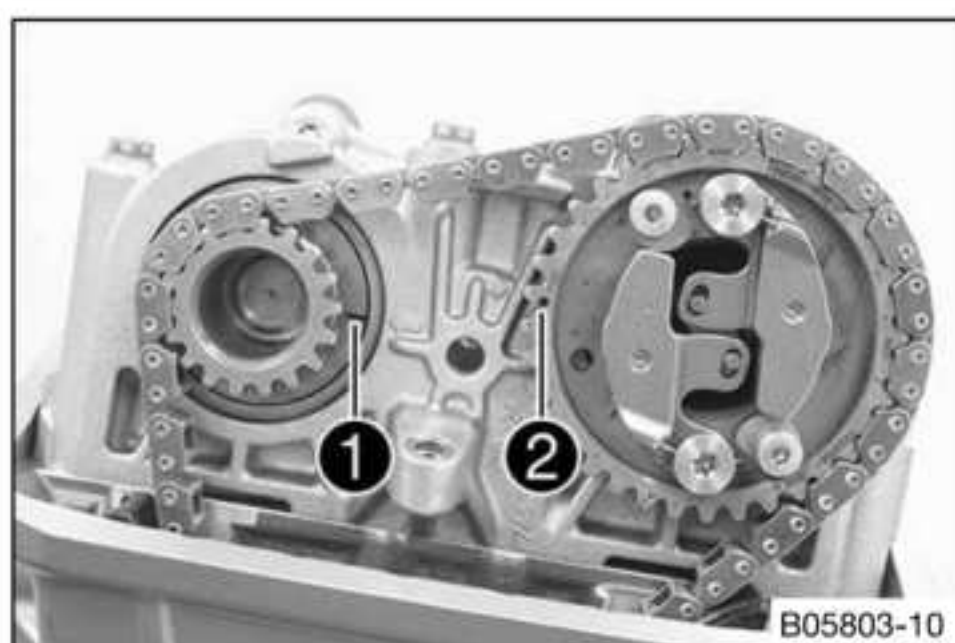


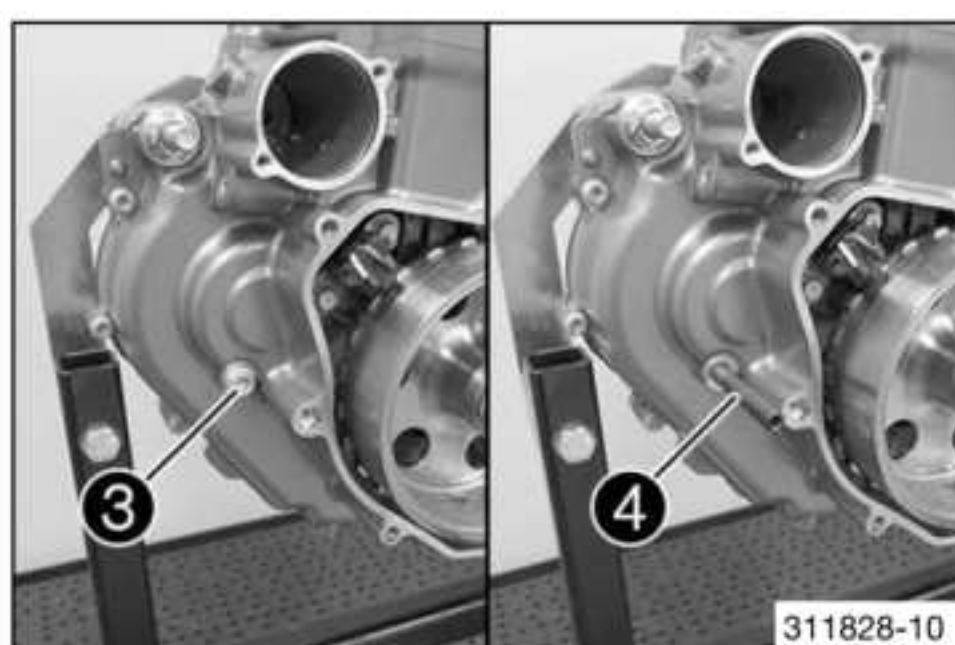
- Remove thermostat **2**.



## 18.3.13 Positioning the engine at ignition top dead center



- Turn the crankshaft counterclockwise until markings **1** of the balancer shaft and **2** of the camshaft are flush with the marking of the camshaft bearing bridge.



- Remove screw **3**.



### Info

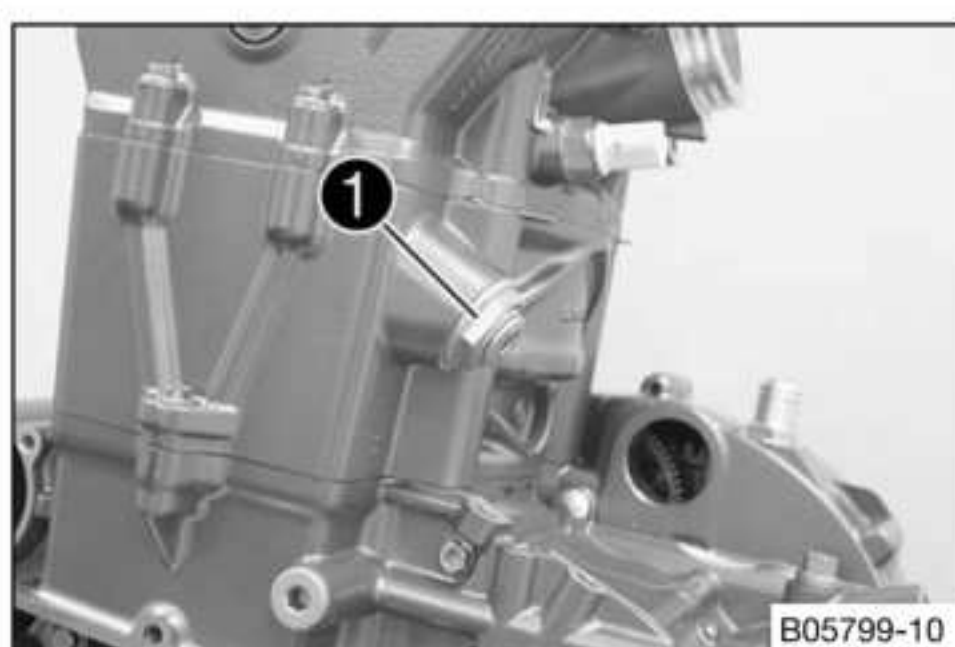
Look through the hole to check that the position hole of the balancer shaft is visible.

- Screw in special tool **4**.

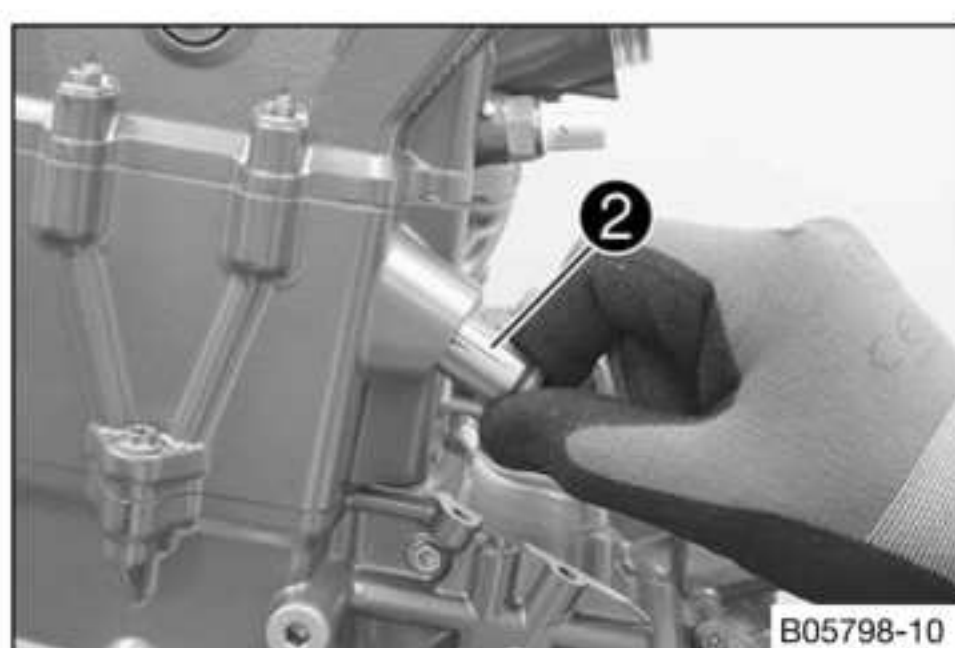
Locking screw (61229015000) (p. 386)



## 18.3.14 Removing the timing chain tensioner



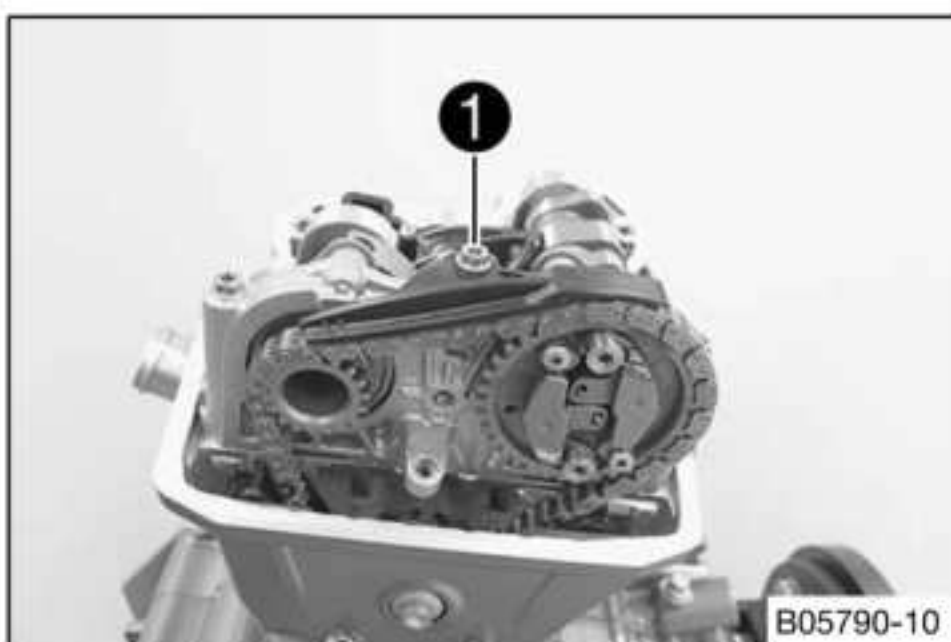
- Remove screw **1** with the seal ring.



- Remove timing chain tensioner **2**.



