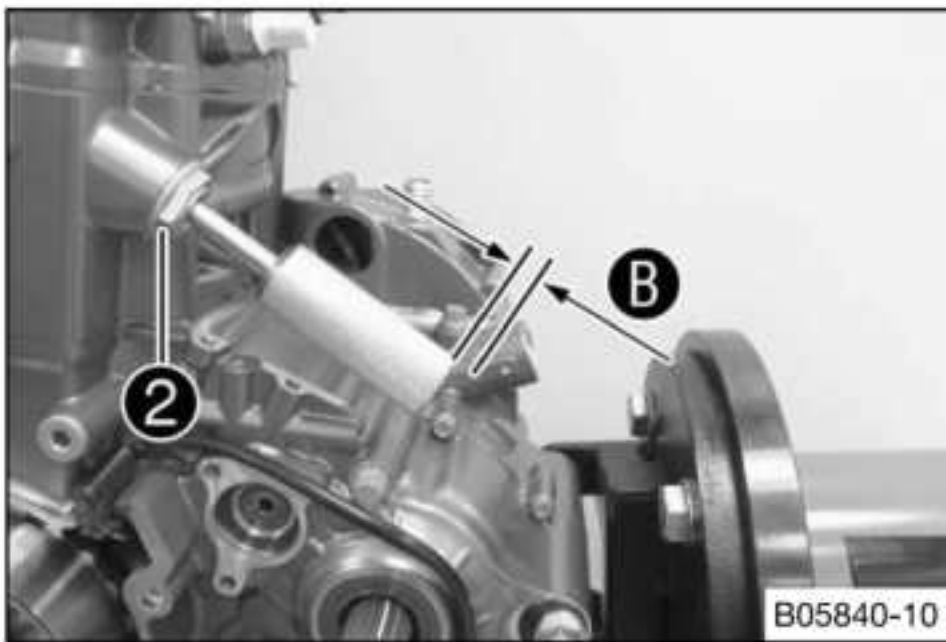
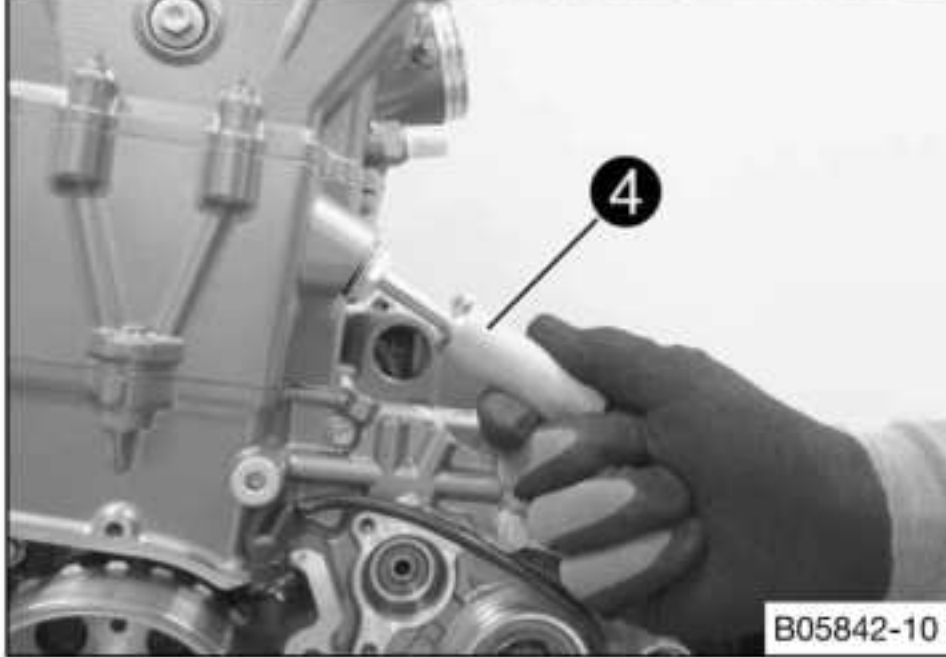


- Remove screw ③.
- Press the timing chain tensioner toward the timing chain using special tool ④.

Release device for timing chain tensioner (77329051000)
(p. 393)

✓ The timing chain tensioner unlocks.



- Tighten screw plug ②.

Guideline

Plug, timing chain tensioner	M24x1.5	25 Nm (18.4 lbf ft)
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- Press against the timing chain tensioner using the special tool and check the notch clearance B.

Guideline

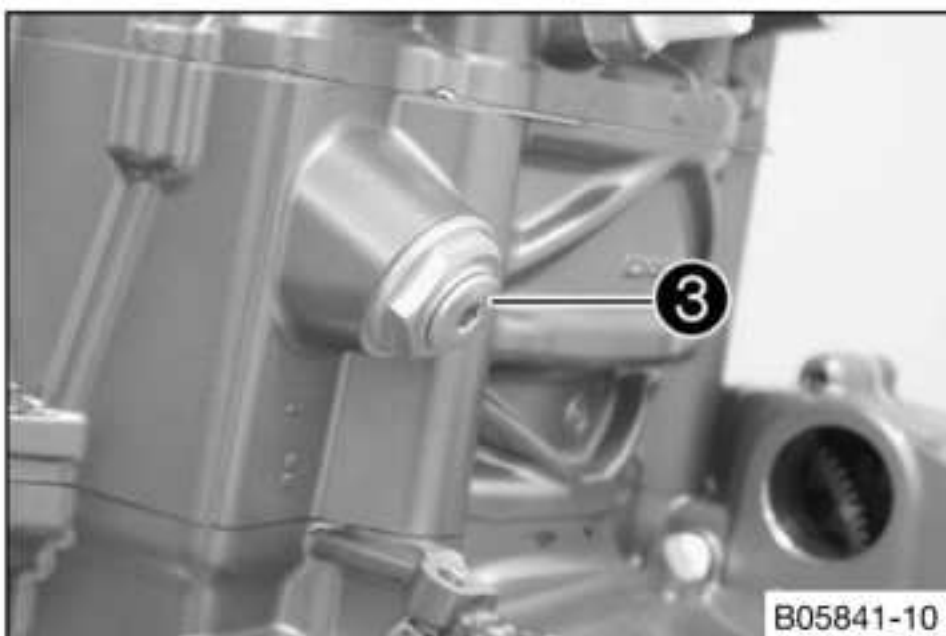
Notch clearance B	$\geq 0.5 \text{ mm } (\geq 0.02 \text{ in})$
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Release device for timing chain tensioner (77329051000)
(p. 393)

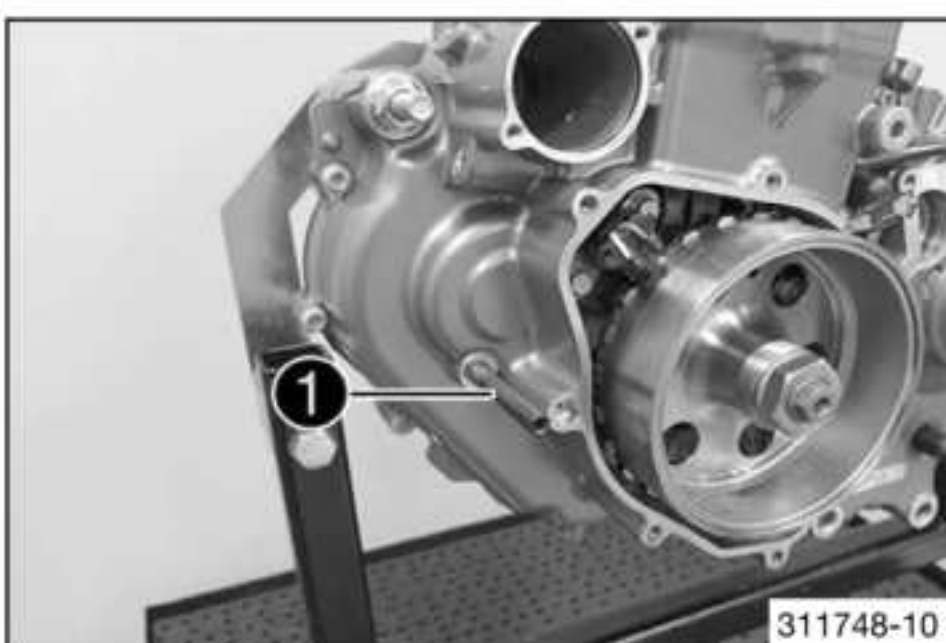
- Mount screw ③ with the O-ring and tighten.

Guideline

Screw, unlocking of timing chain tensioner	M10x1	10 Nm (7.4 lbf ft)
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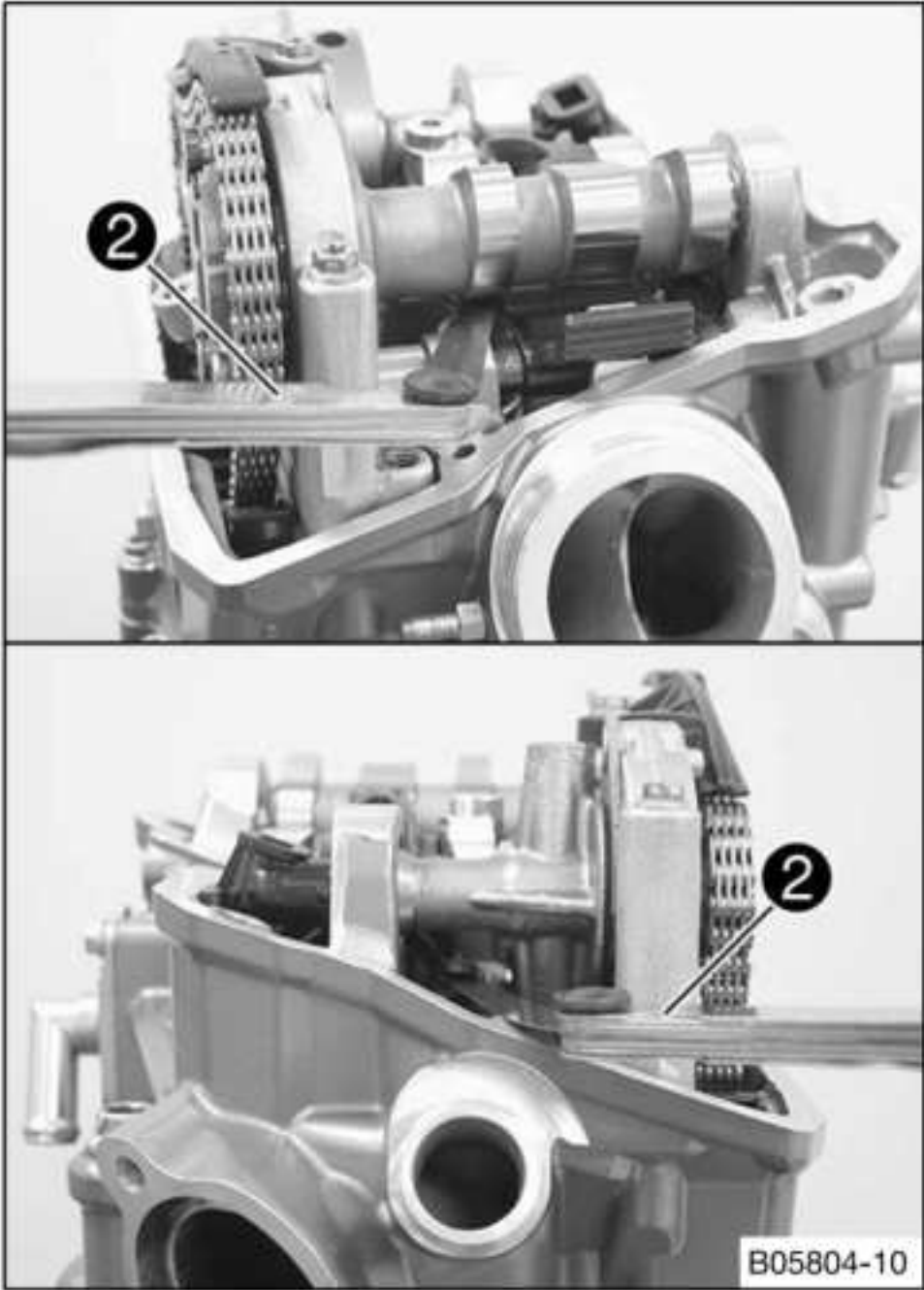
18.5.23 Checking the valve clearance



- Remove special tool ①.

