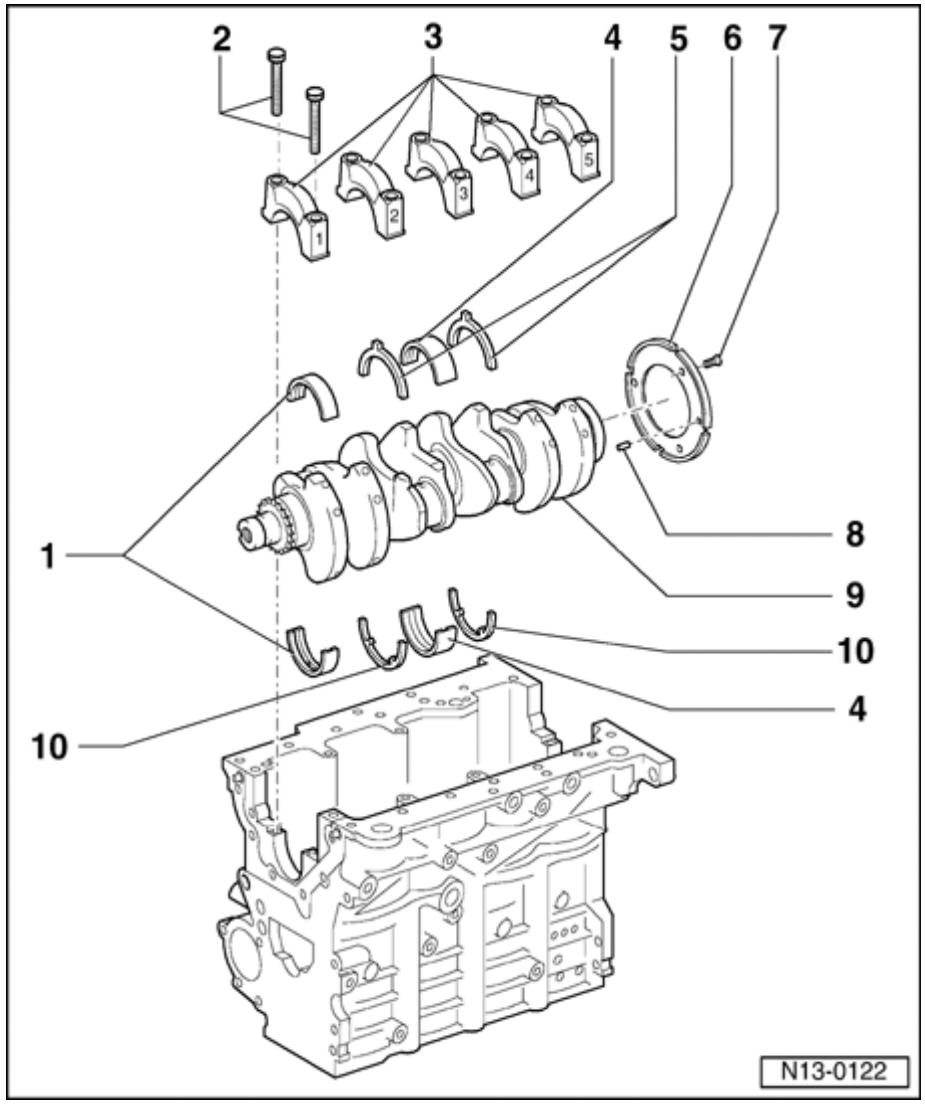


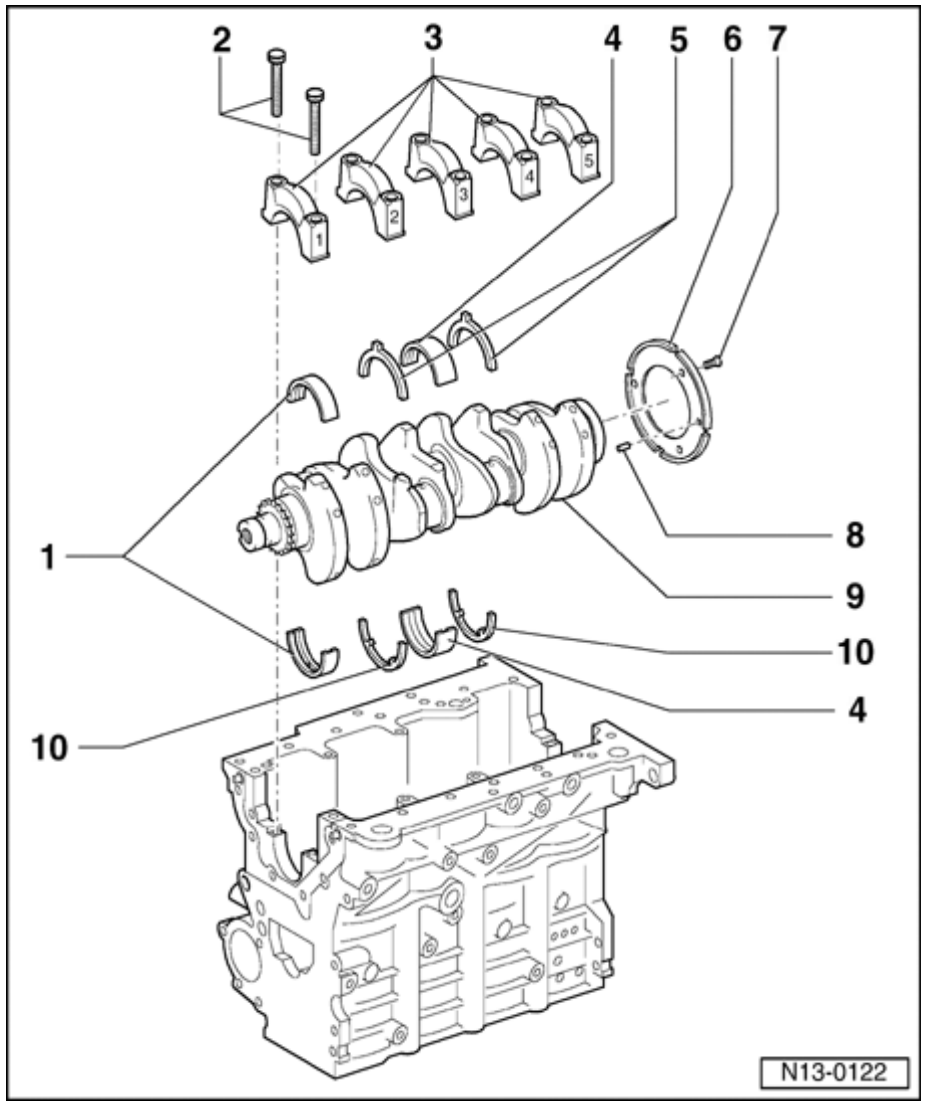
Crankshaft, removing and installing

Note:

- *Before removing the crankshaft, provide for appropriate storage to be sure that no weight is placed on the sensor wheel -6- and that it is not damaged.*
- *Support the engine with support VW 540 before repairing.*
- *When replacing bearing shells be sure to use shells of the same color.*

1 - Bearing shells: 1, 2, 4 and 5

- For bearing caps without oil groove
- For engine block with oil groove
- Do NOT interchange used bearing shells (mark them)



2 - 65 Nm (48 ft lb) + additional $^{1}/_{4}$ turn (90°)

