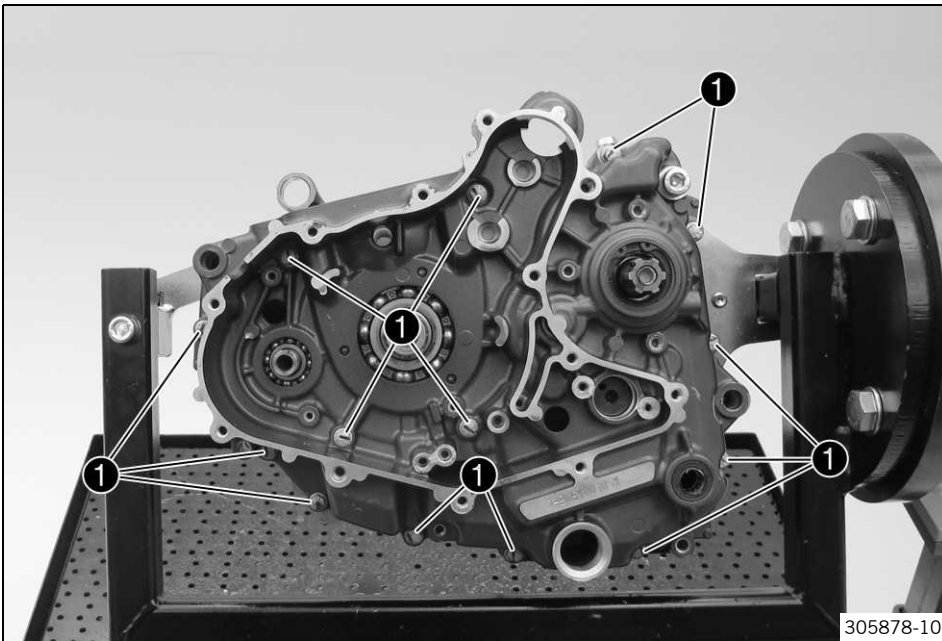


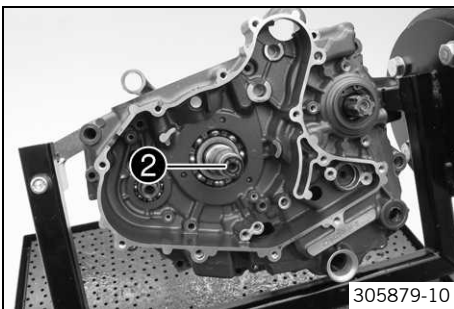
- Pull oil filter ③ out of the oil filter housing.

Circlip pliers reverse (51012011000) (☛ p. 252)

16.3.60 Removing the left engine case (200 Duke)

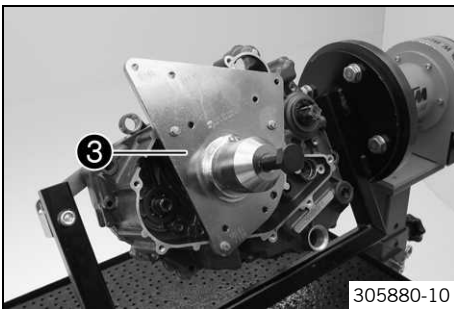


- Remove screws ①.
- Swing the left section of the engine case up and remove the fitting of the engine fixing arm.



- Mount special tool ②.

Pressure screw for crankshaft (90129020000) (☛ p. 257)



- Mount special tool ③ with suitable screws.

Case separating tool (90129048000) (☛ p. 258)

i Info

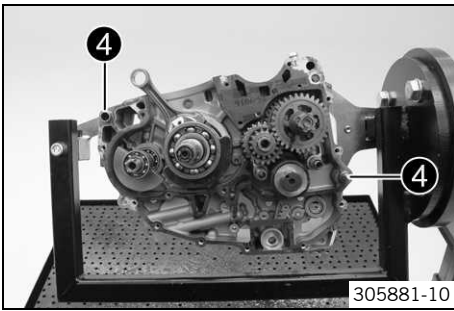
Use the drill hole marked with 901.