Locking screw (61229015000) (p. 386)

- Crank the engine several times.
- Position the engine at ignition top dead center. (p. 189)



- Check the valve clearance at the intake valves between the camshaft and cam levers using the special tool ②.

Guideline

Valve play, cold	
Intake at: 20 °C (68 °F)	0.10 ... 0.15 mm (0.0039 ... 0.0059 in)

Feeler gauge (59029041100) (📖 p. 384)

- » If the valve clearance does not meet specifications:
 - Adjust the valve clearance. (📖 p. 260)
- Check the valve clearance at the exhaust valves between valve and rocker arm using special tool ②.

Guideline

Valve play, cold	
Exhaust at: 20 °C (68 °F)	0.22 ... 0.27 mm (0.0087 ... 0.0106 in)

Feeler gauge (59029041100) (📖 p. 384)

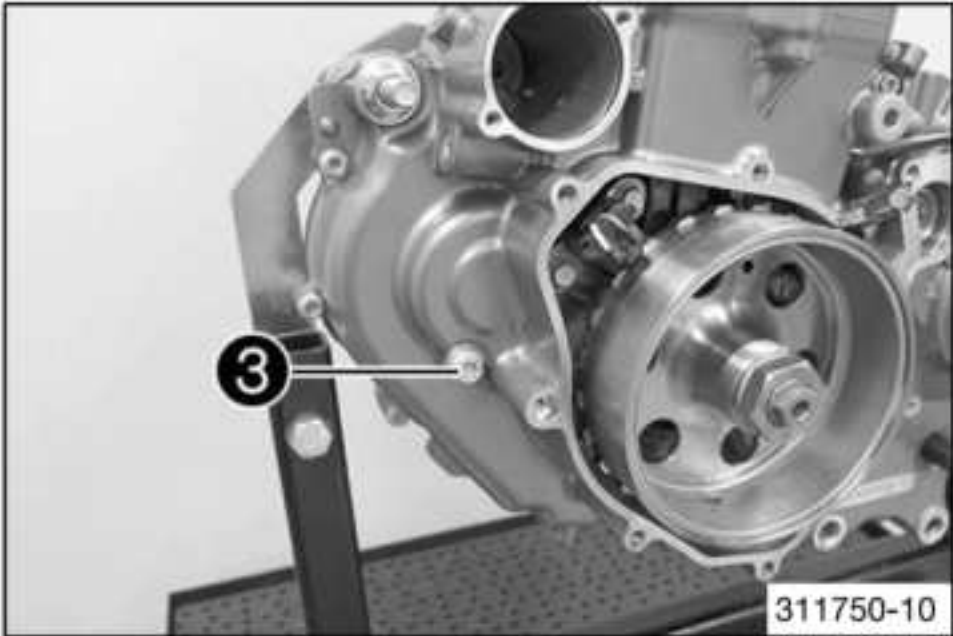
- » If the valve clearance does not meet specifications:
 - Adjust the valve clearance. (📖 p. 260)
- Remove the special tool.

Locking screw (61229015000) (📖 p. 386)
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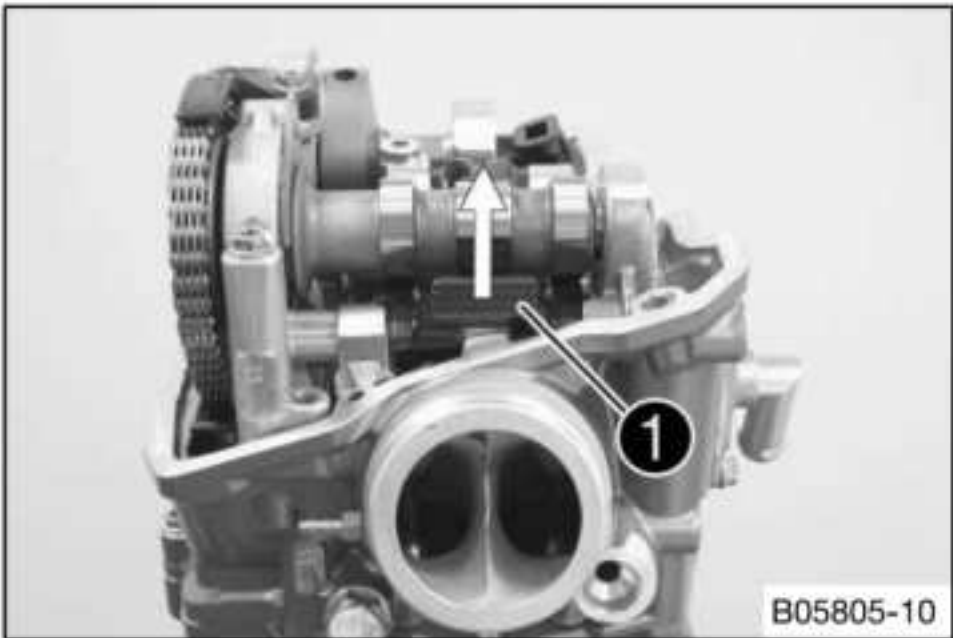
- Mount and tighten screw ③ with the washer.

Guideline

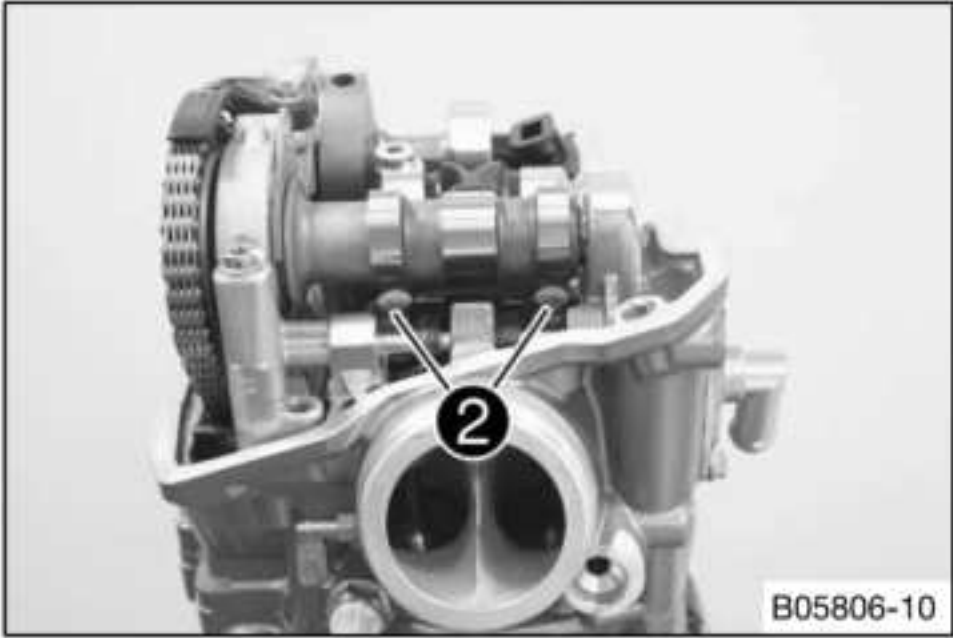
Screw plug, locking screw	M8	15 Nm (11.1 lbf ft)
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18.5.24 Adjusting the valve clearance



- Push cam lever clip ① up and remove.

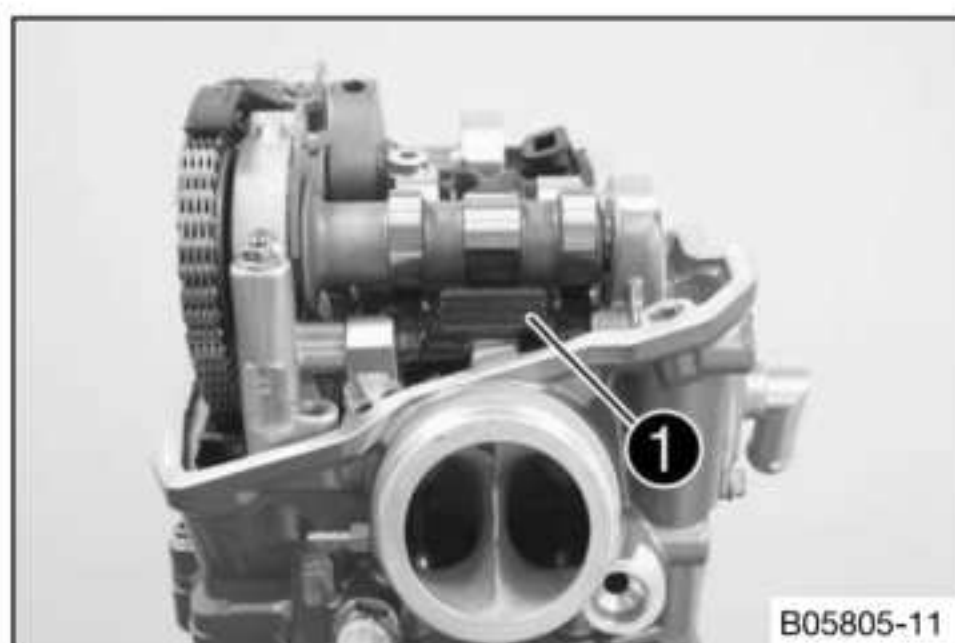


- Push the cam lever aside.

