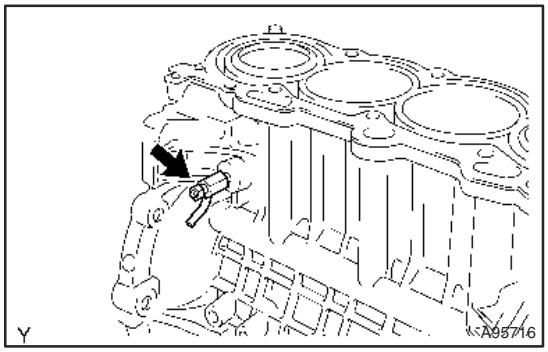
141TK–01

OVERHAUL

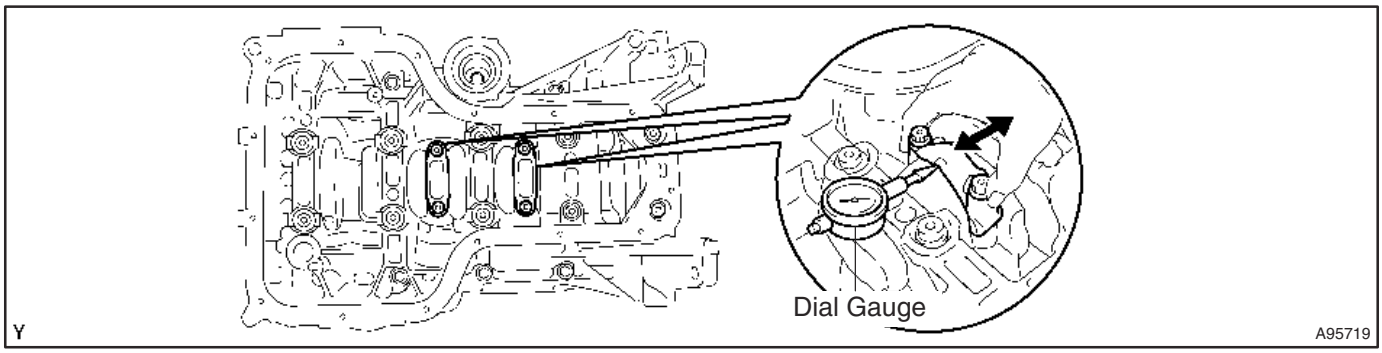


1. REMOVE CYLINDER BLOCK WATER DRAIN COCK SUB–ASSY

(a) Remove the cylinder block water drain cock from the cylinder block.

2. INSPECT CONNECTING ROD THRUST CLEARANCE

(a) Turn the crankshaft and set the No. 1 cylinder to the TDC/compression.

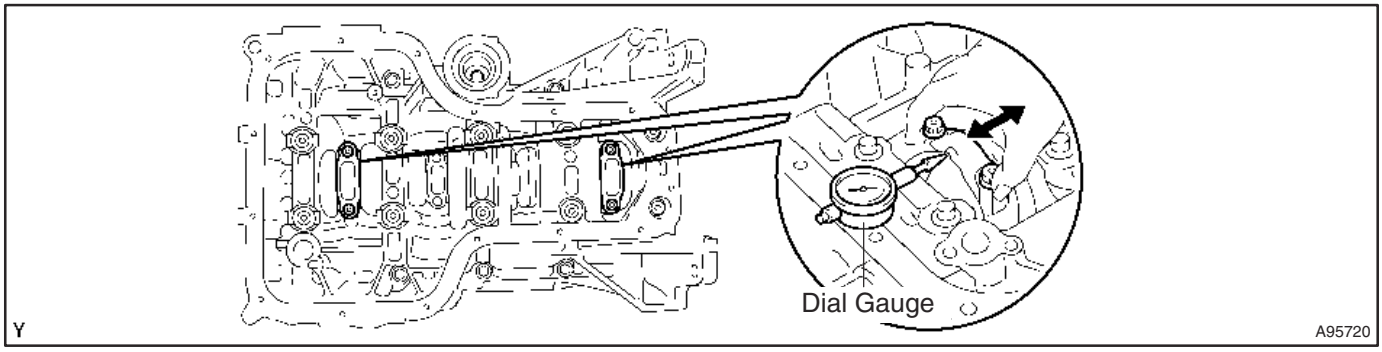


(b) Using a dial indicator, measure the thrust clearance of the No. 2 and No. 3 cylinders while moving the connecting rod back and forth.

Standard thrust clearance:
0.160 to 0.342 mm (0.0063 to 0.0135 in.)
Maximum thrust clearance:
0.342 mm (0.0135 in.)

- If the thrust clearance is greater than maximum, replace the connecting rod.
- If necessary, replace the crankshaft.

(c) Turn the crankshaft and set the No. 2 cylinder to the TDC/compression.



(d) Using a dial indicator, measure the thrust clearance of the No. 1 and No. 4 cylinders while moving the connecting rod back and forth.

Standard thrust clearance:
0.160 to 0.342 mm (0.0063 to 0.0135 in.)
Maximum thrust clearance:
0.342 mm (0.0135 in.)

- If the thrust clearance is greater than maximum, replace the connecting rod.
- If necessary, replace the crankshaft.

3. INSPECT CONNECTING ROD OIL CLEARANCE

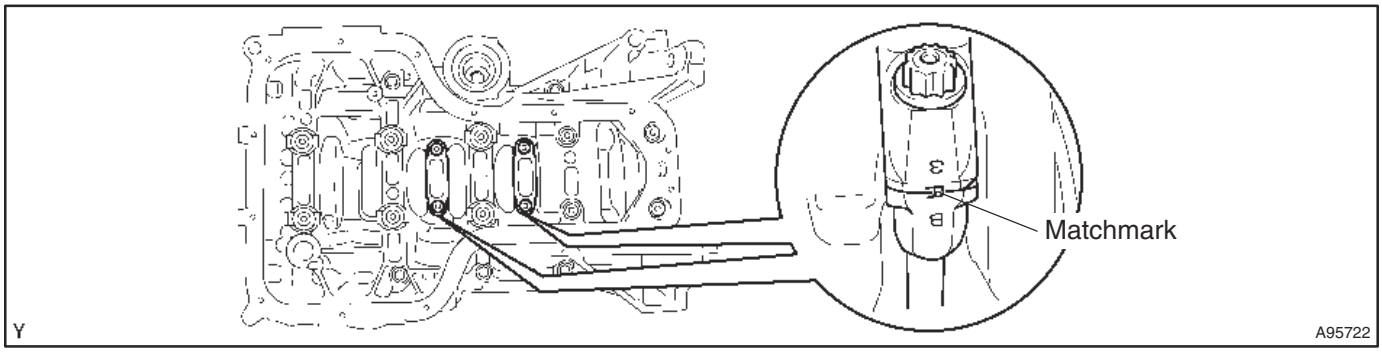
(a) Turn the crankshaft and set the No. 1 cylinder to the TDC/compression.

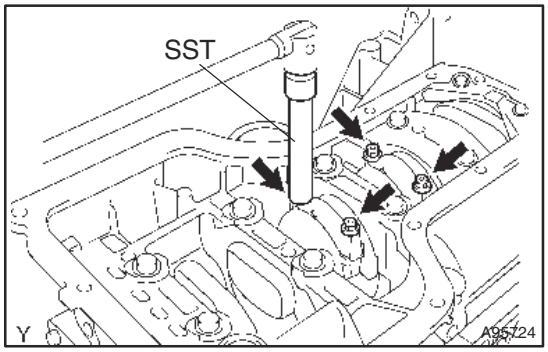
(b) Measure the oil clearance of the No. 2 and No. 3 cylinders.

NOTICE:
Do not turn the crankshaft during the measurement.

(1) Using marking paint, write the matched cylinder number on each connecting rod and cap.

HINT:
The matchmarks on the connecting rods and caps are for ensuring correct reassembling.



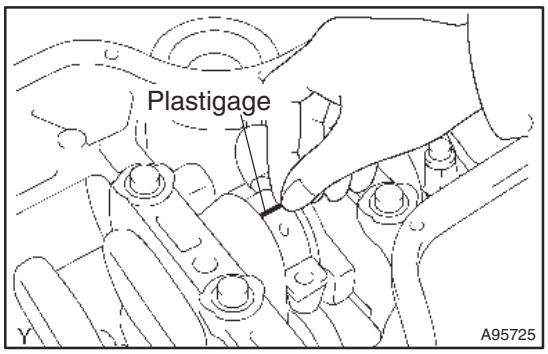


(2) Using SST, remove the 4 bolts and 2 connecting rod caps as shown.

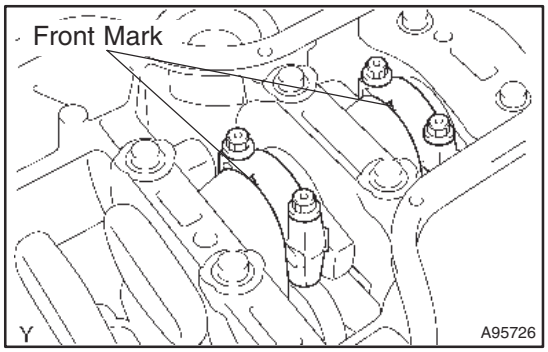
SST 09205–16010

(3) Clean the crank pin and bearing.

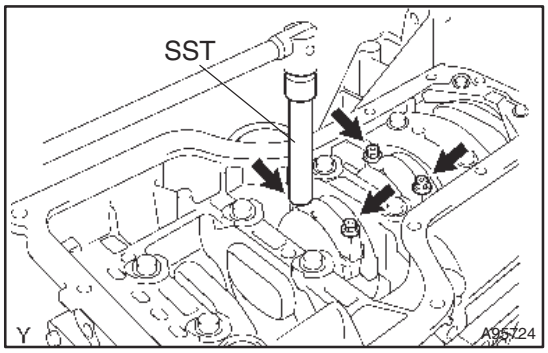
(4) Check the crank pin and bearing for pitting and scratches.



(5) Lay a strip of Plastigage across the crank pin.



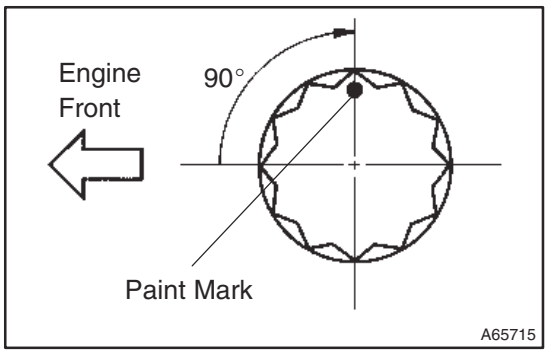
(6) Check that the front marks of the 2connecting rod caps are facing in the correct direction.
(7) Apply a light coat of engine oil to the threads and under the heads of the connecting rod cap bolts.



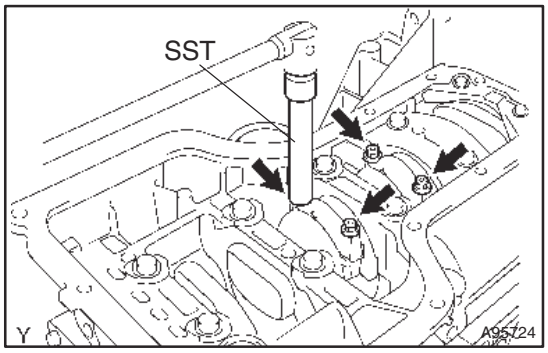
(8) Using SST, tighten the 2 bolts in several passes to the specified torque.

SST 09205–16010

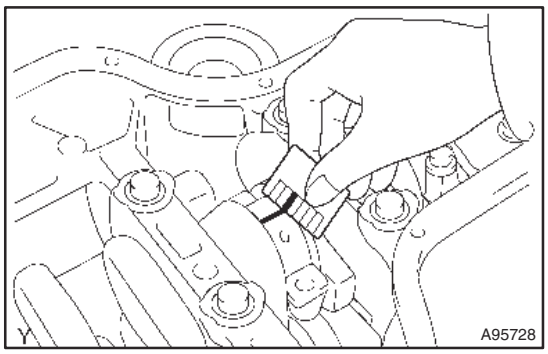
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)



(9) Mark the front of the connecting cap bolts with paint.
(10) Retighten the cap bolts by an additional 90° as shown in the illustration.
(11) Check that the crankshaft turns smoothly.



(12) Remove the 4 bolts and 2 connecting rod caps.