- Pull off the section of the engine case by screwing in the screw.

i Info

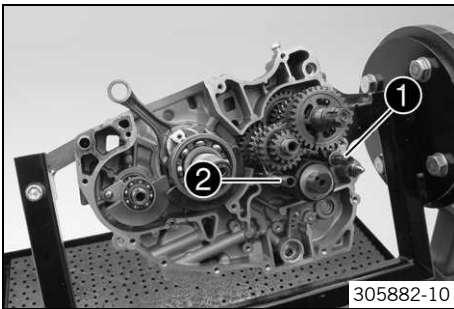
Do not wedge the engine case section.
The washer of the main shaft usually sticks to the bearing.

- Take off the left section of the engine case.
- Remove the special tool.



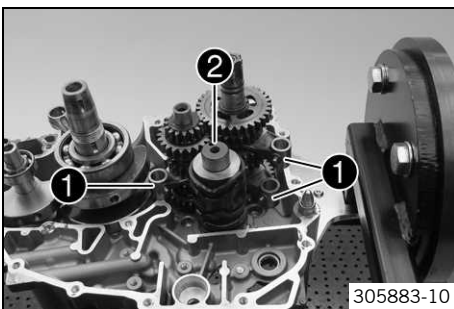
- Remove dowels ④.
- Remove the engine case gasket.

16.3.61 Removing the shift rails (200 Duke)



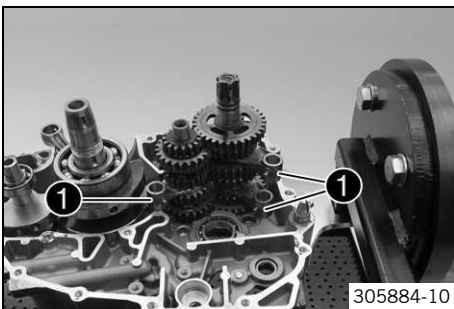
- Remove shift rail ① together with upper spring and the lower spring.
- Remove shift rail ②.

16.3.62 Removing the shift drum (200 Duke)



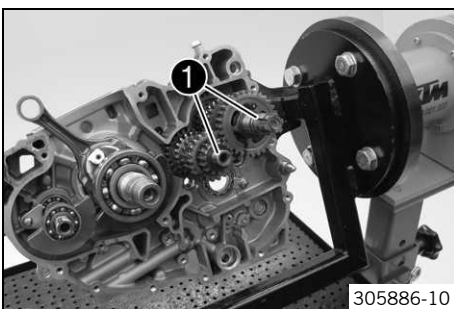
- Swing shift forks ① to one side.
- Remove shift drum ②.

16.3.63 Removing the shift forks (200 Duke)



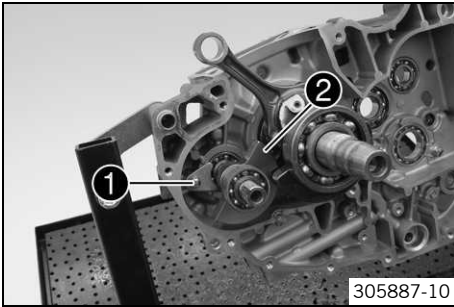
- Remove shift forks ①.

16.3.64 Removing the transmission shafts (200 Duke)



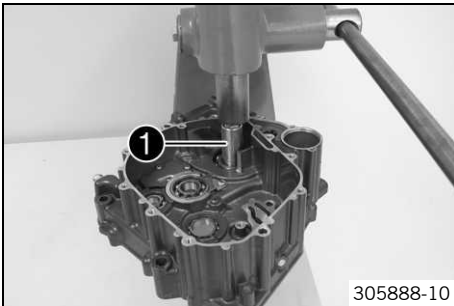
- Pull both transmission shafts ① out of the bearing seats together.

