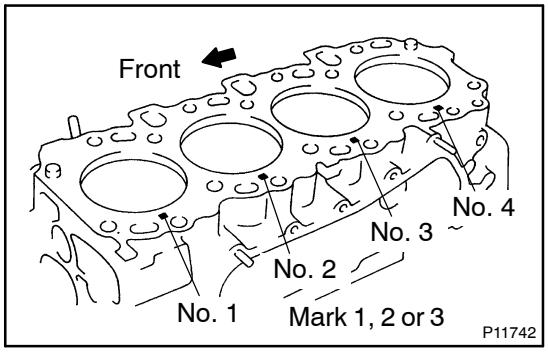
EM1LT–01

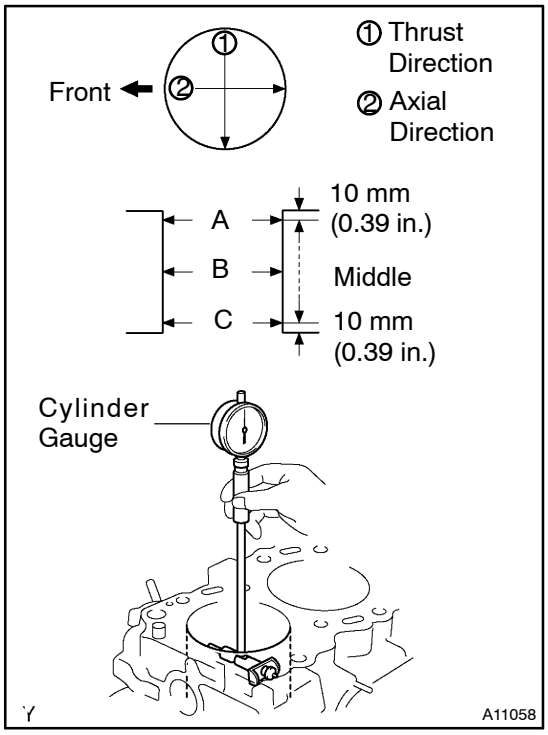
INSPECTION

1. INSPECT CYLINDER BORE DIAMETER



HINT:

There are 3 sizes of the standard cylinder bore diameter, marked "1", "2" and "3" accordingly. The mark is stamped on the top of the cylinder block.



Using a cylinder gauge, measure the cylinder bore diameter at positions A, B and C in the thrust and axial directions.

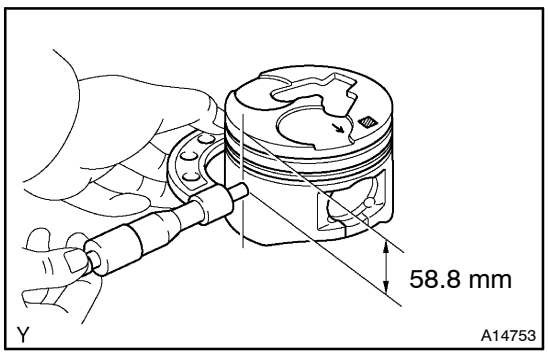
Standard diameter:

STD Mark 1	96.000 – 96.010 mm (3.7795 – 3.7799 in.)
STD Mark 2	96.010 – 96.020 mm(3.7799 – 3.7803 in.)
STD Mark 3	96.020 – 96.030 mm (3.7803 – 3.7807 in.)

Maximum diameter:

STD	96.23 mm (3.7886 in.)
O/S 0.50	96.73 mm (3.8083 in.)
O/S 0.75	96.96 mm (3.8137 in.)
O/S 1.00	97.23 mm (3.8279 in.)

If the diameter is greater than maximum, rebore all the 4 cylinders. If necessary, replace the cylinder block.



2. INSPECT PISTON AND PISTON RING

(a) Inspect the piston oil clearance.

