EM15M–01

REPLACEMENT

1. REPLACE OVERSIZED (O/S) PISTONS

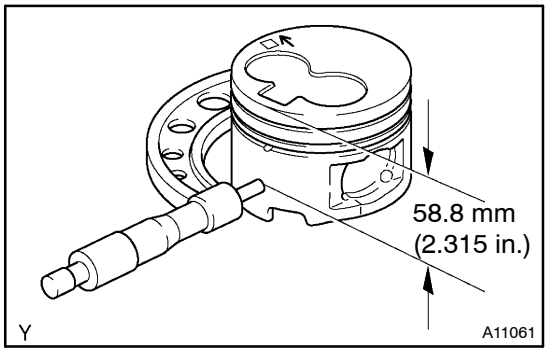
HINT:

- Bore all the 4 cylinders to the O/S piston outside diameter.
- Replace all the piston rings with ones to match the O/S pistons.

(a) Keep the O/S pistons.

O/S piston diameter:

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.)



(b) 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.

(c) Calculate the amount each cylinder is to be rebored as follows:

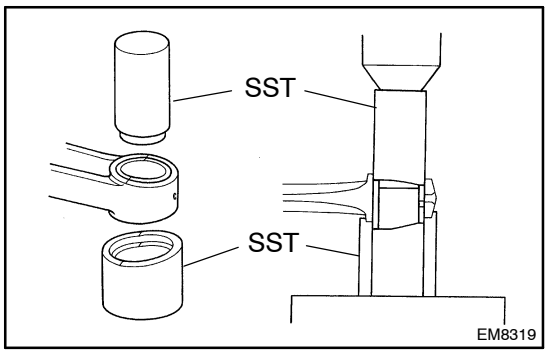
Size to be rebored = P + C – H
P = Piston diameter
C = Piston clearance
0.050 – 0.070 mm (0.0020 – 0.0028 in.)
H = Allowance for honing
0.02 mm (0.0008 in.) or less

(d) Bore and hone cylinder to calculated dimensions.

Maximum honing: 0.02 mm (0.0008 in.)

NOTICE:

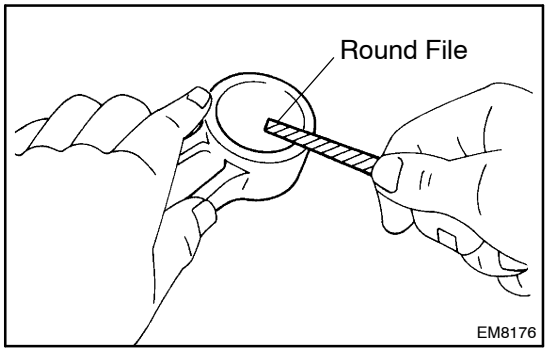
Excess honing will destroy the finished roundness.



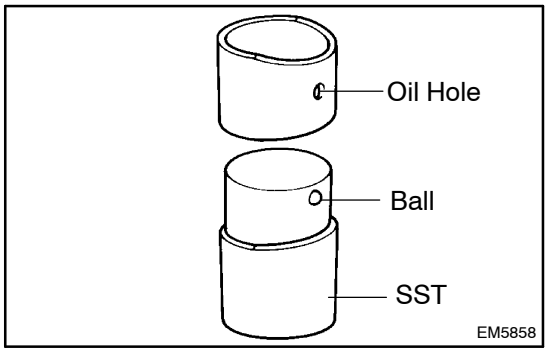
2. REPLACE CONNECTING ROD BUSHING

(a) Using SST and a press, press out the bushing.

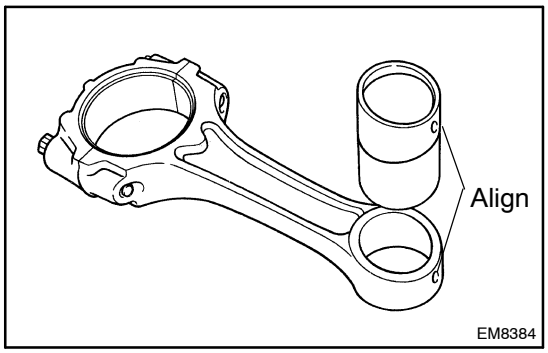
SST 09222–67010 (09222–06010, 09222–06030)



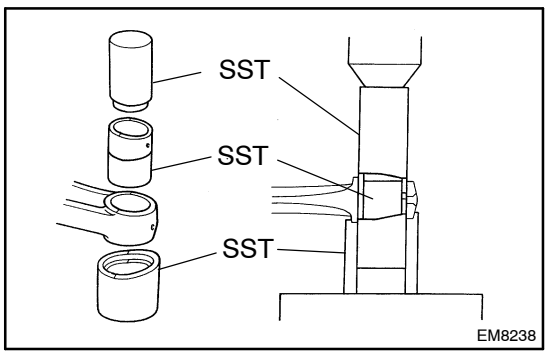
(b) Using a round file, lightly file off any roughness from the small end of the connecting rod.



