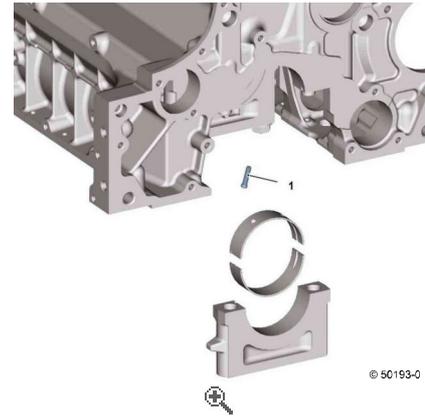




Assembly and disassembly of the piston cooling nozzles (L3)

Disassembly of the piston cooling nozzles

1. Piston cooling nozzle

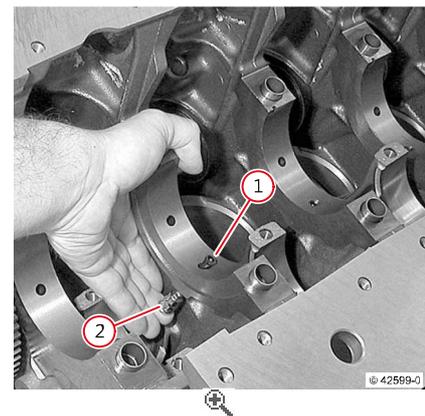


1.

- o Disassemble the crankshaft.



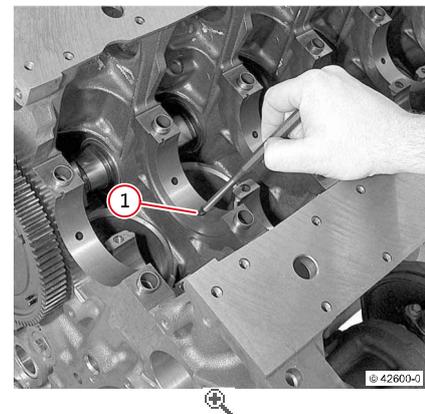
- o Push out the piston cooling nozzle (1) using a suitable tool (2).
- o Carry out a visual inspection of the components.



2.

Assembly of the piston cooling nozzles

- o Clean the holes for the piston cooling nozzles in the crankcase.
- o With the bolt, insert a new piston cooling nozzle (1) to the stop.
- o Assemble the crankshaft.



1.



Replacing the starter ring gear on the flywheel (L3)

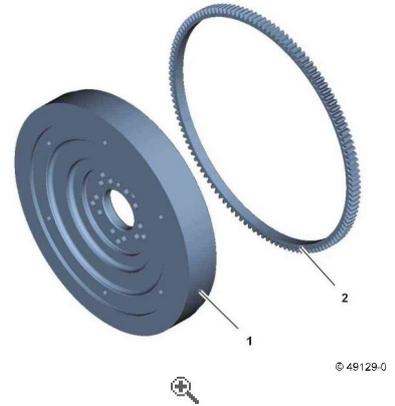


DANGER

Risk of accident, do not touch hot components!

Disassembly of the starter ring gear

1. Flywheel
2. Ring gear



1.
 - o Perforate the ring gear.



Note

Counterhold the flywheel using a suitable tool.



2.
 - o Remove the starter ring gear with a suitable tool.
 - o Clean the flywheel.



- 3.

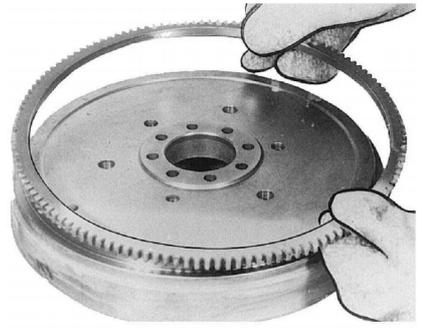
Assembly of the starter ring gear

- o Heat the starter ring gear to 220 °C.
- o Position the starter ring gear on the flywheel.



Note

The starter ring gear must rest evenly on the flywheel support flange.



© 45701-0



1.

