

Bearing Clearances of Camshaft in mm

Radial	Axial
0.04 to 0.08	0.08 to 0.144

When re-grinding the 1st camshaft journal (1) the thrust surfaces (b) are generally only ground so much that a proper thrust surface is obtained (see Fig. 05-38/1).

The camshaft bearing (lapped bearing) of the 1st camshaft journal, however, is wider by 0.25 mm for the overhaul stage. If the width of the overhaul stage is not reached during the grinding of the 1st camshaft journal, the lapped bearing of the overhaul stage must

be adapted by machining, so that the specified axial clearance for the camshaft of 0.08 to 0.144 mm will be obtained.

After the grinding of the camshaft journals check the camshaft for cracks and test the hardness of the individual bearing points.

Hardness of Camshaft

	Rockwell hardness Rc	Scleroscope hardness SKL
Bearing journal and cam base	45 to 60	58 to 73
cam lobe	at least 50 to 60	at least 63 to 73

B. OM 621

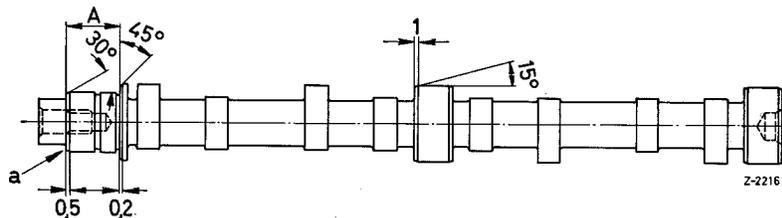


Figure 05-38/2
Camshaft OM 621 for external lubrication
with annular groove on 1st camshaft bearing journal.

The camshaft of the OM 621 is supported in three bearing brackets.

The camshaft bearing pins can once be re-ground to the specified repair size and the respective bearing brackets with smaller bores be supplied ready for installation (see the following table and Job No. 05-39, Section B, item 2).

Table of diameters for the camshaft bearing pins

Camshaft with identification No.	Camshaft bearing pin for	1st bearing (opposite flywheel side)	2nd bearing	3rd bearing (flywheel side)
01	Standard size	34.975	44.975	45.975
		34.959	44.959	45.959
	Intermediate size	34.875	44.875	45.875
12 ¹⁾	Standard size	34.859	44.859	45.859
		34.725	44.725	45.725
	Repair size I	34.709	44.709	45.709
02	Standard size	34.975	45.975	45.975
		34.959	45.959	45.959
12 ¹⁾	Intermediate size	34.875	45.875	45.875
		34.859	45.859	45.859
12 ¹⁾	Standard size	34.975	46.475	46.475
		34.959	46.459	46.459
	Intermediate size	34.875	46.375	46.375
12 ¹⁾	Repair size I	34.859	46.359	46.359
		34.725	46.225	46.225
		34.709	46.209	46.209

¹⁾ Solid shaft for external lubrication of camshaft.

Before regrinding the camshaft, check camshaft accurately for true running. When supporting the shaft in the outer bearings 1 and 3, the maximum out-of-true of the centre bearing, the basic cam circles and the camshaft sprocket seat must not exceed 0.025 mm. If the centre is damaged front or rear or on both sides, re-grind the centre on a centering grinding machine or on a lathe. For camshaft with centre hole remove the cover for sealing the centre hole, or oil duct, at the rear end.

In order to keep to the specified radial clearance of the camshaft, first measure the bores of the camshaft bearings to be installed. On the basis of the bearing clearance, ascertain within which tolerance range the pins have to be re-ground.

Bearing clearances of the camshaft

Radial	Axial
0.025-0.066	0.050-0.128

When regrinding the 1st bearing pin, do not regrind more than 0.1 mm from the lateral butting surface of the collar "b" (see Figure 05-38/2). The same amount of stock removal on collar "b" must also be ground off from surface "a" so that the measure 34.000 to 34.039 is adhered to. Otherwise the axial clearance of the camshaft and consequently the chain misalignment is too large. The lateral out-of-true on the surface "a" must not exceed 0.01 mm. After grinding of the camshaft

bearing pins, check the camshaft for cracks and check the hardness of the individual bearing seats.

After grinding, thoroughly clean the oil bores and blow. Then close the opening at the back side of the camshaft with a new locking cover.

Hardness of the camshaft

	Brinell hardness HB in kg/mm ²	Scleroscope hardness
Bearing pins and basic cam circle	217-248	36-40
Cam lobe and lift	min. 500	min. 64