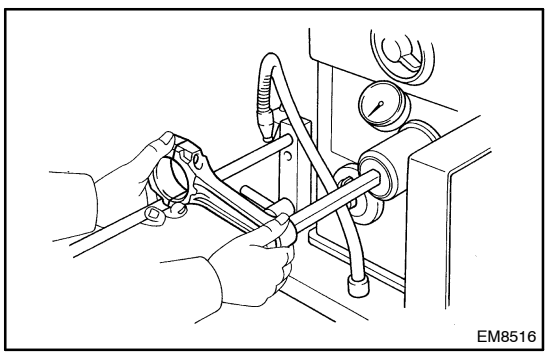
(c) Attach the bushing to SST with the ball of SST inside the oil hole of the bushing.
SST 09222–67010 (09222–06020)



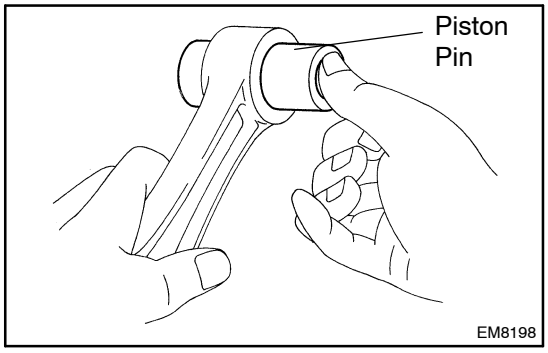
(d) Align the oil holes of a new bushing and the connecting rod.



(e) Using SST and a press, press in the bushing.
SST 09222–67010 (09222–06010, 09222–06020, 09222–06030)



(f) Using a pin hole grinder, hone the bushing to obtain the standard specified clearance (See page EM–83) between the bushing and piston pin.

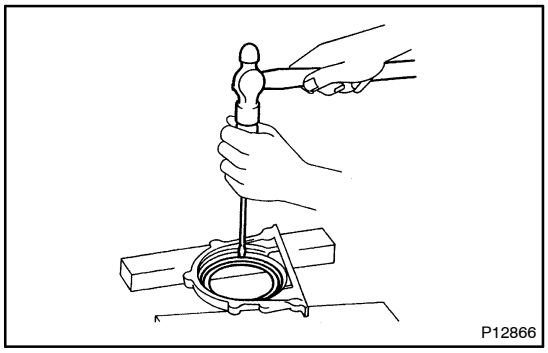


(g) Check the piston pin fit at normal room temperature. Coat the piston pin with engine oil, and push it into the connecting rod with your thumb.

3. GRIND AND HONE MAIN JOURNALS AND/OR CRANK PINS

Grind and hone the main journals and/or crank pins to the finished undersized diameter (See page EM–83).

Install new main journal and/or crankshaft pin undersized bearings.



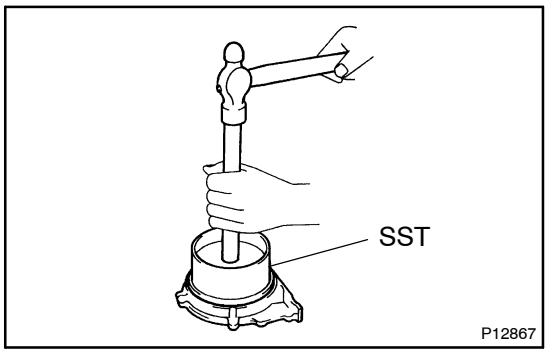
4. REPLACE CRANKSHAFT REAR OIL SEAL

HINT:

There are 2 methods (A and B) to replace the oil seal which are as follows.

(a) If the rear oil seal retainer is removed from the cylinder block:

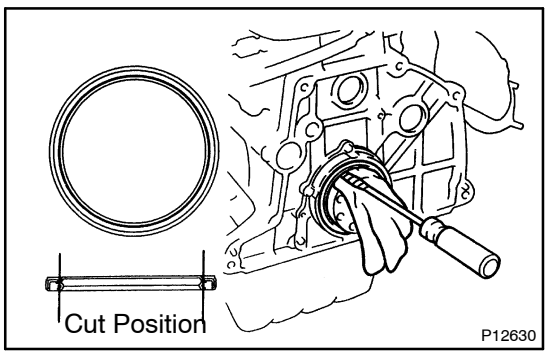
(1) Using a screwdriver and hammer, tap out the oil seal.



(2) Using SST and a hammer, tap in a new oil seal until its surface is flush with the rear oil seal retainer edge.

SST 09223–15030, 09252–10010

(3) Apply MP grease to the oil seal lip.



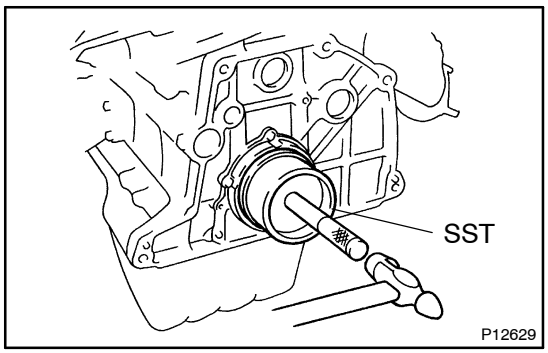
(b) If the rear oil seal retainer is installed to the cylinder block:

(1) Using a knife, cut off the oil seal lip.

(2) Using a screwdriver, pry out the oil seal.

NOTICE:

Be careful not to damage the crankshaft. Tape the screwdriver tip.



(3) Apply MP grease to a new oil seal lip.

(4) Using SST and a hammer, tap in the oil seal until its surface is flush with the rear oil seal retainer edge.

SST 09223–15030, 09252–10010