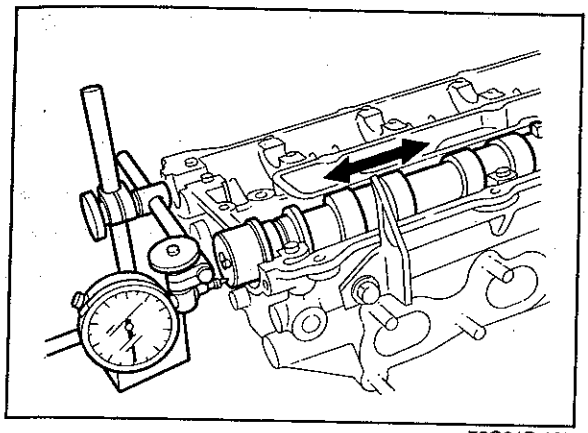
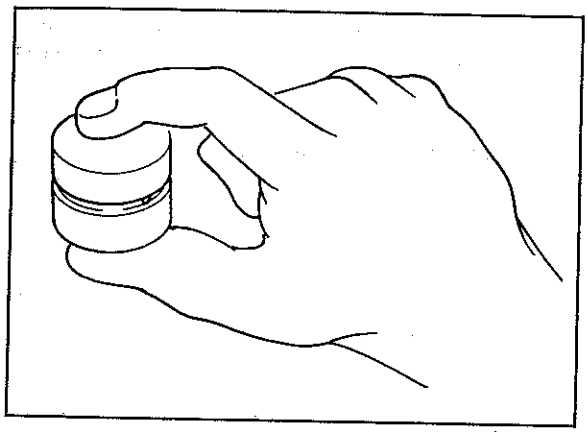


76G01B-125

6. Measure the camshaft end play. If it exceeds the maximum, replace the camshaft and/or the cylinder head.

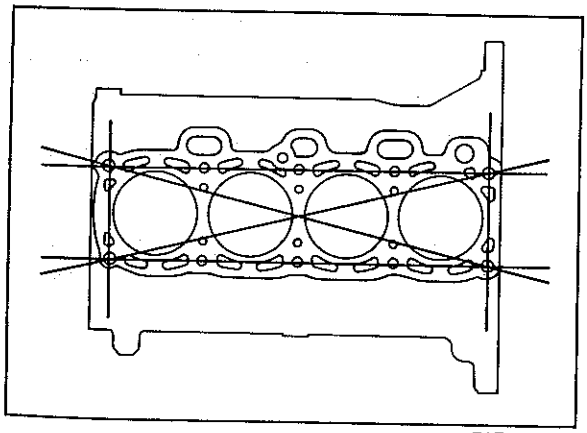
End play:
0.08—0.10 mm (0.003—0.004 in)
Maximum: 0.20 mm (0.008 in)



76G01B-064

Hydraulic Lash Adjuster (HLA)
1. Check the HLA face for wear or damage.
2. Hold the HLA between your fingers and press it. If the HLA moves, replace it.

Caution
Do not disassemble the HLA.



76F01B-018

Cylinder Block

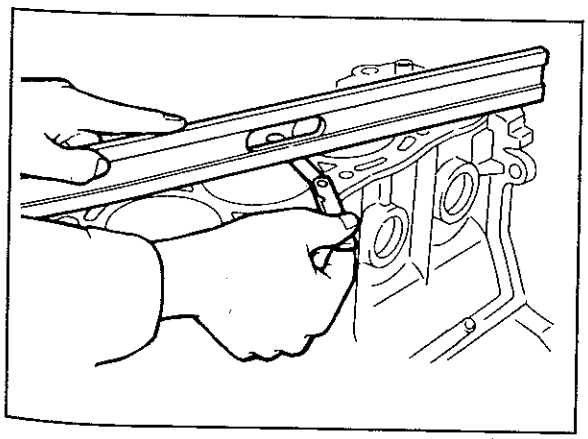
Note
If the cylinder block is replaced, install the dowel pin to the cylinder block.

1. Check the cylinder block. Repair or replace if necessary.
   (1) Leakage damage
   (2) Cracks
   (3) Scoring of wall
2. Measure the distortion of the top surface of the cylinder block in the six directions as shown in the figure.

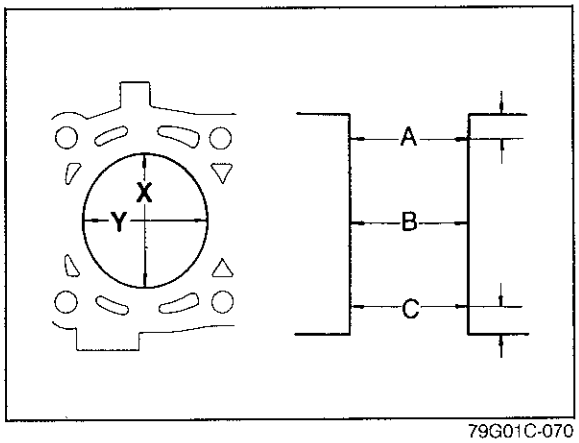
Distortion: 0.15 mm (0.006 in) max.

3. If the distortion exceeds the maximum, repair by grinding, or replace the cylinder block.

Grinding limit: 0.20 mm (0.008 in) max.



