

1. Measure the cleaned cylinder bores at top, in the middle and at the bottom, using an inside measuring instrument. The measurements must be taken in the direction of the piston pin axis (direction A) and then at right angles to this axis (direction B) (see Figure 01-27/1).

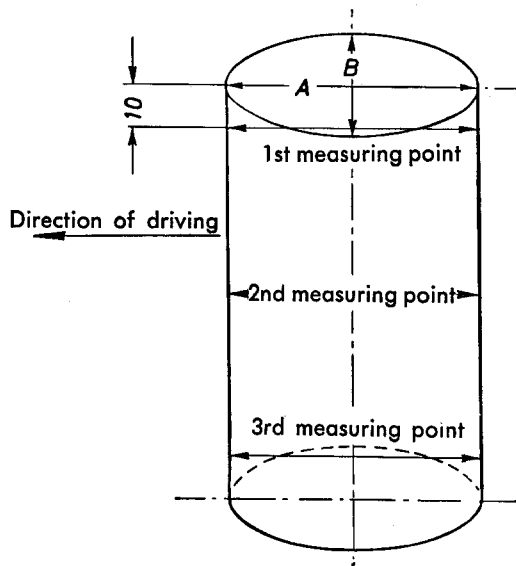


Figure 01-27/1

Out-of-round cylinder bores cause an increased oil consumption and must therefore be bored and honed. Honing alone is insufficient, because the honing tool follows the out-of-round contour.

If the cylinder bores are conical and the degree of conicity does not exceed 0.05 mm, honing will be sufficient.

The maximum wear of the cylinder bores is taken as a basis for the necessary overhaul stage.

The allowance for honing should not be more than 0.03 mm. The machining dimensions must be strictly kept within the limits specified in the table.

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

The maximum permissible roughness of the honed cylinder bores can be as much as 0.005 mm, the unevenness, however, should only be 50 % of the roughness = 0.0025 mm.

## Machining Tolerances

Permissible out-of-round	0.013 mm
Permissible conicity	0.013 mm
Permissible departure from vertical to crankshaft axis, calculated for total height of cylinder	0.050 mm

At the works the number 0 or 1 or 2 are punched on the contact surface for the cylinder head directly next to each cylinder.

The figure 0 denotes a cylinder dia. of:  
75.00 mm, for the OM 636  
85.00 mm, for the OM 621

The figure 1 denotes a cylinder dia. of:  
75.01 mm, for the OM 636  
85.01 mm, for the OM 621

The figure 2 denotes a cylinder dia. of:  
75.02 mm, for the OM 636  
85.02 mm, for the OM 621

The pistons are available in three gradings for each overhaul stage, in steps of 0.01 mm. The pistons must be selected so as to give a **running clearance of 0.06**, if Mahle and/or Nüral pistons are used. If only one size of pistons is available, the cylinders should be honed to fit these pistons.

Only in very urgent cases should the 4th overhaul stage be exploited.

If at all possible cylinder liners should be installed before making use of the 4th overhaul stage (see Job No. 01-29).

### **Machining Dimensions of Cylinder Bores**

(see Job No. 01-0).

### **Dimensions of Pistons**

(see Job No. 03-0).

2. After boring, honing and measuring the cylinders thoroughly clean the crankcase and especially the oilways (see Job No. 01-26).

Also check crankcase for leaks (see Job No. 01-26, Paragraph 8). It can happen that porous spots are brought to light by machining.