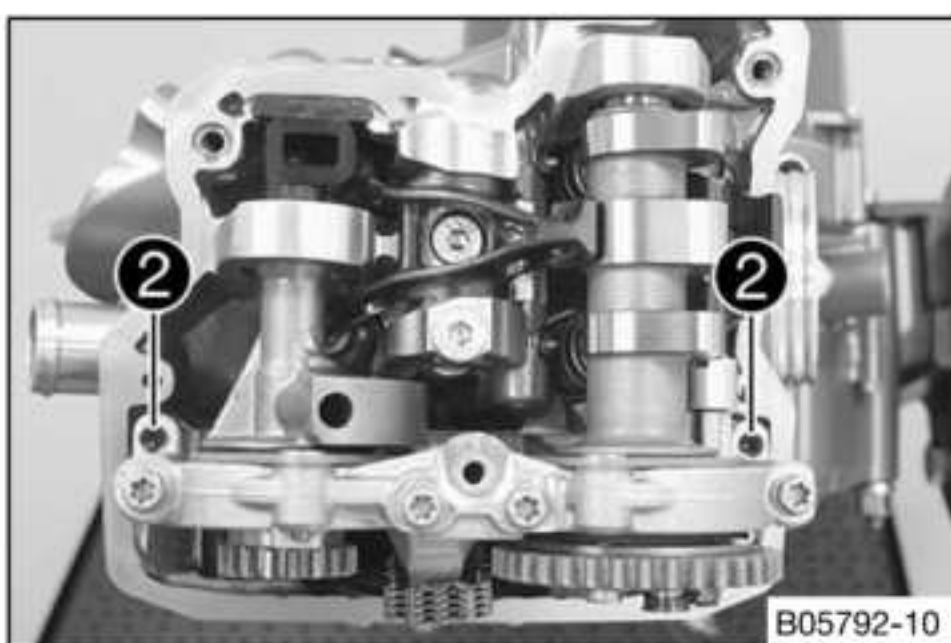
## 18.3.15 Removing the camshafts



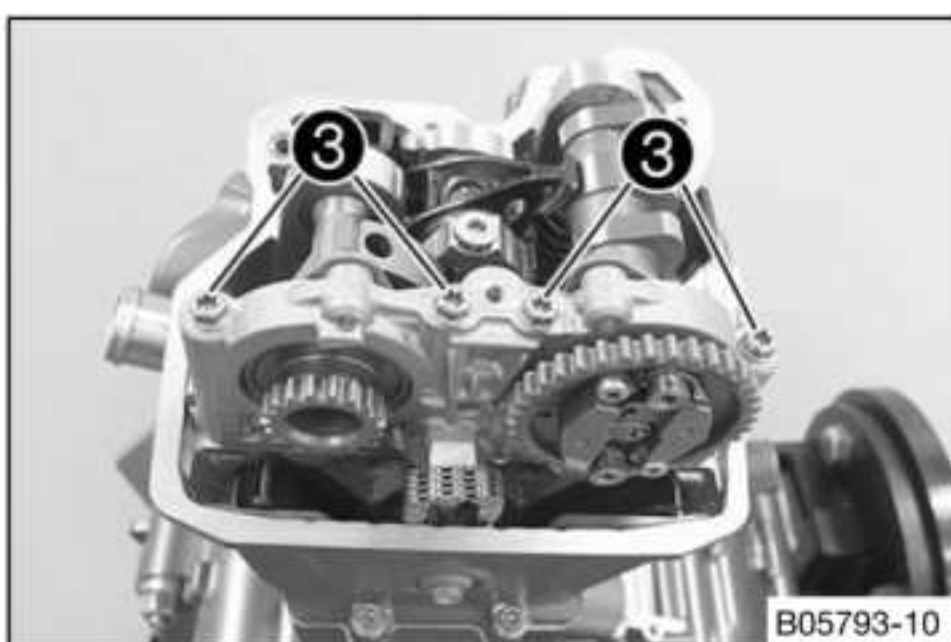
- Remove screw ①.
- Take off guide rail.



- Take off the timing chain from the balancer shaft and the camshaft.

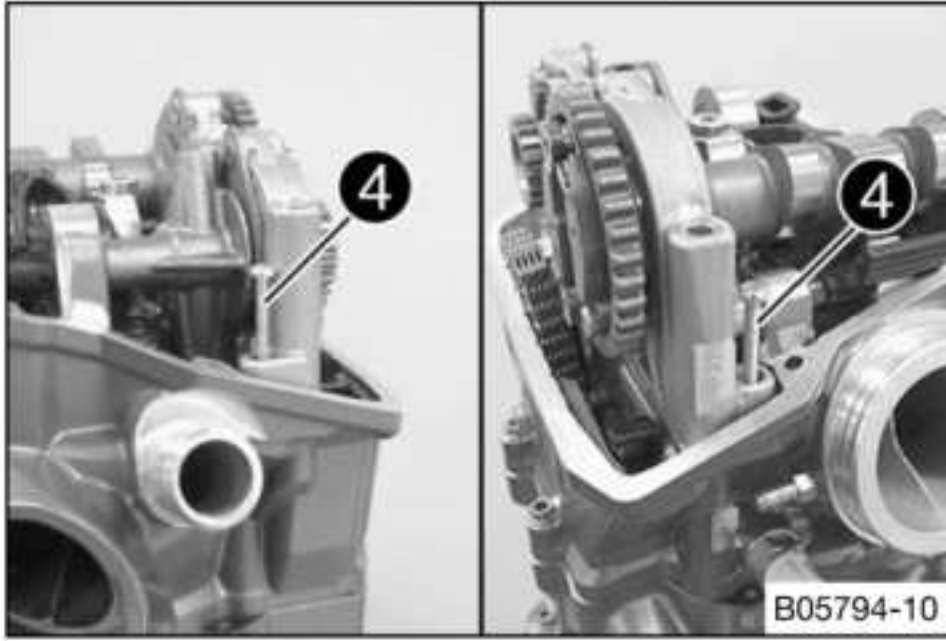


- Remove setscrews ②.

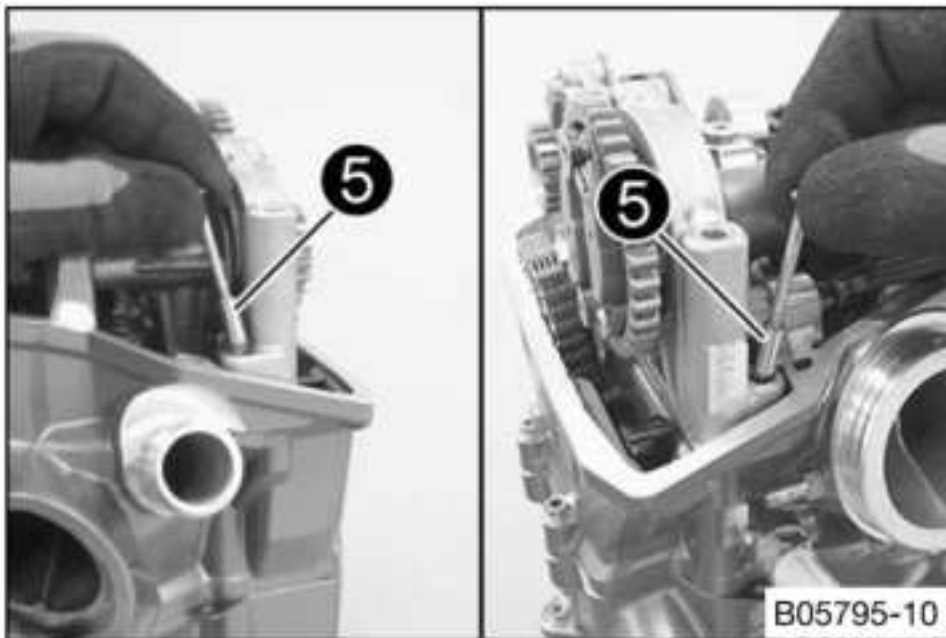


- Loosen and remove screws ③ from the outside to the inside.

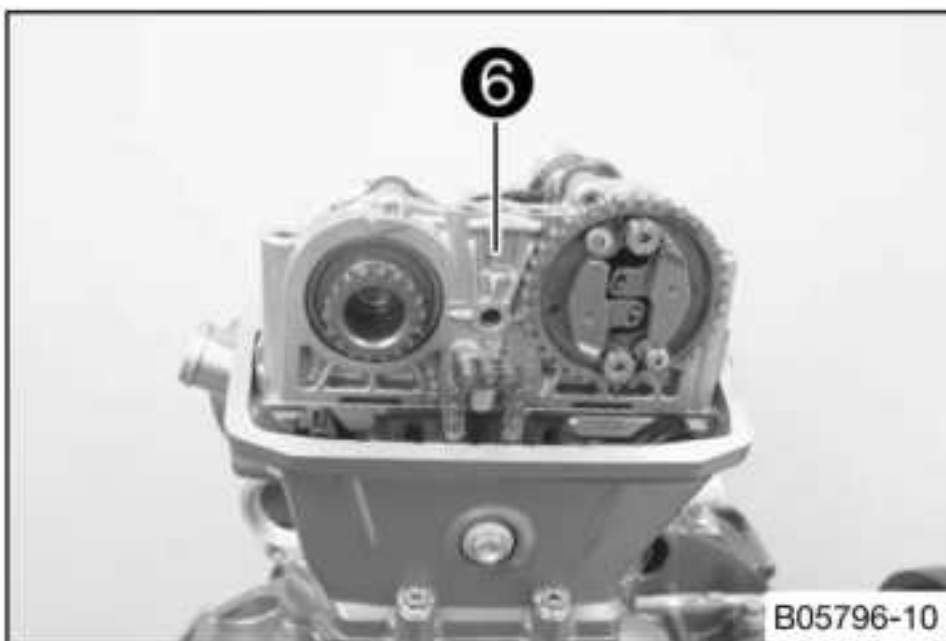




- Mount appropriate M4 screws ④ in the dowel pins.

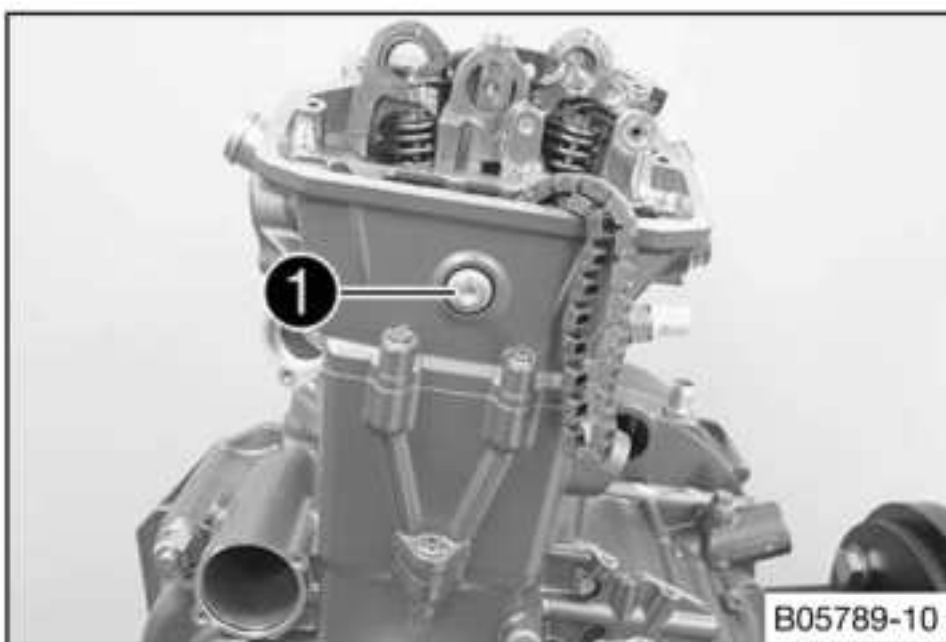


- Remove dowel pins ⑤.