16.3.65 Removing the balancer shaft (200 Duke)



- Remove screw ❶.
- Take off the lock washer.
- Remove balancer shaft ❷.

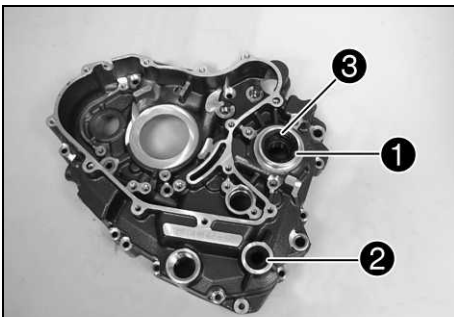
16.3.66 Removing the crankshaft (200 Duke)



- Mount special tool ❶.
- Protecting sleeve (90129019000) (☛ p. 257)
- Position the section of the engine case in a press.
 - Press out the crankshaft.

16.4 Work on individual parts

16.4.1 Work on the left section of the engine case (125 Duke)



- Remove all dowels.
- Remove lock ring ❶.
- Remove shaft seal ring ❷ of the shift shaft and ❸ of the countershaft.
- Remove oil nozzle ❹.
- Remove any sealing mass remnants and clean the engine case section thoroughly.
- Warm the engine case section in an oven.

Guideline

150 °C (302 °F)

- Knock the engine case section against a level wooden plate. This will cause the bearings to drop out of the bearing seats.

i Info

Any bearings that remain in the engine case section must be removed using a suitable tool.

- Insert the new cold bearings into the bearing seats of the hot engine case section and, if necessary, use a suitable press drift to push the bearing all the way to the stop or so that it is flush.

i Info

When pressing the bearing in, ensure that the engine case section is level to prevent damage.

Only press the bearings in via the outer ring; otherwise, the bearings will be damaged when they are pressed in.

- After the engine case section has cooled, check that the bearings are firmly seated.

i Info

If the bearings are not firmly seated after cooling, it is likely that they will rotate in the engine case when warm. In this case, the engine case must be renewed.

- Mount the dowels.



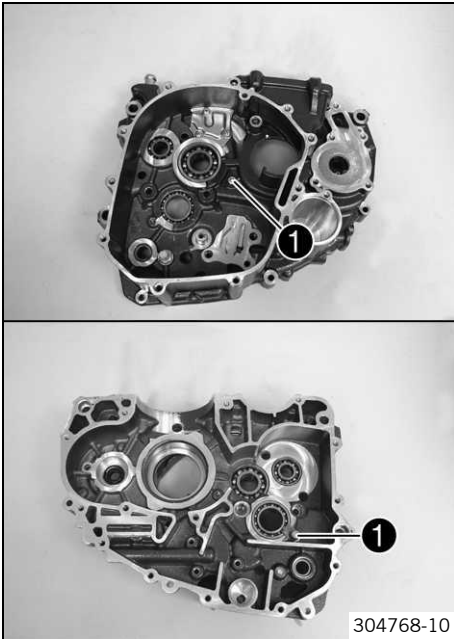
- Press in shaft seal ring ② of the shift shaft with the open side facing inward so that it is flush.
- Press in shaft seal ring ③ of the countershaft with the open side facing inward so that it is flush.
- Mount lock ring ①.
- Mount and tighten oil nozzle ④.

Guideline

Oil nozzle	M5	6 Nm (4.4 lbf ft)	Loctite® 243™
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- Blow out the oil channel with compressed air and check that it is clear.

16.4.2 Work on the right section of the engine case (125 Duke)



- Remove all dowels.
- Remove screws ①. Remove the bearing retainers.
- Remove any sealing mass remnants and clean the engine case section thoroughly.
- Warm the engine case section in an oven.