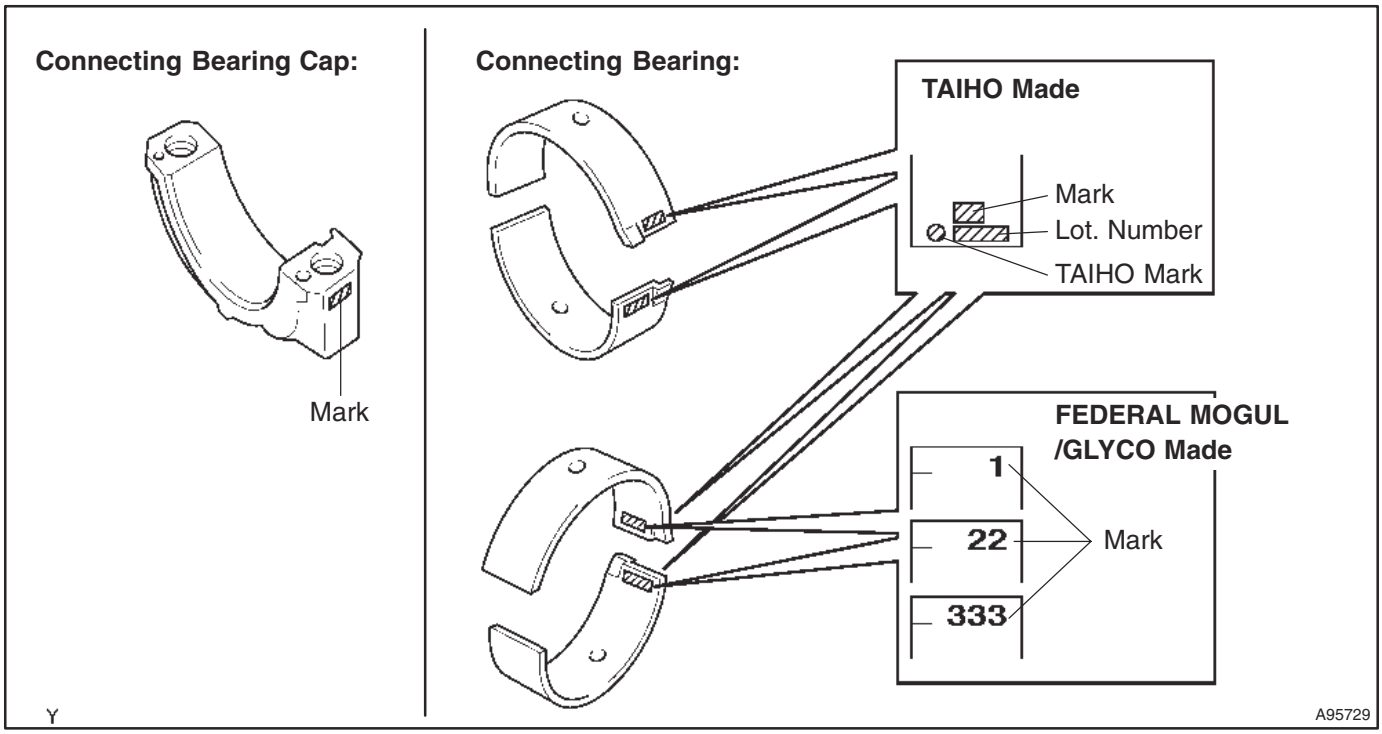


(13) Measure the Plastigage at its widest point.

Standard oil clearance:
0.028 to 0.060 mm (0.0011 to 0.0024 in.)
Maximum oil clearance: 0.080 mm (0.0031 in.)

NOTICE:
Remove the Plastigage completely after the measurement.

- If the oil clearance is greater than maximum, replace the connecting rod bearing.
- If necessary, grind or replace the crankshaft.



HINT:

- The TAIHO mark is either on the claw side or the opposite side.
- If replacing a bearing, select a new one having the same number as marked on the connecting rod. There are 3 sizes of standard bearings, marked ”1”, ”2” and ”3” accordingly.

Item	Mark	Specification
Connecting rod bearing cap bore diameter	1 2 3	47.000 to 47.008 mm (1.8504 to 1.8507 in.) 47.009 to 47.016 mm (1.8507 to 1.8510 in.) 47.017 to 47.024 mm (1.8511 to 1.8513 in.)
Connecting rod bearing thickness	1 2 3	1.486 to 1.490 mm (0.0585 to 0.0587 in.) 1.491 to 1.494 mm (0.0587 to 0.0588 in.) 1.495 to 1.498 mm (0.0589 to 0.0590 in.)
Crankshaft pin outer diameter	–	43.992 to 44.000 mm (1.7320 to 1.7323 in.)

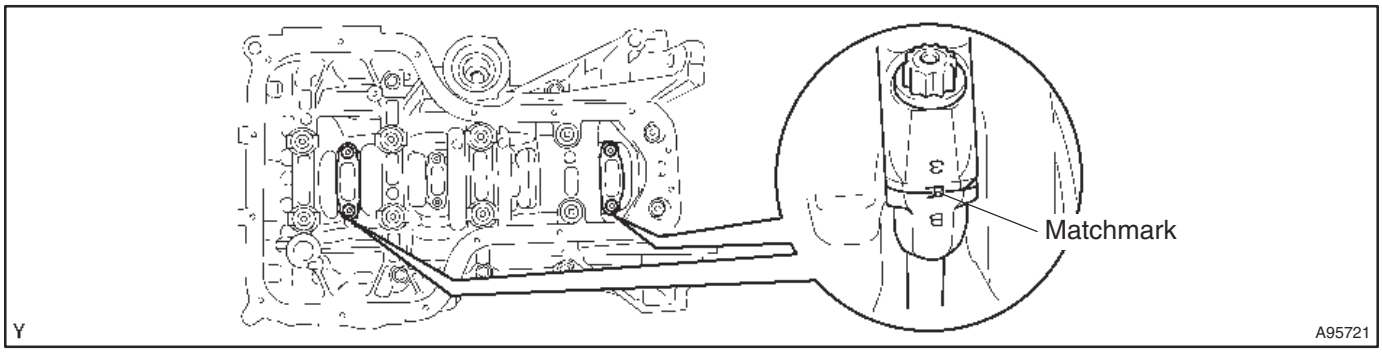
(c) Turn the crankshaft and set the No. 2 cylinder to the TDC/compression.

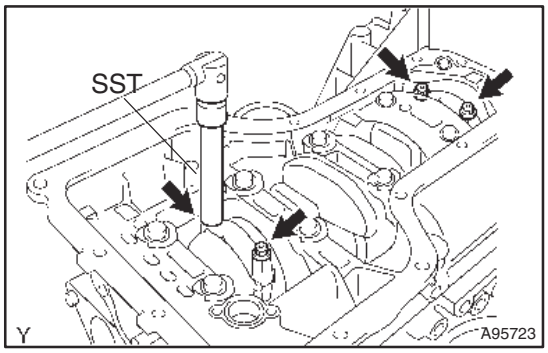
(d) Measure the oil clearance of the No. 1 and No. 4 cylinders.

NOTICE:
Do not turn the crankshaft during the measurement.

(1) Using marking paint, write the matched cylinder number on each connecting rod and cap.

HINT:
The matchmarks on the connecting rods and caps are for ensuring correct reassembling.



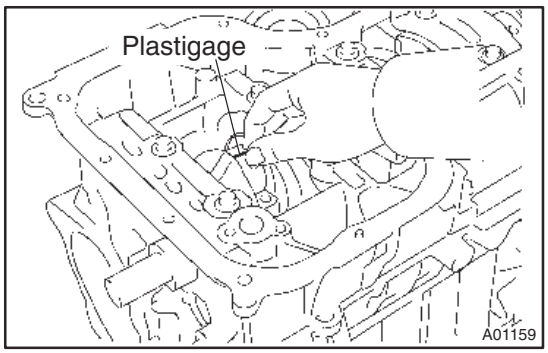


(2) Using SST, remove the 4 bolts and 2 connecting rod caps as shown.

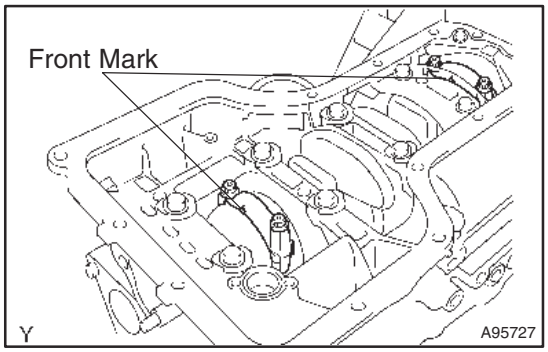
SST 09205–16010

(3) Clean the crank pin and bearing.

(4) Check the crank pin and bearing for pitting and scratches.

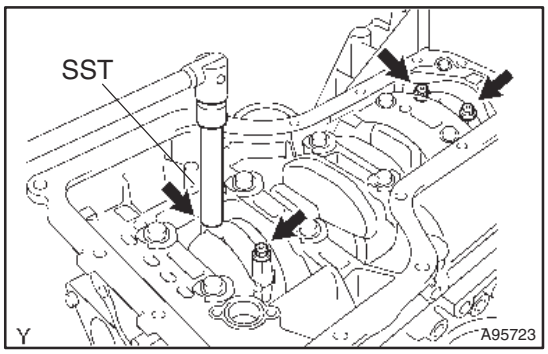


(5) Lay a strip of Plastigage across the crank pin.



(6) Check that the front marks of the connecting rod cap are facing in the correct direction.

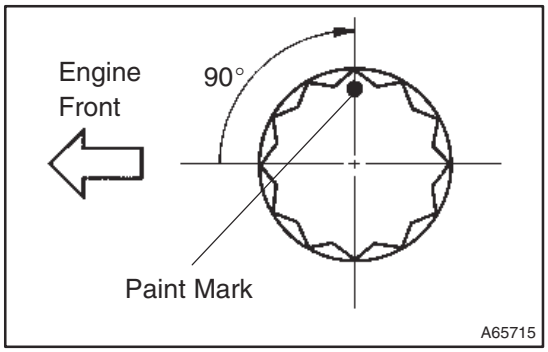
(7) Apply a light coat of engine oil to the threads and under the heads of the connecting rod cap bolts.



(8) Using SST, tighten the 2 bolts in several passes to the specified torque.

SST 09205–16010

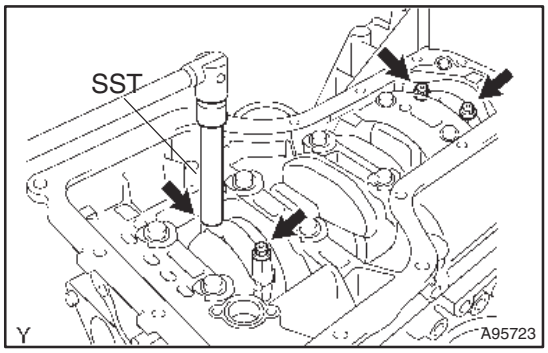
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)



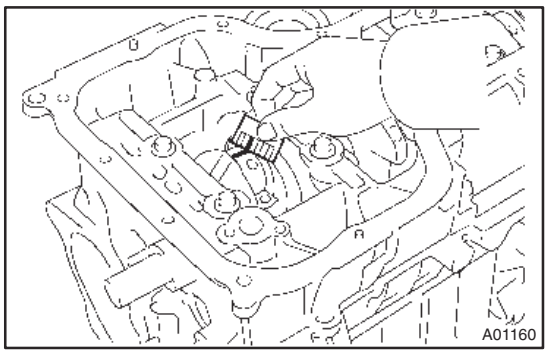
(9) Mark the front of the connecting cap bolts with paint.

(10) Retighten the cap bolts by an additional 90° as shown in the illustration.

(11) Check that the crankshaft turns smoothly.



(12) Remove the 4 bolts and 2 connecting rod caps.

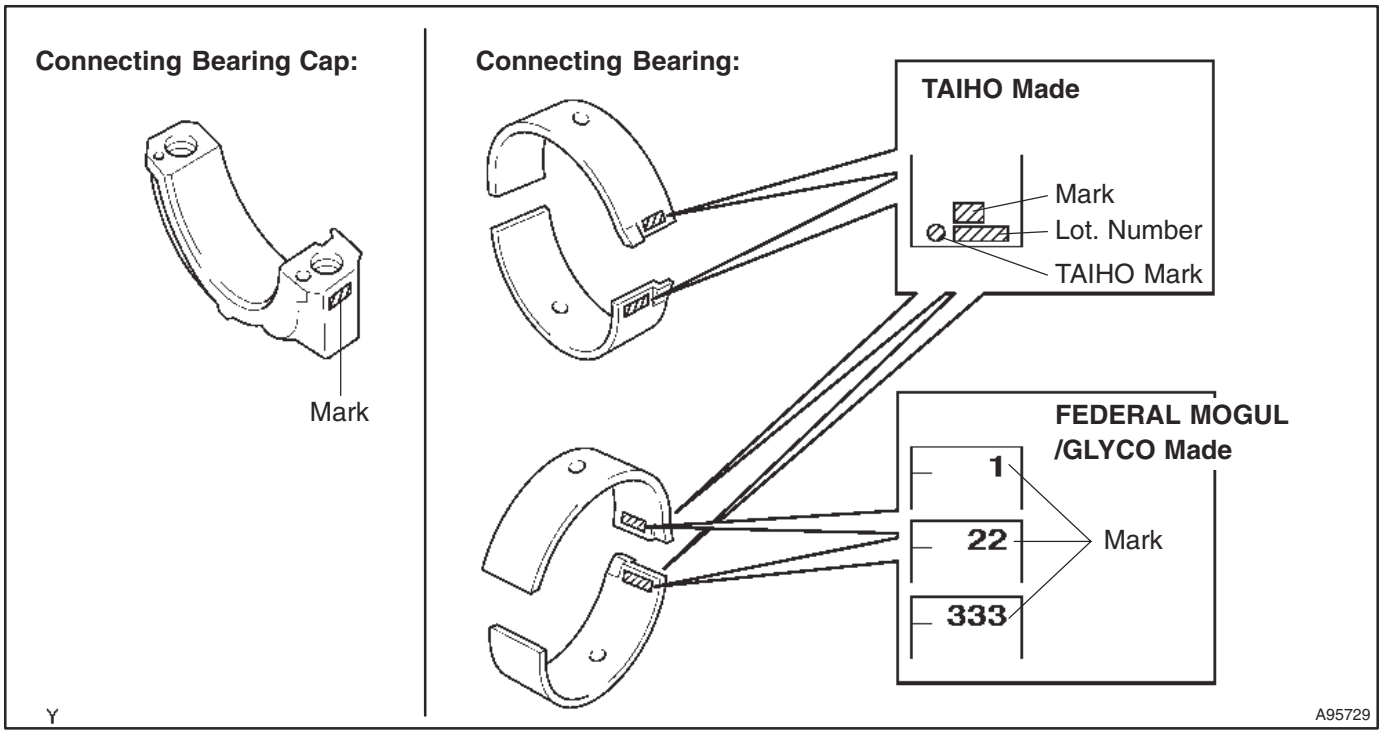


(13) Measure the Plastigage at its widest point.

