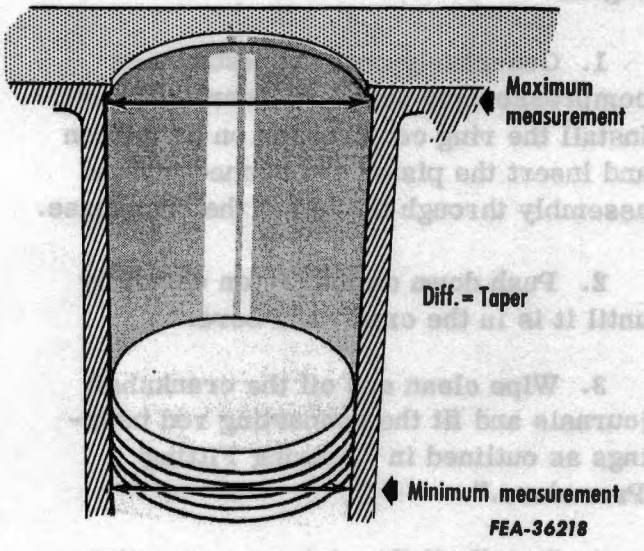
Crankcase Cylinder Re-Boring Procedure

This section covers re-boring of the cylinder bore with the engine disassembled. However, if re-boring is the only service to be performed on the engine, the crankshaft need not be removed.

When to Re-Bore

Replacement piston ring kits may be used to extend the life of the piston if cylinder wear has not been excessive. Inspect cylinder bores for scoring and roughness which indicate excessive wear. Check cylinder bores for taper and out-of-round by the use of a cylinder gauge placed at the top, middle, and bottom of bores, both parallel and at right angle to the centerline of crankshaft. To be within safe limits, the taper from top to bottom of the ring travel area must not exceed 0.005 in. and the out-of-round (egg-shape) condition must not exceed .005 in. in the cylinder bores. If the bore is worn beyond these limits, a re-boring job is required. It is advisable to re-bore for the smallest possible oversize pistons and rings. If only one or two bores require correction, it is not necessary to re-bore all cylinders to the same oversize.



Preparing the Block

Clean the water jacket with materials that will remove rust and scale and then flush thoroughly. Degrease the crankcase so that the abrasive material from the boring operation may be completely removed before reassembly.

Before setting up a boring machine on the block, the top of block must be carefully cleaned to remove all foreign materials, such as carbon, rust, or gasket cement. Use a 14 in. fine-cut, mill file to draw-file the block for removal of all burrs and high spots around the top edge and bolt holes. This will provide a smooth, true working surface for the boring operation. This is very important because the alignment of the cylinder bores depends entirely on the tightness of this working surface.