Guideline

150 °C (302 °F)

- Knock the engine case section against a level wooden plate. This will cause the bearings to drop out of the bearing seats.

i **Info**

Any bearings that remain in the engine case section must be removed using a suitable tool.

- Insert the new cold bearings into the bearing seats of the hot engine case section and, if necessary, use a suitable press drift to push the bearing all the way to the stop or so that it is flush.

i **Info**

When pressing the bearing in, ensure that the engine case section is level to prevent damage.

Only press the bearings in via the outer ring; otherwise, the bearings will be damaged when they are pressed in.

- After the engine case section has cooled, check that the bearings are firmly seated.

i **Info**

If the bearings are not firmly seated after cooling, it is likely that they will rotate in the engine case when warm. In this case, the engine case must be renewed.

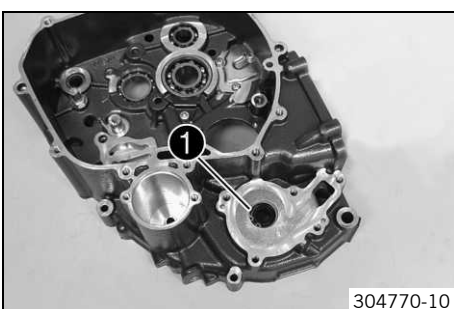
- Mount the dowels.
- Position all bearing locks.
- Mount and tighten screws ①.

Guideline

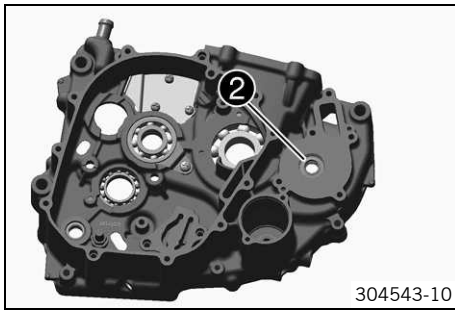
Screw, bearing retainer	M6	12 Nm (8.9 lbf ft)	Loctite® 243™
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- Blow compressed air through the oil channel and check that it is clear.

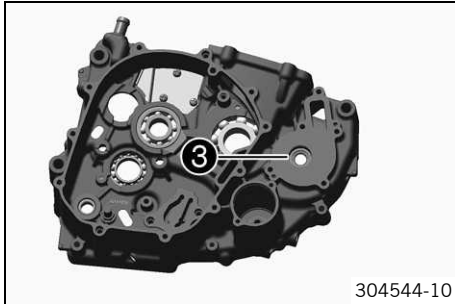
16.4.3 Changing the shaft seal ring of the water pump (125 Duke)



- Remove lock ring ①.

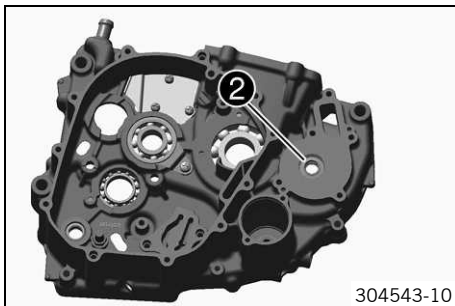


- Remove shaft seal ring ②.



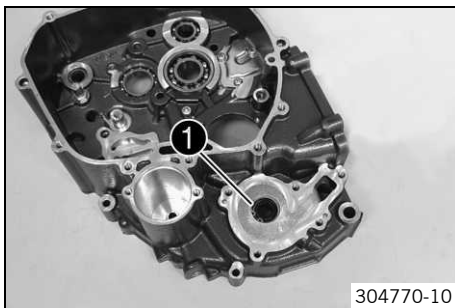
- Remove shaft seal ring ③.
- Press the new shaft seal ring ③ in all the way with the open side facing inward.