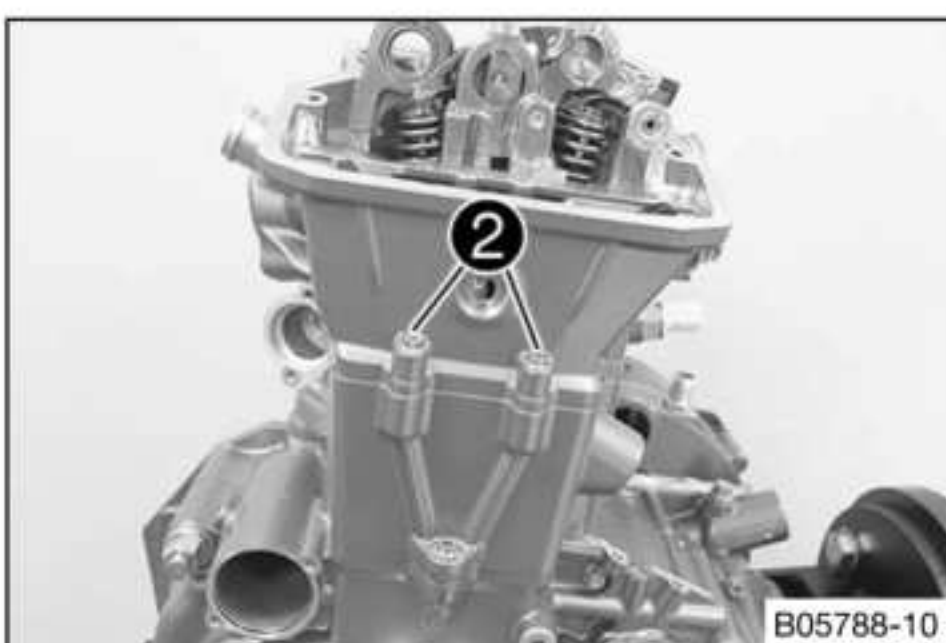


- Take off camshaft bearing bridge ⑥ with balancer shaft and camshaft.

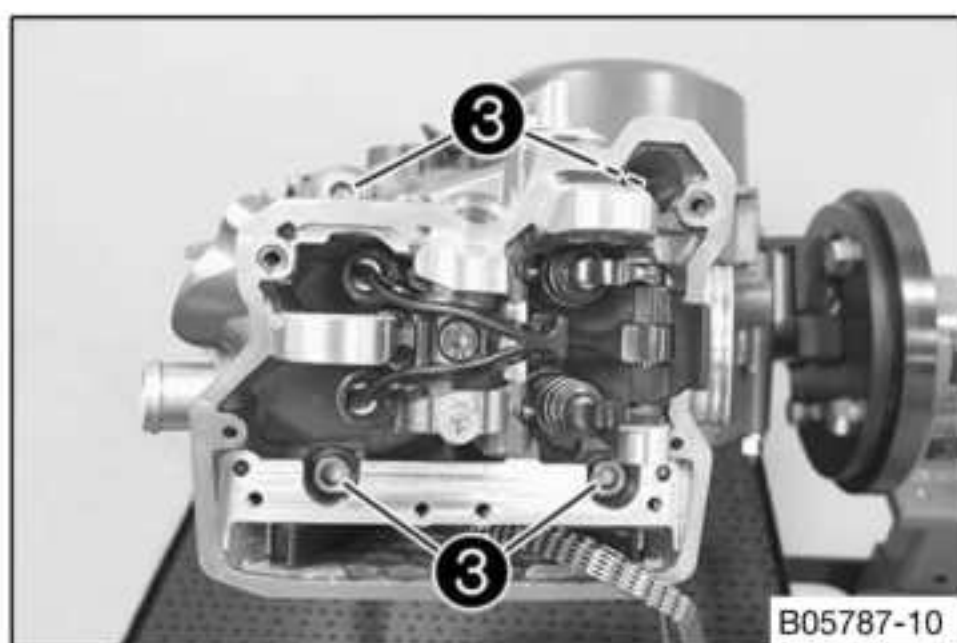
## 18.3.16 Removing the cylinder head



- Remove screw ① with the gasket.

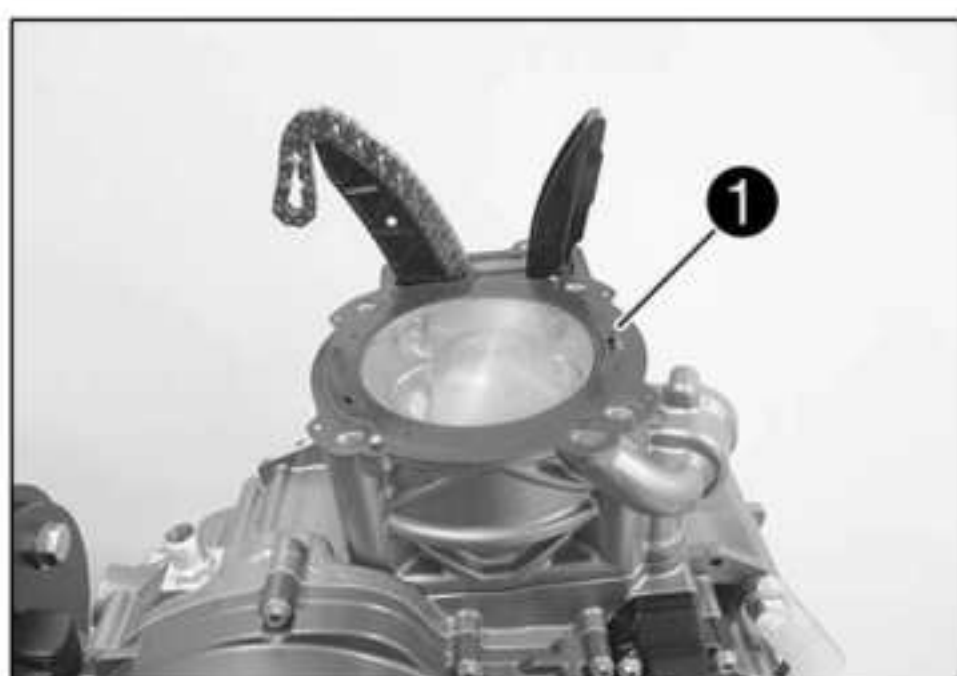


- Remove screws ②.



- Loosen screws ③ in a crisscross pattern and remove them.
- Remove the cylinder head.

## 18.3.17 Removing the piston

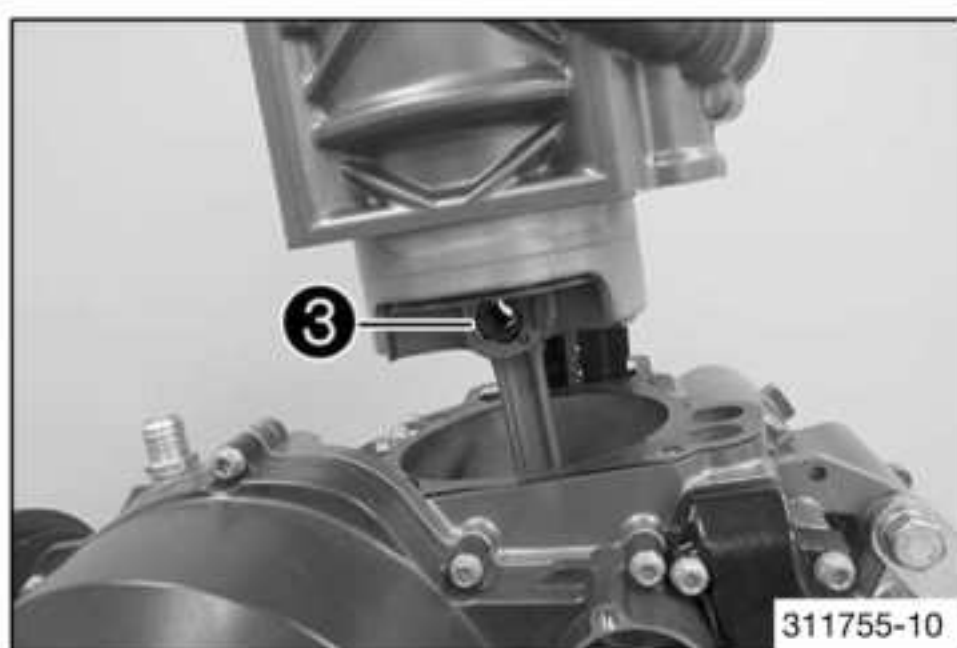
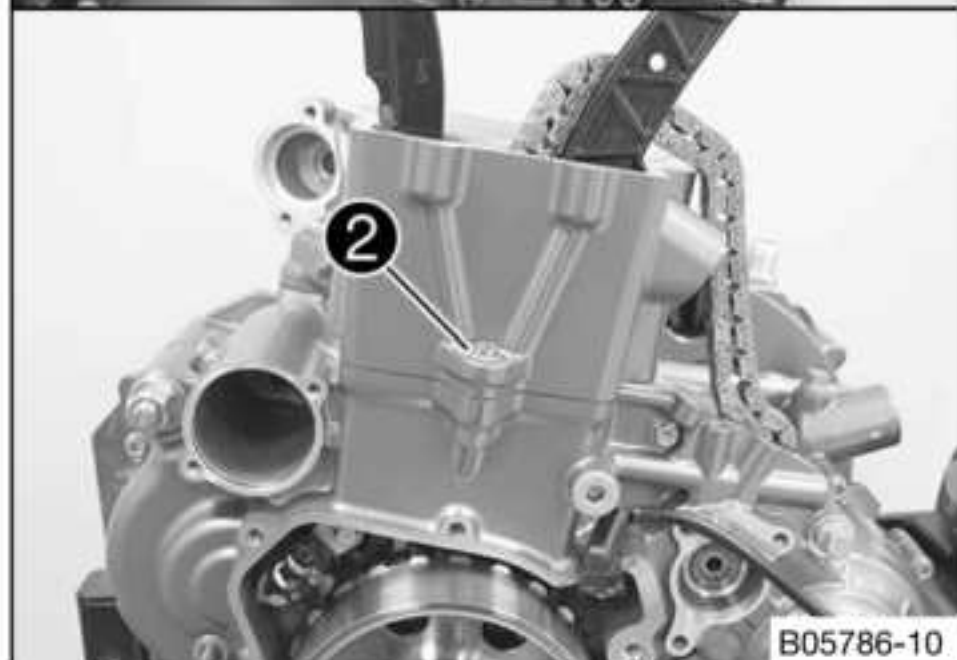


- Take off cylinder head gasket ①.
- Remove screw ②.
- Push the cylinder upward.



### Info

Only push the cylinder as far up as necessary to take the piston pin out.