**Info**
Make sure that the crankshaft is at top dead center.

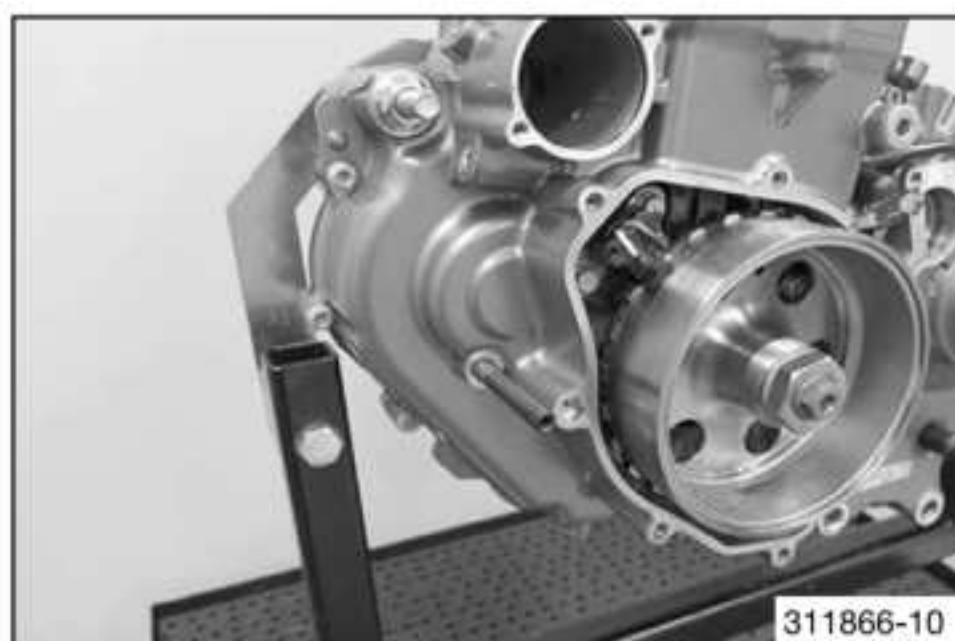
- Remove shims ② and set them down according to the installation position.
- Correct the shims based on the results of the valve clearance check.
- Insert suitable shims.

- Position cam lever.
- Mount cam lever clip ①.

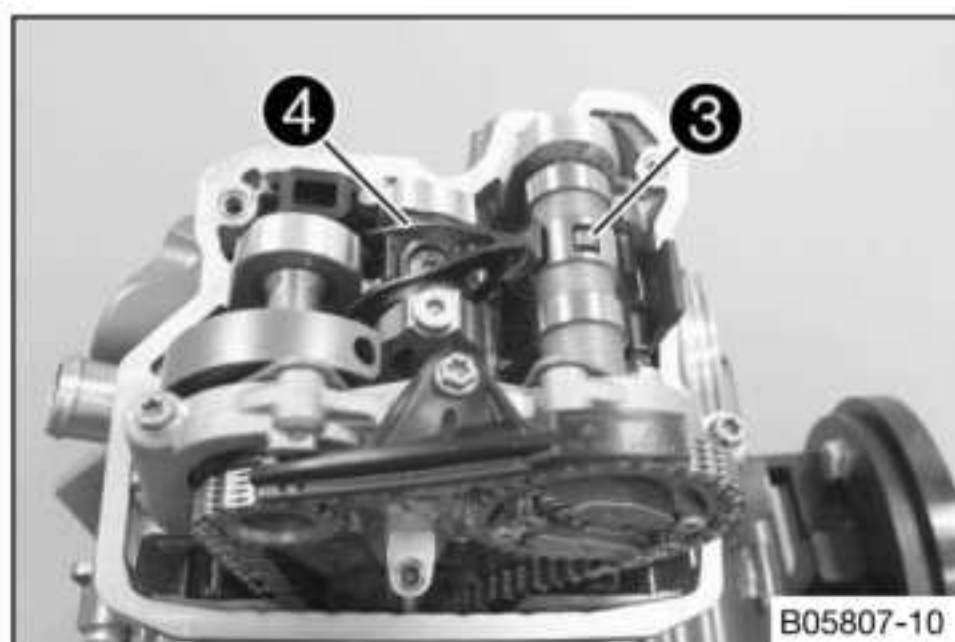


- Remove the special tool.

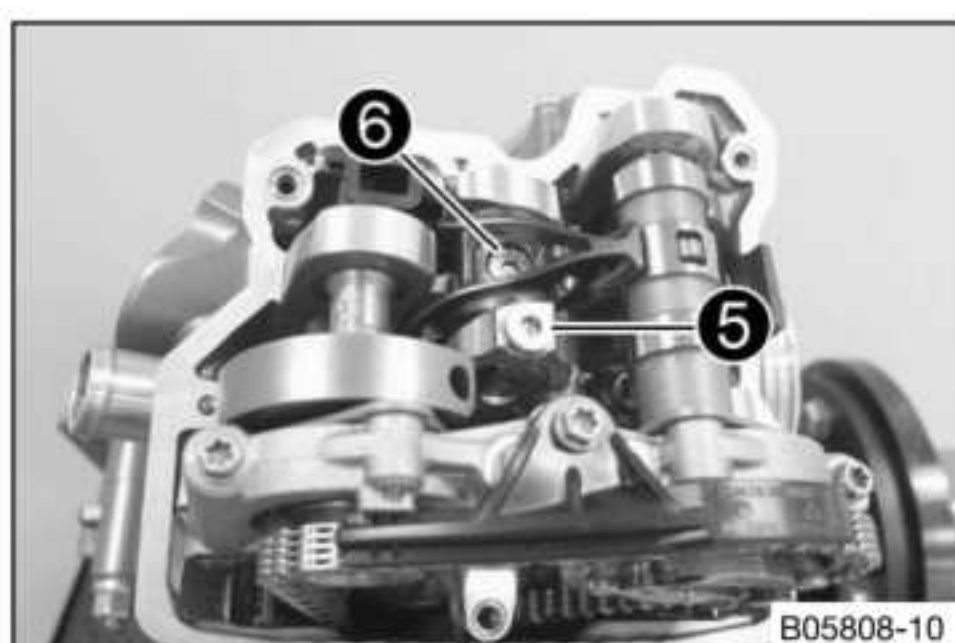
Locking screw (61229015000) (🔧 p. 386)



- Keep turning the crankshaft counterclockwise until autode-compressor cam ③ is visible in front of rocker arm ④ as shown.

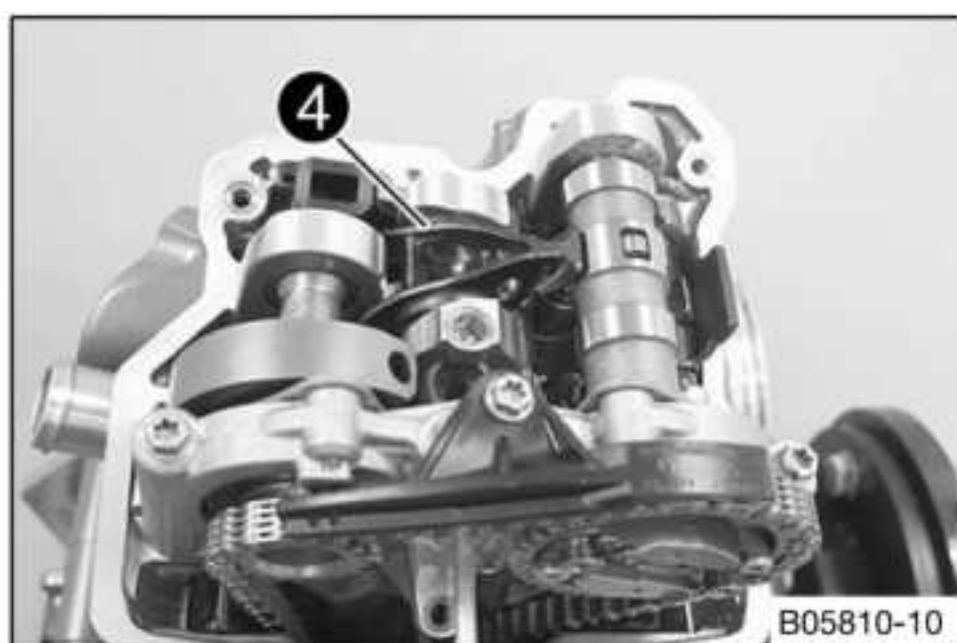


- Remove screws ⑤ and ⑥.

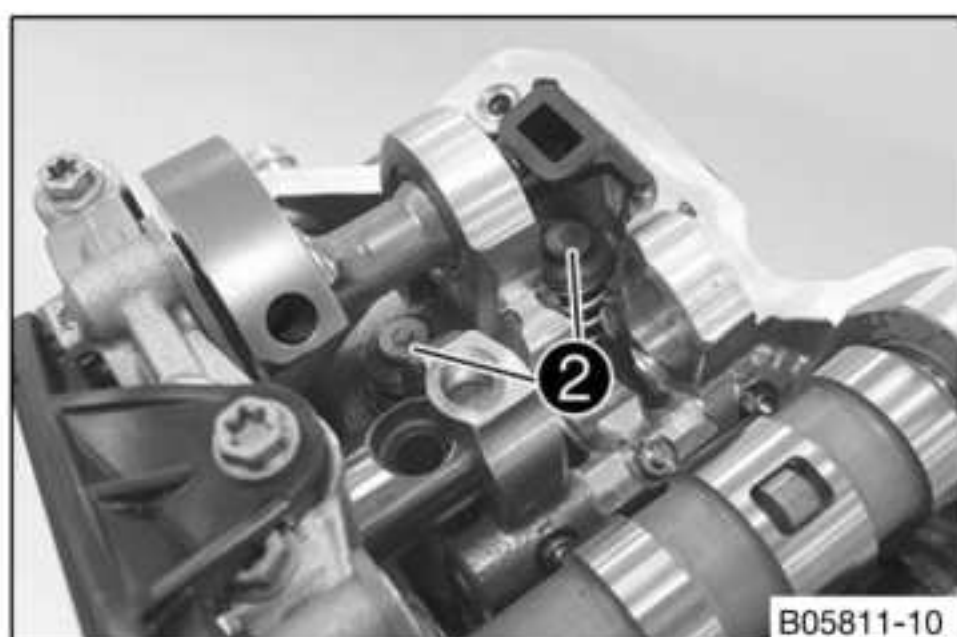


- Screw a suitable M6 screw ⑦ into the rocker arm shaft.
- Remove the rocker arm shaft.

