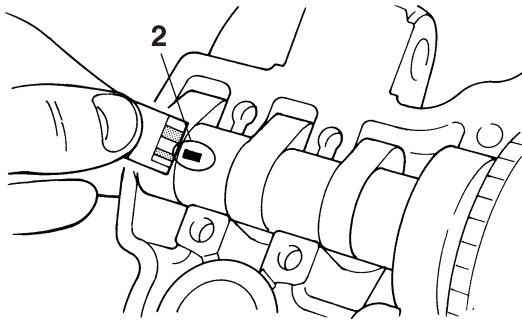
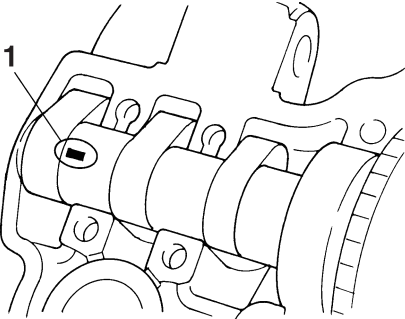
TIP

- Tighten the camshaft cap bolts in stages and in a crisscross pattern, working from the inner caps out.
- Do not turn the camshaft when measuring the camshaft journal-to-camshaft cap clearance with the Plastigauge®.



Camshaft cap bolt
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

- d. Remove the camshaft caps and then measure the width of the Plastigauge® "2".

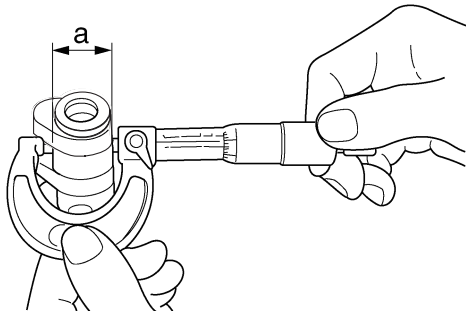


5. Measure:

- Camshaft journal diameter "a"
 Out of specification → Replace the camshaft.
 Within specification → Replace the cylinder head and the camshaft caps as a set.



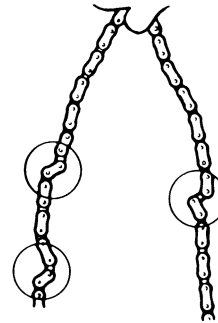
Camshaft journal diameter
21.959–21.972 mm (0.8645–0.8650 in)



EAS23870

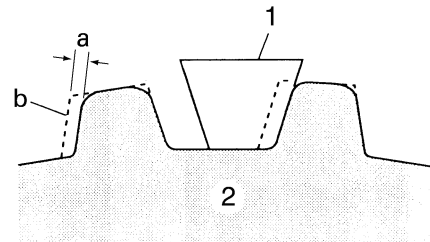
CHECKING THE TIMING CHAIN AND CAMSHAFT SPROCKET

1. Check:
- Timing chain
 Damage/stiffness → Replace the timing chain and camshaft and camshaft sprocket as a set.



343 007

2. Check:
- Camshaft sprockets
 More than 1/4 tooth wear "a" → Replace the camshaft sprocket and the timing chain as a set.



- a. 1/4 tooth
 b. Correct

1. Timing chain
 2. Camshaft sprocket

EAS18P1008

CHECKING THE CHAIN GUIDE

1. Check:
- Timing chain guide (top side)
 Wear/damage → Replace.

EAS23970

CHECKING THE TIMING CHAIN TENSIONER

1. Check:
- Timing chain tensioner
 Cracks/damage/rough movement → Replace.