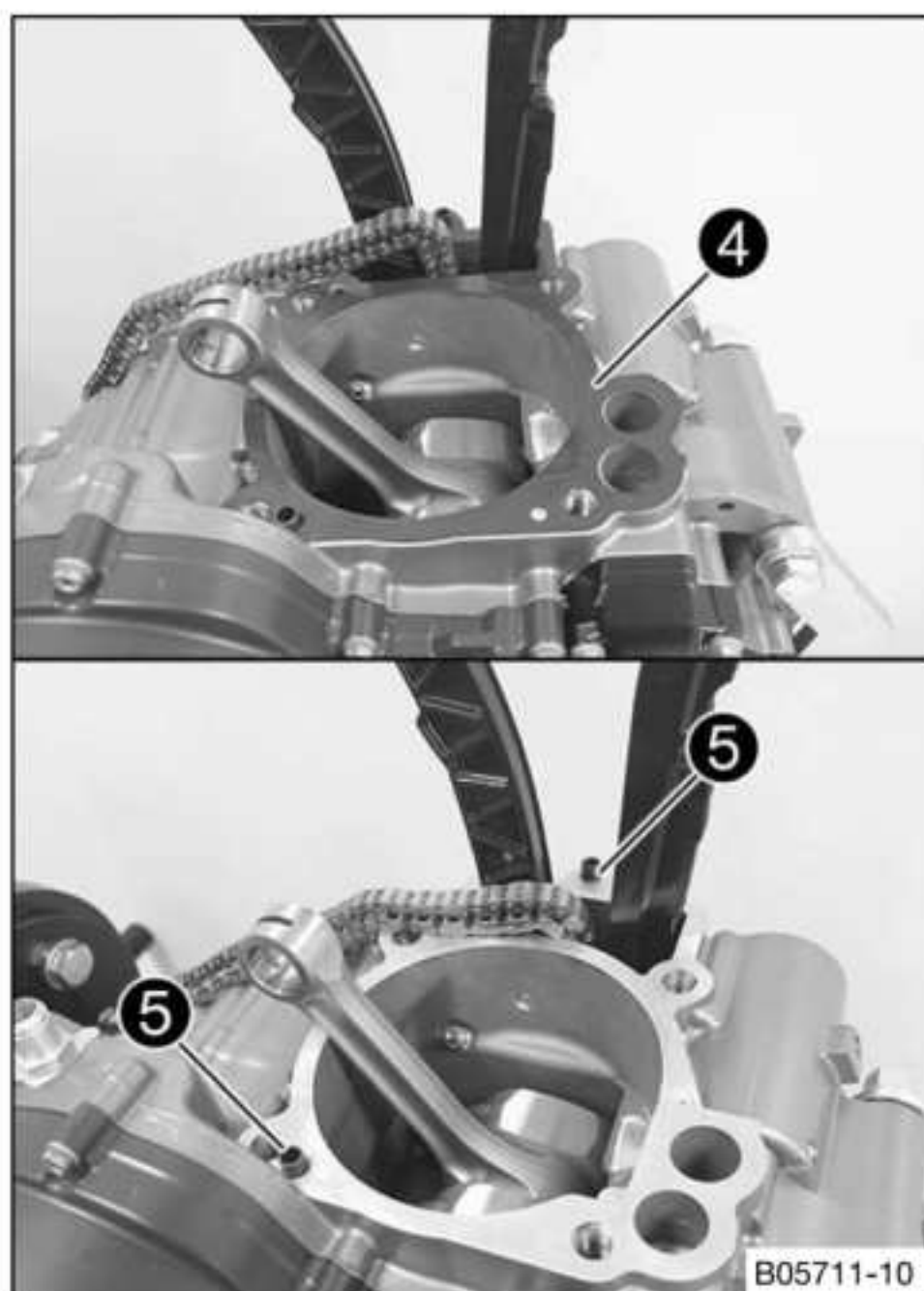
- Remove piston ring lock ③.
- Remove the piston pin.
- Take off the cylinder and piston.
- Push the piston upward out of the cylinder.



### Info

If no further work is to be performed on the cylinder and piston, the piston can remain in the cylinder.

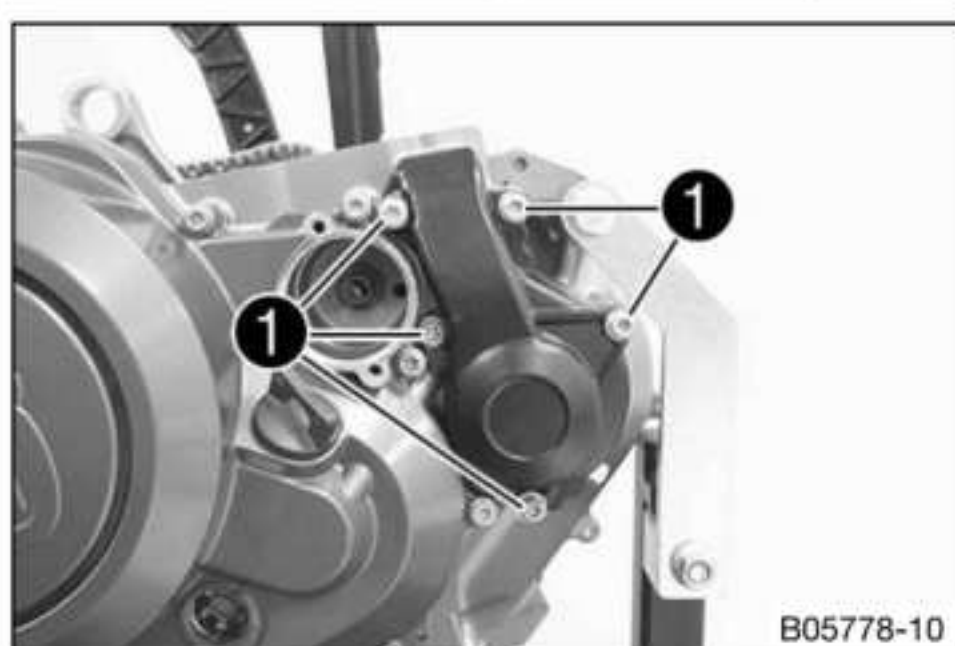




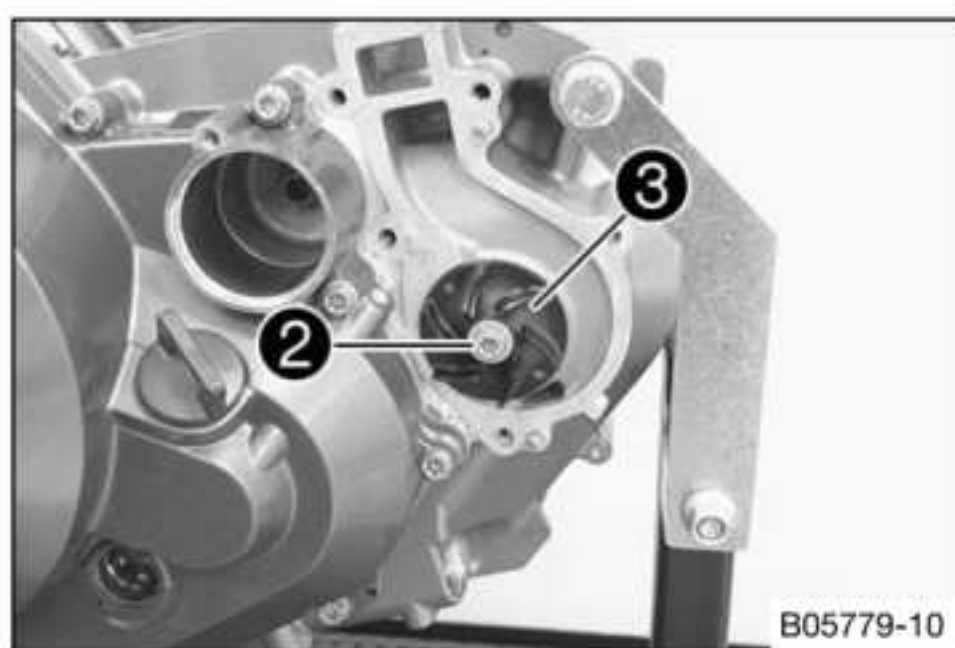
- Remove cylinder base gasket ④.
- Remove dowels ⑤.



### 18.3.18 Removing the water pump impeller



- Remove screws ①.
- Take off the water pump cover.

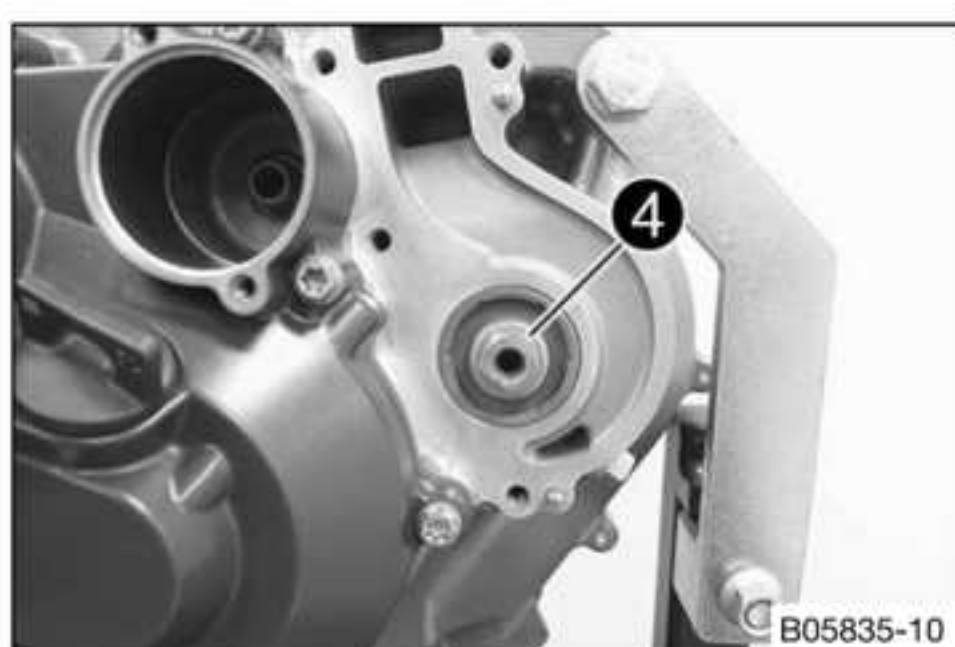


- Remove screw ②.
- Remove water pump impeller ③.
- Take off the water pump cover seal.



#### Info

Ensure the locating pins remain in place.

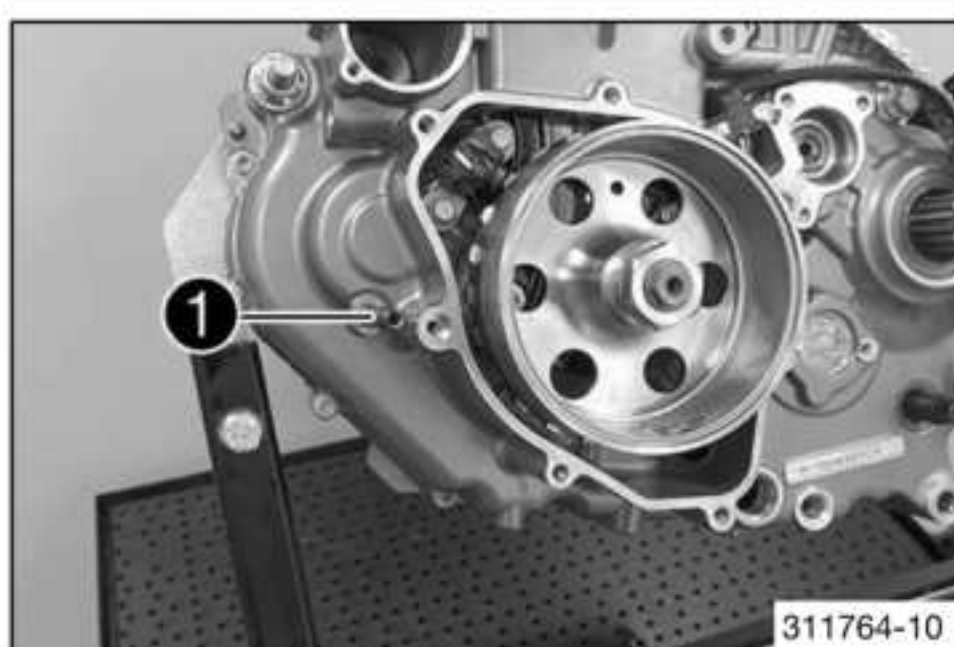


- Remove form washer ④.