Mounting sleeve (90129043000) (☛ p. 258)



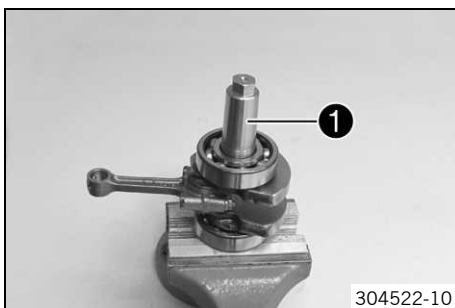
- Press shaft seal ring ② all the way in with the open side facing outward.

Mounting sleeve (90129043000) (☛ p. 258)



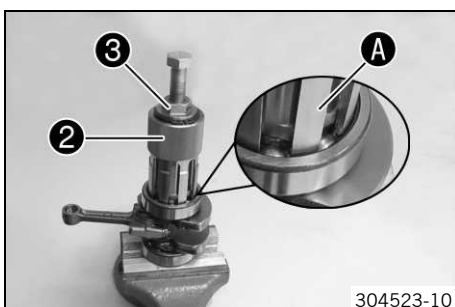
- Mount lock ring ①.

16.4.4 Removing the main bearing (125 Duke)



- Mount special tool ①.

Protecting sleeve (90129019000) (☛ p. 257)

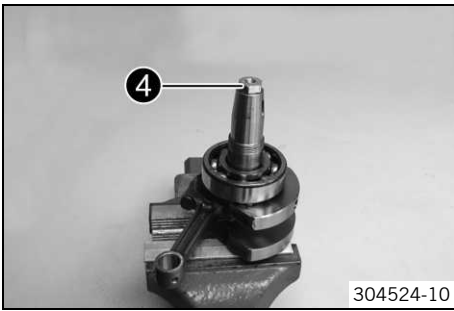


- Mount special tool ②.

Puller for main bearing (90129018000) (☛ p. 256)

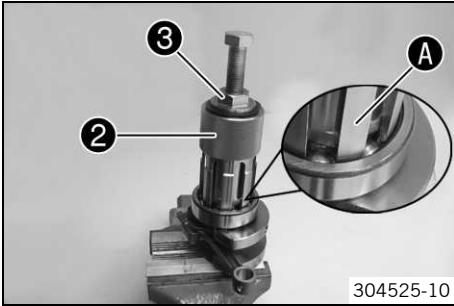
✓ Holding arms A engage in the outer bearing race.

- Tension the holding arms by turning nut ③.
- Pull off the main bearing by screwing in the screw.



- Clamp the crankshaft.
- Mount special tool ④.

Pressure screw for crankshaft (90129020000) (☛ p. 257)

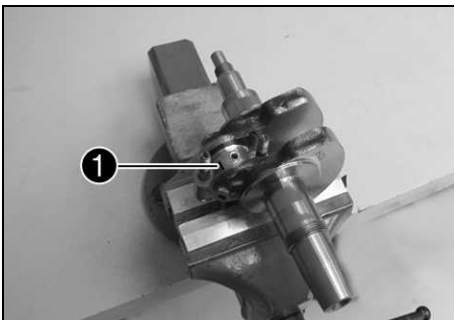


- Mount special tool ②.

Puller for main bearing (90129018000) (☛ p. 256)

- ✓ Holding arms ① engage in the outer bearing race.
- Tension the holding arms by turning nut ③.
- Pull off the main bearing by screwing in the screw.

16.4.5 Checking the radial play of the lower conrod bearing (125 Duke)



- Clamp the connecting rod with soft jaws.
- Position the bearing shells. Insert the **Plastigauge** clearance gauge ① offset by 90° to the bearing face.

Plastigauge measuring strips (60029012000) (☛ p. 253)

- Position the conrod bearing cover. Mount and tighten the nuts.

Guideline

Nut, conrod bearing	M7	24 Nm (17.7 lbf ft)
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i **Info**
Do not twist the connecting rod.

