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 overbored 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)