Oversized Cylinder Bore Specifications for Perkins 1103 & 1104 Diesel Engines

The AERA Technical Committee offers the following information on recommended overbore cylinder specifications for Perkins 1103 & 1104 diesel engines. This information should be considered anytime overbore operations are being attempted.

For optimum engine performance to be obtained from an over-bored cylinder block Perkins provides the following information for qualified machine shop personnel, realizing there is different equipment used. Note: Perkins offers two oversize pistons for service, they are .020" (.500 MM) and.040" (1.000 MM).

Preliminary bore:
First oversize of bore before it is honed .... 4.1485-4.1505" (105.373-105.424 MM)
Second oversize of bore before it is honed .... 4.1682-4.1702" (105-873-105.924 MM)
Surface finish .... Ra 3.2 to 4.0 micrometers
Maximum ovality and taper .... .0008" (.020 MM)

Diamond Hone:
Hone angle (cross hatch) .... 35°
Finish size of first O/S bore, diamond honed .... 4.1515-4.1520" (105.449-105.461 MM)
Finish size of second O/S bore, diamond honed   .... 4.1712-4.1717" (105.949-105.961 MM)
Surface finish .... Ra 2.2 to 3.0 micrometers
Maximum ovality and taper .... .0005" (.012 MM)

Silicone Carbide Base Hone:
Hone angle (cross hatch) .... 35°
Finish size of first O/S bore, silicon carbide honed .... 4.1535-4.1545" (105.500-105.525 MM)
Finish size of second O/S bore, diamond honed .... 4.1732-4.1742" (106.000-106.025 MM)
Surface finish .... Ra 1.3 to 1.6 micrometers
Maximum ovality and taper .... .0004" (.010 MM)

Silicone Carbide Plateau Hone:
Hone angle (cross hatch) .... 35°
Finish size of first O/S bore, silicon carbide plateau honed .... 4.1535-4.1545" (105.500-105.525 MM)
Finish size of second O/S bore, diamond plateau honed .... 4.1732-4.1742" (106.000-106.025 MM)
Surface finish .... Ra .65-1.3 micrometers
Maximum ovality and taper .... .0004" (.010 MM)