T.\$84.21.B0.02.03.00.03 - v1



Fitting and removing counterweight drive system, checking (L3)

Readily available commercial tools:

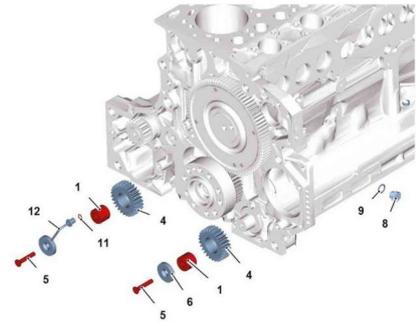
- Torque wrench

Special tools:

- Alignment pins (q.ty 2): 100810
- Plaster
- DEUTZ DW 72 mastic

Removing counterweight drive system

- 3 - Mounting pin
- 4 - Gear wheel
- 5 - Self-tapping screw
- 6 - Washer
- 8 - Hex screw
- 9 - O-ring
- 11 - O-ring
- 12 - Mounting pin



© 50330-0

1.

- Disassemble the gear case.



Construction unit

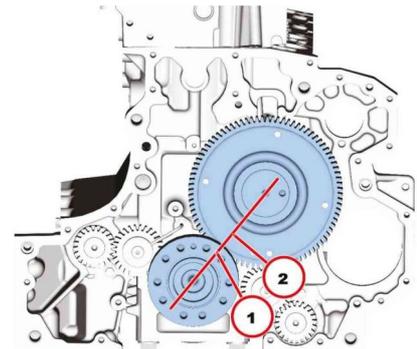
09

- Bring cylinder piston 1 to top dead centre.



Note

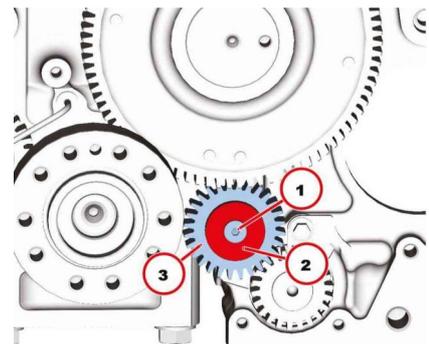
The mark (1) on the flange of the crankshaft must line up with the reference mark (2).



© 50305-0

2.

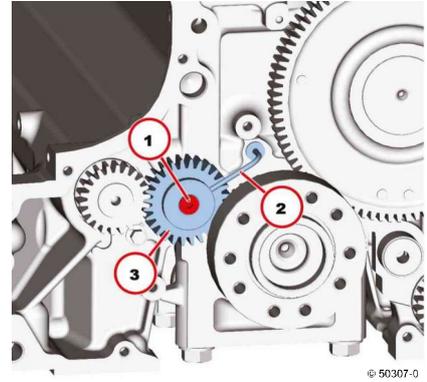
- Remove screw (1).
- Remove washer (2).
- Remove the intermediate wheel (3).
- Remove the bearing pin.



© 50306-0

3.

- Remove screw (1).
- Remove lube oil pipe (2).
- Remove the intermediate wheel (3).
- Remove the bearing pin.



© 50307-0

4.

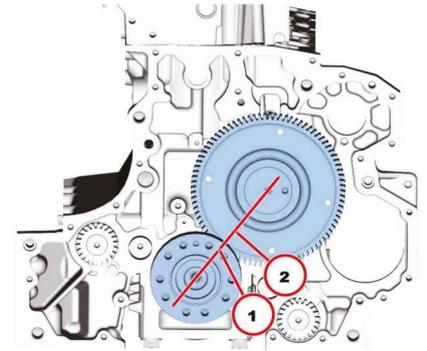
Fitting the counterweight drive system

- o Bring cylinder piston 1 to top dead centre.



Note

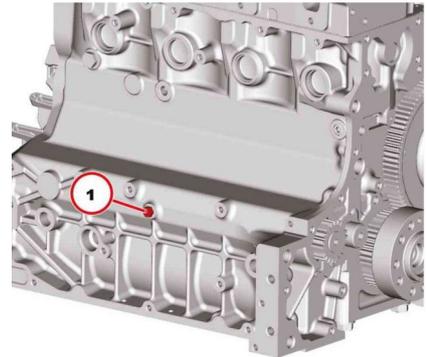
The mark (1) on the flange of the crankshaft must line up with the reference mark (2).



© 50305-1

1.

- o Do not fully unscrew drain plug (1).



© 50309-0

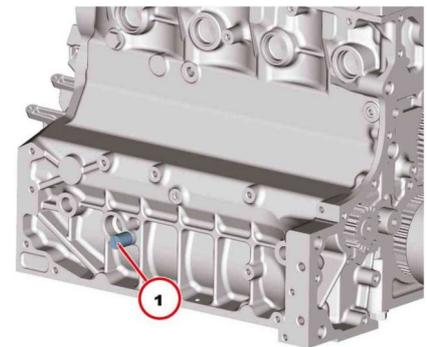
2.

