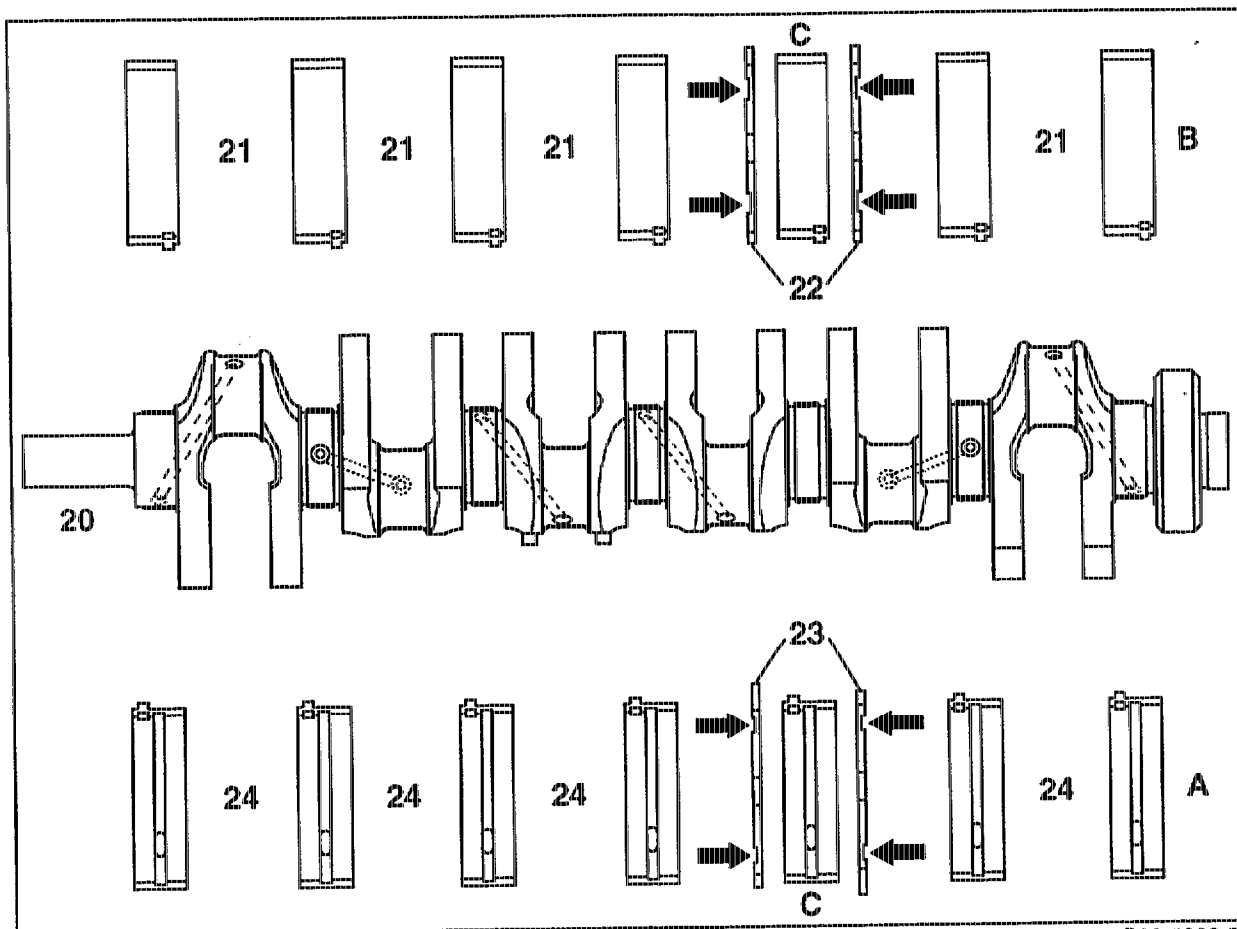


03-1800 Removing and installing crankshaft

Preceding work:

Engine removed (01-0300).
 Oil pump removed (18-2100).
 Oil shield at crankshaft removed (18-2180).
 End cover removed (01-2220).
 Timing case cover removed (01-2100).