Standard oil clearance:
0.028 to 0.060 mm (0.0011 to 0.0024 in.)
Maximum oil clearance: 0.080 mm (0.0031 in.)

NOTICE:
Remove the Plastigage completely after the measurement.

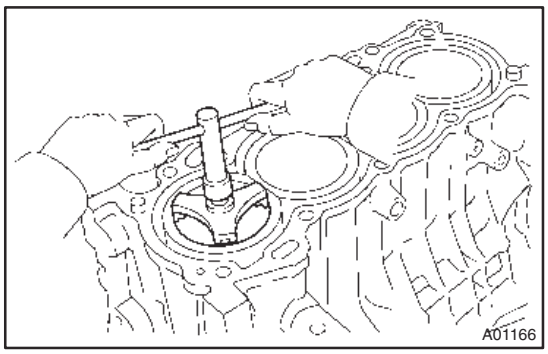
- If the oil clearance is greater than maximum, replace the connecting rod bearing.
- If necessary, grind or replace the crankshaft.



HINT:

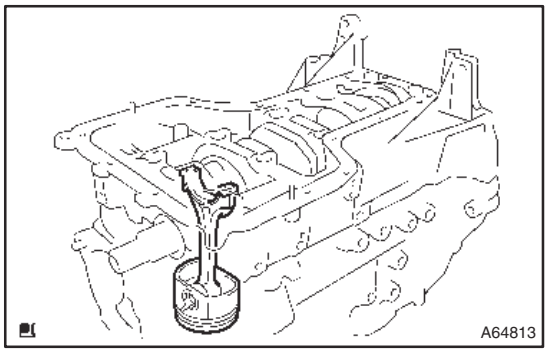
- The TAIHO mark is either on the claw side or the opposite side.
- If replacing a bearing, select a new one having the same number as marked on the connecting rod. There are 3 sizes of standard bearings, marked ”1”, ”2” and ”3” accordingly.

Item	Mark	Specification
Connecting rod bearing cap bore diameter	1 2 3	47.000 to 47.008 mm (1.8504 to 1.8507 in.) 47.009 to 47.016 mm (1.8507 to 1.8510 in.) 47.017 to 47.024 mm (1.8511 to 1.8513 in.)
Connecting rod bearing thickness	1 2 3	1.486 to 1.490 mm (0.0585 to 0.0587 in.) 1.491 to 1.494 mm (0.0587 to 0.0588 in.) 1.495 to 1.498 mm (0.0589 to 0.0590 in.)
Crankshaft pin outer diameter	–	43.992 to 44.000 mm (1.7320 to 1.7323 in.)



4. REMOVE CONNECTING ROD SUB–ASSY

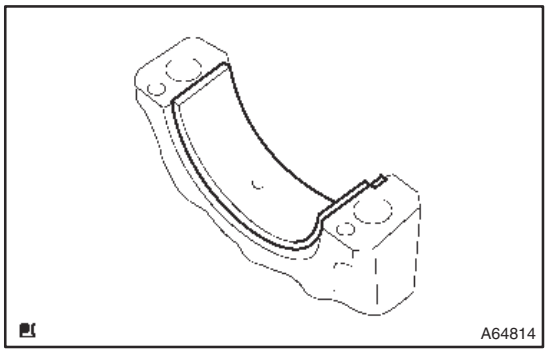
(a) Using a ridge reamer, remove all the carbon from the top of the cylinder.



(b) Push the piston, connecting rod assembly and upper bearing through the top of the cylinder block.

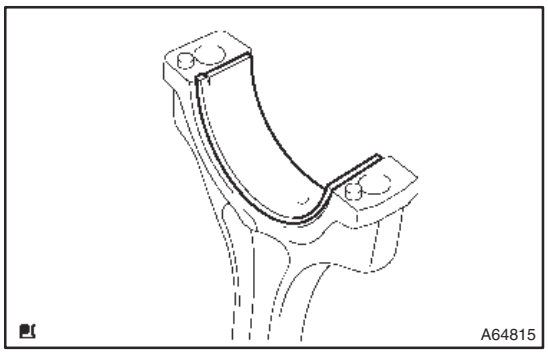
HINT:

- Keep the bearing, connecting rod and cap together.
- Arrange the piston and connecting rod assemblies in the correct order.

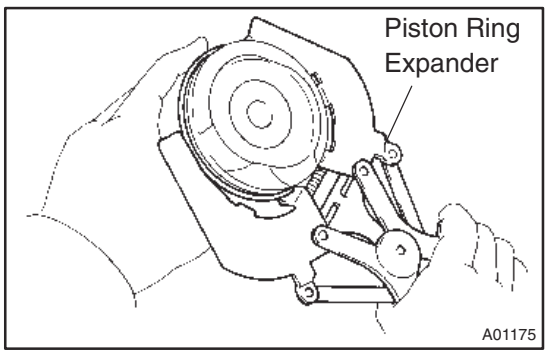


5. REMOVE CONNECTING ROD BEARING

(a) Remove the connecting rod bearing from the connecting rod cap.



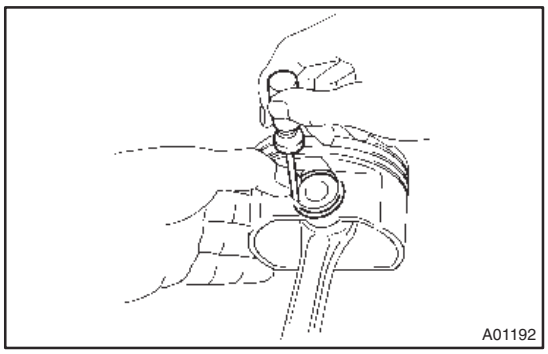
(b) Remove the connecting rod bearing from the connecting rod.



6. REMOVE PISTON RING SET

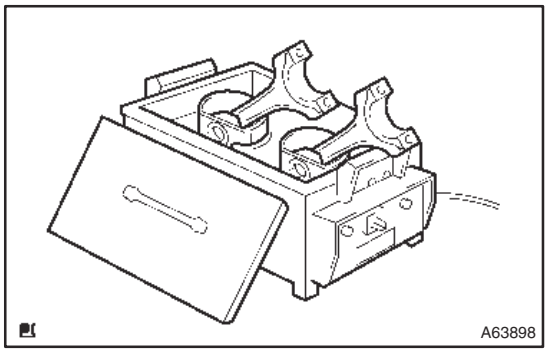
(a) Using a piston ring expander, remove the 2 compression rings.

(b) Remove the 2 side rails and oil ring by hand.

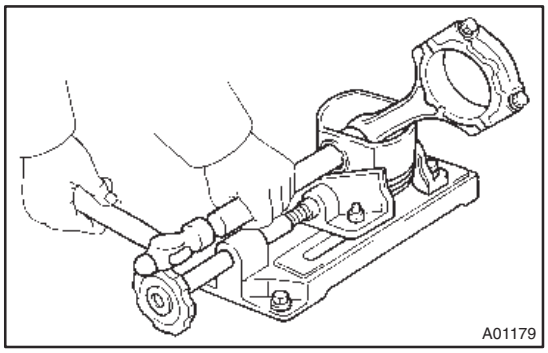


7. REMOVE W/PIN PISTON SUB–ASSY

(a) Using a small screwdriver, pry out the 2 snap rings.



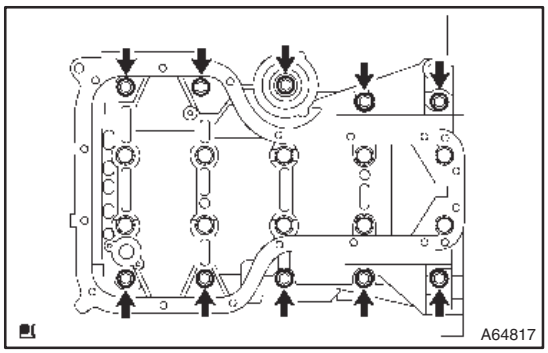
(b) Heat the piston up to 80 to 90°C (176 to 194°F).



(c) Using a plastic hammer and brass bar, lightly tap out the piston pin, then remove the connecting rod.

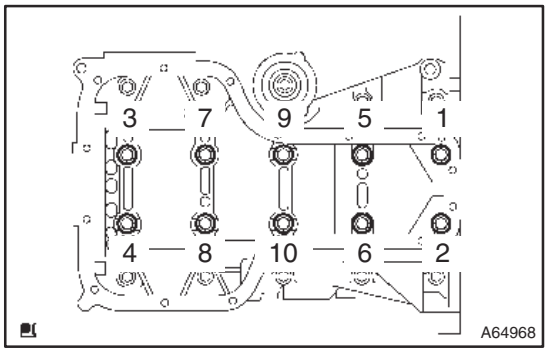
HINT:

- The piston and pin are a matched set.
- Arrange the piston, pins, ring, connecting rod and bearings in the correct order.

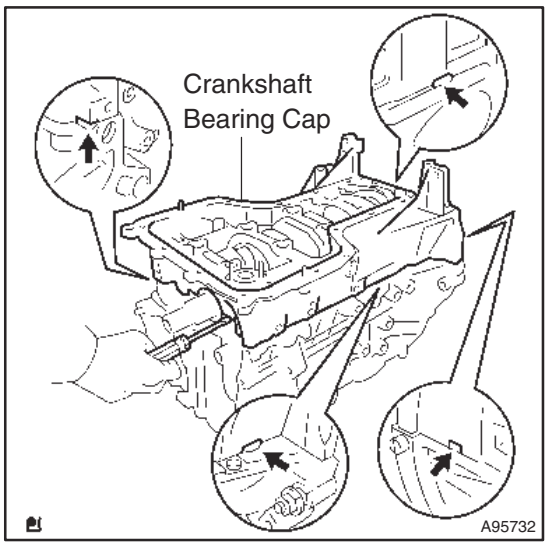


8. REMOVE CRANKSHAFT

(a) Remove the 10 bolts from the crankshaft bearing cap.



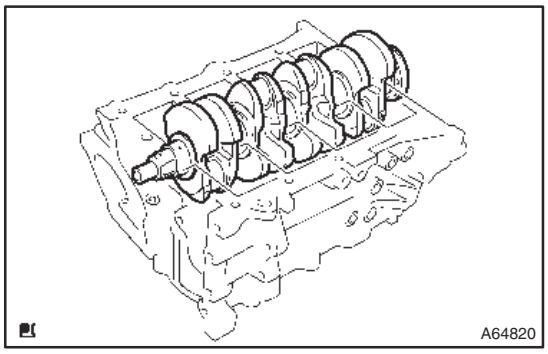
(b) Uniformly loosen the 10 bearing cap bolts in several passes in the sequence shown in the illustration.



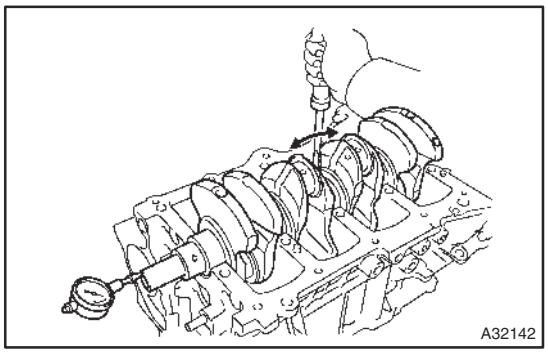
(c) Using a screwdriver, remove the crankshaft bearing cap by prying the indicated portions between the cylinder block and bearing cap.

NOTICE:

Be careful not to damage the contact surfaces of the cylinder block and bearing cap.



(d) Remove the crankshaft from the cylinder block.



9. INSPECT CRANKSHAFT THRUST CLEARANCE

(a) Using a dial indicator, measure the thrust clearance while prying the crankshaft back and forth with a screwdriver.

Standard thrust clearance:

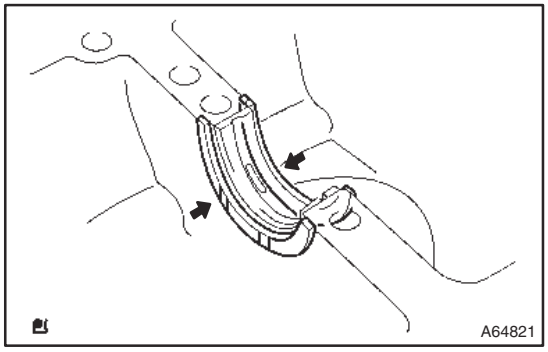
0.04 to 0.24 mm (0.0016 to 0.0094 in.)