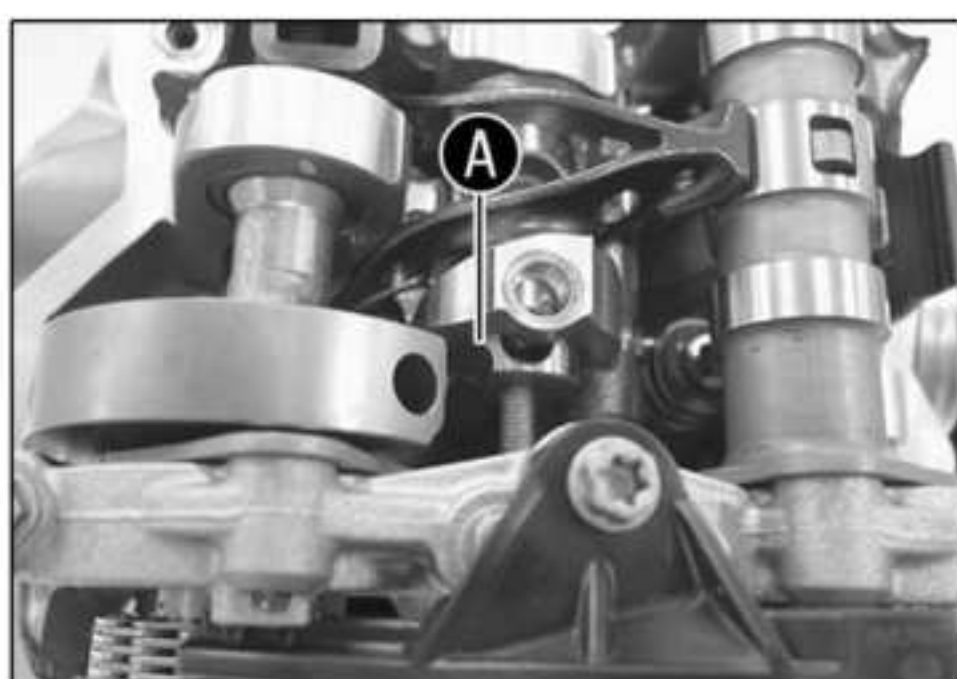




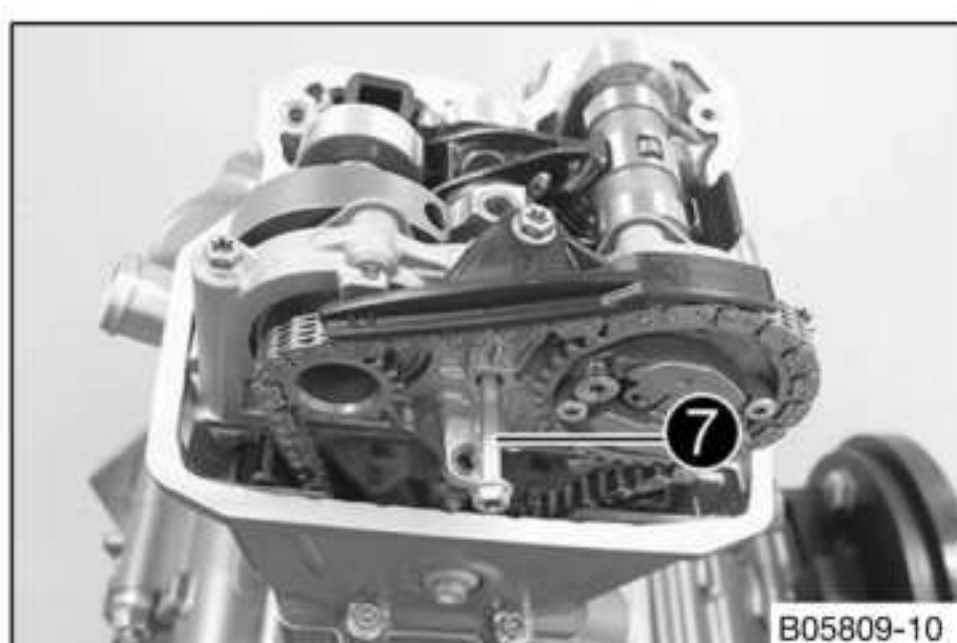
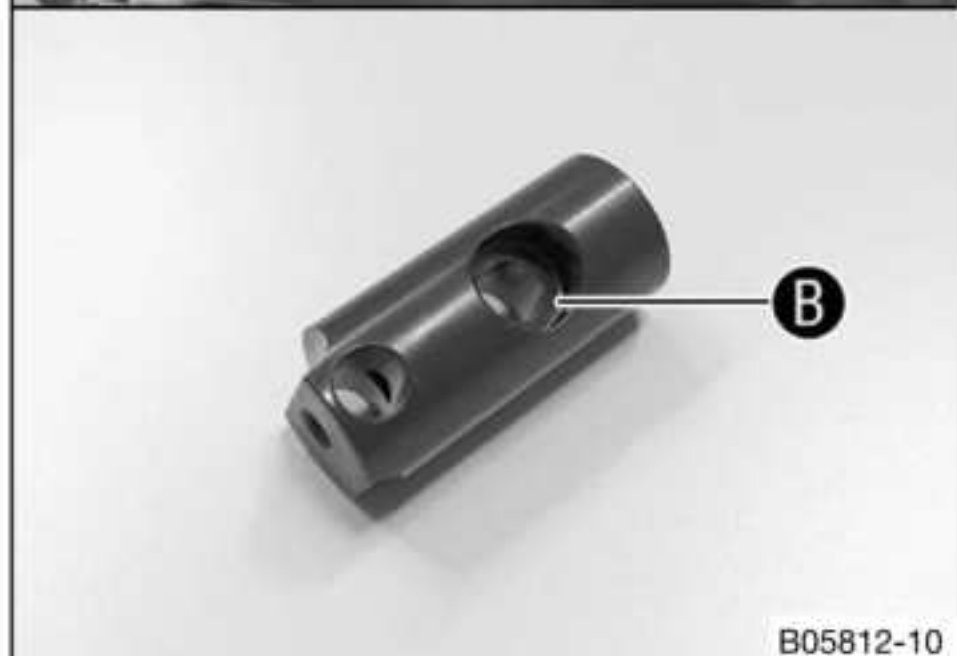
- Remove rocker arm ④.



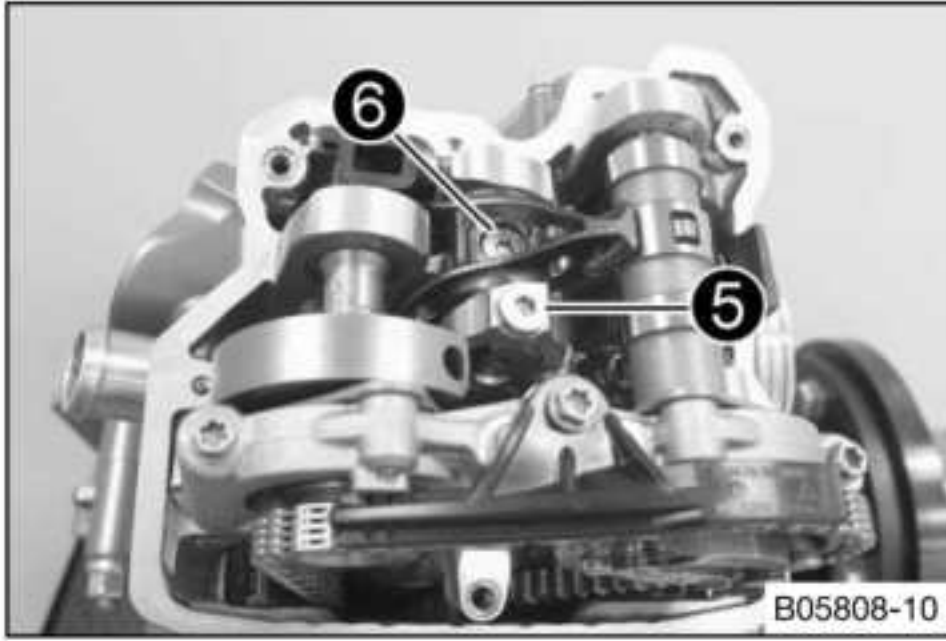
- Remove shims ② and set them down according to the installation position.
- Correct the shims based on the results of the valve clearance check.
- Insert suitable shims.



- Position the rocker arm and mount the rocker arm shaft.
 - ✓ The large recess ① must face the exhaust side.
 - ✓ Dip ② in the rocker arm shaft faces upward.



- Remove screw ⑦.



- Mount and tighten screw **5**.

Guideline

Screw, rocker arm shaft	M8x55	15 Nm (11.1 lbf ft)
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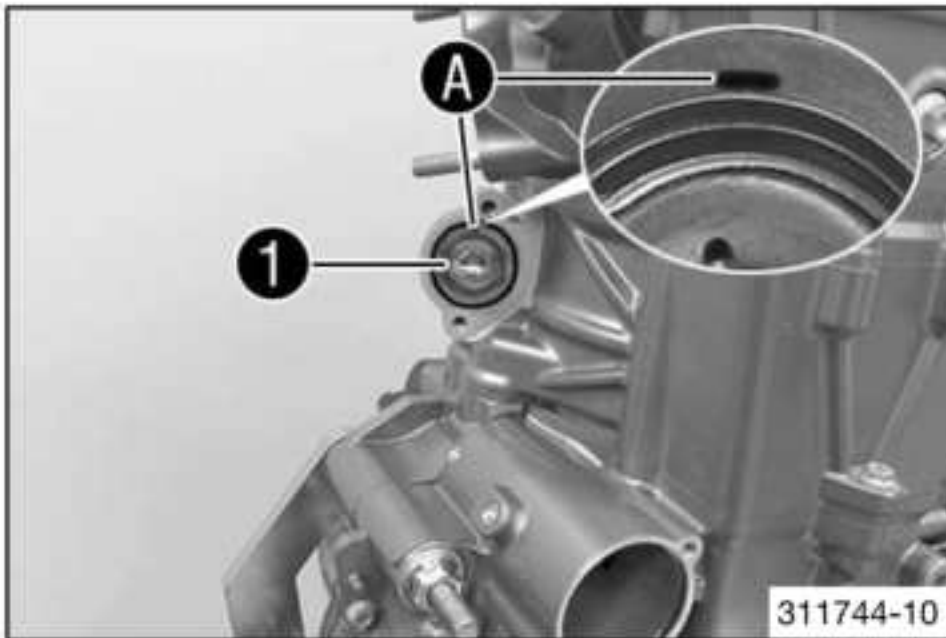
- Mount and tighten screw **6**.

Guideline

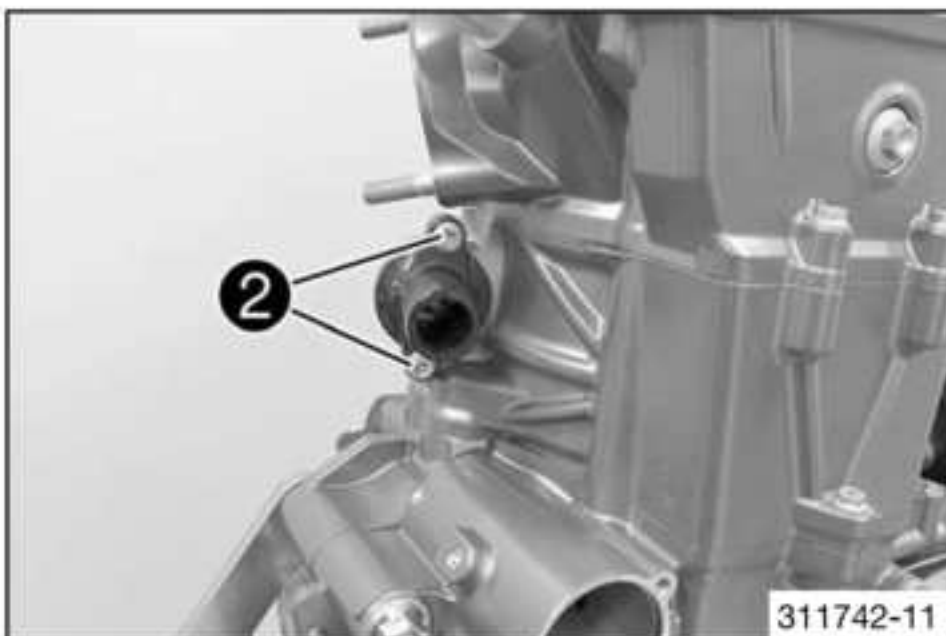
Screw, rocker arm shaft	M8x40	15 Nm (11.1 lbf ft)
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- Check the valve clearance. (📖 p. 259)

18.5.25 Installing the thermostat



- Position thermostat **1** with the gasket.
✓ Drill hole **A** must face upward.

