

## B. Re-bedding of Crankshaft

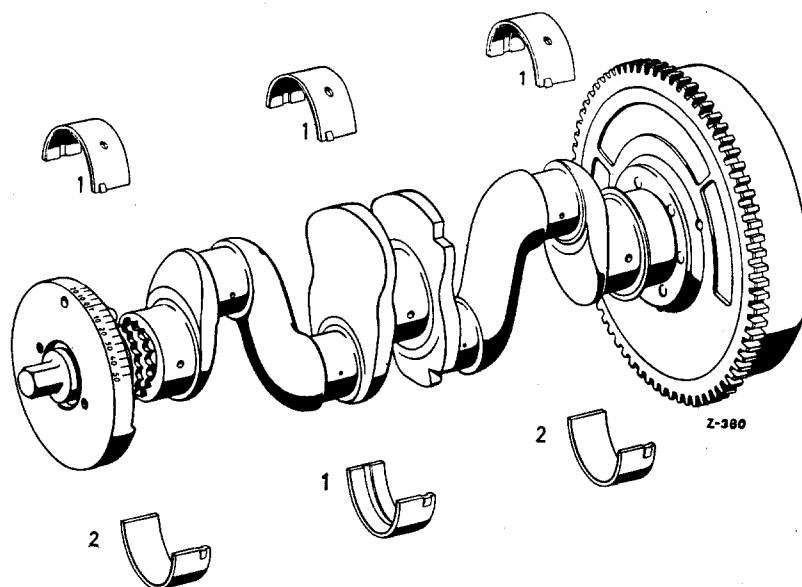


Fig. 03 — 5/2

### Bearing Play of Crankshaft

in mm

Radial *	End play of locating bearing	Crush fit of bearing shell halves
0.045 - 0.065	0.040 - 0.096	+ 0.01

\* The radial play shown in the table is an average play which in practice must be strictly adhered to.

The bearing shell halves of the crankshaft bearings are supplied ready for fitting and graded for the various overhaul stages. The three upper bearing shells (1) and the lower center bearing shell half (1) (with oil hole and lubrication groove) are identical and may therefore be interchanged (i. e. when the bearings are new). The same applies to the two lower bearing shell halves (2).

The crankshaft bearings should always be replaced as a complete set of three bearings, i. e. of six bearing shell halves.

The tolerance of the bearing shell halves is  $\pm 0.01$  mm at a diameter of 74.519 mm. In the extreme case, there is thus a crush of from  $-0.01$  to  $+0.03$  mm, the base bore being 74.500—74.519 mm. A crush of  $+0.01$  mm will usually be obtained. In practice it is unnecessary to measure this slight crush because the bearing shell halves are supplied ready for installation and if the base bores in the crankcase are of the correct diameter, an adequate crush is assured.

The 2<sup>nd</sup> bearing is designed as a locating bearing. The center bearing cap is for this reason fitted with a check plate on both sides, held in position by two heavy dowel pins (Figs. 03—5/3 and 03—5/4).