- o Insert the centring pins (1).
- o Fasten the mass compensation shaft with the centring pins (1).



WARNING

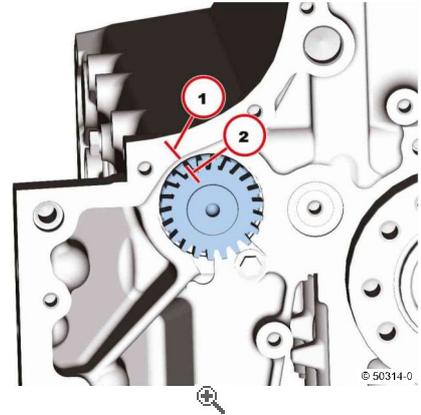
Stop rotating the mass compensation shaft.



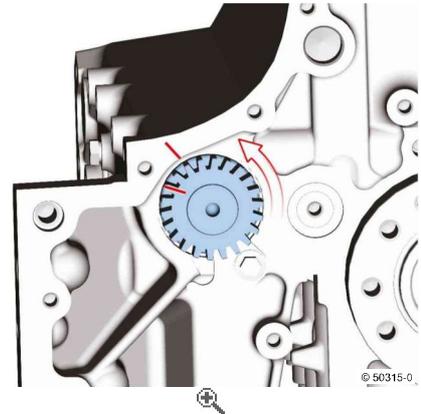
© 50311-0

3.

- o Apply the reference marks (1) and (2).



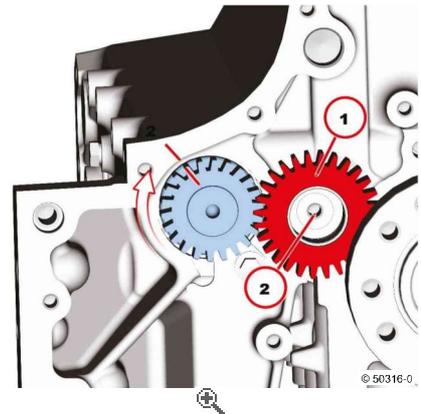
- 4.
- Unscrew the centring pins (side A).
 - Turn the mass compensation shaft of the two teeth in the direction of the arrow.



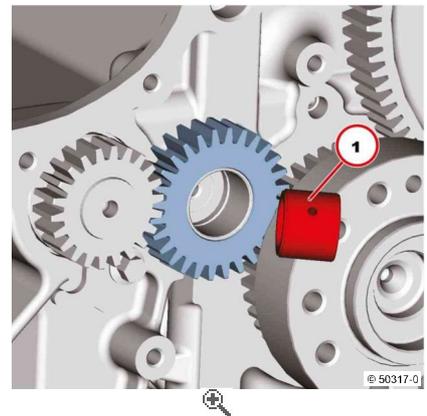
- 5.
- From above, engage the intermediate wheel (1) in the tothing.

Note

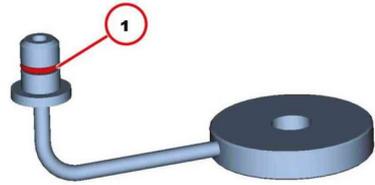
Turn the mass compensation shaft in the direction of the arrow until the reference marks coincide. Centre the intermediate wheel (1) with respect to the threaded hole (2).



- 6.
- Lightly oil the bearing pins (1).
 - Insert the bearing pins (1).



- 7.
- Fit new O-ring (1).



© 50318-0



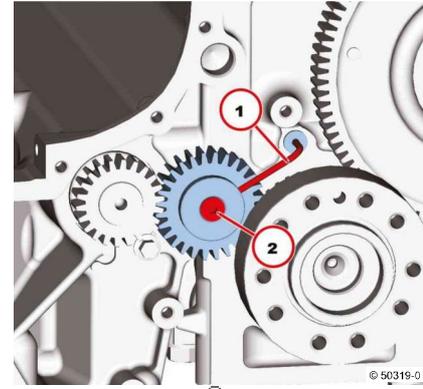
8.

- o Fit lube oil pipe (1).
- o Tighten screws (2).



Note

Insert the screw with DEUTZ DW 72 sealant. Do not tighten the screw at this stage.