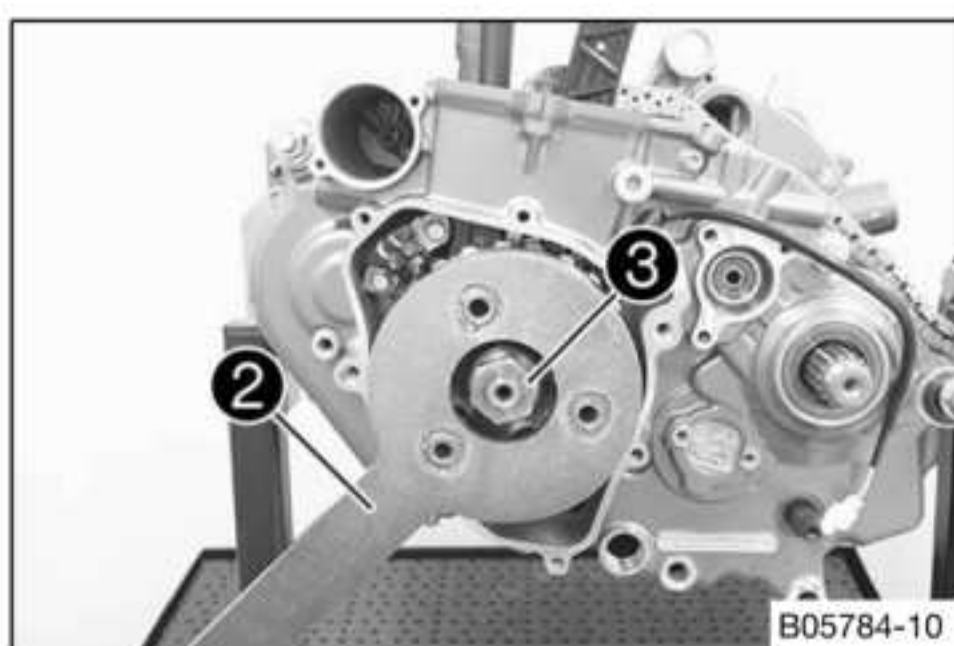


## 18.3.19 Removing the rotor



- Remove special tool ①.

Locking screw (61229015000) (p. 386)



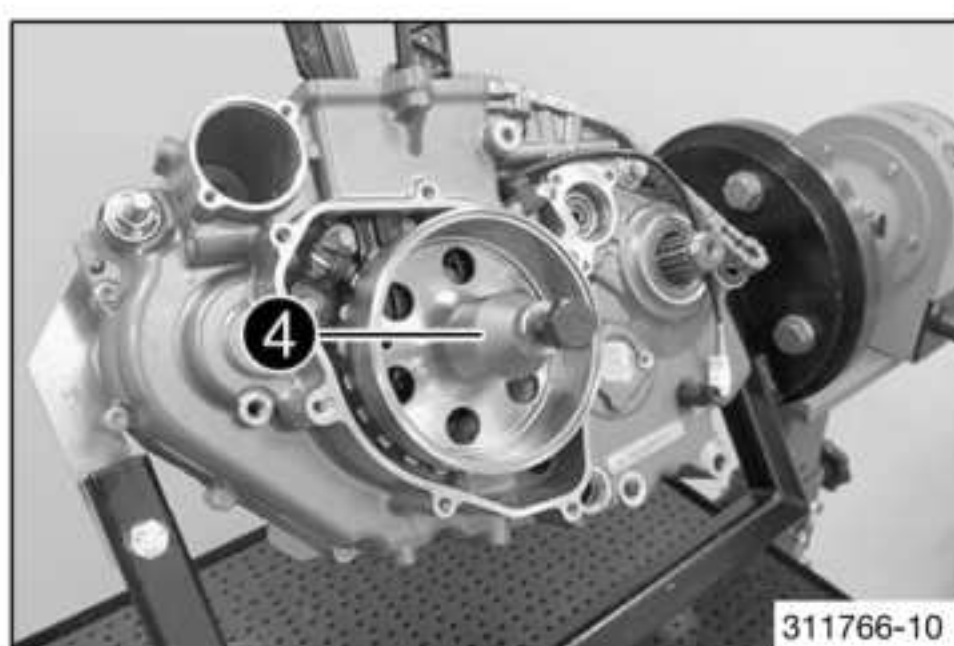
- Hold the rotor with special tool ②.

Holding wrench (75029091000) (p. 390)

### **i** Info

Make sure that the crankshaft is not locked.

- Remove nut ③ and the locking edge washer.

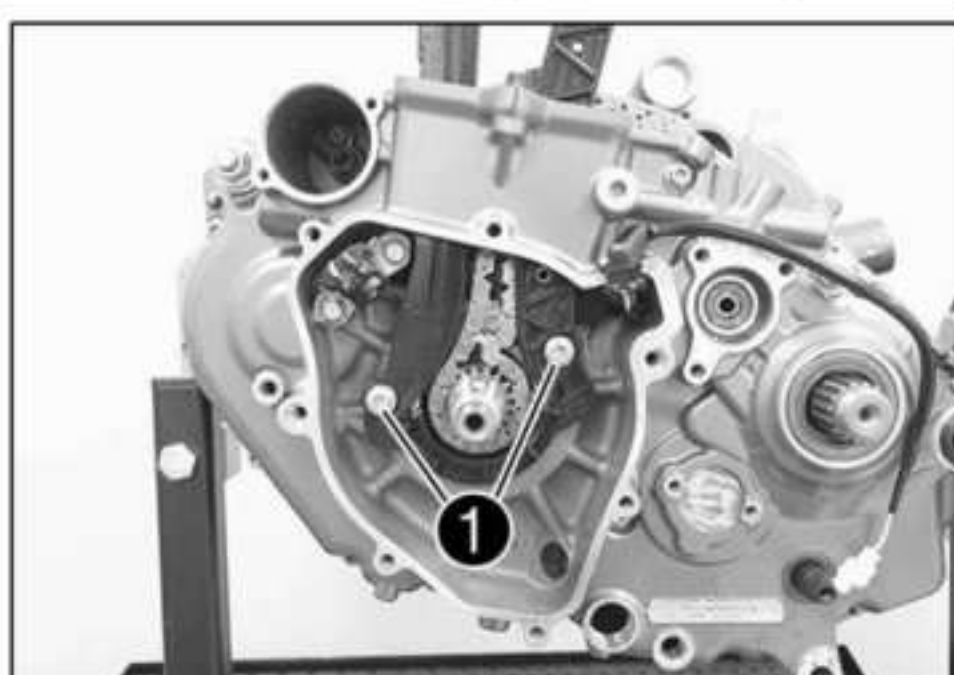


- Mount special tool ④ on the rotor.

Puller (58429009000) (p. 382)

- Hold it tight using the special tool and pull off the rotor by turning the screw in.
- Remove the special tool.

## 18.3.20 Removing the timing chain



- Remove screws ①.

- Pull timing chain guide rail ② out of timing chain securing guide ③.

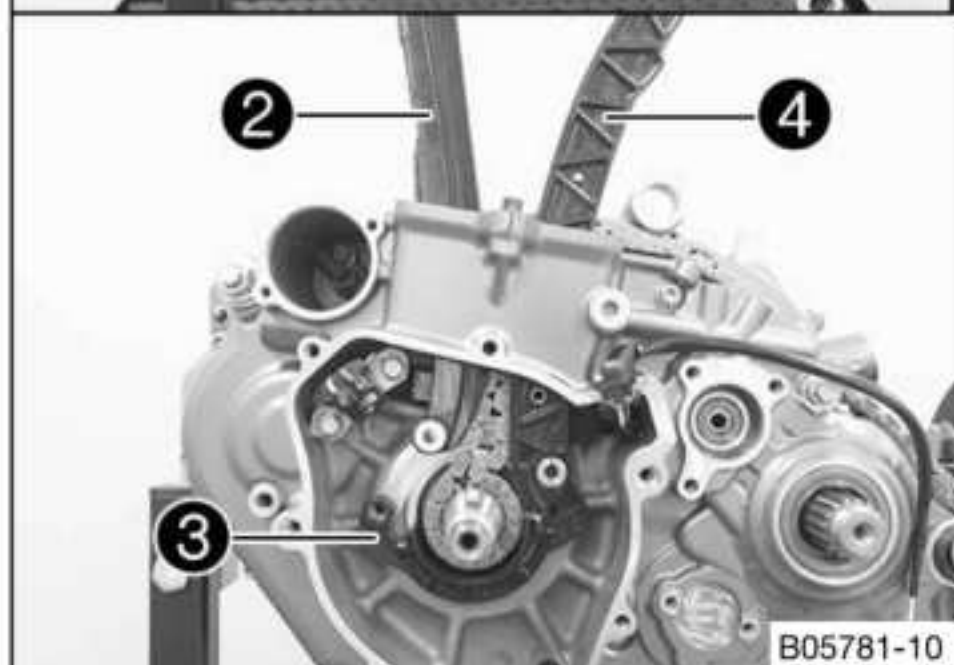
### **i** Info

The support bushing is plugged into the timing chain securing guide through the timing chain guide rail.

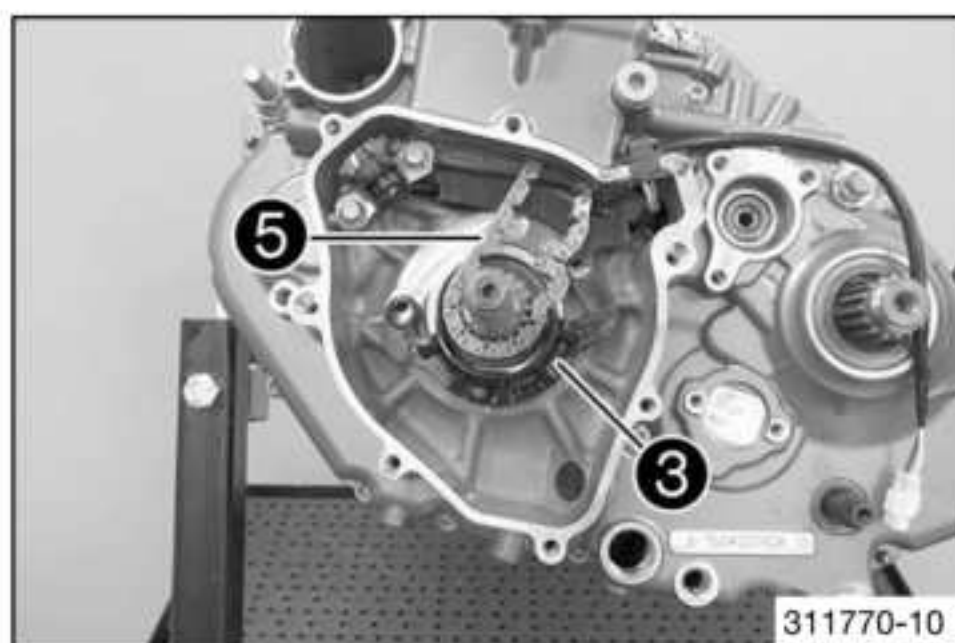
- Remove the timing chain guide rail upward out of the timing chain shaft.

- Hold the timing chain securing guide tight and pull the timing chain tensioning rail ④ out of the timing chain securing guide.

- Remove the timing chain tensioning rail upward out of the timing chain shaft.