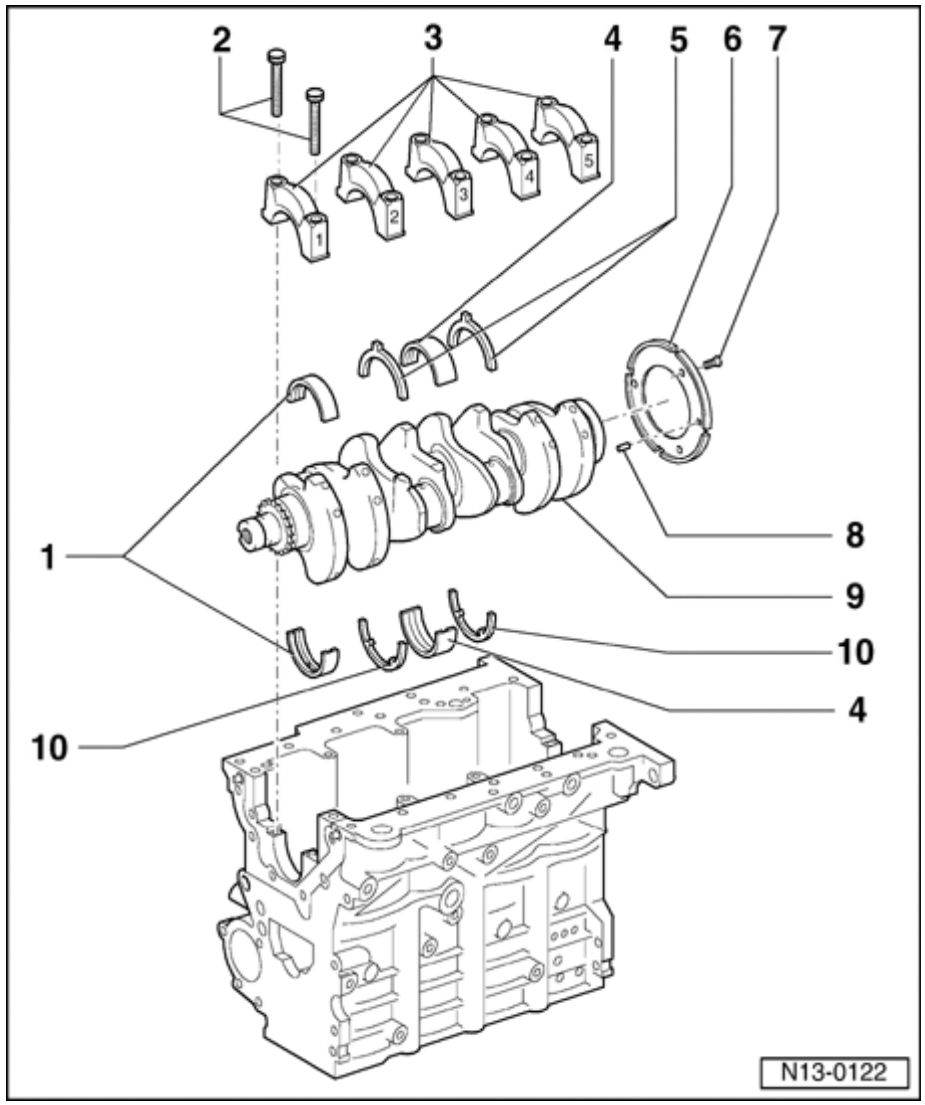
- Always replace
- Threaded along complete length of bolt
- To measure radial clearance tighten to 65 Nm (48 ft lb) but no further

3 - Bearing cap

- Bearing cap 1: Pulley end
- Bearing cap 3 with recesses for thrust washers
- Bearing shell retaining lugs, engine block/bearing cap must be on the same side

4 - Bearing shell 3

- Bearing cap w/o oil groove
- For engine block with oil groove
- Do NOT interchange used bearing shells (mark them).



