Data

Group number[1]		0	1	2
Standard dimension 86.0	piston dia.	85.970–85.982	85.980–85.992	85.990–86.002
	cylinder dia.	85.998–86.008	86.008–86.018	86.019–86.028
Repair stage 1 + 0.5	piston dia.	86.470–86.482	86.480–86.492	86.490–86.502
	cylinder dia.	86.498–86.508	86.508–86.518	86.519–86.528
Repair stage 2 + 1.0	piston dia.	86.970–86.982	86.980–86.992	86.990–86.002
	cylinder dia.	86.998–86.008	87.008–87.018	87.019–87.028

[1]) Decisive for association is the smallest measured cylinder dia. and the largest measured piston dia.

Max. wear limit in driving or transverse direction of cylinder bores at upper reversing point of 1st piston ring		0,10
Piston clearance	When new	0,025–0,035
	Wear limit	0,08

Machining tolerances

Permissible deviation (radial distance) from cylinder shape	When new	0,007
	Wear limit	0,025
Permissible deviation from square with reference to cylinder height		0,05
Mean height of roughness		0,002–0,004
Permissible height of waviness		50 % of roughness
Chamfer of cylinder bores		see fig. point 2

Conventional tools

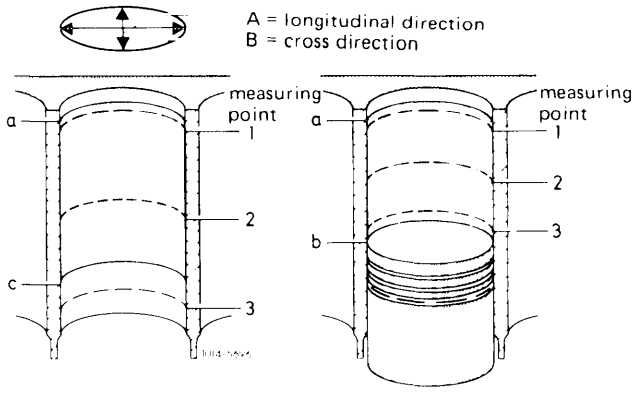
Inside measuring instrument for 50–150 mm dia., with 0.01 mm readout and measuring point pressure relief	e.g. made by Hommel Handel, 5000 Köln 71 Sunnen GRM-2125

Note

In particular for a complaint concerning "excessive oil consumption" a measurement of the cylinder bores is essential in addition to a visual inspection.

1 Measure the cleaned cylinder bores with an internal tester at measuring points 1, 2 and 3 in longitudinal direction A (piston pin axis) and in cross direction B.

When the pistons are installed measuring point 3 will be just barely above the piston, which must be at BDC.



a top reversing point of first piston ring
b BDC of piston
c bottom reversing point of oil scraper ring

The group number punched into crankcase (arrow), matches the group number of the pistons installed as standard equipment.

On used engines, the original cylinder dia. shows up after thorough cleaning of top land zone.

The difference in diameter of dimension shown on top land zone and the dimension at measuring point 1 generally indicates the respective max. wear.

In the event of repairs, hone cylinder bores according to dimensions of available pistons plus piston clearance.

The processing machines used for boring (pre-honing), finish-honing and polishing should be set in accordance with respective operating instructions.

Upon boring, the cylinder bores should be chamfered at upper cylinder end according to drawing.

The lower cylinder end should remain sharp edged without burr.