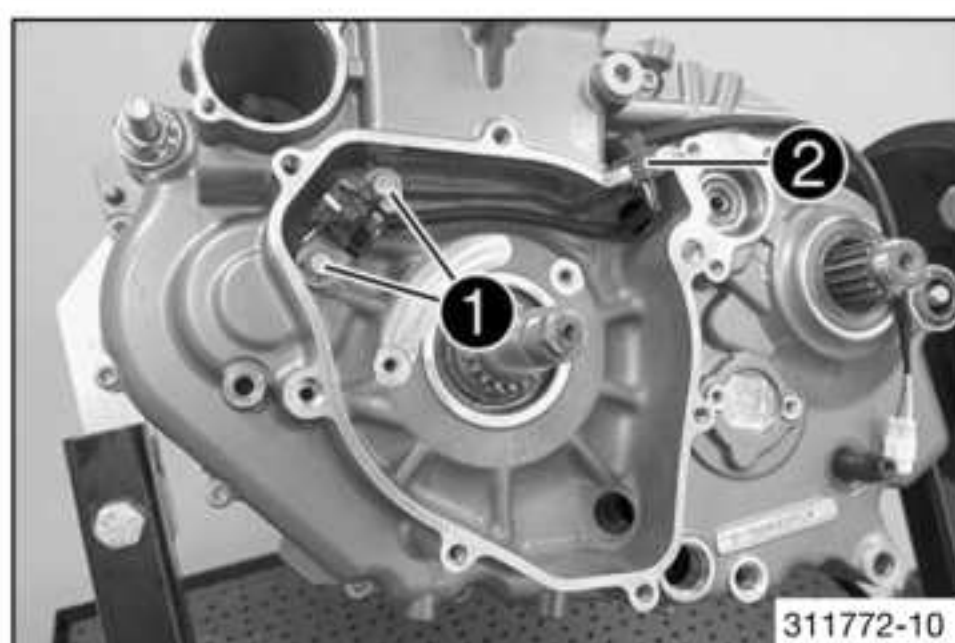
- Remove timing chain securing guide **3**.
- Slip out timing chain **5**.



### Info

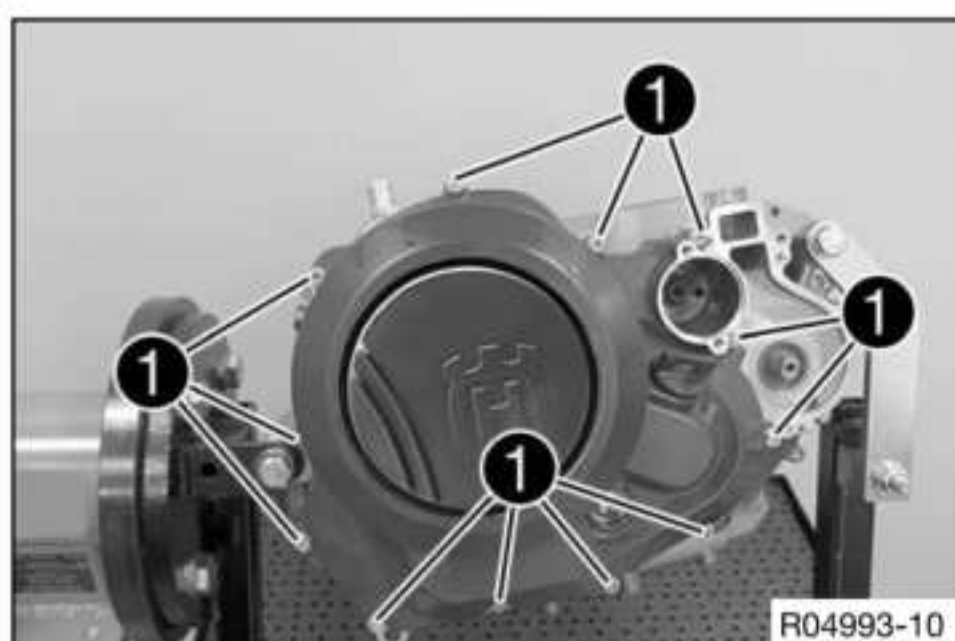
If the timing chain is to be reused, mark the direction of travel.

## 18.3.21 Removing the crankshaft speed sensor

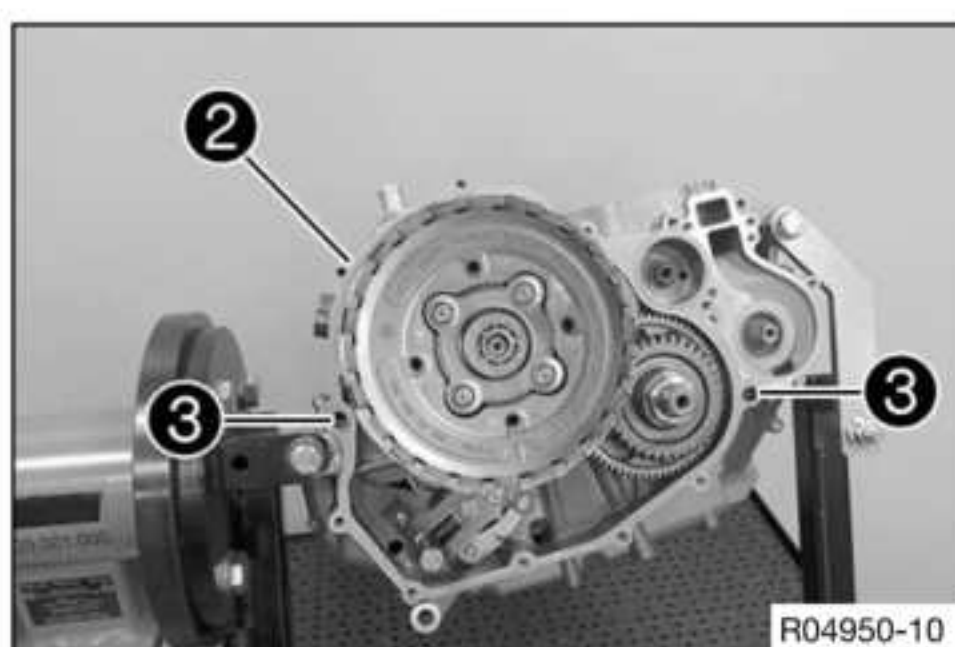


- Remove screws **1**.
- Pull rubber grommet **2** out of the engine case.
- Remove the crankshaft speed sensor.

## 18.3.22 Removing the clutch cover



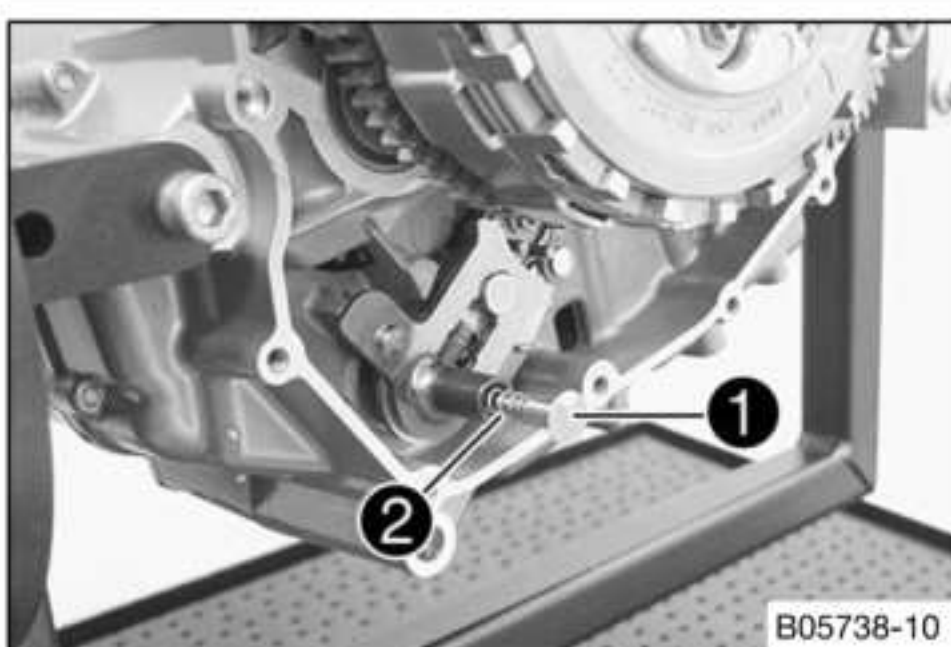
- Remove screws **1**.
- Take off the clutch cover.



- Remove the clutch cover gasket **2**.
- Take off dowels **3**.

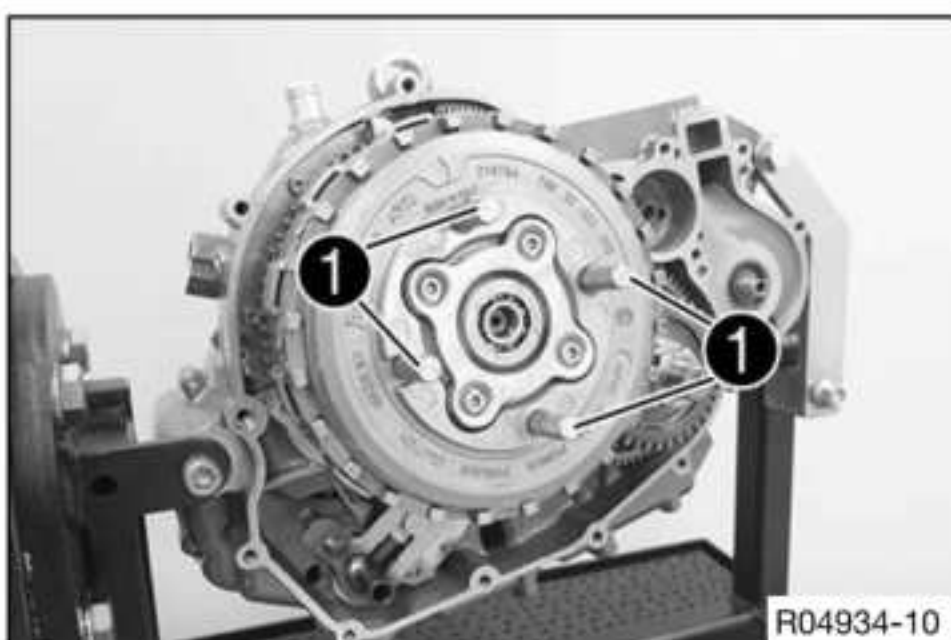


## 18.3.23 Removing the spacer and spring



- Remove spacer **1** and spring **2**.

## 18.3.24 Removing the clutch basket

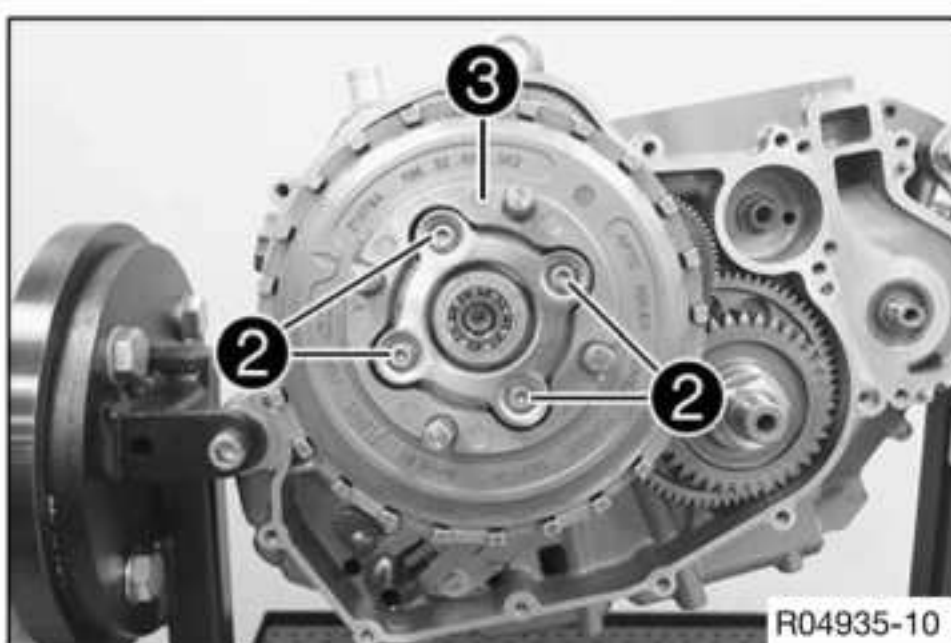


- Clamp the anti-hopping clutch with special tool **1**.