Maximum thrust clearance: 0.30 mm (0.0118 in.)

- If the thrust clearance is greater than maximum, measure the thrust washer thickness.
- If the thickness is not as specified, replace the thrust washer.

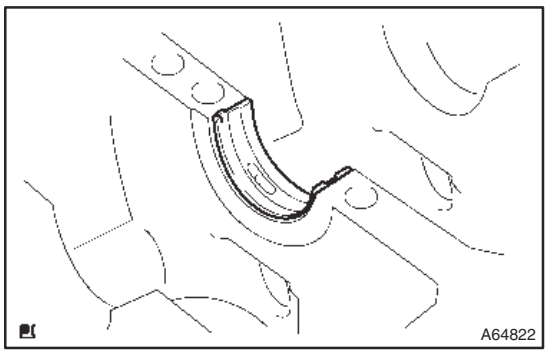
HINT:

Thrust washer thickness: 2.430 to 2.480 mm (0.0957 to 0.0976 in.).



10. REMOVE CRANKSHAFT THRUST WASHER UPPER

(a) Remove the 2 crankshaft thrust washers from the cylinder block.

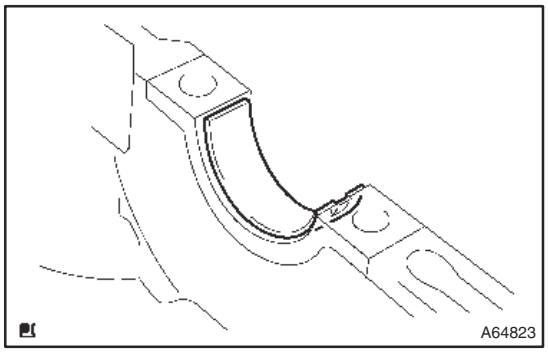


11. REMOVE CRANKSHAFT BEARING

(a) Remove the 5 crankshaft bearings from the cylinder block.

NOTICE:

Arrange the main bearings and thrust washers in the correct order.



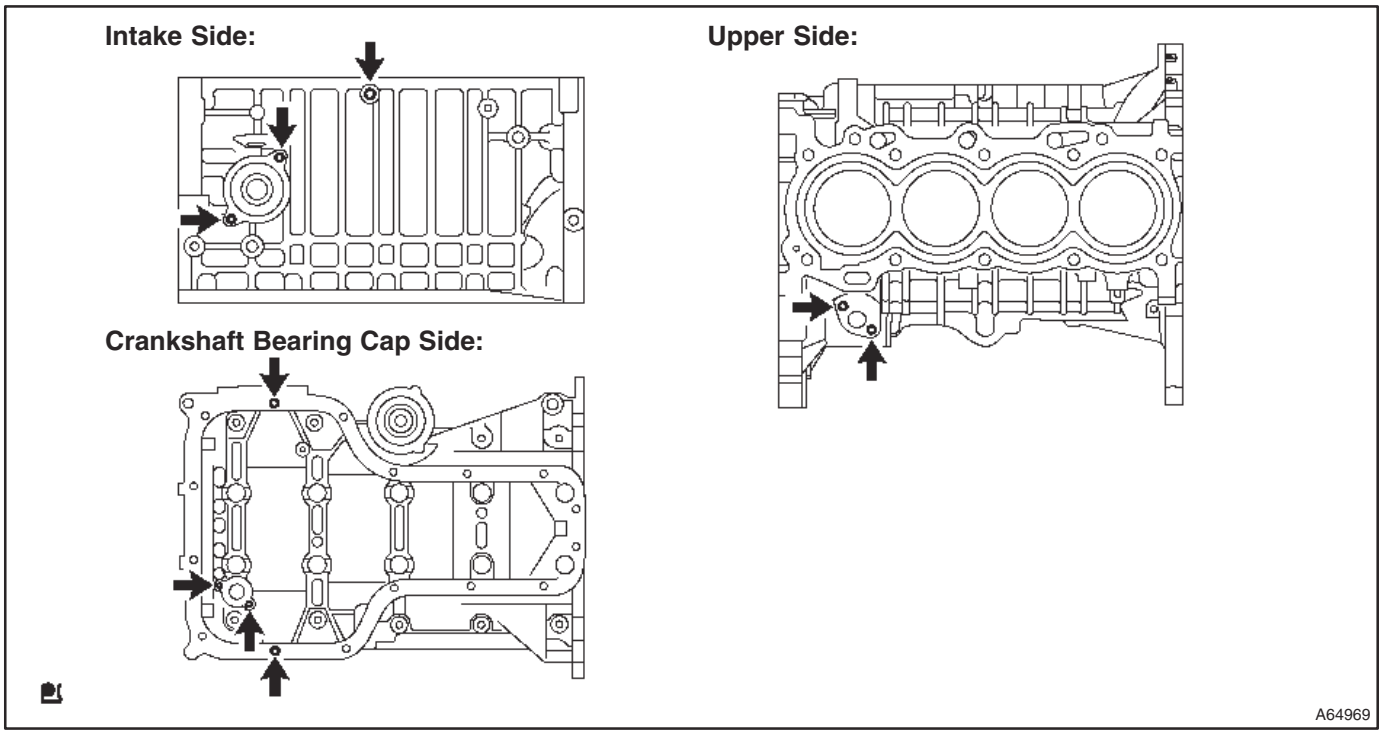
(b) Remove the 5 crankshaft bearings from the crankshaft bearing cap.

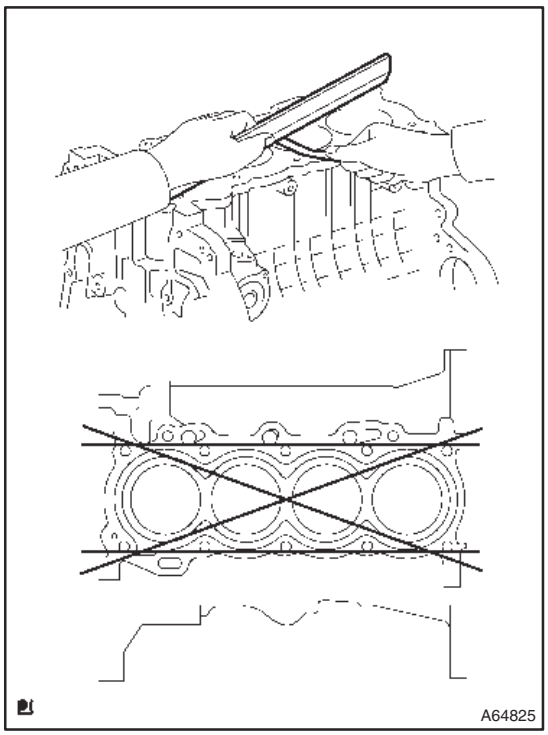
NOTICE:

Arrange the main bearings and thrust washers in the correct order.

12. REMOVE STUD BOLT

(a) Using Torx socket wrenches E5 and E7, remove the 9 stud bolts.



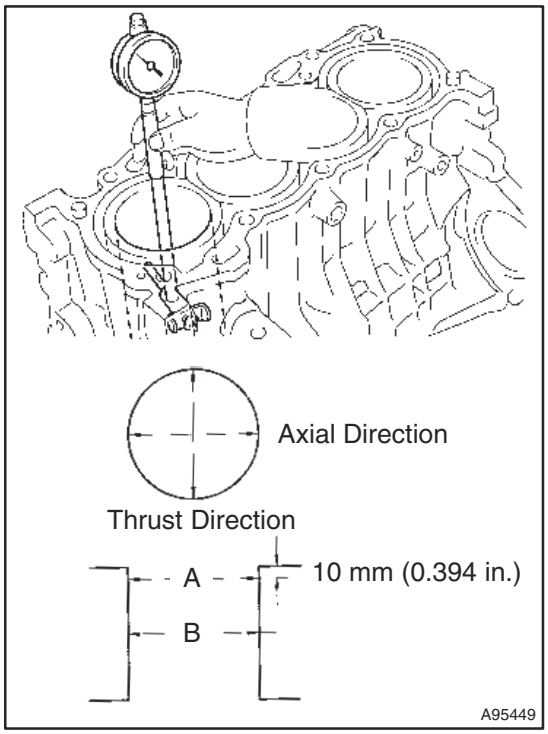


13. INSPECT CYLINDER BLOCK FOR FLATNESS

(a) Using a precision straight edge and feeler gauge, measure the warpage on the surface which comes into contact with the cylinder head gasket.

Maximum warpage: 0.05 mm (0.0020 in.)

If the warpage is greater than maximum, replace the cylinder block.

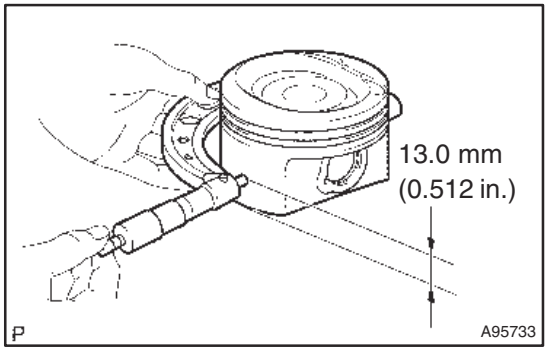


14. INSPECT CYLINDER BORE

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

Standard diameter:
79.000 to 79.013 mm (3.1102 to 3.1107 in.)
Maximum diameter: 79.133 mm (3.1155 in.)

If the average diameter of 4 positions is greater than maximum, replace the cylinder block.



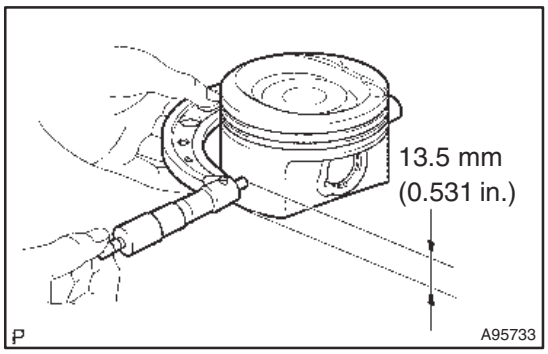
15. INSPECT W/PIN PISTON SUB–ASSY

(a) For engine type 1ZZ–FE.

(1) Using a micrometer, measure the diameter of the piston. Align the micrometer so it is 13.0 mm (0.512 in.) from the bottom of the piston and at right angles (90°) to the piston pin holes as illustrated.

Piston diameter:
78.955 to 78.965 mm (3.1085 to 3.1089 in.)

If the diameter is not as specified, replace the piston.

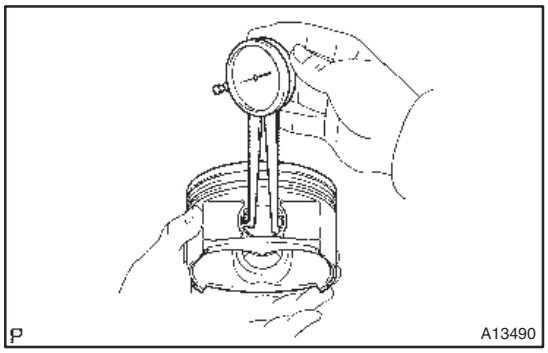


(b) For engine type 3ZZ–FE.
(1) Using a micrometer, measure the diameter of the piston. Align the micrometer so it is 13.5 mm (0.531 in.) from the bottom of the piston and at right angles (90°) to the piston pin holes as illustrated.
Piston diameter:
78.960 to 78.975 mm (3.1087 to 3.1091 in.)

If the diameter is not as specified, replace the piston.

16. INSPECT PISTON OIL CLEARANCE

(a) Subtract the piston diameter measurement from the cylinder bore diameter measurement.
Standard oil clearance: 0.073 to 0.096 mm (0.0029 to 0.0038 in.)
Maximum oil clearance: 0.10 mm (0.0039 in.)
- If the oil clearance is greater than maximum, replace all of the piston assembly.
- If necessary, replace the cylinder block.

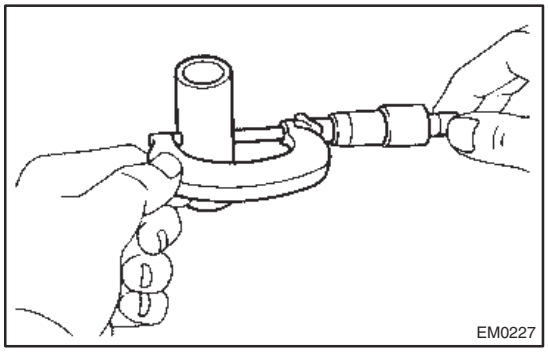


17. INSPECT PISTON PIN OIL CLEARANCE

(a) Using a caliper gauge, measure the piston pin bore diameter.
Piston pin bore diameter:
20.006 to 20.015 mm (0.7876 to 0.7880 in.)