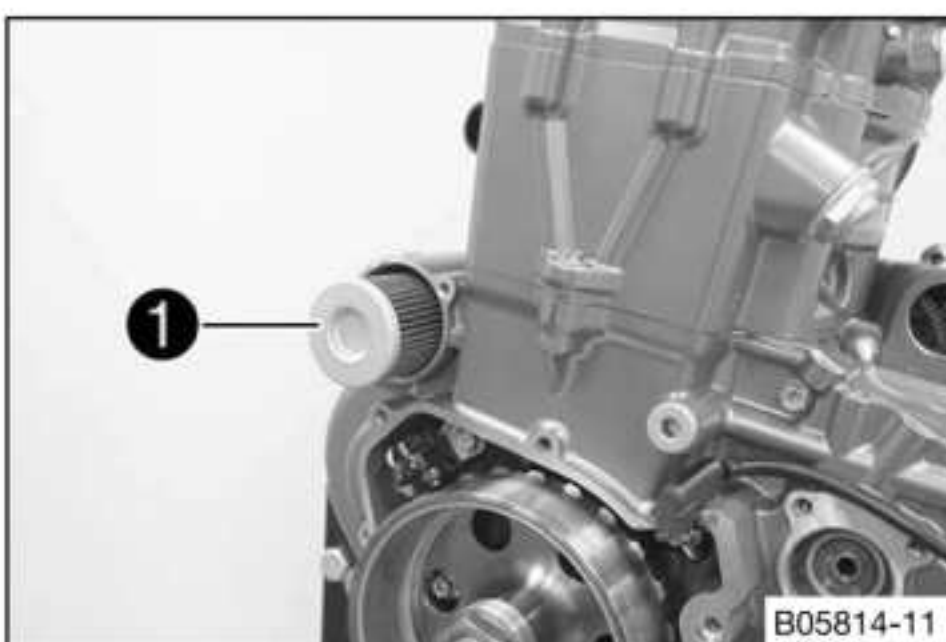


- Position the thermostat case.
- Mount and tighten screws **2**.

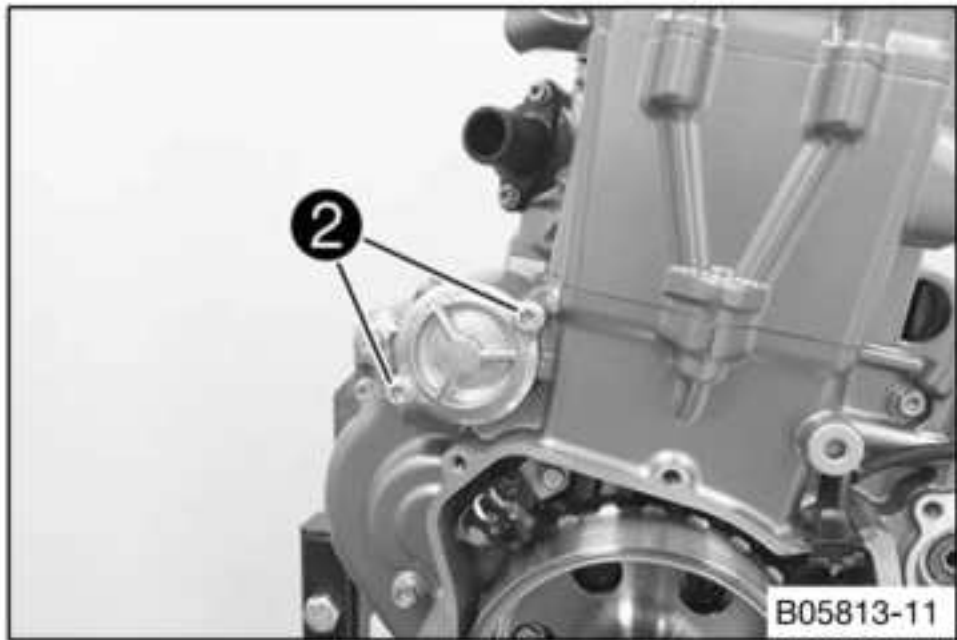
Guideline

Screw, thermostat housing	M6	10 Nm (7.4 lbf ft) Loctite®243™
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18.5.26 Installing the oil filter



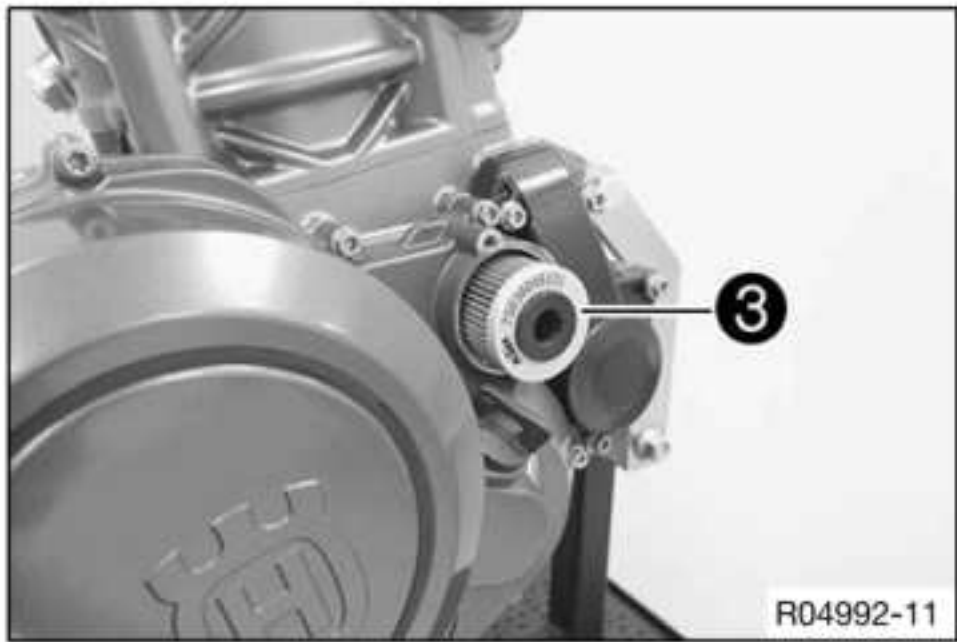
- Insert oil filter **1**.



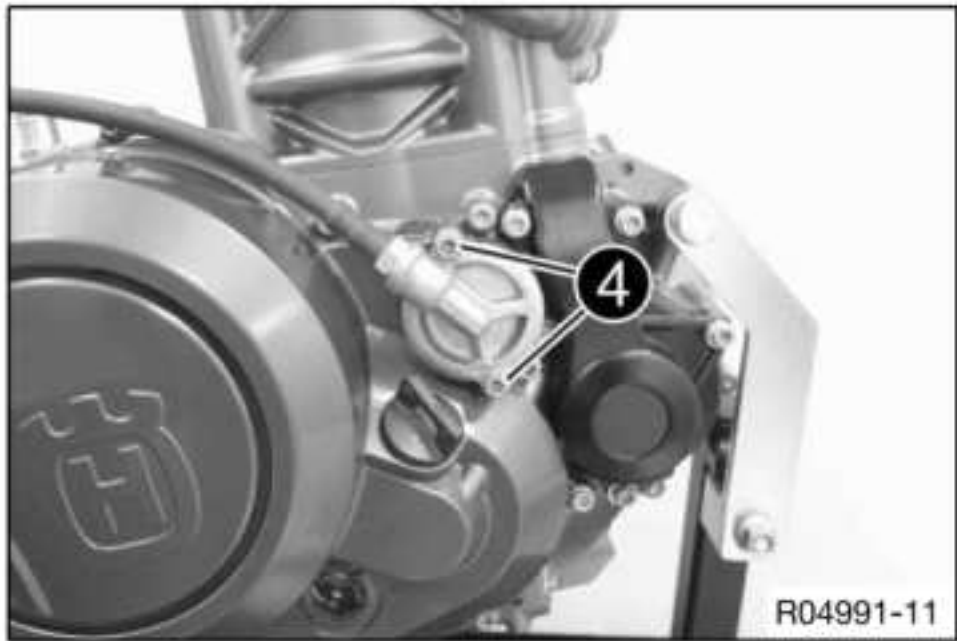
- Oil the O-ring of the oil filter cover and mount it with the oil filter cover.
- Mount and tighten screws ②.

Guideline

Screw, oil filter cover	M5	6 Nm (4.4 lbf ft)
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- Insert oil filter ③.

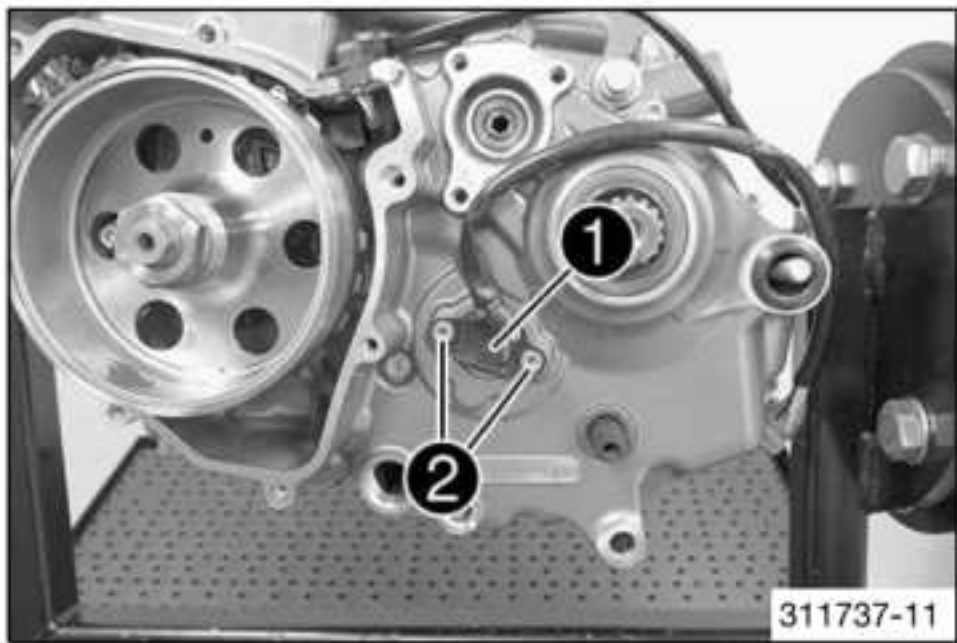


- Oil the O-ring of the oil filter cover and mount it with the oil filter cover.
- Mount and tighten screws ④.