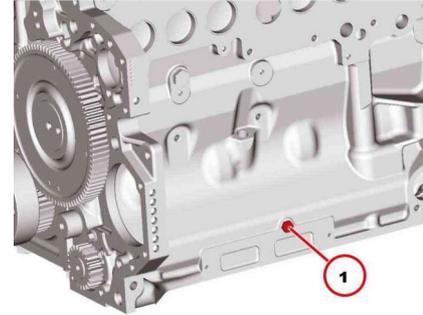


© 50319-0



9.

- o Do not fully unscrew drain plug (1).



© 50308-0



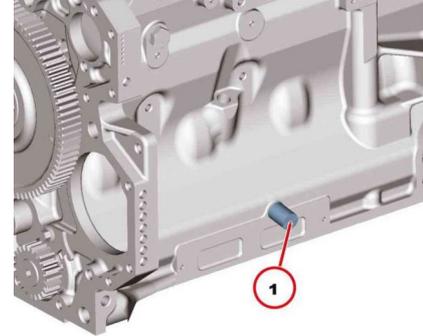
10.

- o Insert the centring pins (1).
- o Fasten the mass compensation shaft with the centring pins (1).



WARNING

Stop rotating the mass compensation shaft.



© 50310-0



11.

- o Assemble the B side intermediate wheel.



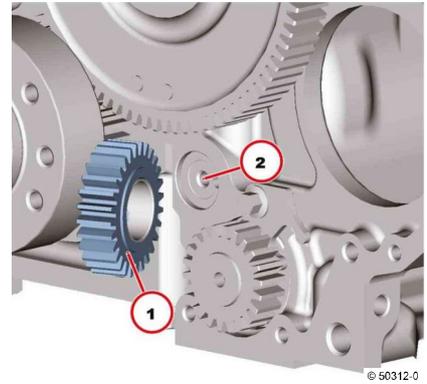
Note

Centre the intermediate wheel (1) with respect to the threaded hole (2). If the sides of the teeth do not coincide with the crankshaft, it can be rotated easily.



WARNING

Stop rotating the mass compensation shaft.



© 50312-0



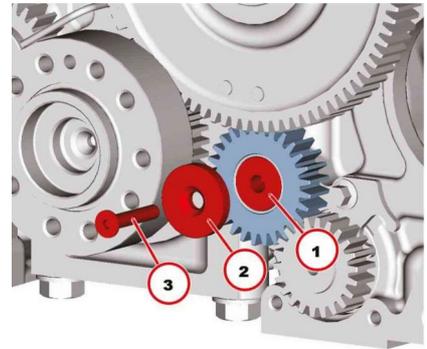
12.

- Lightly oil the bearing pins (1).
- Insert the bearing pins (1).
- Fit washer (2).
- Screw in the screw (3).



Note

Insert the screw with DEUTZ DW 72 sealant. Do not tighten the screw at this stage.

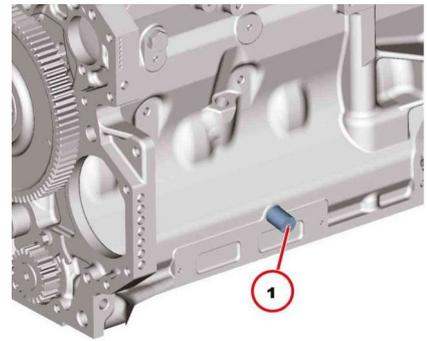


© 50313-0



13.

- Unscrew the centring pins (1).

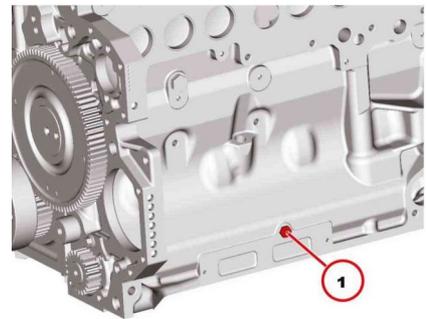


© 50316-0



14.

- Fit a new seal.
- Tighten the screw plug (1): 9 Nm

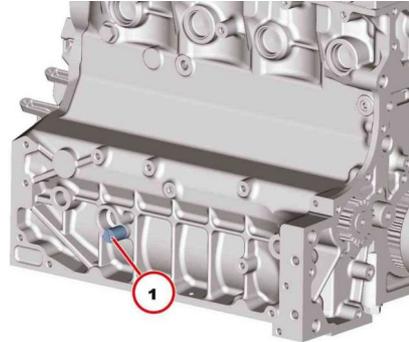


© 50308-0



15.