Operation no. of operation texts and work units or standard texts
 and flat rates:
 03-4351




P03-5296-57

- A Crankcase
- B Bearing cap
- C Fit bearing at bearing point 5

Conrod bearing cap unbolt, remove.
 Crankshaft bearing cap unbolt, remove.

Note

The crankshaft bearing caps are consecutively numbered, beginning with the first crankshaft bearing cap at the front.

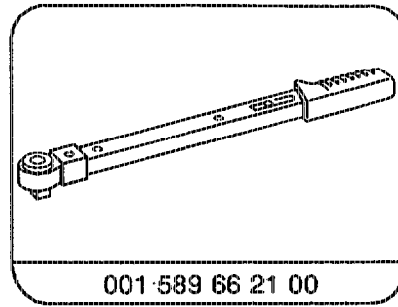
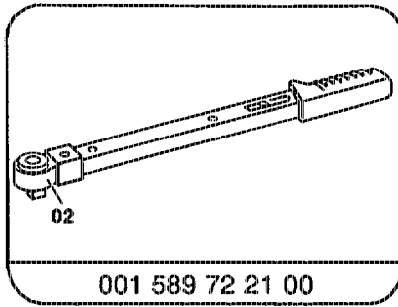
Crankshaft (20)	remove, install.
	Note
	Crankshaft bearing shells (24) in the crankcase have an oil groove and an oil feed drilling.
Crankshaft bearing cap	install, pay attention to fit, see note.
Axial bearings (22) and (23)	install in crankshaft bearing point (5).
	Note
	The thrust washers in the bearing cap each have two retaining lugs as an anti-twist lock. The oil grooves (arrows) in the thrust washers (22) and (23) must face toward the crankshaft thrust sides.
Bolt thread and bolt head contact surface	oil.
Bolts of crankshaft bearing caps	tighten from inside to outside. Initial torque 55 Nm. Tightening angle 90 – 100°. Re-use bolts up to a bolt length of max. 63.8 mm.
Conrod bearing cap	lubricate with engine oil and install bearing cap.
	
	Pay attention to marking. Install the bearing shells with the oil drilling in the conrod otherwise the conrod bushes will not be lubricated.
Conrod bolts	tighten (03–3100).
Crankshaft (20)	rotate, check clearance.

Tightening torques in Nm or angle of rotation

Bolts 1) of crankshaft bearing cap	initial torque	55
	angle of rotation	90°

1) Re-use bolts up to a bolt length of max. 63.8 mm.

Special tools



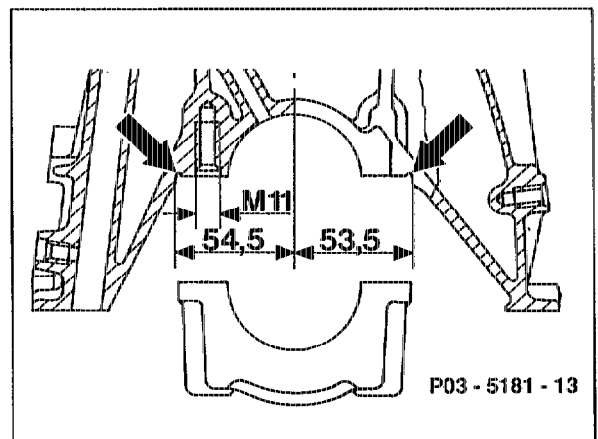
Note

The 7 crankshaft bearing caps are fitted at the side in the crankcase (arrows). The fit is off-centred so that the bearing caps can only be installed in one position.

The crankshaft bearing caps are machined together with the crankcase.

Following bearing damage, the conrods must be taken out and any swarf present in the conrod bores, the crankshafts and crankcase oil galleries removed.

Replace oil filter, oil cooler and oil pump.



The forged conrods are guided axially in the pistons (piston-guided conrods) (arrows).

