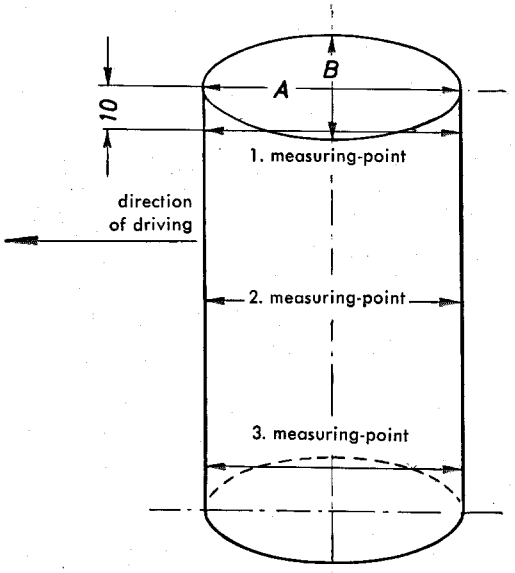
B. Boring and Honing of Cylinder Bores

Measure the cleaned cylinder bores at the top, in the middle and at the bottom, using an internal micrometer. The measurements must be taken in the direction of the axis of the piston pin (direction A) and then at right angles to this axis (direction B) (Fig. 01 — 5/3).



A = Longitudinal direction B = Lateral direction

Fig. 01 — 5/3

Out-of-round cylinder bores mean increased oil consumption and they must therefore be bored and honed. Honing alone is insufficient as the hone follows the out-of-round contour.

If the cylinder bores are conical, but the degree of conicity does not exceed 0.05 mm, honing is sufficient. But if the conicity exceeds this figure, the cylinders must be re-bored and then honed.

The point of maximum wear in the bore is taken as the basis on which the required overhaul is decided.

The allowance for honing should not be more than 0.03 mm. Machining dimensions must be kept strictly to the limits laid down in the table.

After honing, the cylinder walls must be entirely free of scorings and scratches.

The maximum permissible roughness of the honed cylinder may be as much as 0.005 mm, but the average depth of corrugation must not exceed 50% of the average permissible roughness, i. e., 0.0025 mm.

Machining Tolerances

Permissible degree of out-of-round	0.013 mm
Permissible conicity	0.013 mm
Departure from vertical to crankshaft axis, calculated over total height of cylinder	0.050 mm

At the works, the numbers 0 or 1 or 2 are punched on the upper separating surface of the crankcase, opposite each cylinder.

The number 0 indicates:
Cylinder diameter 85.00 mm

the number 1 indicates:
Cylinder diameter 85.01 mm

the number 2 indicates:
Cylinder diameter 85.02 mm.

The pistons are available in three gradings — within the overhaul stages — in steps of 0.01 mm. The pistons must be selected so as to give

0.04 mm Running Clearance.

If, when a repair is being carried out, only one size of piston is available, the cylinders should be honed out to fit the available pistons.

After boring and honing out the cylinder bores, it is advisable to check the crankcase for leakage (see Job No. 01 — 5, Section A).

Machining Dimensions of Cylinder Bores

in mm

Overhaul stage	Cylinder bore	Available piston sizes
Standard size	85.000 / 85.022	84.96 84.97 84.98
Intermediate stage	85.250 / 85.272	85.21 85.22 85.23
1st Overhaul stage	85.500 / 85.522	85.46 85.47 85.48
2nd Overhaul stage	86.000 / 86.022	85.96 85.97 85.98
3rd Overhaul stage	86.500 / 86.522	86.46 86.47 86.48