Mark	mm (in.)
A	20.006 to 20.009 (0.7876 to 0.7878)
B	20.010 to 20.012 (0.7878 to 0.7879)
C	20.013 to 20.015 (0.7879 to 0.7880)

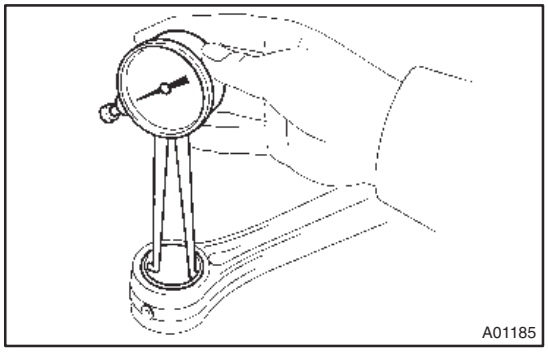
If the diameter is not as specified, replace the piston assembly.



(b) Using a micrometer, measure the piston pin outer diameter.
Piston pin outer diameter:
20.004 to 20.013 mm (0.7876 to 0.7879 in.)

Mark	mm (in.)
A	20.004 to 20.007 (0.7876 to 0.7877)
B	20.008 to 20.010 (0.7877 to 0.7878)
C	20.011 to 20.013 (0.7878 to 0.7879)

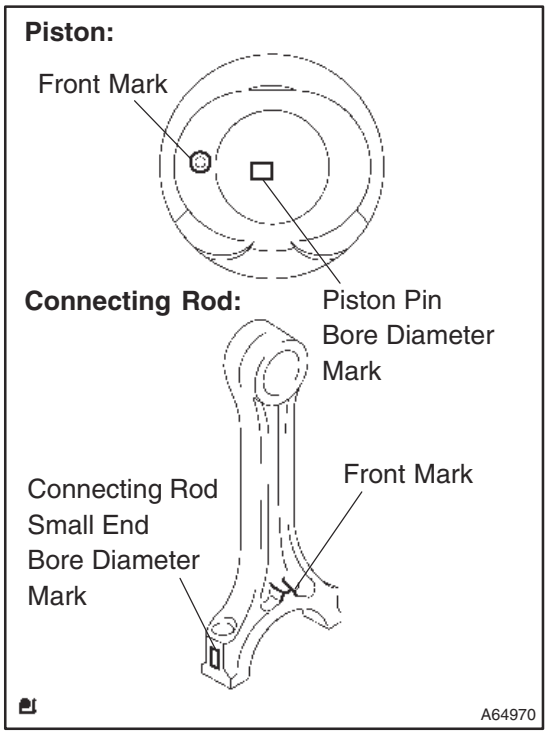
If the diameter is not as specified, replace the piston assembly.



(c) Using a caliper gauge, measure the connecting rod small end bore diameter.
Connecting rod small end bore diameter:
20.012 to 20.021 mm (0.7879 to 0.7882 in.)

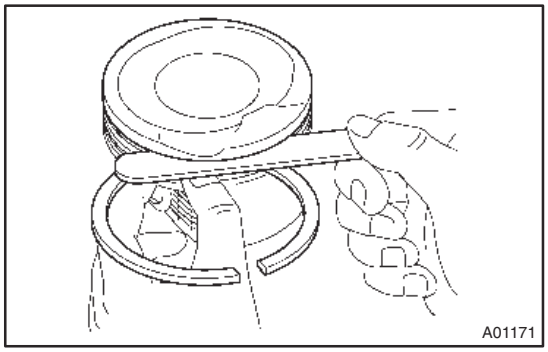
Mark	mm (in.)
A	20.012 to 20.015 (0.7879 to 0.7880)
B	20.016 to 20.018 (0.7880 to 0.7881)
C	20.019 to 20.021 (0.7881 to 0.7882)

If the diameter is not as specified, replace the connecting rod assembly.



(d) Subtract the piston pin outer diameter measurement from the piston pin bore diameter measurement.
Standard oil clearance:
–0.001 to 0.017 mm (–0.00004 to 0.0007 in.)
Maximum oil clearance: 0.017 mm (0.0007 in.)
- If the oil clearance is greater than maximum, replace the connecting rod assembly.
- If necessary, replace the piston pin.

(e) Subtract the piston pin outer diameter measurement from the connecting rod small end bore diameter measurement.
Standard oil clearance:
0.005 to 0.011 mm (0.0002 to 0.0004 in.)
Maximum oil clearance: 0.011 mm (0.0004 in.)
- If the oil clearance is greater than maximum, replace the connecting rod assembly.
- If necessary, replace the connecting rod and piston pin.

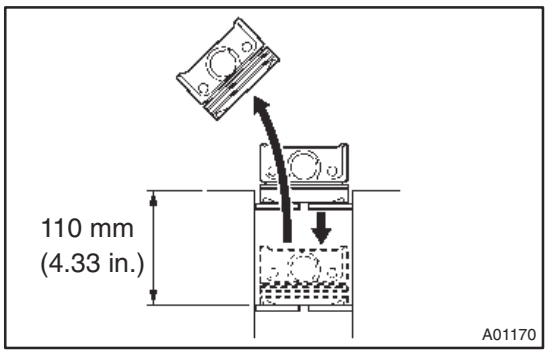


18. INSPECT RING GROOVE CLEARANCE

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

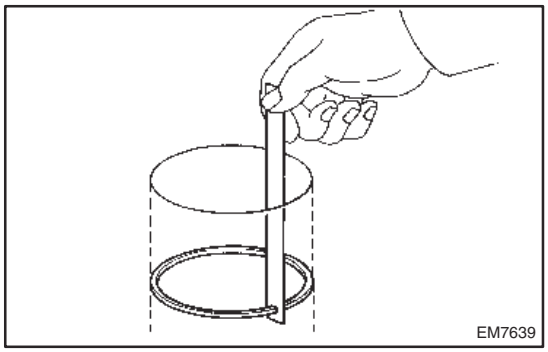
Item	Specification
No. 1 ring	0.02 to 0.07 mm (0.0008 to 0.0028 in.)
No. 2 ring	0.03 to 0.07 mm (0.0012 to 0.0028 in.)
Oil ring	0.03 to 0.11 mm (0.0012 to 0.0043 in.)

If the groove clearance is not as specified, replace the piston assembly.



19. INSPECT PISTON RING END GAP

(a) Using a piston, push the piston ring a little beyond the bottom of the ring travel, which is 110 mm (4.33 in.) from the top of the cylinder block.



(b) Using a feeler gauge, measure the end gap.

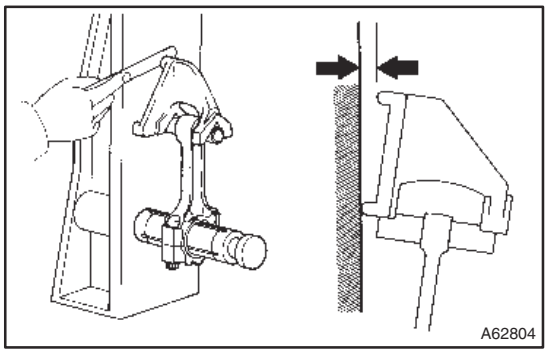
Standard end gap:

Item	Specification
No. 1 ring	0.25 to 0.35 mm (0.0098 to 0.0138 in.)
No. 2 ring	0.35 to 0.50 mm (0.0138 to 0.0197 in.)
Oil ring	0.15 to 0.40 mm (0.0059 to 0.0157 in.)

Maximum end gap:

Item	Specification
No. 1 ring	1.05 mm (0.0413 in.)
No. 2 ring	1.20 mm (0.0472 in.)

- If the end gap is greater than maximum, replace the piston ring.
- If the end gap is greater than maximum, even with a new piston ring, replace the cylinder block.



20. INSPECT CONNECTING ROD SUB–ASSY

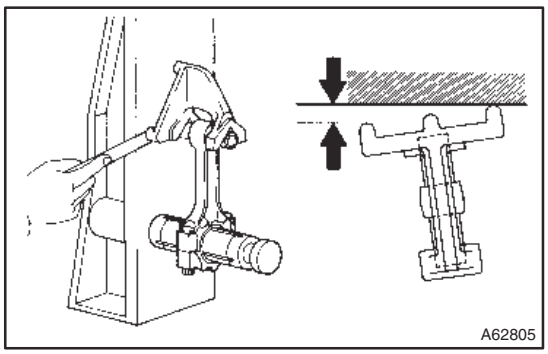
(a) Using a connecting rod aligner and feeler gauge, check the connecting rod alignment.

(1) Check for out–of–alignment.

Maximum out–of–alignment:

0.05 mm (0.0020 in.) per 100 mm (3.94 in.)

If the out–of–alignment is greater than maximum, replace the connecting rod assembly.

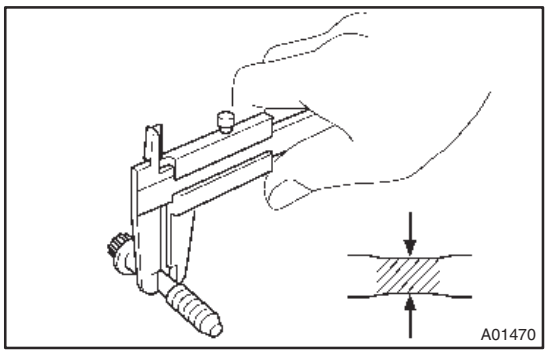


(2) check for twist.

Maximum twist:

0.05mm (0.0020 in.) per 100 mm (3.94 in.)

If the twist is greater than maximum, replace the connecting rod assembly.

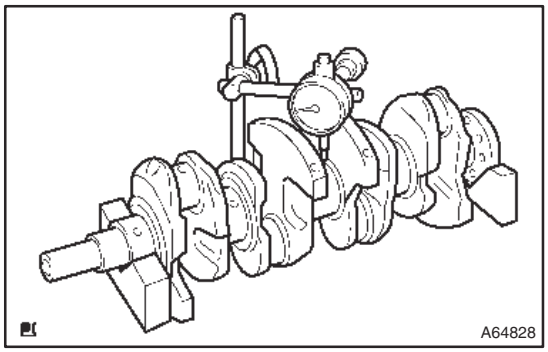


21. INSPECT CONNECTING ROD BOLT

(a) Using vernier calipers, measure the tension portion diameter of the bolts.

Standard diameter:
6.6 to 6.7 mm (0.260 to 0.264 in.)
Minimum diameter: 6.4 mm (0.252 in.)

If the diameter is less than minimum, replace the connecting rod bolt.

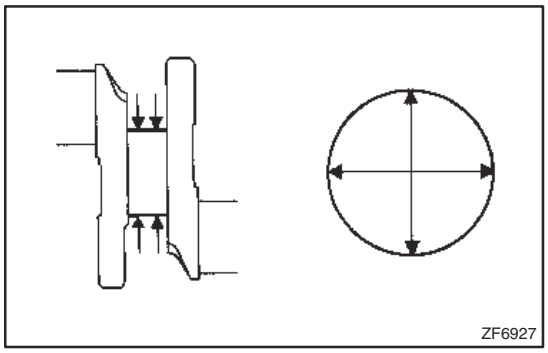


22. INSPECT CRANKSHAFT

(a) Using a dial indicator and V–blocks, measure the circle runout as shown in the illustration.

Maximum circle runout: 0.03 mm (0.0012 in.)

If the circle runout is greater than maximum, replace the crankshaft.



(b) Using a micrometer, measure the diameter of each main journal at the points shown in the illustration.

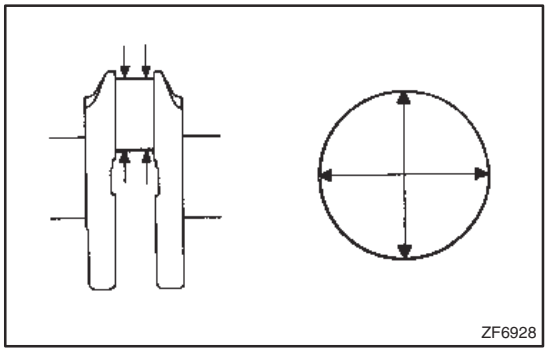
Diameter: 47.988 to 48.000 mm (1.8893 to 1.8898 in.)

If the diameter is not as specified, check the crankshaft oil clearance.

(c) Check each main journal for taper and out–of–round as shown.

Maximum taper and out–of–round:
0.02 mm (0.0008 in.)

If the taper or out–of–round is greater than maximum, replace the crankshaft.



(d) Using a micrometer, measure the diameter of each crank pin at the points shown in the illustration.

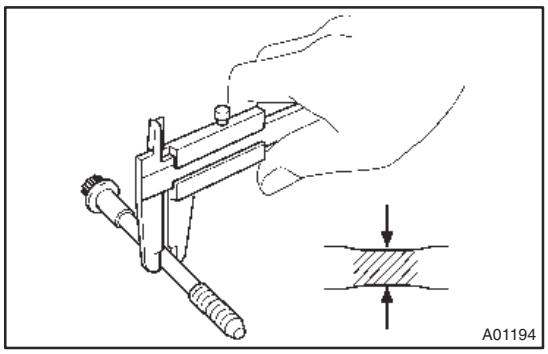
Diameter: 43.992 to 44.000 mm (1.7320 to 1.7323 in.)

If the diameter is not as specified, check the connecting rod oil clearance.

(e) Check each crank pin for taper and out–of–round as shown.

Maximum taper and out–of–round:
0.02 mm (0.0008 in.)

