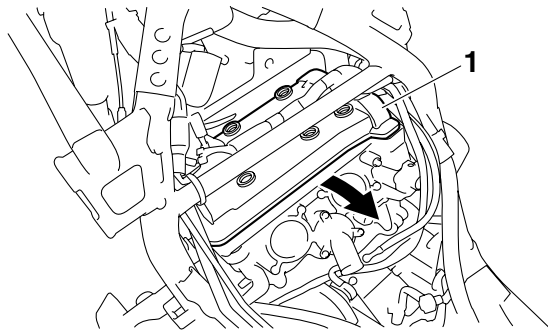


9. Remove:

- Cylinder head cover "1"
- Cylinder head cover gasket

TIP

Lift up the wire harness, brake pipes, clutch pipe, and clutch hose, and then pull the cylinder head cover rearward to remove it.



EAS23810

REMOVING THE CAMSHAFTS

1. Align:

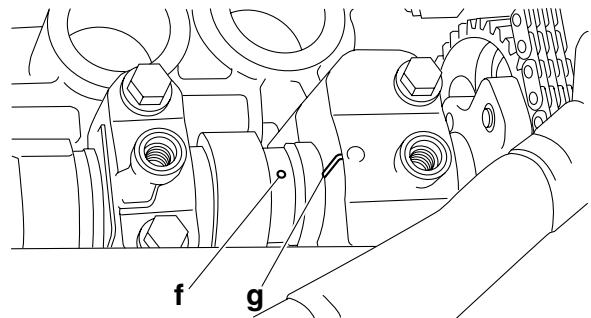
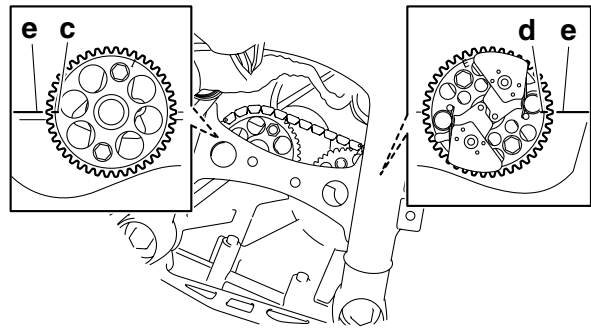
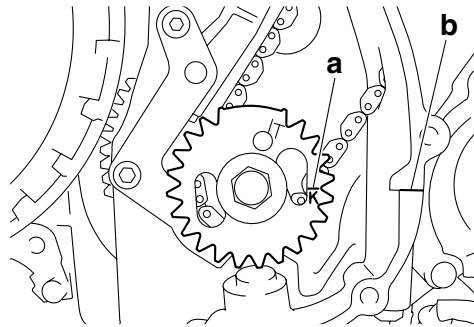
- "K" mark "a" on the pickup rotor
(with the crankcase mating surface "b")



- a. Turn the crankshaft clockwise.
- b. Align the "K" mark "a" with the crankcase mating surface "b".

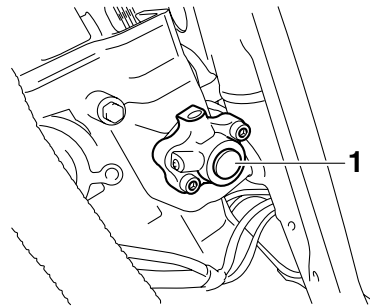
TIP

When the "K" mark "a" is aligned with the crankcase mating surface "b", check that the match mark "c" on the intake camshaft sprocket and match mark "d" on the exhaust camshaft sprocket are aligned with the cylinder head surface "e". Also, check that the hole "f" in the intake camshaft is aligned with the match mark "g" on the intake camshaft cap. If the match marks or hole are not aligned, turn the crankshaft clockwise 360 degrees.



2. Remove:

- Timing chain tensioner "1"
- Timing chain tensioner gasket



3. Remove:

- Camshaft caps

ECA13720

NOTICE

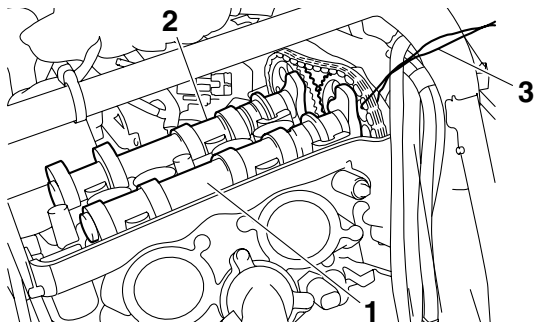
To prevent damage to the cylinder head, camshafts or camshaft caps, loosen the camshaft cap bolts in stages and in a criss-cross pattern, working from the outside in.