Guideline

Screw, oil filter cover	M5	6 Nm (4.4 lbf ft)
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18.5.27 Installing the gear position sensor

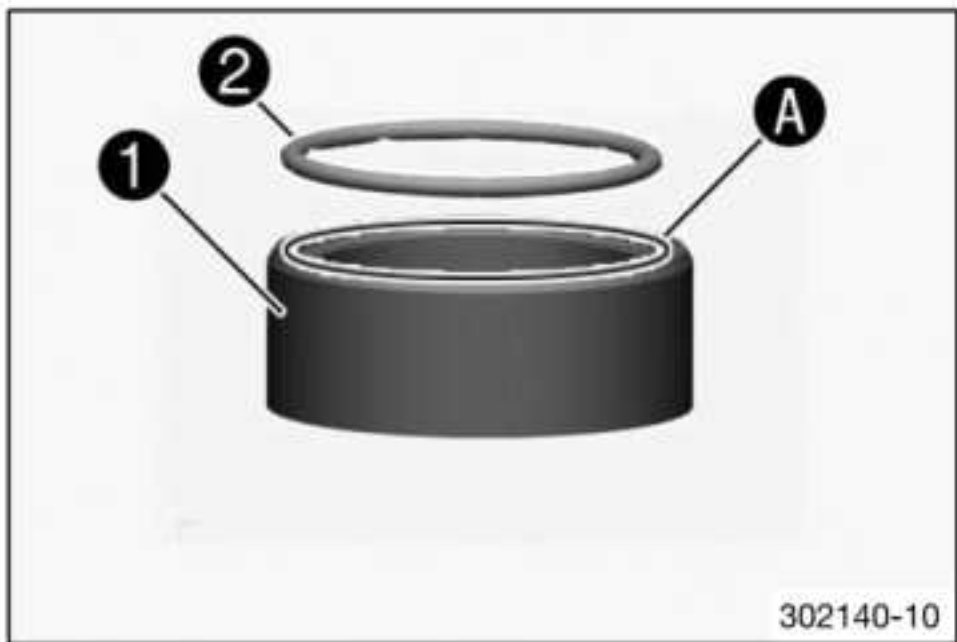


- Position gear position sensor ①.
- Mount and tighten screws ②.

Guideline

Screw, gear sensor	M5	5 Nm (3.7 lbf ft) Loctite® 243™
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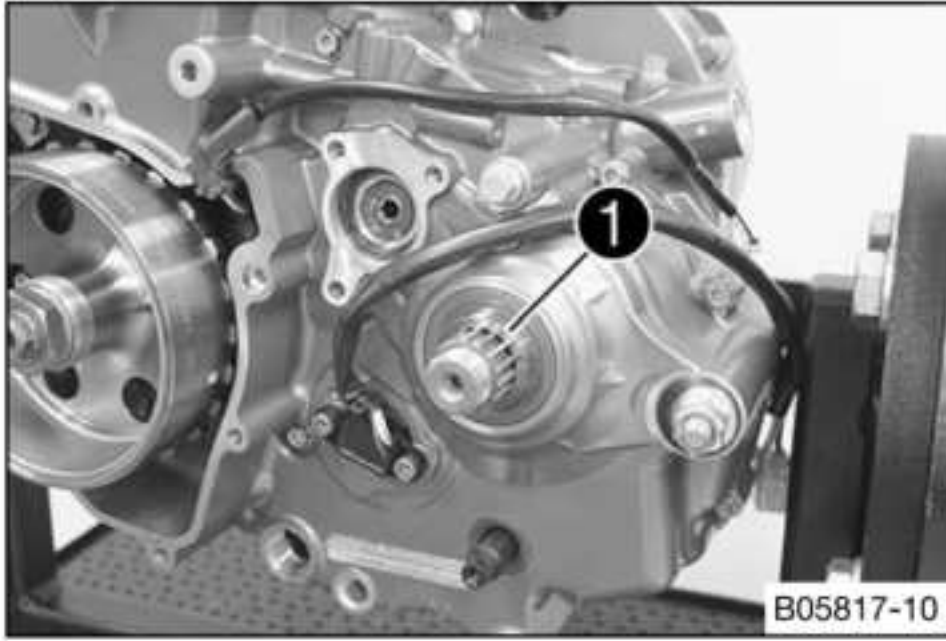
18.5.28 Installing the spacer



- Before mounting, grease spacer ① in area A and O-ring ②.

Long-life grease (p. 378)

- Position the O-ring in the recess of the spacer.

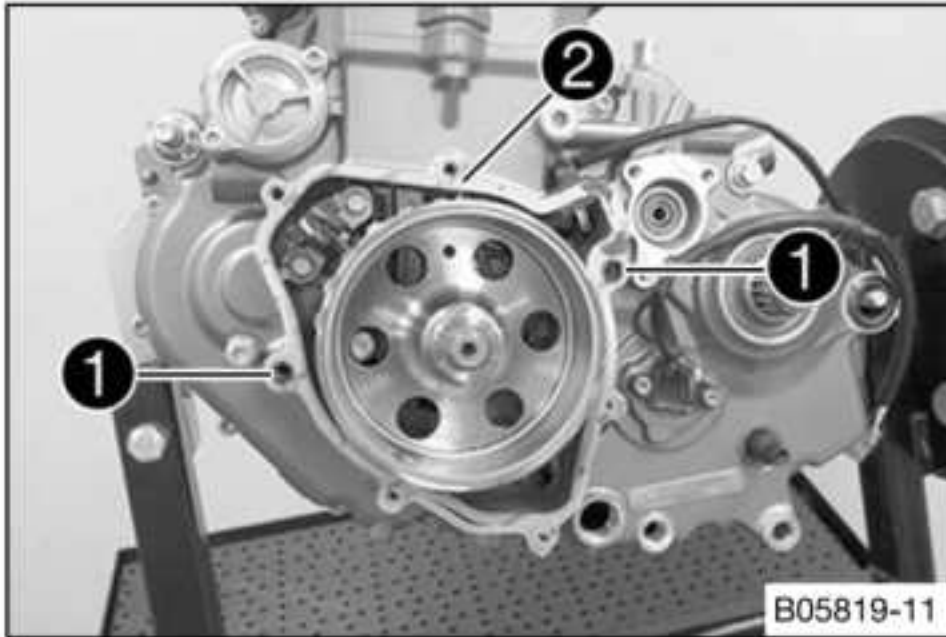


- Grease the shaft seal ring.

Long-life grease (p. 378)

- Push spacer ① with the O-ring onto the countershaft with a twisting motion.
 - ✓ The recess with the O-ring faces inward.
 - ✓ The shaft seal ring rests against the spacer along its entire circumference.

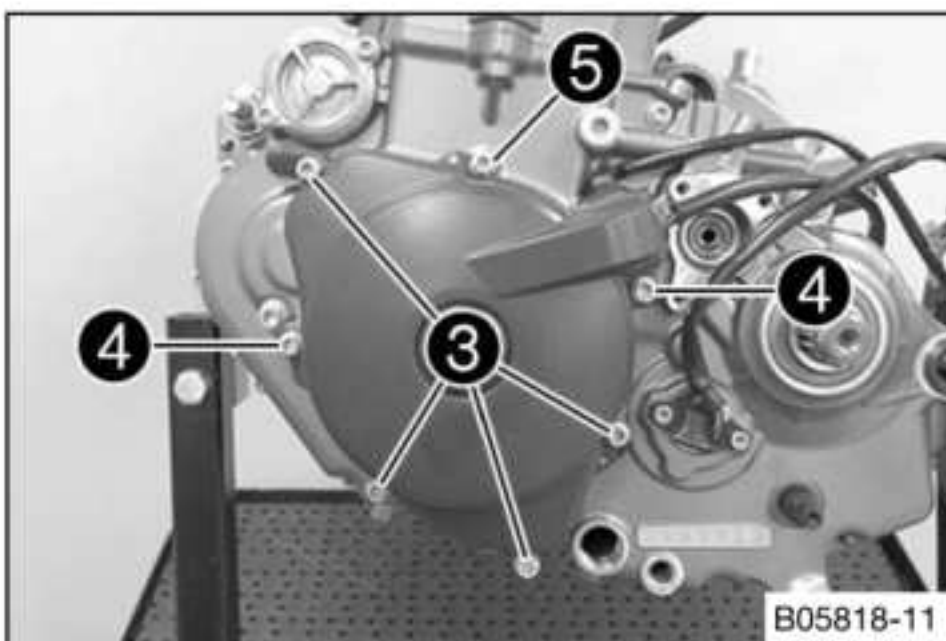
18.5.29 Installing the alternator cover



- Apply sealing compound lightly in the area of the rubber grommet.

Loctite® 5910

- Mount dowel ① and position the alternator cover gasket ②.



- Position the alternator cover.
- Mount and tighten screws ③.

Guideline

Screw in alternator cover	M6	10 Nm (7.4 lbf ft)
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- Mount and tighten screws ④.

Guideline

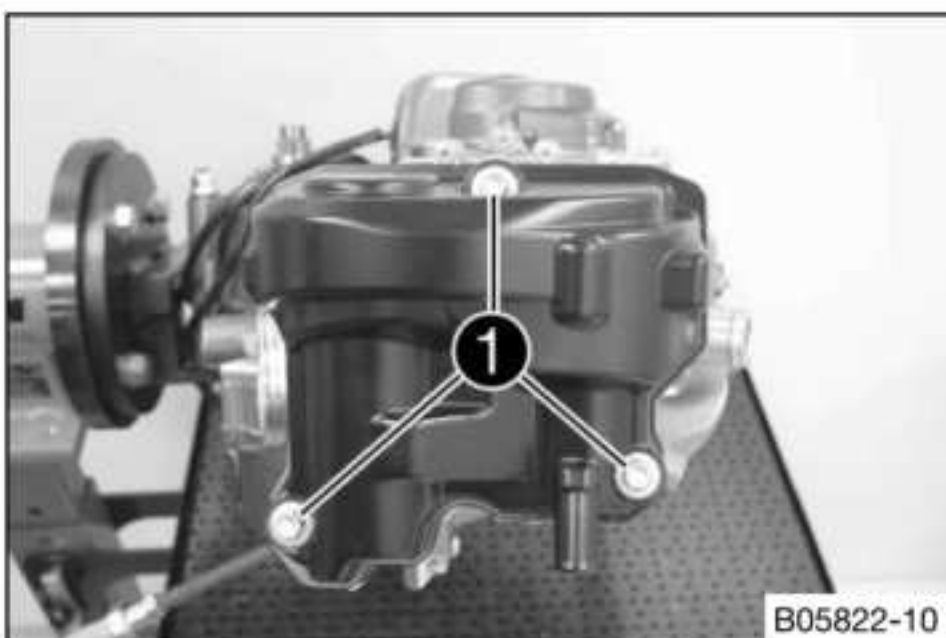
Screw, alternator cover	M6x30	10 Nm (7.4 lbf ft)
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- Mount and tighten screw ⑤.