If the taper or out–of–round is greater than maximum, replace the crankshaft.



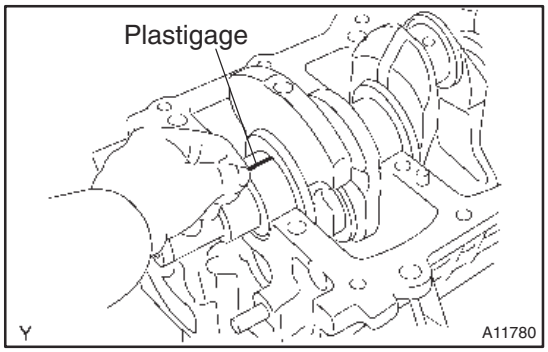
23. INSPECT CRANKSHAFT BEARING CAP SET BOLT

(a) Using vernier calipers, measure the tension portion diameter of the bolts.

Standard diameter: 7.3 to 7.5 mm (0.287 to 0.295 in.)

Minimum diameter: 7.3 mm (0.287 in.)

If the diameter is greater than minimum, replace the crankshaft bearing cap set bolt.



24. INSPECT CRANKSHAFT OIL CLEARANCE

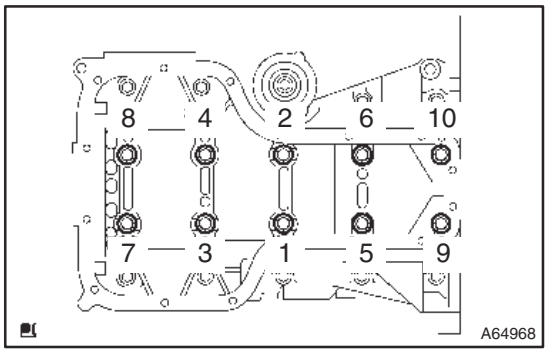
NOTICE:

Do not turn the crankshaft.

(a) Clean each main journal and bearing.

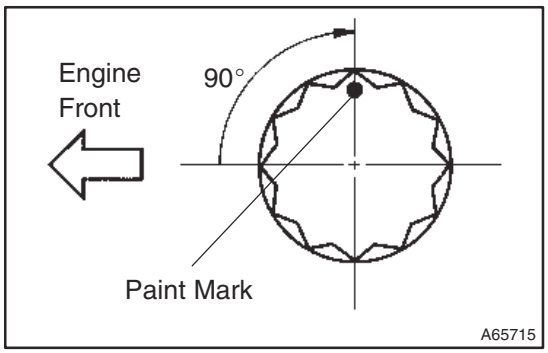
(b) Place the crankshaft on the cylinder block.

(c) Lay a strip of Plastigage across each journal.



(d) Using SST, tighten the bolts to the specified torque in the several passes in the sequence shown.

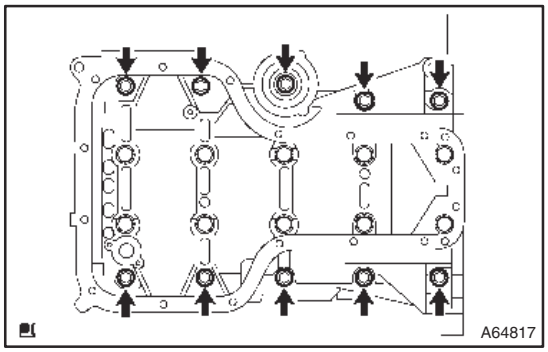
Torque: 44 N·m (449 kgf·cm, 33 ft·lbf)



(e) Mark the front of the bearing cap bolts with paint.

(f) Retighten the bearing cap bolts by an additional 90° as shown in the illustration.

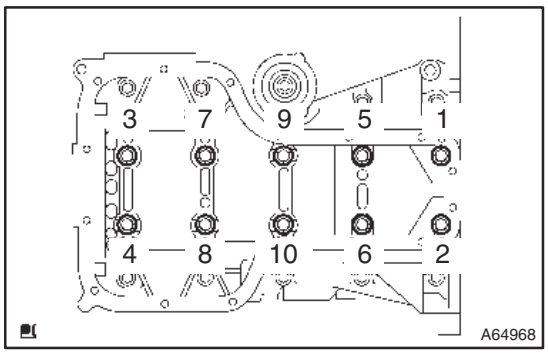
(g) Check that the painted mark is now at a 90° angle to the front.



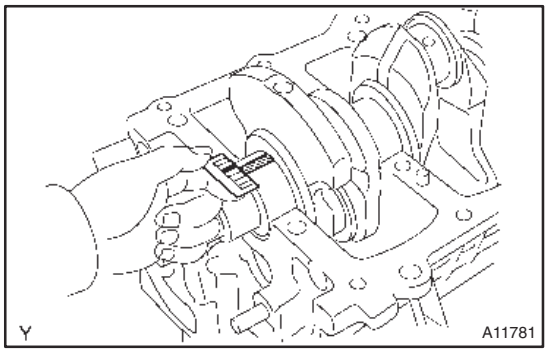
(h) Tighten the 10 other bolts for the bearing cap.

Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)

(i) Remove the 10 bolts.



(j) Uniformly loosen the 10 bearing cap bolts in several passes in the sequence shown in the illustration.



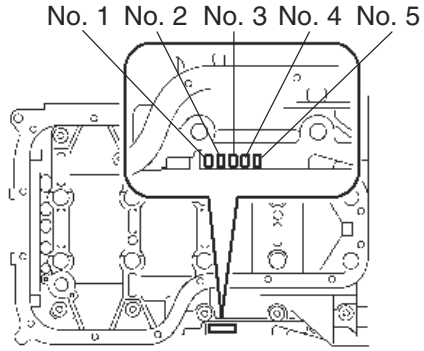
(k) Measure the Plastigage at its widest point.
Standard oil clearance:
0.015 to 0.032 mm (0.0006 to 0.0012 in.)
Maximum oil clearance: 0.05 mm (0.0020 in.)

NOTICE:
Completely remove the Plastigage.

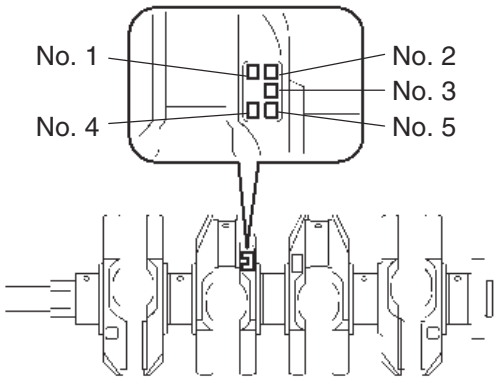
- If the oil clearance is greater than minimum, replace the crankshaft bearing.
- If necessary, replace the crankshaft.

HINT:
If replacing a bearing, select a new one having the same number. If the number of the bearing cannot be determined, calculate the correct use bearing number by adding together the numbers imprinted on the cylinder block and crankshaft, then select a new bearing having the calculated number. There are 4 sizes of standard bearings, marked "1", "2", "3" and "4" accordingly.

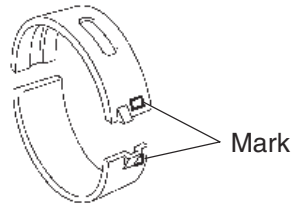
Cylinder Block:



Crankshaft:



Bearing:



Cylinder block (A) + Crankshaft (B)	0 to 2	3 to 5	6 to 8	9 to 11
Use bearing	"1"	"2"	"3"	"4"

EXAMPLE:
Cylinder block "3" (A) + Crankshaft "4" (B) = Total number 7 (Use bearing "3")

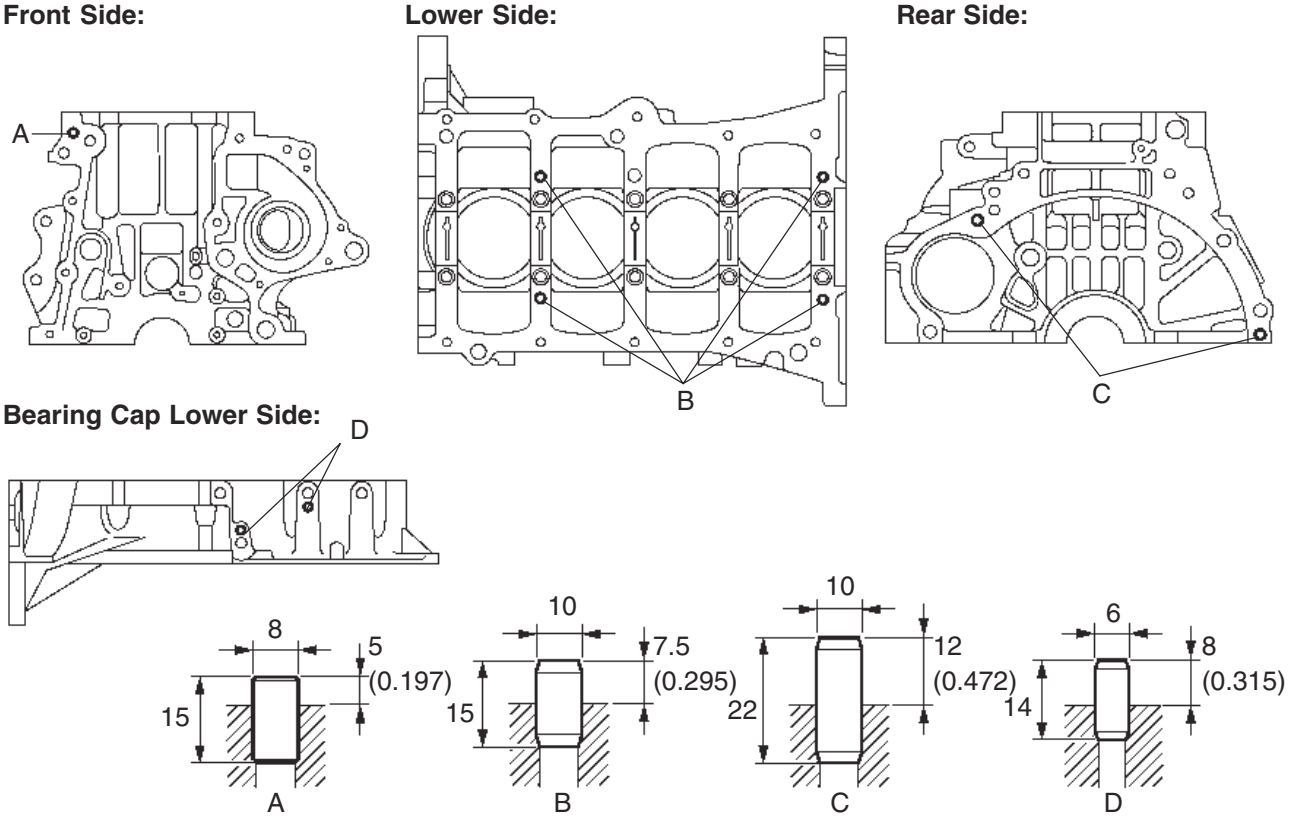
Item	Mark	mm (in.)
Cylinder block journal bore diameter (A)	"0"	52.000 to 52.002 (2.0472 to 2.0473)
	"1"	52.003 to 52.004 (2.0474 to 2.0474)
	"2"	52.005 to 52.006 (2.0474 to 2.0475)
	"3"	52.007 to 52.009 (2.0475 to 2.0476)
	"4"	52.010 to 52.011 (2.0476 to 2.0477)
	"5"	52.012 to 52.013 (2.0477 to 2.0478)
	"6"	52.014 to 52.015 (2.0478 to 2.0478)
Crankshaft journal diameter (B)	"0"	47.999 to 48.000 (1.8897 to 1.8898)
	"1"	47.997 to 47.998 (1.8896 to 1.8897)
	"2"	47.995 to 47.996 (1.8896 to 1.8896)
	"3"	47.993 to 47.994 (1.8895 to 1.8895)
	"4"	47.991 to 47.992 (1.8894 to 1.8894)
	"5"	47.988 to 47.990 (1.8893 to 1.8894)
Standard bearing center wall thickness	"1"	1.994 to 1.997 (0.0785 to 0.0786)
	"2"	1.998 to 2.000 (0.0787 to 0.0787)
	"3"	2.001 to 2.003 (0.0788 to 0.0789)
	"4"	2.004 to 2.006 (0.0789 to 0.0790)

25. INSTALL STRAIGHT PIN

(a) Using a plastic hammer, install 9 new straight pins into the cylinder block.

Standard protrusion:

Item	Specification
A	5.0 mm (0.197 in.)
B	7.5 mm (0.295 in.)
C	12.0 mm (0.472 in.)
D	8.0 mm (0.315 in.)



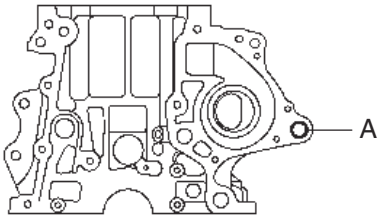
26. INSTALL RING PIN

(a) Using a plastic hammer, install 5 new ring pins into the cylinder block.