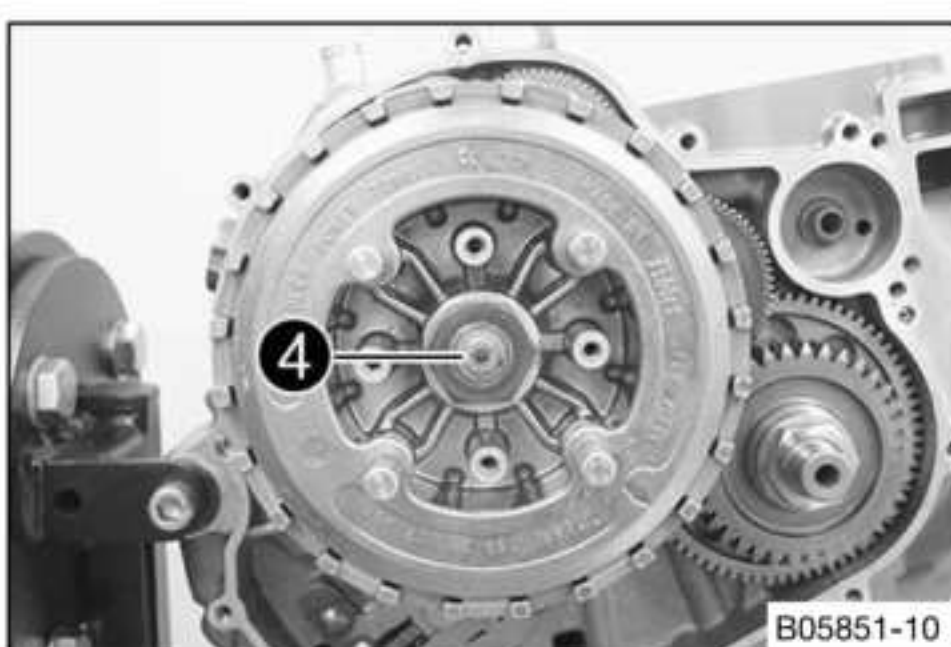
Assembly screws (75029033000) (p. 387)

### **i** Info

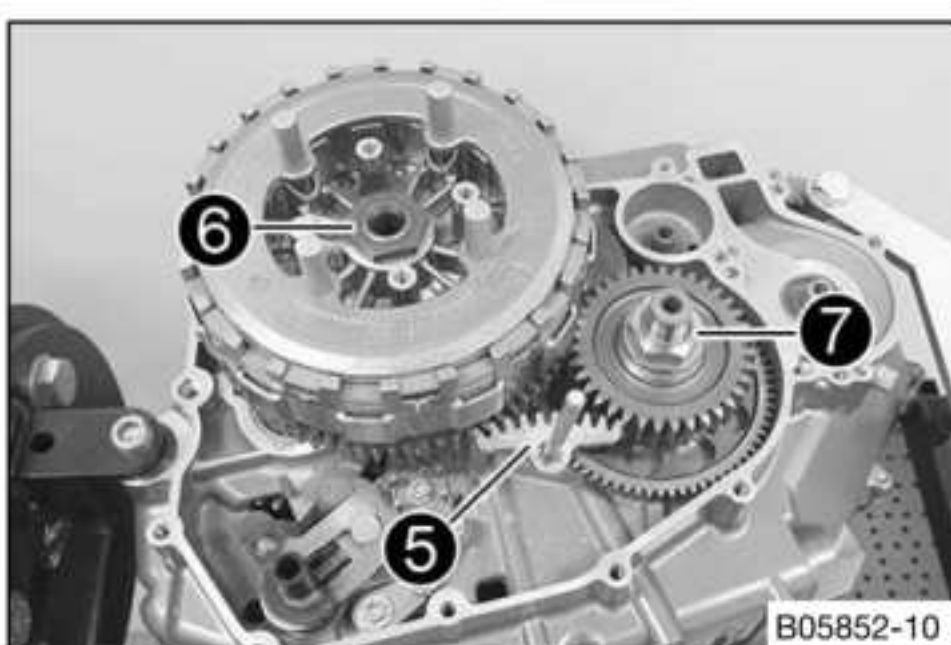
Tighten the special tool by hand only; do not use another tool.



- Loosen screws **2** in a crisscross pattern and remove them with the anticentrifugal ring and clutch springs.
- Remove clutch pressure cap **3**.



- Remove clutch throw-out **4**.



- Hold the clutch basket using special tool **5**.

Gear segment (75029081000) (p. 390)

### **i** Info

Make sure that the crankshaft is not locked.

- Remove nut **6** with the washer.
- Remove nut **7**.

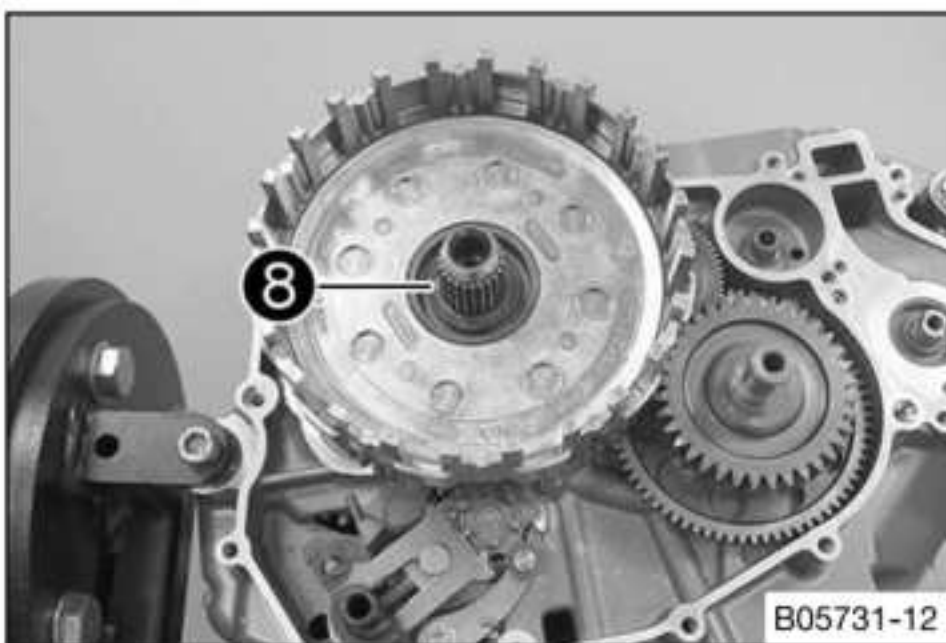
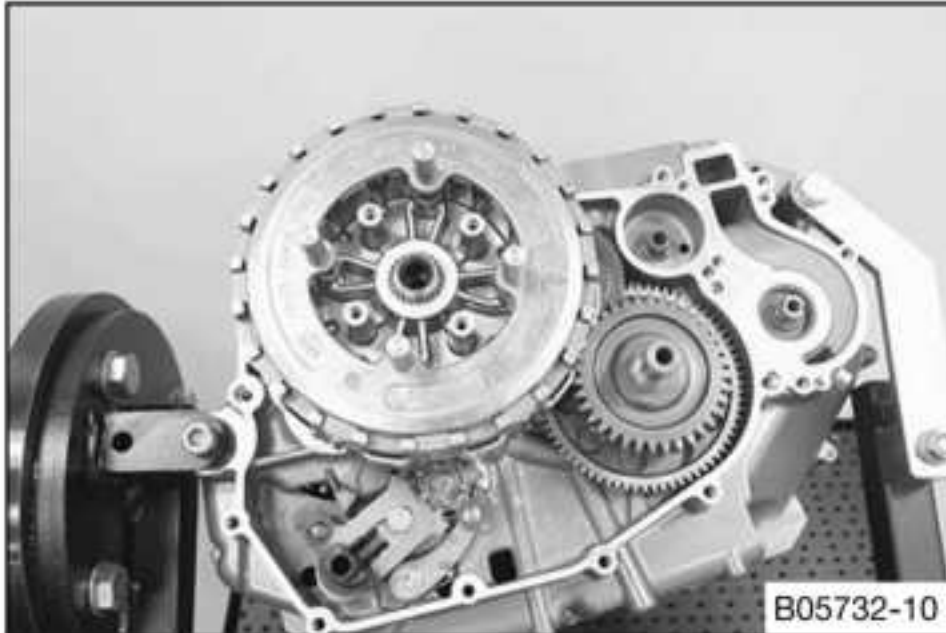


**i Info**  
LH thread!

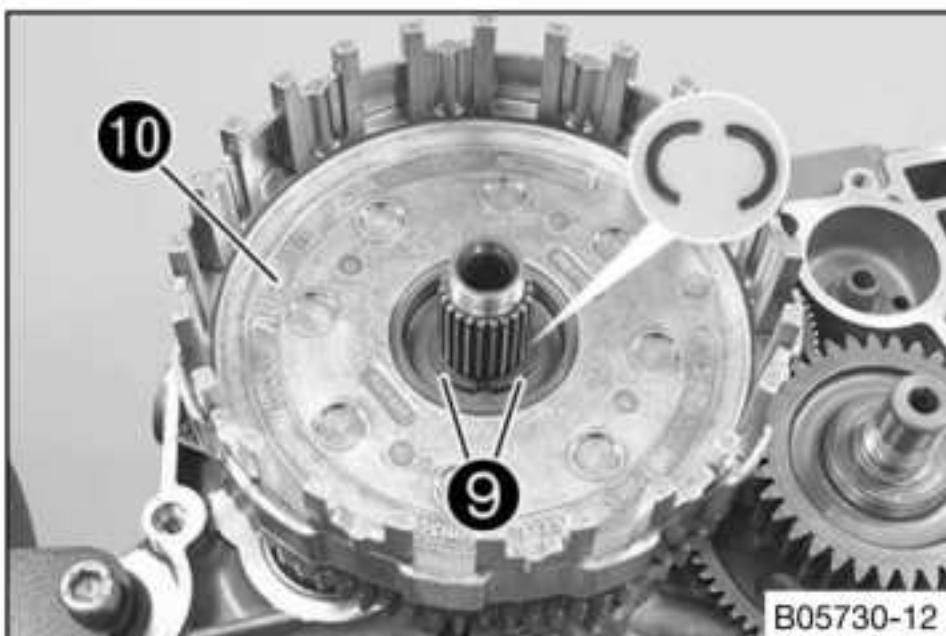
- Remove the special tool.