Guideline

Screw, alternator cover (timing chain shaft through-hole)	M6	10 Nm (7.4 lbf ft) Loctite® 243™
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18.5.30 Installing the valve cover

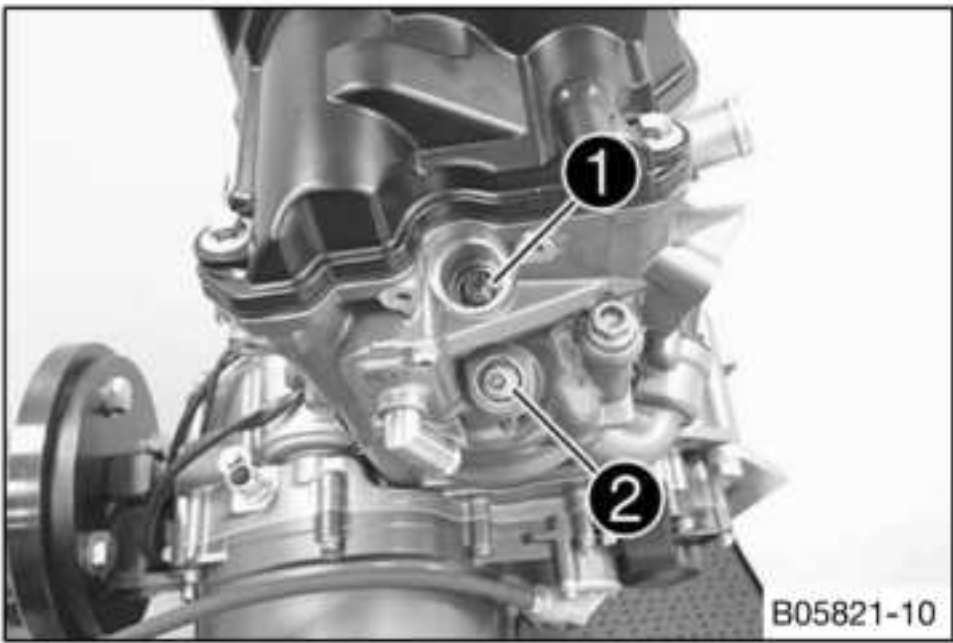


- Position the valve cover with the gasket.
- Mount and tighten screws ①.

Guideline

Screw, valve cover	M6	10 Nm (7.4 lbf ft)
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18.5.31 Installing the spark plugs

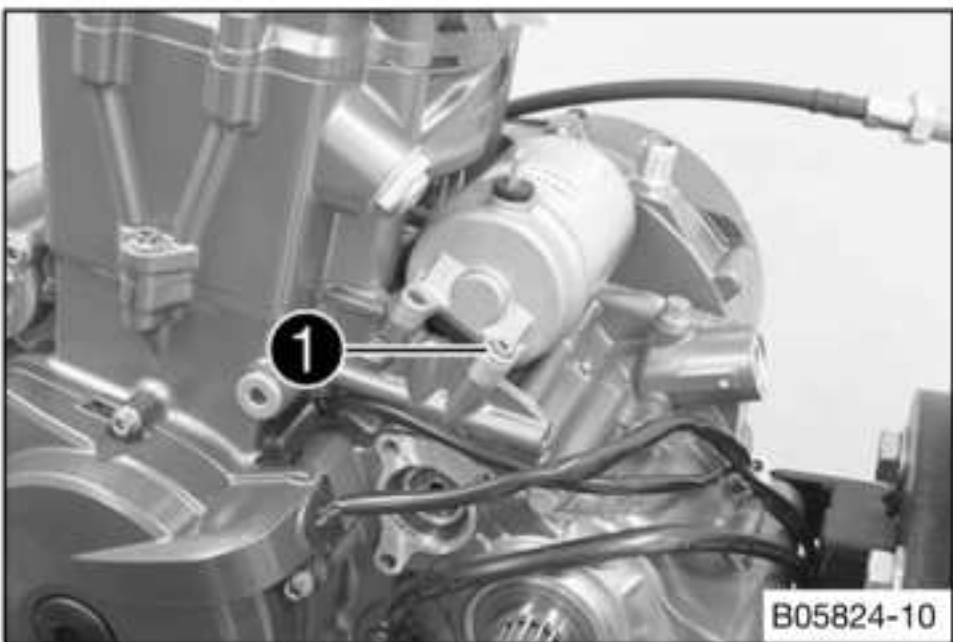


- Mount and tighten spark plug 1 using the special tool.
Guideline

Spark plug inside	M12x1.25	18 Nm (13.3 lbf ft)
Spark plug wrench (75029172000) (p. 391)		
- Mount and tighten spark plug 2 using the special tool.
Guideline

Spark plug outside	M10x1	11 Nm (8.1 lbf ft)
Spark plug wrench (75029172000) (p. 391)		

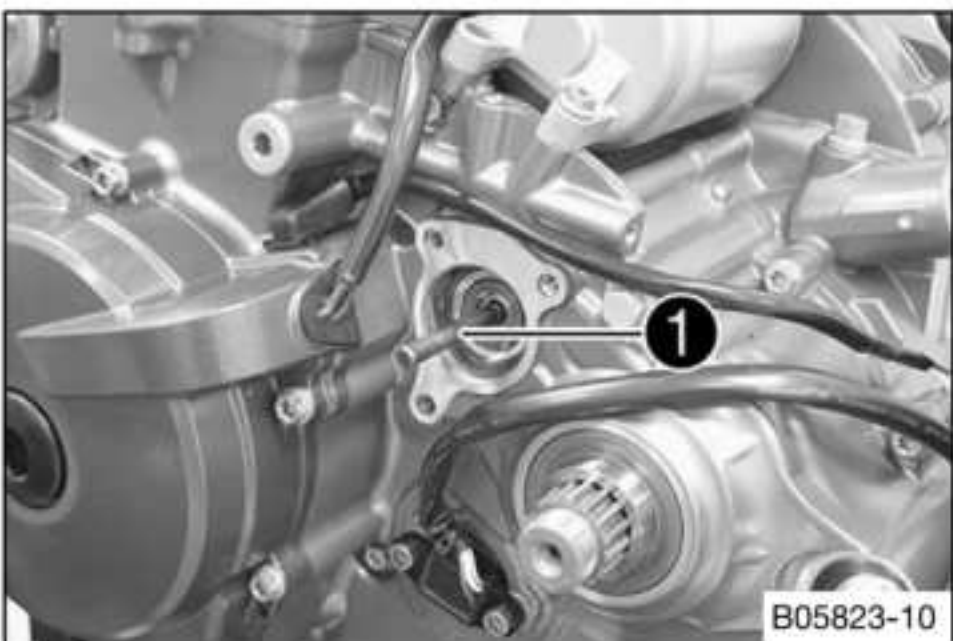
18.5.32 Installing the starter motor



- Grease the O-ring and mount the starter motor.
Long-life grease (p. 378)
- Mount and tighten screw 1.
Guideline

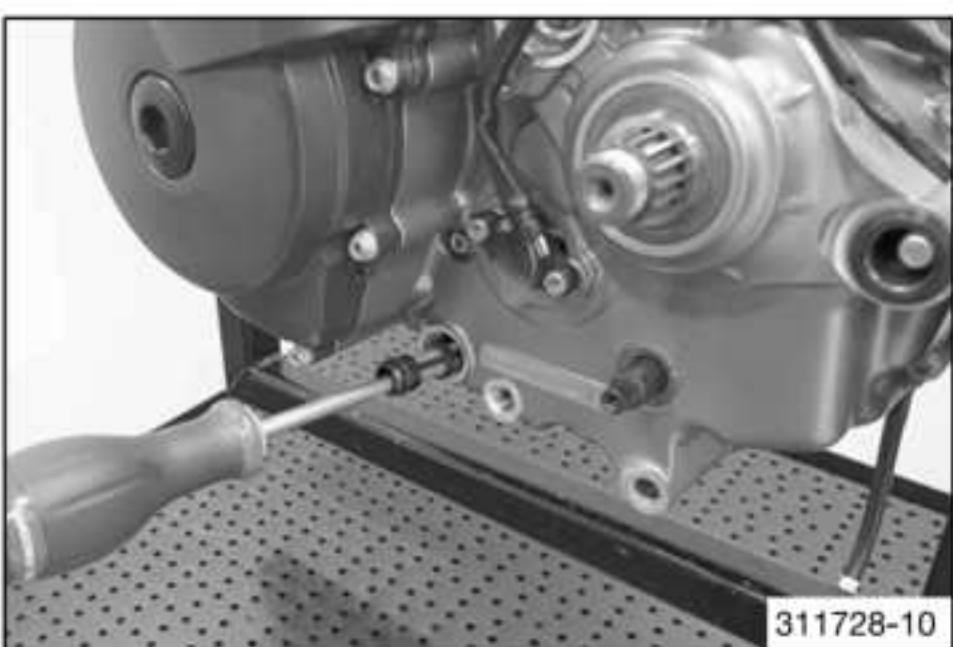
Screw, starter motor	M6	10 Nm (7.4 lbf ft) Loctite®243™
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18.5.33 Installing the clutch push rod

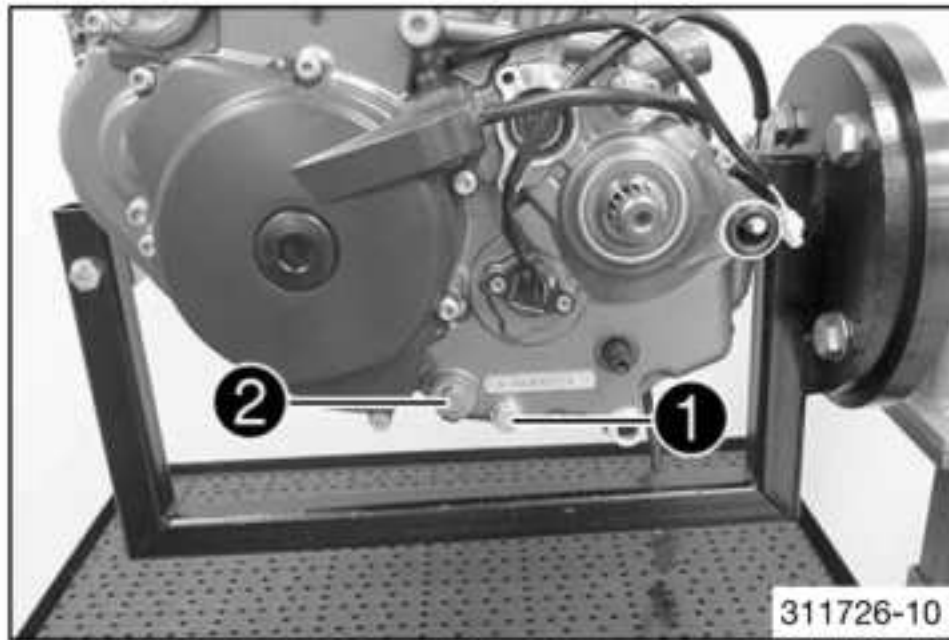


- Mount clutch push rod 1.
✓ The flattened side of the clutch push rod faces the clutch slave cylinder.

