

Due to casting inaccuracies in the crankcase it can happen that the walls between the individual cylinders become too weak after re-boring of the bores seating the cylinder liners, so that the force-fit of the cylinder liners no longer has the specified value when heat expansion sets in. Such crankcases should no longer be used. The wall between two cylinders must have a thickness of at least 2.5 mm.

There are two versions of cylinder liners, with collar and without collar (see Figure 01-29/1 and 01-29/2). Generally, cylinder liners without collar are installed due to the easier machining of these liners. Cylinder liners with collar, of course, are again installed in crankcases which were previously equipped with such liners.

While the cylinder liner is installed, the cylinder bore can be machined to standard size and in addition to the first overhaul stage only.

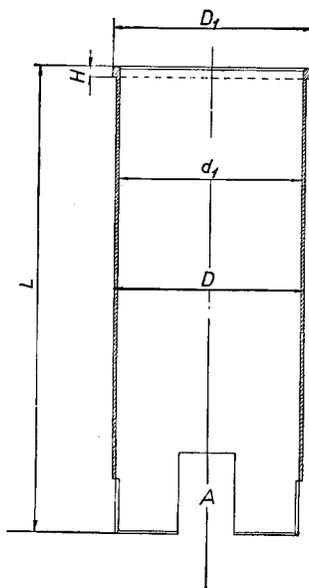


Figure 01-29/1  
Cylinder liner with collar

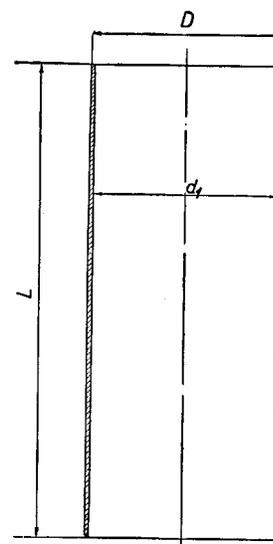


Figure 01-29/2  
Cylinder liner without collar

1. Measure the cylinder bores.
2. Measure the outer diameter of the cylinder liners on top and bottom each measurement at a 90° angle from the other. Determine the average dimension. Departure from out-of-round should not be more than 0.03 mm and the conicity not more than 0.01 mm.
3. The force-fit value should be 0.17–0.09 mm. Determine the dimension of the bores in the crankcase accordingly. Select the maximum force-fit value for liners without collar, because there is the danger of longitudinal movement. Select value in the vicinity of minimum force-fit for liners with collar.
4. Machine the cylinder bore to the determined dimension. When using liners with collar machine the bore for the collar in the cylinder block 0.1 mm larger than the outer diameter of the collar, so that the shoulder is well seated in the bore. The top of the collar should be level with the contact surface of the cylinder block.
5. Thoroughly clean corresponding cylinder liner and cylinder bore. Then press in the

cylinder liner, so that it will be level with the contact surface of the cylinder block.

6. After installation of the liner saw in and knock out the recesses (A) for the connecting rods in accordance with the cut-outs in the crankcase. Thoroughly chamfer the inner edges of the cylinder liner on top and bottom under 45 deg and 0.5 mm deep (see Figure 01-29/1).

7. Bore and hone the cylinder bore to standard size = 75.00 to 75.019 mm.

**Note:** On the engines of the type 636.912 and 636.915 the standard measure is 73.500 to 73.519 mm.

For the engines of Model OM 621, no cylinder liners are provided as yet.