RECONDITIONING THE ENGINE CYLINDER BLOCK
Checking and Resurfacing the Cylinder Block

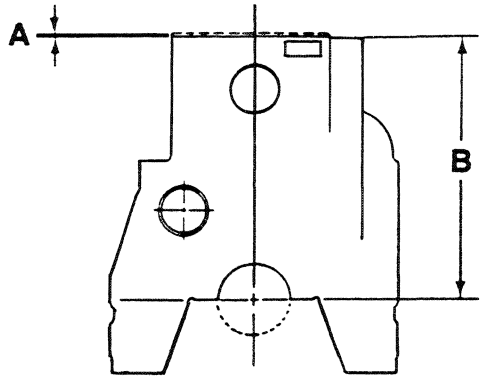
STEP 77

Clean the cylinder block completely. Remove carbon and other deposits. Check for cracks and other damage.

STEP 78

Check the cylinder block surface with a straight edge and feeler gauge. Resurface the cylinder block if warpage or erosion is more than 0.010 mm in any 50 mm diameter area or if there is more than 0.075 mm overall end to end or side to side.

STEP 79



B902936J

Resurface the cylinder block in increments necessary to straighten the surface and maintain the surface finish according to the following specifications:

A = 0.25 mm first refacing.
0.35 mm second refacing.
0.50 mm total amount of material that can be removed.

B = 322.90 to 323.10 mm standard.
322.65 to 322.85 mm first refacing.
322.40 mm to 322.60 mm second refacing.

C = Surface finish 1.5 to 3.2 micrometers.

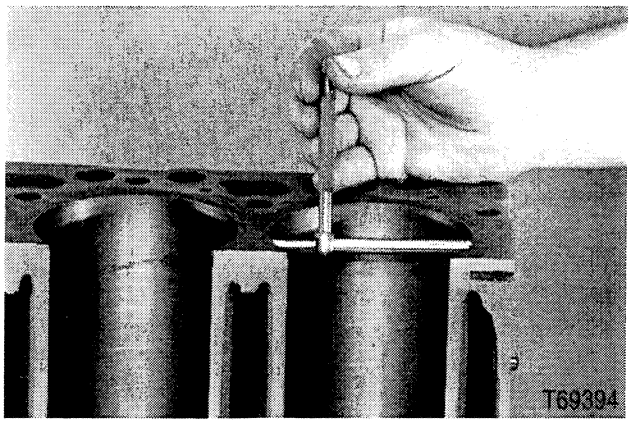
D = Use this area to stamp an "X" when the first refacing of 0.25 mm is done. Stamp a second "XX" when the second refacing 0.050 mm total is done.

NOTE: *When resurfacing the block it is always necessary to machine the block to the specified dimensions. There are two thicknesses of head gasket to make up for the material removed from the cylinder block. See page 2415-30 for selection of the correct head gasket.*

Reconditioning the Cylinder Block for Oversize Pistons

NOTE: *Some of the following photographs show a cylinder block that has been cut in half for photographic purposes.*

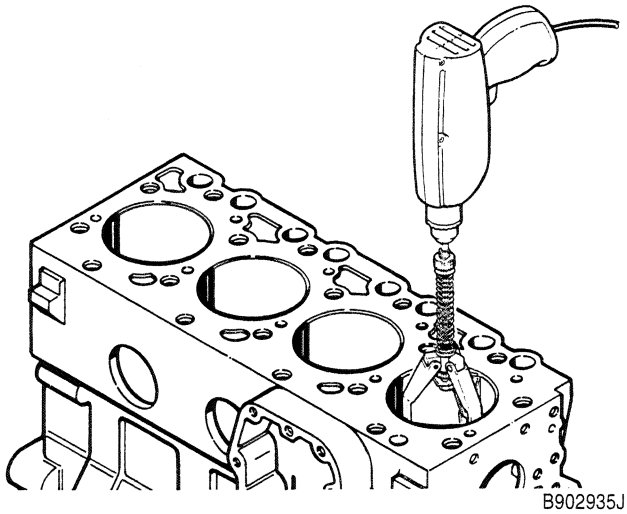
STEP 80



For 0.5 mm oversize pistons, machine cylinder bores to 102.40 to 102.44 mm.

For 1.0 mm oversize pistons, machine cylinder bores to 102.90 to 102.94 mm.

STEP 81



Use a cylinder hone and hone the cylinder bores to the following specifications. Use a lubricant/coolant with the hone to keep the stones clean and cool.

Rough Honing - Use 80 to 150 grit stones to get a cross-hatch pattern of 45 to 60 degrees from horizontal.

0.5 mm oversize piston - 102.475 to 102.695 mm
1.0 mm oversize piston - 102.975 to 103.195 mm

Finishing Honing - Use 250 to 300 grit stones to get a cross-hatch pattern of 45 to 60 degrees from horizontal.