HINT:

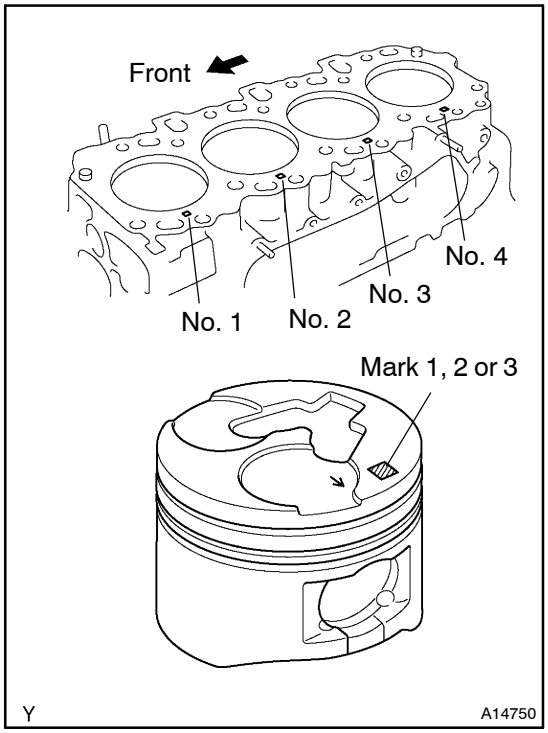
There are 3 sizes of the standard piston diameter, marked "1", "2" and "3" accordingly. The mark is stamped on the piston top.

(1) Using a micrometer, measure the piston diameter at right angles to the piston pin center line, 58.8 mm (2.315 in.) from the piston head.

Piston diameter:

STD Mark 1	95.940 – 95.950 mm (3.7772 – 3.7776 in.)
STD Mark 2	95.950 – 95.960 mm (3.7776 – 3.7779 in.)
STD Mark 3	95.960 – 95.970 mm (3.7779 – 3.7783 in.)
O/S 0.50	96.440 – 96.470 mm (3.7968 – 3.7980 in.)
O/S 0.75	96.690 – 96.720 mm (3.8067 – 3.8079 in.)
O/S 1.00	96.940 – 96.970 mm (3.8165 – 3.8177 in.)

(2) Measure the cylinder bore diameter in the thrust directions (See step 1 above).



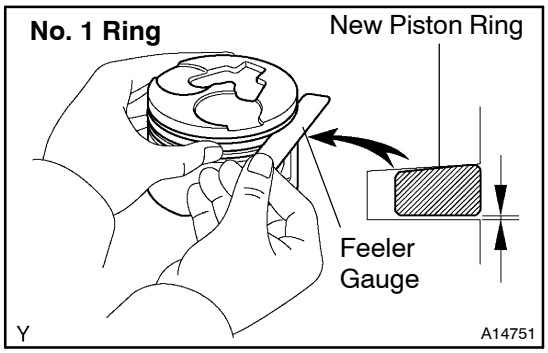
(3) Subtract the piston diameter measurement from the cylinder bore diameter measurement.

Standard oil clearance:
0.050 – 0.070 mm (0.0020 – 0.0028 in.)
Maximum oil clearance: 0.14 mm (0.0055 in.)

If the oil clearance is greater than maximum, replace all the 4 pistons and rebore all the 4 cylinders. If necessary, replace the cylinder block.

HINT:

Use new cylinder block: Use a piston with the same number mark as the cylinder bore diameter marked on the cylinder block.

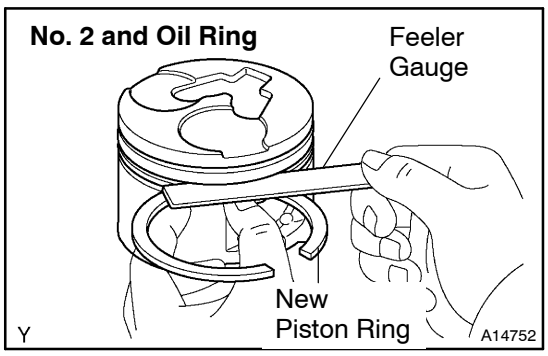


(b) Inspect the piston ring groove clearance.

(1) No. 1 ring:

Install a new No. 1 piston ring to the piston. Using a feeler gauge, measure the clearance between new piston ring and the wall of the ring groove.

Ring groove clearance (No. 1):
0.061 – 0.105 mm (0.0024 – 0.0043 in.)



(2) No. 2 and oil ring:

Using a feeler gauge, measure the clearance between the new piston ring and the wall of the ring groove.

Ring groove clearance (No. 2 and oil ring):

No. 2	0.060 – 0.100 mm (0.0024 – 0.0039 in.)
Oil	0.020 – 0.060 mm (0.0009 – 0.0024 in.)

If the clearance is greater than maximum, replace the piston.