5 - Thrust washer

- For bearing cap 3
- Note positioning

6 - Sensor wheel

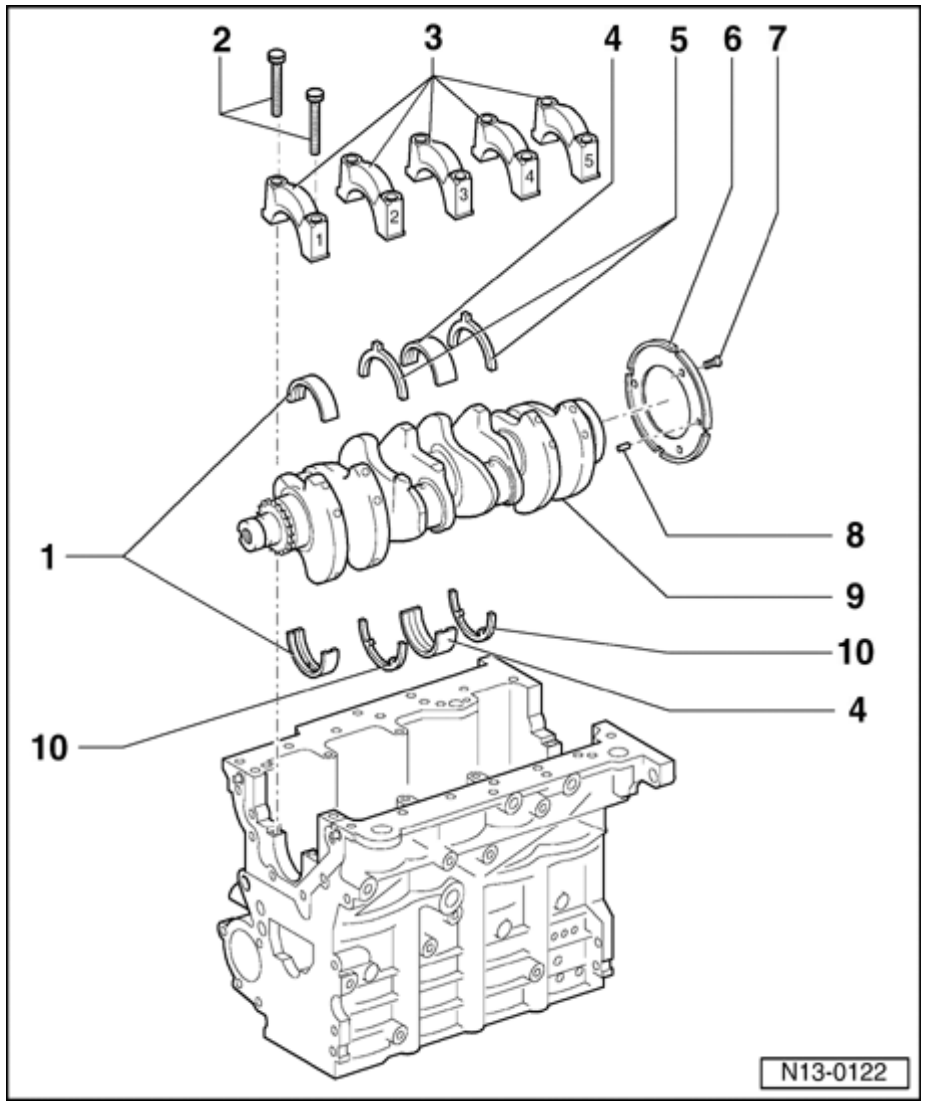
- For Engine Speed (RPM) sensor -G28-
- Installation possible in one position only, hole is offset

7 - 10 Nm (7 ft lb) + additional $^{1}/_{4}$turn (90 °)

- Always replace
- Torque angle can be measured with Hazet 6690 torque angle meter or equivalent.

8 - Dowel pin

- Checking projection from crankshaft ⇒ Fig. ⇒ 1



9 - Crankshaft

- Axial clearance new: 0.07 to 0.17 mm; Wear limit: 0.37 mm
- Check radial clearance with Plastigage: New: 0.03 to 0.08 mm; Wear limit: 0.17 mm
- Do not rotate crankshaft when checking radial clearance
- Crankshaft dimensions ⇒ Page 13-50

10 - Thrust washer

- For engine block, bearing 3

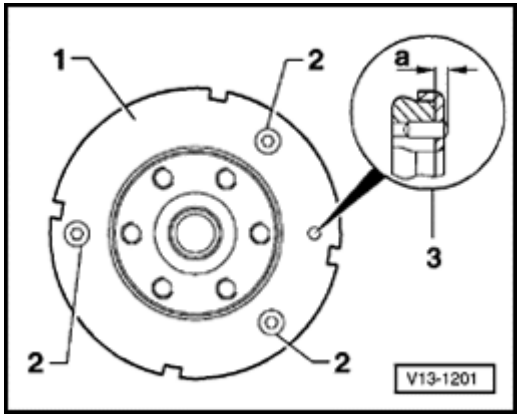


Fig. 1 Crankshaft dowel pin projection, checking

Special tools

- Depth gauge

- Check projection of dowel pin with drive sensor plate -1- removed.

1 - Sensor plate

2 - Securing bolt

3 - Projection of dowel pin -3- from crankshaft

a = 2.5 to 3.0 mm

Crankshaft dimensions (mm)

Honing dimension	Main journal diameter	Con-rod journal diameter
Basic dimension	-0.022 54.00 -0.042	-0.022 47.80 -0.042
1st undersize	-0.022 53.75 -0.042	-0.022 47.55 -0.042
2nd undersize	-0.022 53.50 -0.042	-0.022 47.30 -0.042
3rd undersize	-0.022 53.25 -0.042	-0.022 47.05 -0.042