4. Remove:

- Intake camshaft "1"
- Exhaust camshaft "2"

TIP

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



5. Remove:

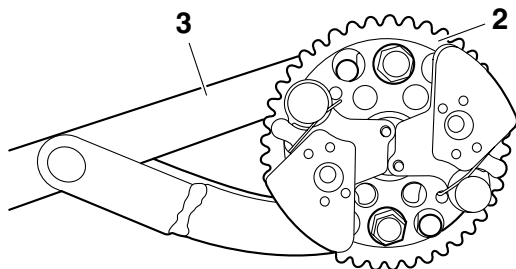
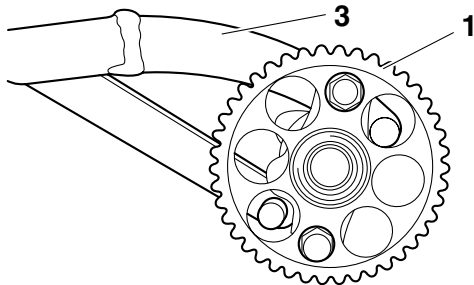
- Intake camshaft sprocket "1"
- Exhaust camshaft sprocket "2"

TIP

While holding the intake camshaft sprocket and exhaust camshaft sprocket with the rotor holding tool "3", loosen the intake camshaft sprocket bolts and exhaust camshaft sprocket bolts.



Rotor holding tool
90890-01235
Universal magneto & rotor holder
YU-01235



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 dimensions

Intake A

40.250–40.350 mm (1.5846–1.5886 in)

Limit

40.150 mm (1.5807 in)

Intake B

29.976–30.076 mm (1.1802–1.1841 in)

Limit

29.876 mm (1.1762 in)

Exhaust A

39.250–39.350 mm (1.5453–1.5492 in)

Limit

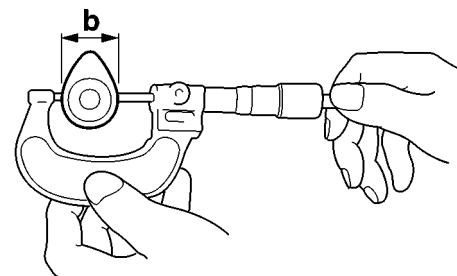
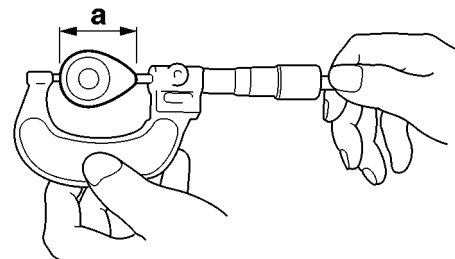
39.150 mm (1.5413 in)

Exhaust B

29.950–30.050 mm (1.1791–1.1831 in)

Limit

29.850 mm (1.1752 in)

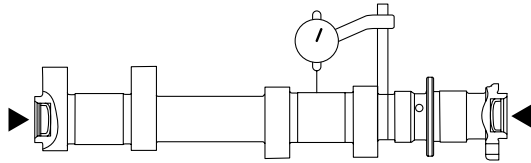


3. Measure:

- Camshaft runout
 Out of specification → Replace.



Camshaft runout limit
0.030 mm (0.0012 in)



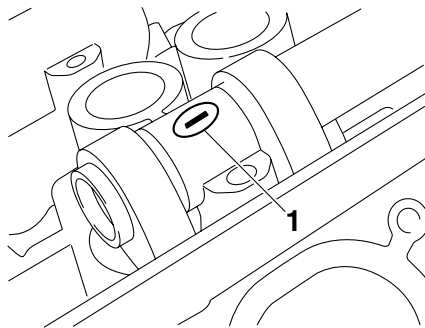
4. Measure:

- 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)

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



- Install the camshaft caps.

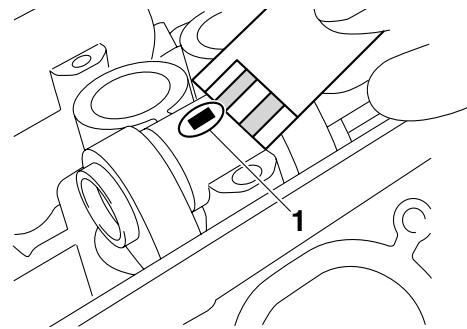
TIP

- 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)

- Remove the camshaft caps and then measure the width of the Plastigauge® “1”.