Gear segment (75029081000) (📖 p. 390)

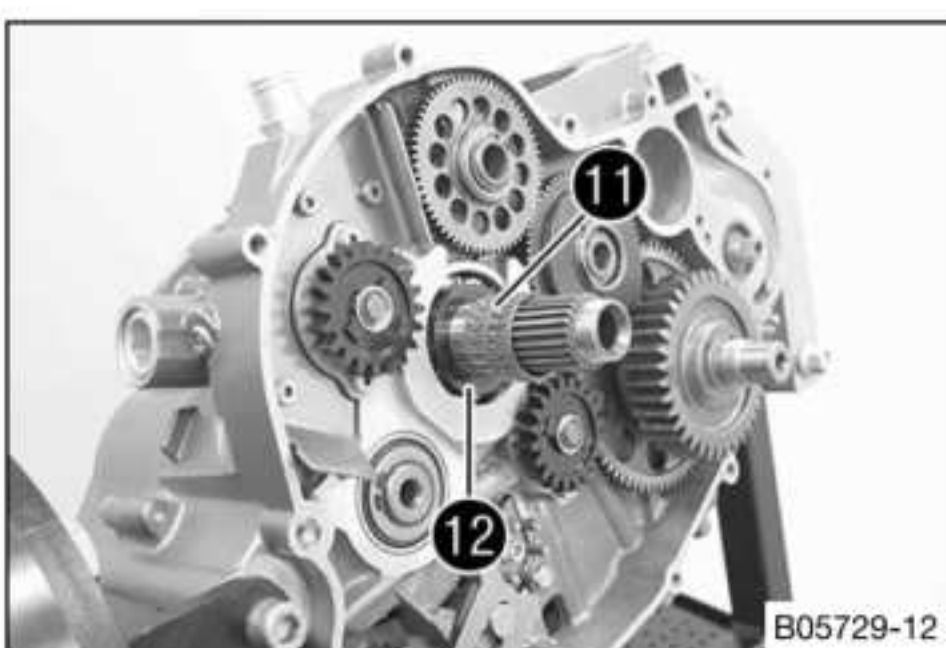
- Remove the antihopping clutch.



- Remove stepped washer **8**.



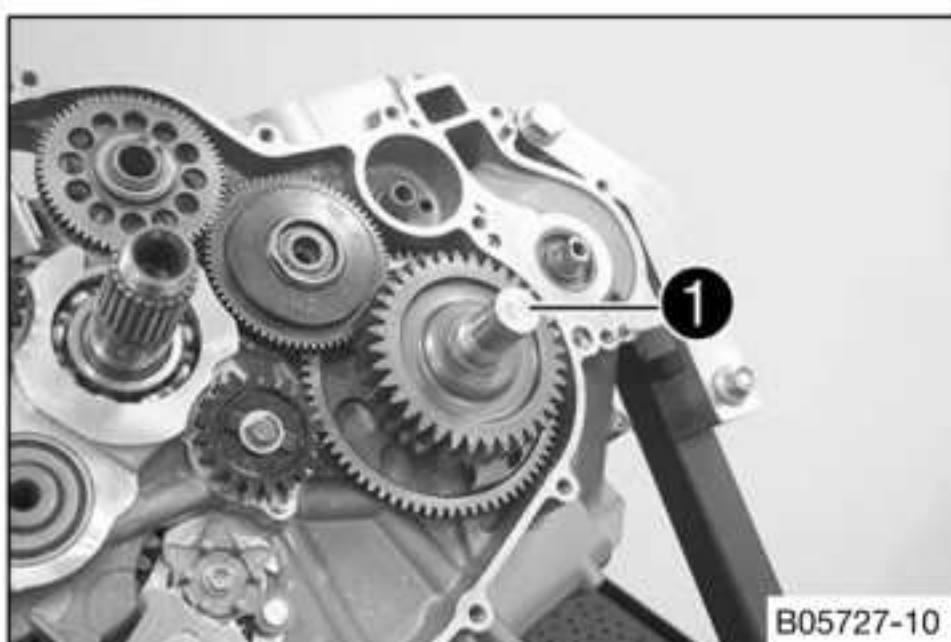
- Remove half washers **9**.
- Take off clutch basket **10**.



- Remove needle bearing **11** and supporting plate **12**.

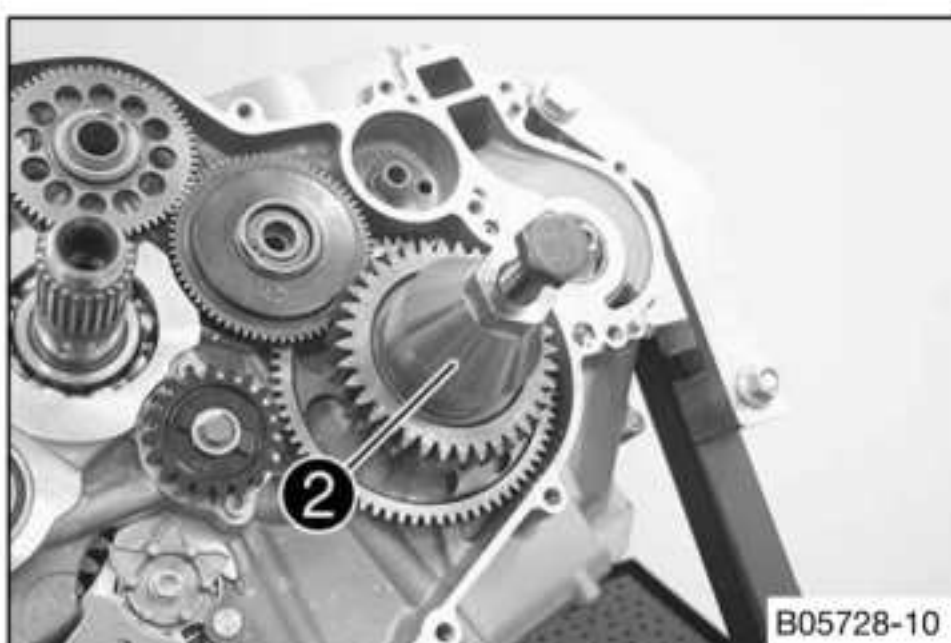


## 18.3.25 Removing the primary gear wheel



- Position special tool ①.

Protection cap (75029090000) (p. 390)

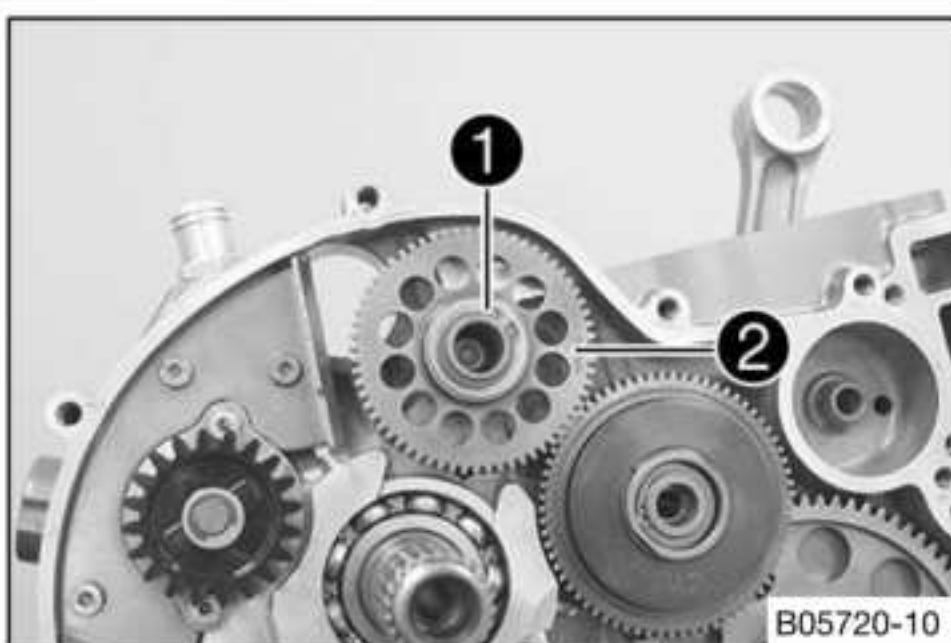


- Mount special tool ②.

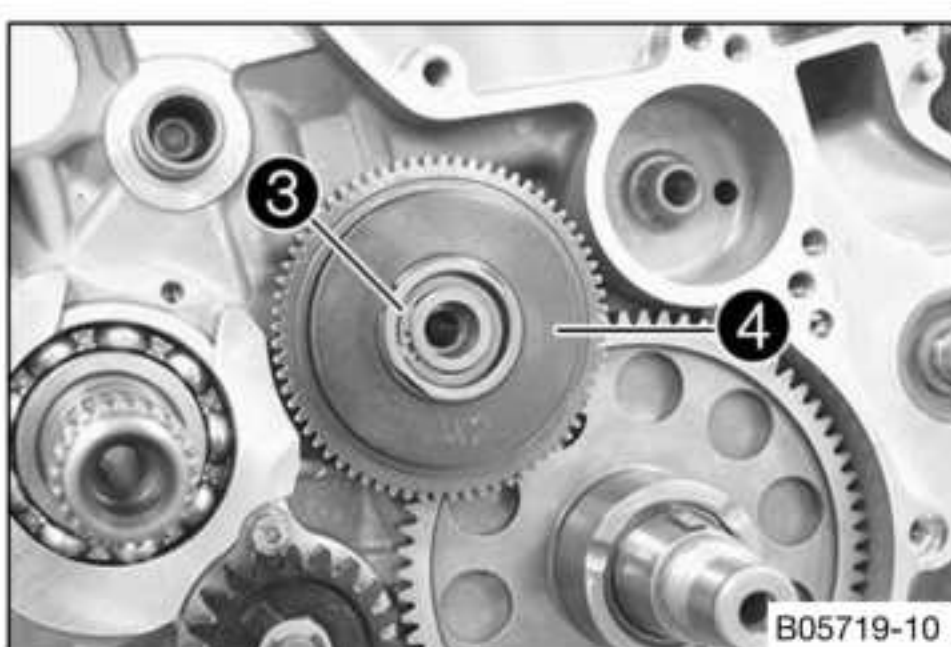
Puller (75029021000) (p. 387)

- Hold the special tool firm and pull off the primary gear wheel by turning the screw in.
- Remove the special tools.

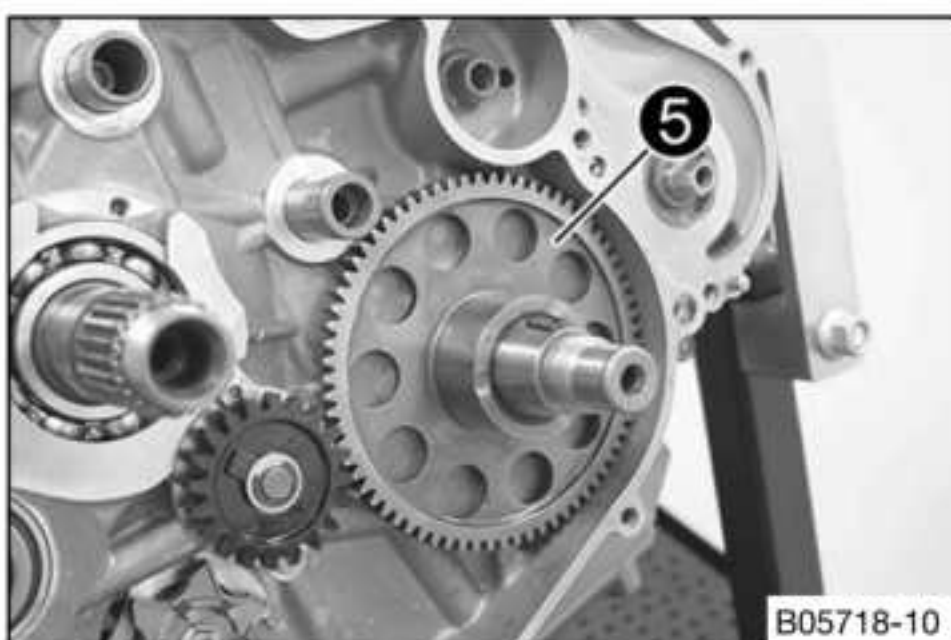
## 18.3.26 Removing the starter drive



- Remove lock ring ①.
- Take off the starter idler gear ② with the washer.



- Remove lock ring ③.
- Remove torque limiter ④ with the washers and needle bearing.



- Take off freewheel gear ⑤.