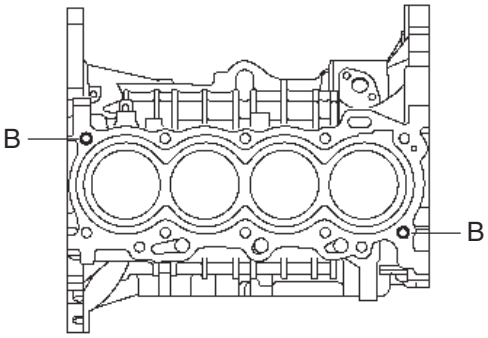
Standard protrusion:

Item	Specification
A	6.0 mm (0.236 in.)
B	7.0 mm (0.276 in.)
C	10.0 mm (0.394 in.)

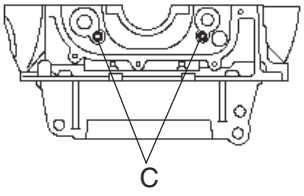
Front Side:

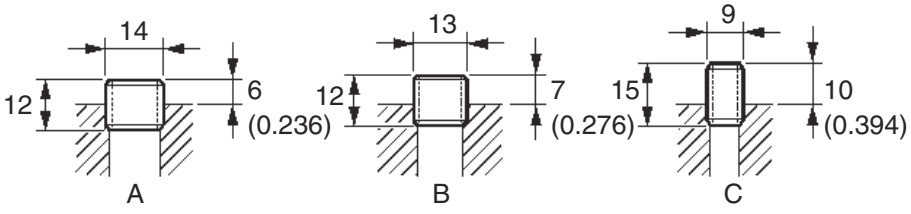


Upper Side:



Bearing Cap Front Side:





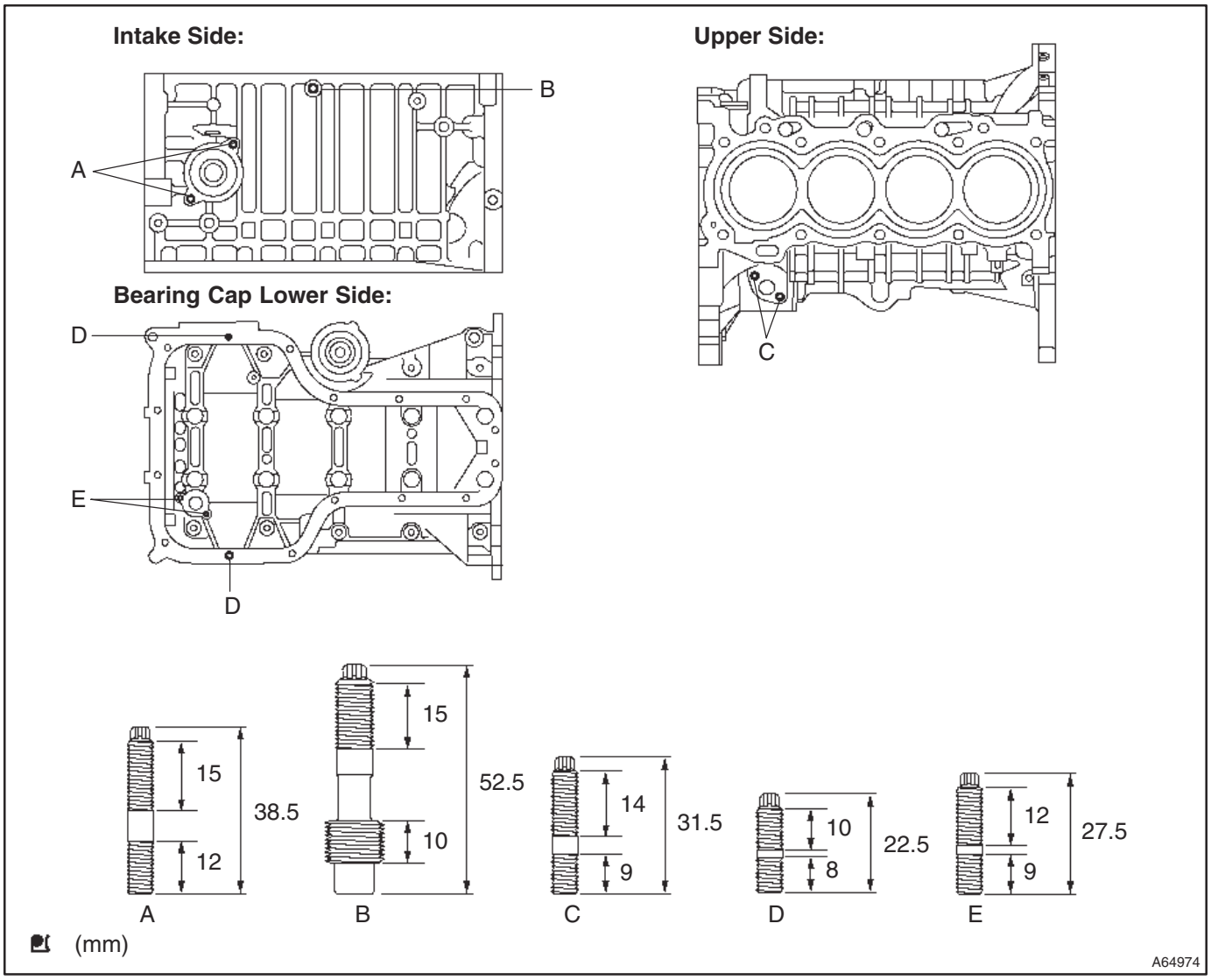
(mm (in.))

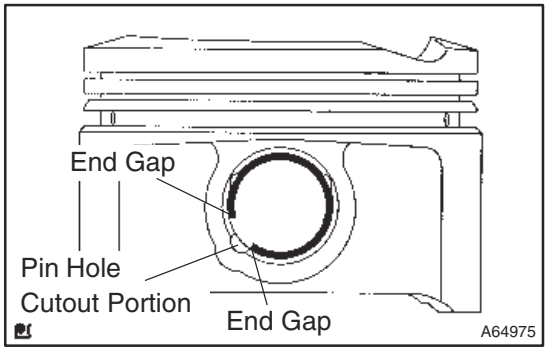
A64973

27. INSTALL STUD BOLT

(a) Using Torx socket wrenches E5 and E7, install the 9 stud bolts into the cylinder block.

Torque:
5.0 N·m (51 kgf·cm, 44 in.·lbf) for A
11 N·m (112 kgf·cm, 8 ft·lbf) for B
5.0 N·m (51 kgf·cm, 44 in.·lbf) for C
5.0 N·m (51 kgf·cm, 44 in.·lbf) for D
5.0 N·m (51 kgf·cm, 44 in.·lbf) for E



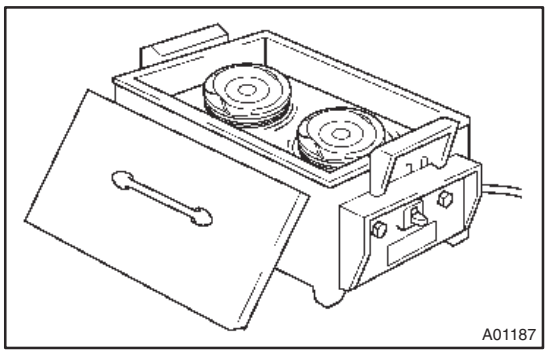


28. INSTALL W/PIN PISTON SUB–ASSY

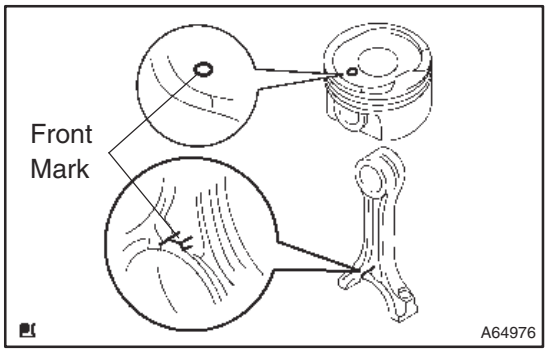
(a) Using a small screwdriver, install a new snap ring onto one end of the piston pin hole.

HINT:

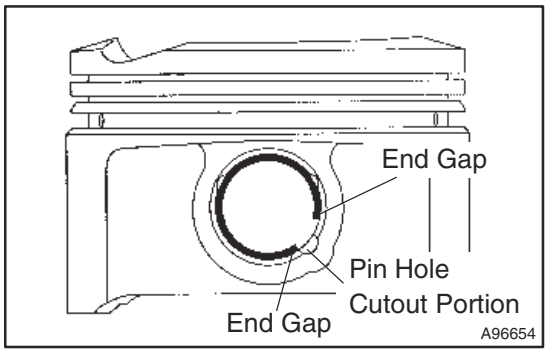
Be sure that the end gap of the snap ring is aligned with the pin hole cutout portion of the piston.



(b) Gradually heat the piston up to 80 to 90°C (176 to 194°F).



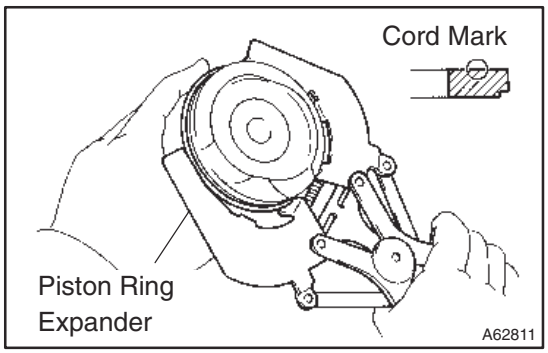
(c) Align the front marks on the piston with the connecting rod, then push in the piston with your thumb.



(d) Using a small screwdriver, install a new snap ring onto one end of the piston pin hole.

HINT:

Be sure that the end gap of the snap ring is aligned with the pin hole cutout portion of the piston.



29. INSTALL PISTON RING SET

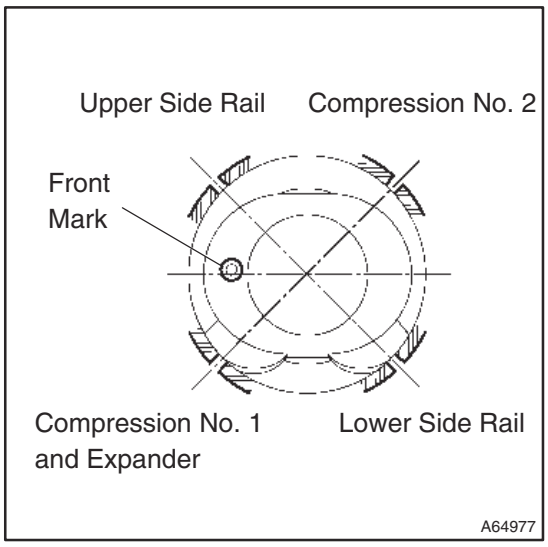
HINT:

In case of reusing the piston rings, install them onto the matched pistons with the surfaces facing upward correctly.

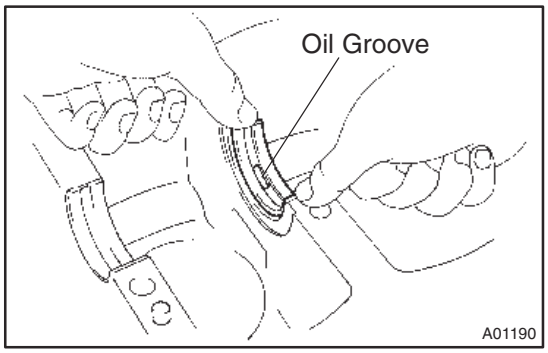
(a) Install the oil ring expander and 2 side rails by hand.

(b) Using a piston ring expander, install the 2 compression rings with the code mark facing upward.

Code mark (No. 2 only): 2R



(c) Position the piston rings so that the ring ends are as shown.

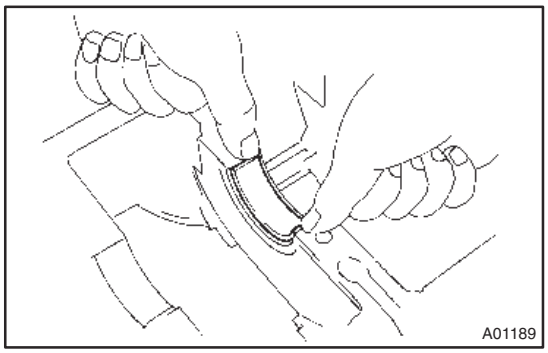


30. INSTALL CRANKSHAFT BEARING

(a) Install the upper bearing with an oil groove onto the cylinder block.

NOTICE:

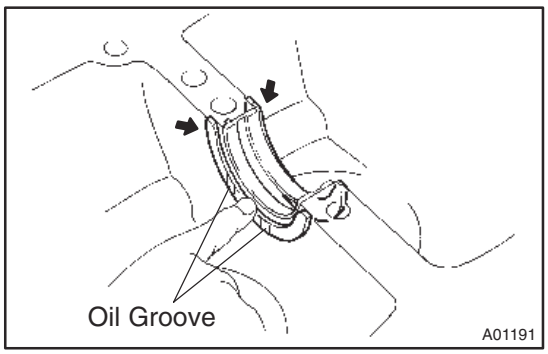
Do not apply engine oil to the bearing and its contact surface.



(b) Install the lower bearing onto the bearing cap.