18.5.34 Installing oil screens



- Push the oil screen with O-rings on to a pin wrench. Push the pin wrench through the opening into the drill hole of the opposite engine case wall and push the oil screen as far as possible into the engine case.



- Mount the oil drain plug **1** with the magnet and a new seal ring and tighten it.

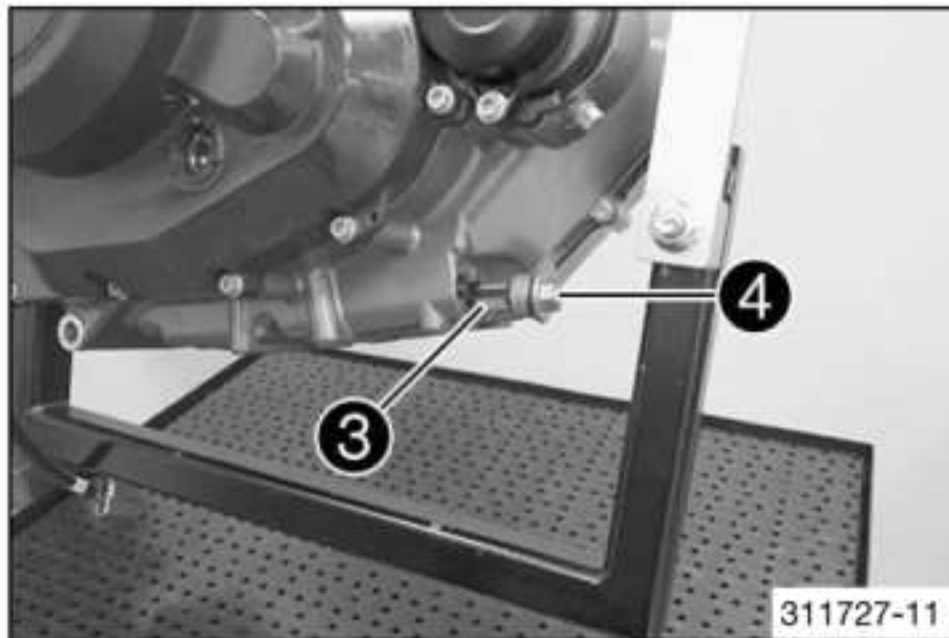
Guideline

Oil drain plug with magnet	M12x1.5	20 Nm (14.8 lbf ft)
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- Mount and tighten screw plug **2** with the O-ring.

Guideline

Plug, oil screen	M20x1.5	15 Nm (11.1 lbf ft)
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- Position the oil screen **3** with O-rings.
- Mount and tighten screw plug **4** with the O-ring.

Guideline

Plug, oil screen	M20x1.5	15 Nm (11.1 lbf ft)
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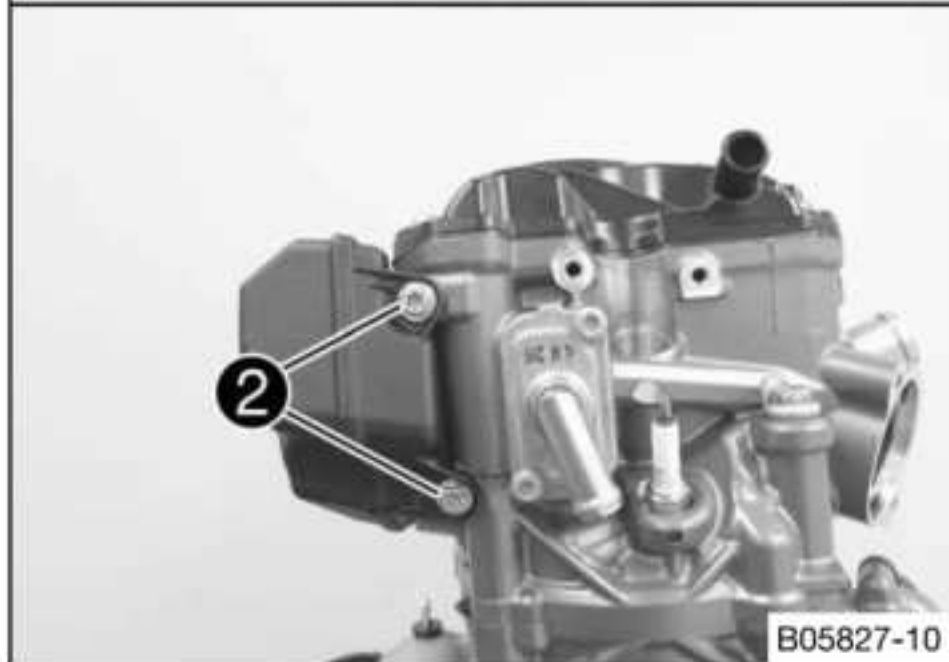
18.5.35 Installing the resonator



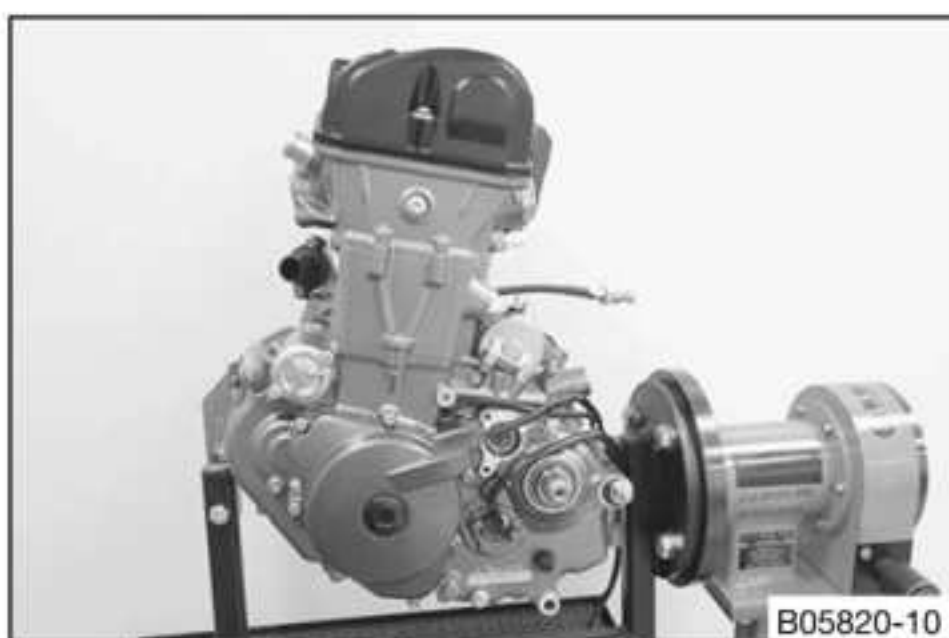
- Oil and mount both O-rings **1**.
- Position resonator on the cylinder head.
- Mount and tighten screws **2**.

Guideline

Screw, resonator	M6	10 Nm (7.4 lbf ft) Loctite® 243™
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18.5.36 Removing the engine from the engine assembly stand




- Remove the engine from the engine assembly stand.



Info

Have an assistant help you or use a motorized hoist.


19.1 Checking/correcting the fluid level of the hydraulic clutch



Warning

Skin irritation Brake fluid causes skin irritation.


- Keep brake fluid out of the reach of children.
- Wear suitable protective clothing and safety glasses.
- Do not allow brake fluid to come into contact with the skin, the eyes or clothing.
- Consult a doctor immediately if brake fluid has been swallowed.
- Rinse the affected area with plenty of water in the event of contact with the skin.
- Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
- If brake fluid spills on to your clothing, change the clothing.



Note

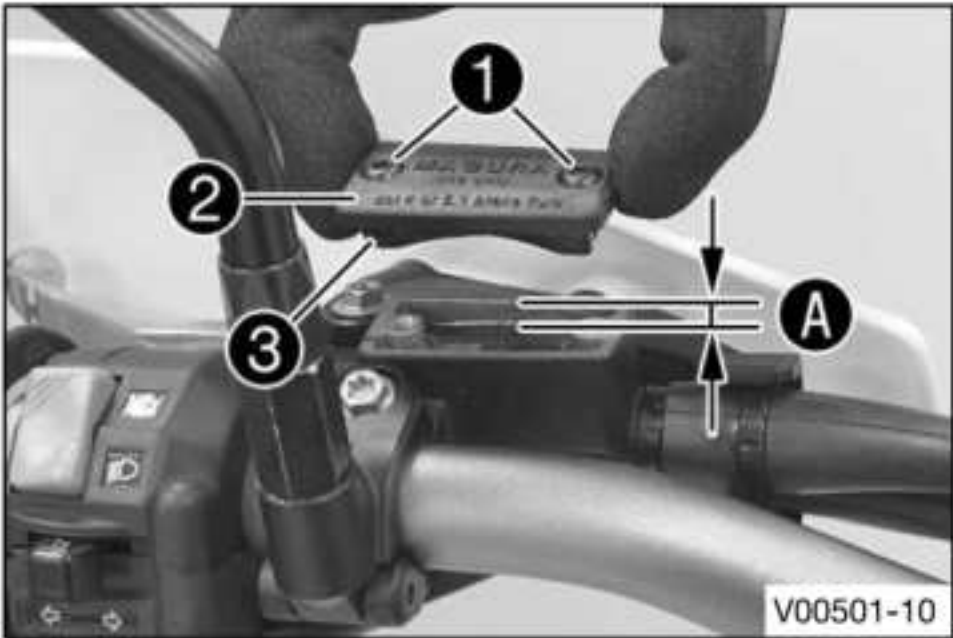
Environmental hazard Hazardous substances cause environmental damage.

- Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.




Info

The fluid level rises with increasing wear of the clutch facing discs. Never use DOT 5 brake fluid. It is silicone-based and purple in color. Oil seals and clutch lines are not designed for DOT 5 brake fluid. Avoid contact between brake fluid and painted parts. Brake fluid attacks paint. Only use clean brake fluid from a sealed container.



- Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
 - Remove screws ❶.
 - Take off cover ❷ with membrane ❸.
 - Check the fluid level.
- | | |
|-----------------------------------|----------------|
| Fluid level ❸ below container rim | 4 mm (0.16 in) |
|-----------------------------------|----------------|
- » If the fluid level does not meet specifications:
- Correct the fluid level of the hydraulic clutch.
- | |
|--|
| Brake fluid DOT 4 / DOT 5.1 (📖 p. 376) |
|--|
- Position the cover with the membrane. Mount and tighten the screws.



Info

Clean up overflowed or spilled brake fluid immediately with water.