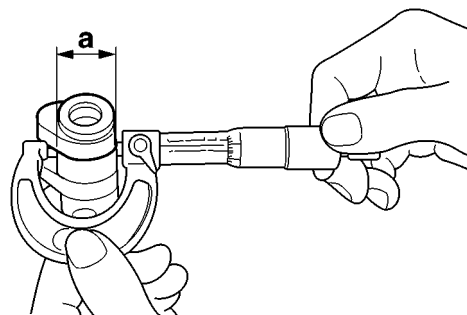


5. Measure:

- 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
24.459–24.472 mm (0.9630–0.9635 in)

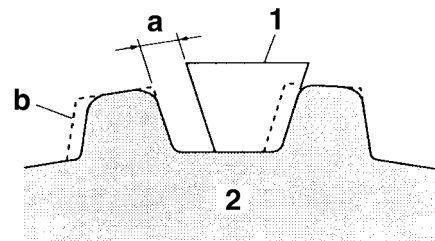


EAS23P1090

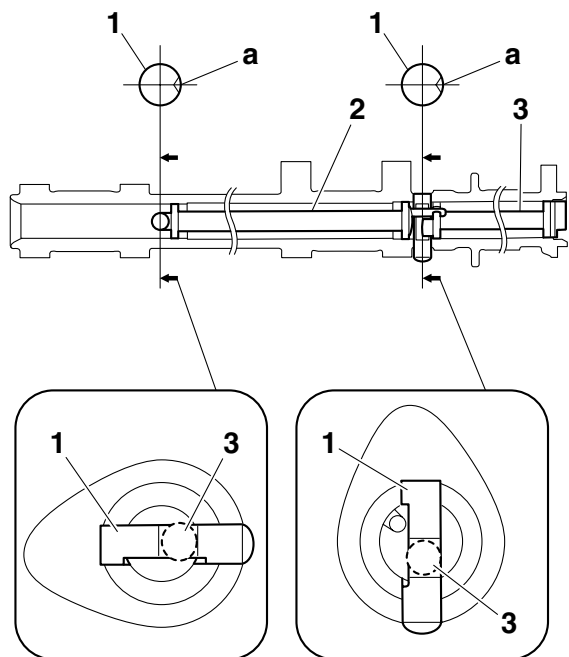
CHECKING THE CAMSHAFT SPROCKET

1. Check:

- Camshaft sprocket
More than 1/4 tooth wear “a” → Replace the camshaft sprocket, timing chain, and crankshaft as a set.



- a. 1/4 tooth
- b. Correct
- 1. Timing chain roller
- 2. Camshaft sprocket



3. Install:

- Intake camshaft sprocket "1"
- Exhaust camshaft sprocket "2"



Camshaft sprocket bolt
24 Nm (2.4 m·kgf, 17 ft·lbf)

ECA23P1077

NOTICE

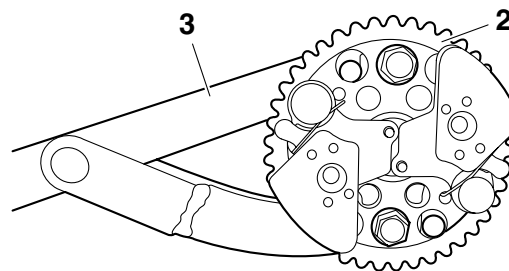
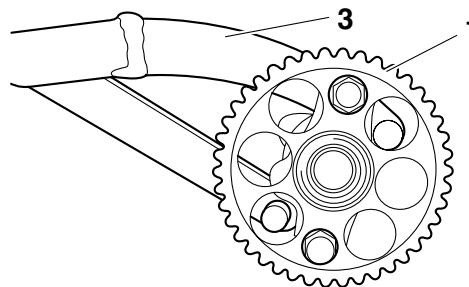
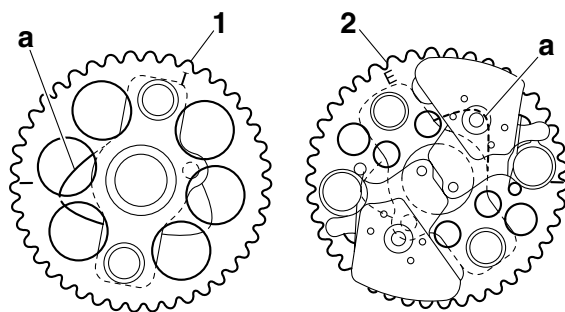
Be sure to tighten the camshaft sprocket bolts to the specified torque to avoid the possibility of the bolts coming loose and damaging the engine.

TIP

- Install the cam lobe #1 "a" at the position shown in the illustration.
- Tighten the camshaft sprocket bolt with the rotor holding tool "3".



Rotor holding tool
90890-01235
Universal magneto & rotor holder
YU-01235



4. Install:

- Timing chain "1"
- Exhaust camshaft "2"
- Exhaust camshaft cap

ECA23P1073

NOTICE

Do not turn the crankshaft when installing the camshaft to avoid damage or improper valve timing.

TIP

- When installing the timing chain, start with the exhaust camshaft and be sure to keep the timing chain as tight as possible on the exhaust side.
- Make sure the match mark "a" on the exhaust camshaft sprocket are aligned with the cylinder head edge.



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