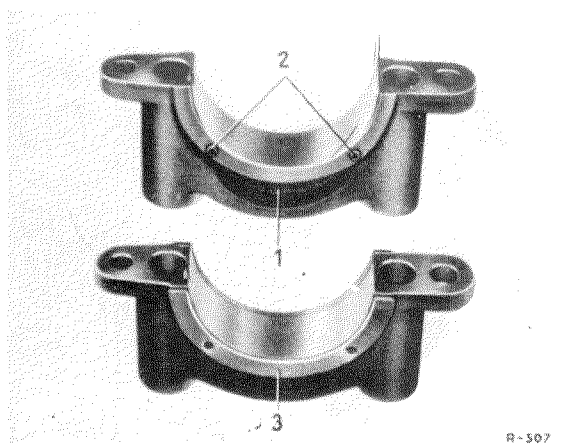


Fig. 03—5/3

- 1 Crankshaft bearing cap
- 2 Dowel pin
- 3 Check plate half

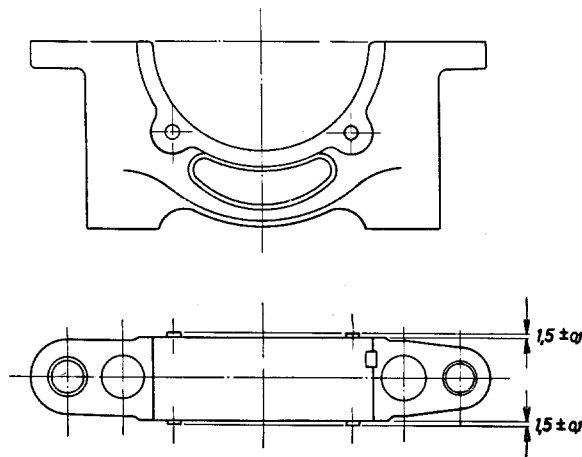


Fig. 03—5/4

The check plates are available in the following thicknesses:

2 mm (standard), 2.05 mm, 2.10 mm, 2.15 mm, 2.20 mm, 2.25 mm, 2.30 mm and 2.35 mm.

Departure from nominal dimensions in each case:  $-0.020$  to  $-0.027$  mm.

The check plate halves must be so selected that the correct end play of from 0.040 to 0.096 mm for the journal of the locating bearing of the crankshaft is obtained.

1. Screw on the bearing caps and tighten the screws to a torque of 8 mkg.
2. After the base bores have been carefully cleaned, they should be measured with an internal micrometer in the three directions A, B and C (measurements are taken at right angles to the separating surface and again at  $30^\circ$  to it) (Figs. 03—5/5 and 03—5/6).

In order to check the bearing bores for conicity, these measurements are taken at the front and again at the rear of the bore.

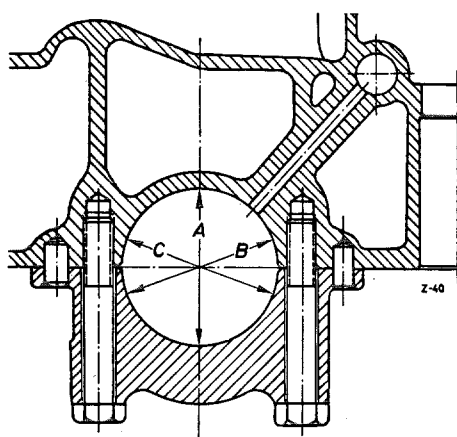


Fig. 03—5/5

The diameter of the base bores is 74.500 to 74.519 mm.

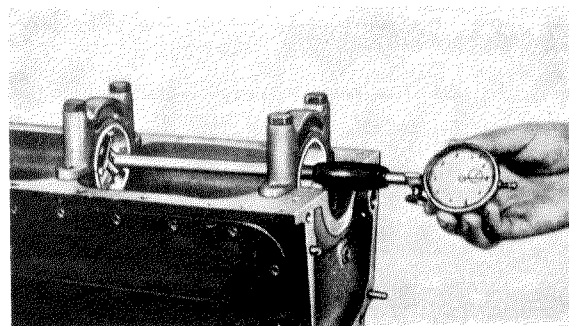


Fig. 03—5/6

Permissible out-of-round	0.01 mm
Permissible conicity	0.01 mm

3. Off-center bearing caps can be brought into position by lightly tapping with a hammer. The bearing cap is centrally placed when all three measurements are identical.

**Re-machining of the separating surfaces of the bearing caps and the bearing shell halves is not permissible.**

4. The bores should be measured in the same way with the bearing shells fitted.

The diameter of the crankshaft bearing with bearing shell halves fitted is: Standard, 69.99—70.02 mm, and at 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> overhaul stages, 0.25 mm less each time.

The table of crankshaft bearing play given on Page 03 — 5/3 can now be used to decide the scale of tolerances according to which the crankshaft journals are to be ground. No departure in either direction may be made from the specified maximum and minimum radial play values in this table.