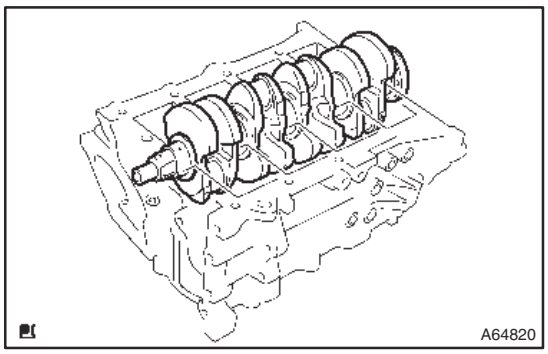
NOTICE:

Do not apply engine oil to the bearing and its contact surface.



31. INSTALL CRANKSHAFT THRUST WASHER UPPER

(a) Install the 2 thrust washers onto the No. 3 journal position of the cylinder block with the oil grooves facing outward.

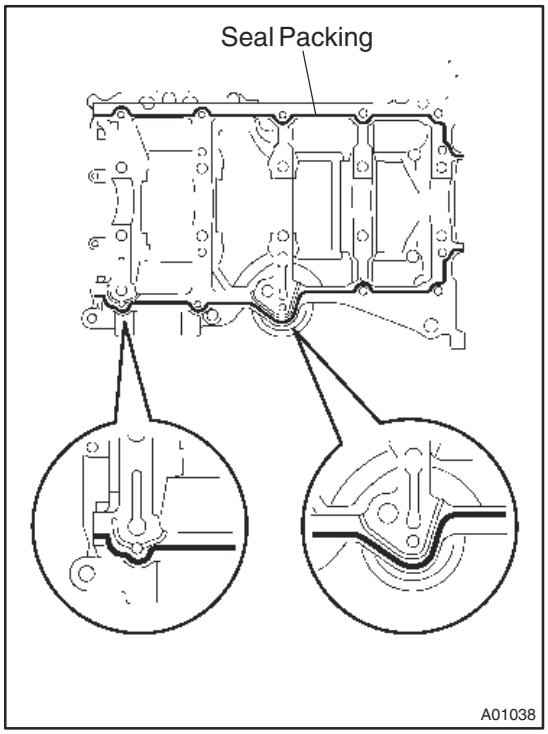


32. INSTALL CRANKSHAFT

(a) Apply engine oil to the upper bearing, then install the crankshaft onto the cylinder block.

(b) Apply a light coat of engine oil to the bolt threads, bolt seats, and bearings of the bearing cap.

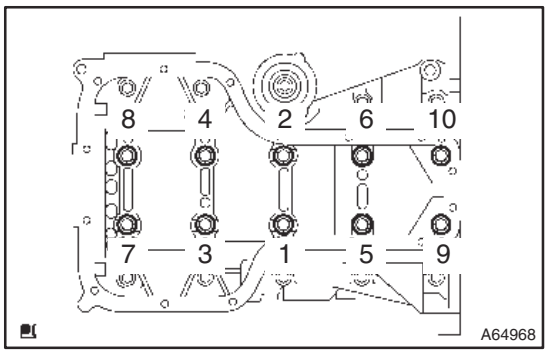
(c) Install the crankshaft onto the cylinder block.



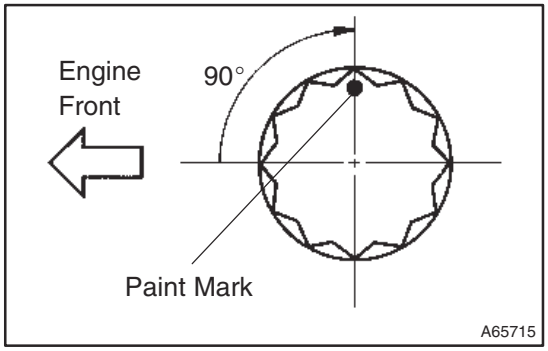
(d) Apply a continuous bead of seal packing (Diameter; 2.5 to 3.5 mm (0.098 to 0.138 in.)) as shown in the illustration.
Seal packing: Part No. 08826–00080 or equivalent

NOTICE:

- **Remove any oil from the contact surface.**
- **Install the bearing cap sub–assembly within 3 minutes after applying seal packing.**
- **Do not put into engine oil for at least 2 hours after installation.**



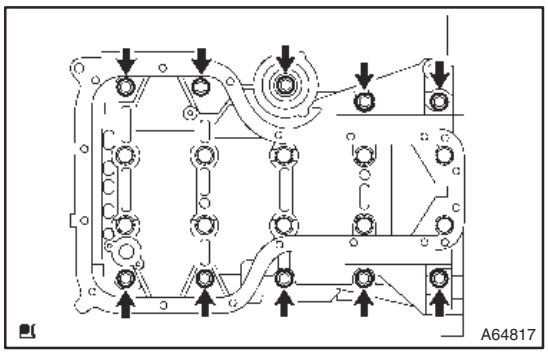
(e) Tighten the bolts in several passes in the sequence shown to the specified torque.
Torque: 44 N·m (449 kgf·cm, 33 ft·lbf)



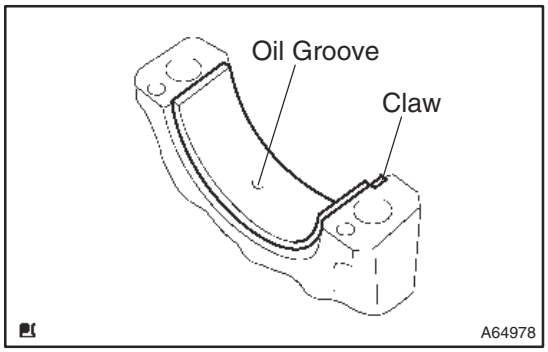
(f) Mark the front of the bearing cap bolts with paint.

(g) Retighten the bearing cap bolts by an additional 90° as shown in the illustration.

(h) Check that the painted mark is now at a 90° angle to the front.



(i) Tighten the 10 other bolts for the bearing cap.
Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)

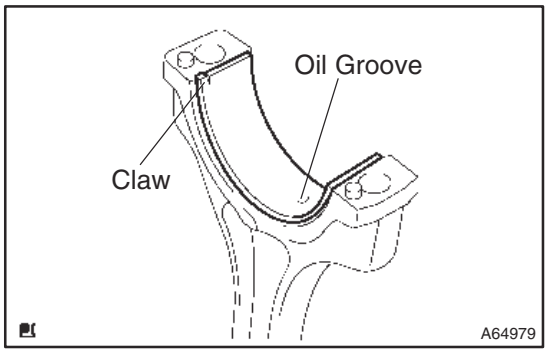


33. INSTALL CONNECTING ROD BEARING

(a) Align the connecting rod bearing claw with the oil groove of the connecting rod cap.

(b) Install the connecting rod bearing onto the connecting rod cap.

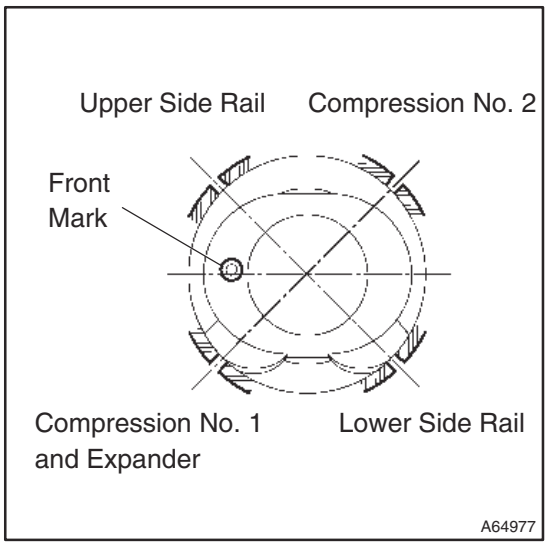
NOTICE:
Do not apply engine oil to the bearing and its contact surface.



(c) Align the connecting rod bearing claw with the oil groove of the connecting rod.

(d) Install the connecting rod bearing onto the connecting rod.

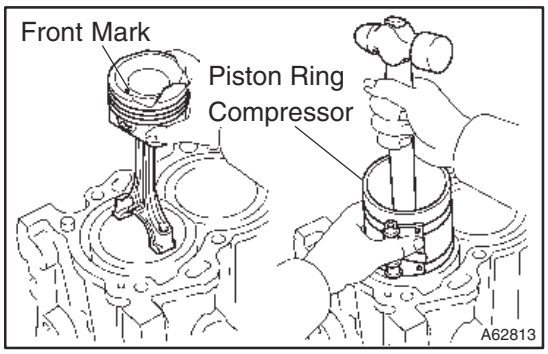
NOTICE:
Do not apply engine oil to the bearing and its contact surface.



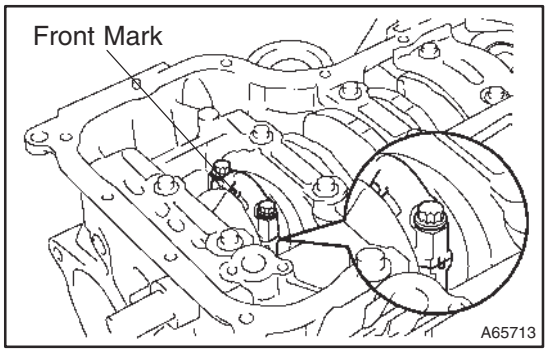
34. INSTALL CONNECTING ROD SUB–ASSY

(a) Position the piston rings so that the ring ends are as shown.

(b) Apply engine oil to the cylinder walls, pistons, and surfaces of the connecting rod bearings.



(c) Using a piston ring compressor, correctly push the numbered piston and connecting rod assemblies into each cylinder with the front mark of the piston facing forward.



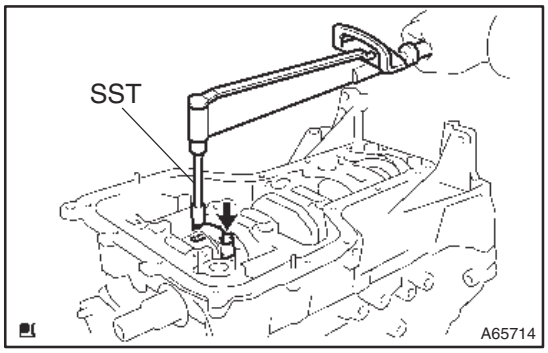
(d) Align the pin dowels of the connecting rod cap with the pins of the connecting rod, then install the connecting rod.

NOTICE:

Match the numbered connecting rod cap with the same numbered connecting rod.

(e) Check that the protrusion of the connecting rod cap is facing in the correct direction.

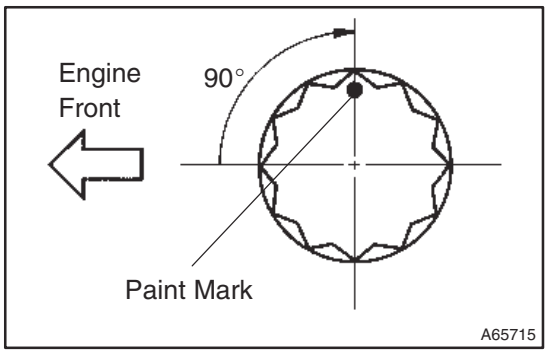
(f) Apply a light coat of engine oil to the threads and the bottom of the heads of the connecting rod cap bolts.



(g) Using SST, tighten the bolts in several passes to the specified torque.

SST 09205–16010

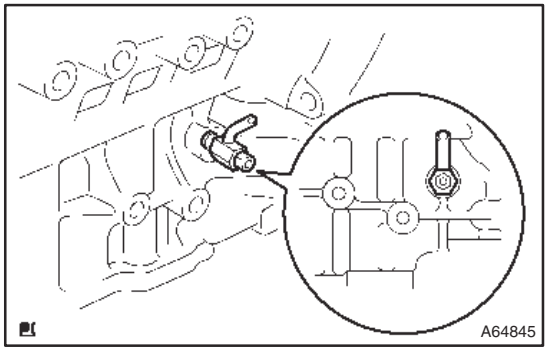
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)



(h) Mark the front of the connecting cap bolts with paint.

(i) Retighten the cap bolts by an additional 90° as shown in the illustration.

(j) Check that the crankshaft turns smoothly.



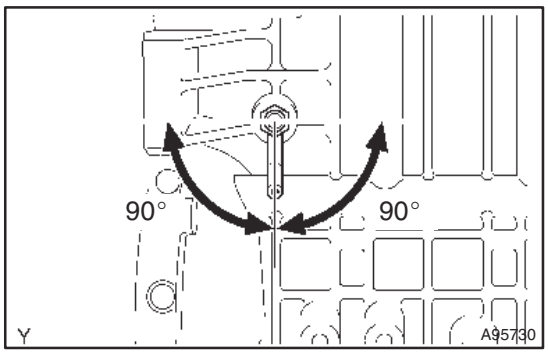
35. INSTALL CYLINDER BLOCK WATER DRAIN COCK SUB–ASSY

(a) Apply adhesive to 2 or 3 threads of the cylinder block water drain cock, then install it within 3 minutes as shown in the illustration.

Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

Adhesive:

Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent



(b) After applying the specified torque, rotate the cylinder block water drain cock clockwise until its drain port faces downward.

NOTICE:

- **Do not put into coolant for at least an hour after installation.**
- **Do not rotate the drain union more than 360° in (b), and never loosen it after setting the union correctly.**