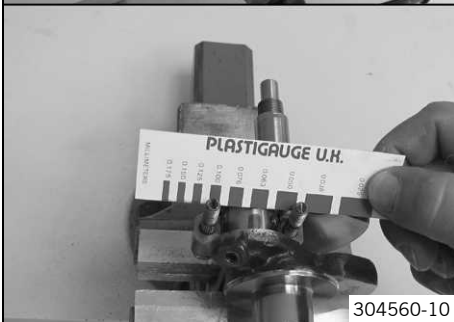
- Remove the conrod bearing cover again. Compare the **Plastigauge** clearance gauge with the specifications on the packaging.

Guideline

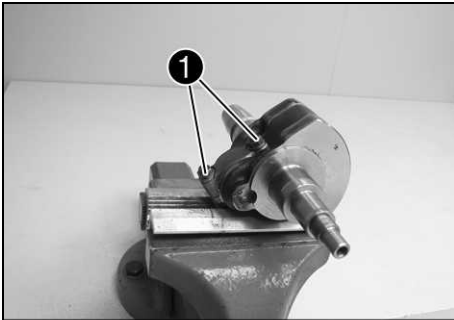
Connecting rod - radial play of lower conrod bearing	
New condition	0.030... 0.060 mm (0.00118... 0.00236 in)
Wear limit	0.080 mm (0.00315 in)

i **Info**
The width of the **Plastigauge** clearance gauge is equivalent to the bearing play.

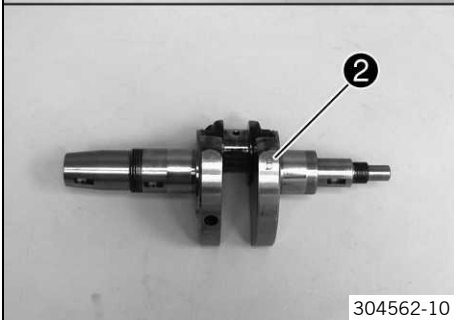
- Clean the parts.



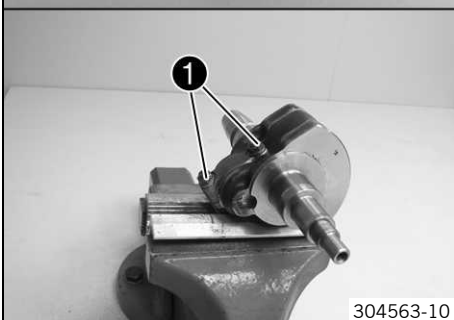
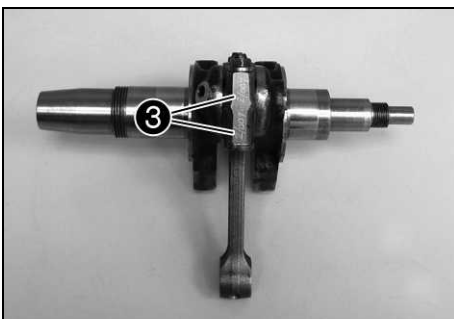
16.4.6 Changing the conrod bearing (125 Duke)



304561-10



304562-10



304563-10

- Clamp the connecting rod with soft jaws.
- Remove the nuts ❶.
- Remove the conrod bearing cover and crankshaft. Remove the bearing shells.

- Measure the crank pin diameter.

Guideline

Crankshaft – diameter, crank pin	
Crankshaft classification A	25.990... 25.998 mm (1.02323... 1.02354 in)
Crankshaft classification B	25.999... 26.006 mm (1.02358... 1.02386 in)

i Info
The crankshaft classification is indicated by marking ❷.

- Check the radial play of the lower conrod bearing. (☛ p. 121)

- Oil the bearing shells.
- Position the conrod bearing cover according to marking ❸.
- Mount and tighten nuts ❶.

Guideline

Nut, conrod bearing	M7	24 Nm (17.7 lbf ft)
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