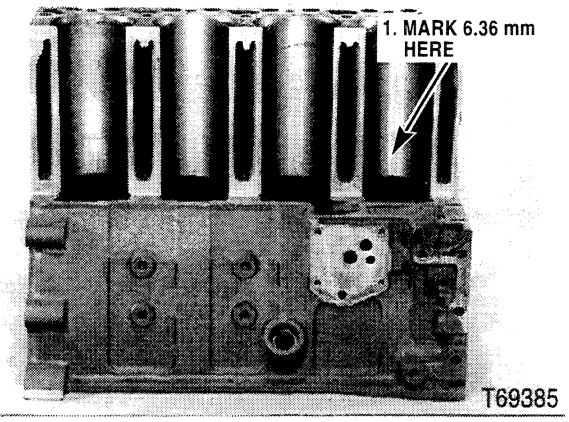
0.5 mm oversize piston - 102.50 to 102.54 mm
1.0 mm oversize piston - 103.00 to 103.04 mm

Finished cylinder bore must have a surface finish of 0.4 to 0.8 micrometers with a taper of less than 0.025 mm.

Reconditioning the Cylinder Block for Sleeves

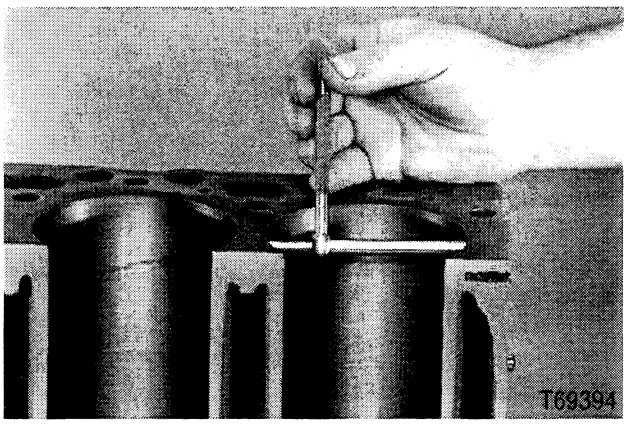
NOTE: *Some of the following photographs show a cylinder block that has been cut in half for photographic purposes.*

STEP 82



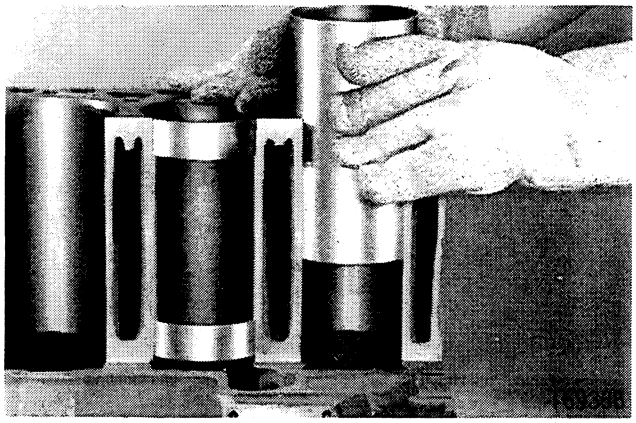
Put a mark on the cylinder bores 6.36 mm up from the bottom.

STEP 83



Bore each cylinder to a diameter of 104.485 to 104.515 mm down to the mark. Boring must be done in four steps with the final step taking a maximum of 0. 125 mm. Let the block cool before the final step to prevent distortion.

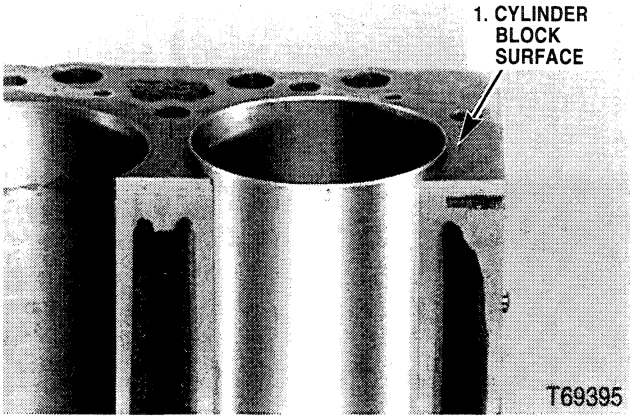
STEP 84



Freeze the sleeves at -12° C for at least one hour. Push the sleeves into the bore until the sleeve contacts the ridge at the bottom of the bore.

WARNING: *Always wear gloves to prevent frostbite to your hands when handling frozen parts.* SM118A

STEP 85



Cut the top of the sleeve flush to 0.025 mm above the cylinder block surface.