- Unscrew the centring pins (1).

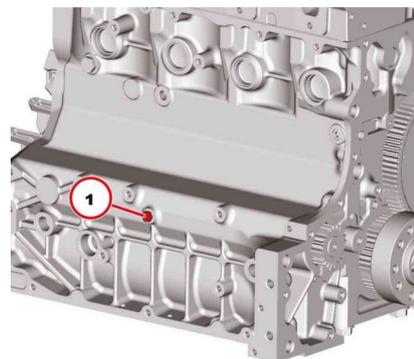


© 50311-0



16.

- o Fit a new seal.
- o Tighten the screw plug (1): 9 Nm



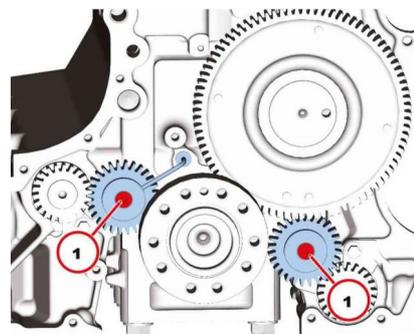
© 50309-0



17.

- o Tighten the screws (1): 22 Nm
- o Assemble the gear case.

	Construction unit 09
--	--------------------------------



© 50320-0



18.

Technical data

Tightening torque

ID no.	Designation	Screws type	Indications/observations	Value
A72 001	Screw plug (counterweight shaft) on crankcase			9 Nm
A72 003	Intermediate wheel on crankcase		Fit with DEUTZ DW 72 2 sealant	22 Nm

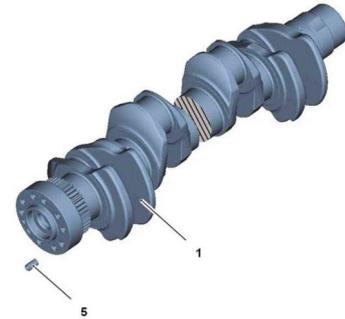
	Note When tightening fasteners to the specified torque using a torque wrench, a torque dispersion of +/- 10 % is permitted.
--	---



Assembly and disassembly of the crankshaft (L3)

Disassembly of the crankshaft

- o 1 - Crankshaft
- o 5 - Threaded insert



© 48779-0

1.

- o Disassemble the front cover.



Construction unit

01

- o Disassemble the gear case cover.



Construction unit

09

- o Disassemble the connecting rod drum.



Construction unit

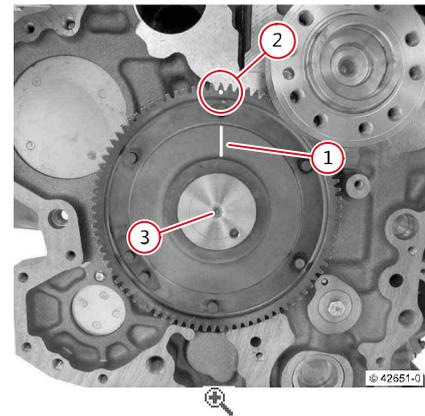
06

- o Place the mark of reference (1) on the ring gear of the camshaft.



Note

The reference mark must be located on a line between the marking (2) and the mid point (3) of the camshaft.



© 42651-0

2.

- o Uniformly rotate the crankshaft until the mark (1) on the flange of the shaft coincides with the auxiliary mark (2) on the camshaft ring gear.



Note

If the crankshaft flange is aligned, the mark on the camshaft ring gear will be covered.

- o Disassemble the crankshaft bearing covers.



Construction unit

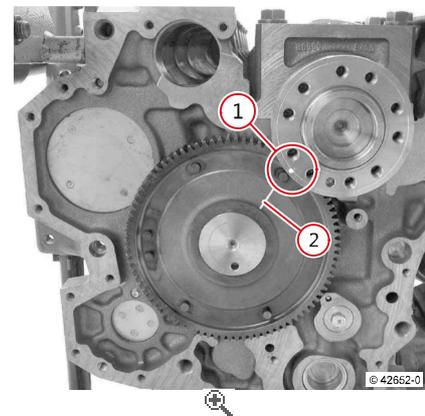
01

- o Disassemble the crankshaft bearings.



Construction unit

05



© 42652-0

3.

- o Remove the crankshaft.

Assembly of the crankshaft

- o Check the crankshaft endfloat.



Construction unit

05

- o Position the camshaft.

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