86U01X-101

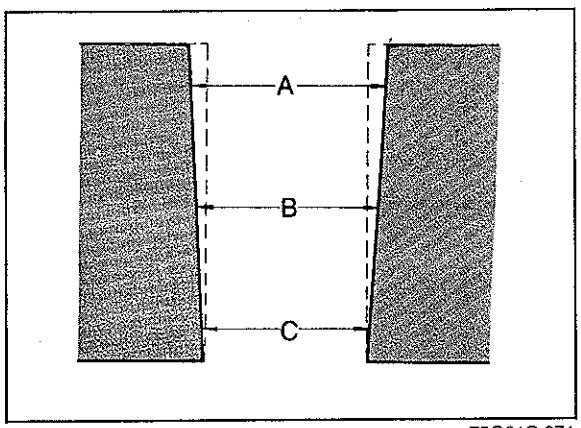


79G01C-070

4. Measure the cylinder bore in directions X and Y at three levels in each cylinder as shown.

Cylinder bore mm (in)

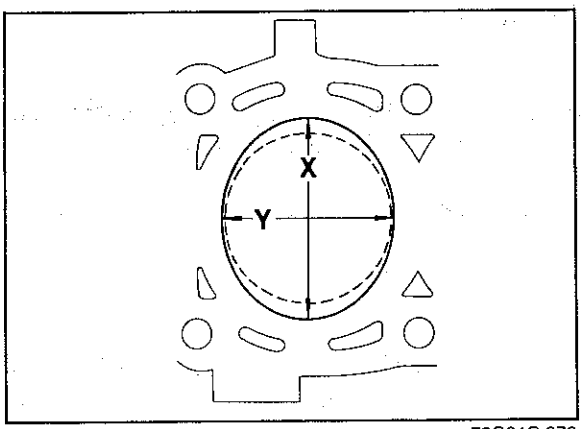
Size	Bore
Standard	86.000—86.019 (3.3858—3.3866)
0.25 (0.010) oversize	86.250—86.269 (3.3957—3.3964)
0.50 (0.020) oversize	86.500—86.519 (3.4055—3.4062)



79G01C-071

(1) If the difference between the measurement A and C exceeds the maximum taper, rebore the cylinder to oversize.

Taper: 0.019 mm (0.0007 in) max.

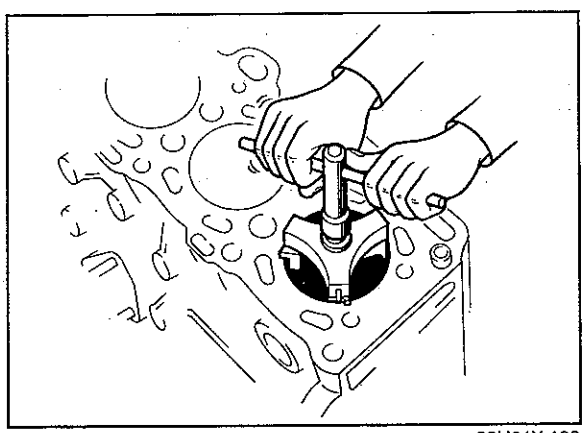


79G01C-072

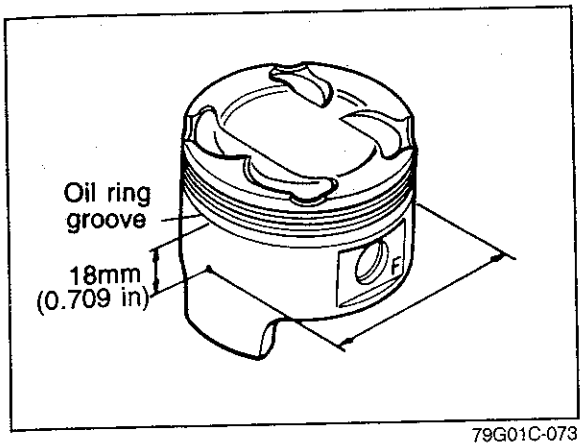
(2) If the difference between the measurement X and Y exceeds the maximum out-of-round, rebore the cylinder to oversize.

Out-of-round: 0.019 mm (0.0007 in) max.

Caution
The boring size should be based on the size of an oversize piston and be the same for all cylinders.


86U01X-102

5. If the upper part of the cylinder wall shows uneven wear, remove the ridge with a ridge reamer.



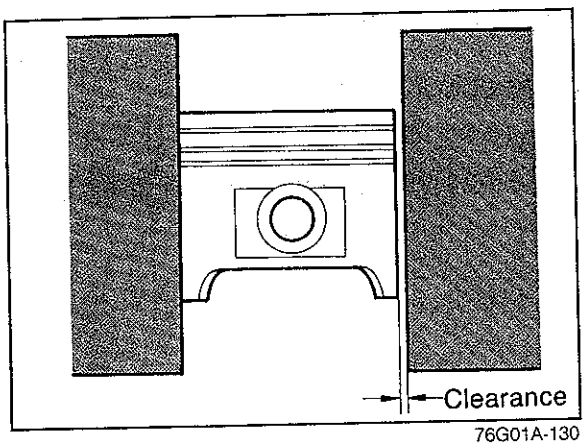
79G01C-073

Piston

1. Inspect the outer circumferences of all pistons for seizure or scoring. Replace if necessary.
2. Measure the outer diameter of each piston at a right angle (**90°**) to the piston pin, **18 mm (0.709 in) below** the oil ring land lower edge.

Piston diameter mm (in)

Size	Diameter
Standard	85.944—85.964 (3.3836—3.3844)
0.25 (0.010) oversize	86.194—86.214 (3.3935—3.3942)
0.50 (0.020) oversize	86.444—86.464 (3.4033—3.4041)



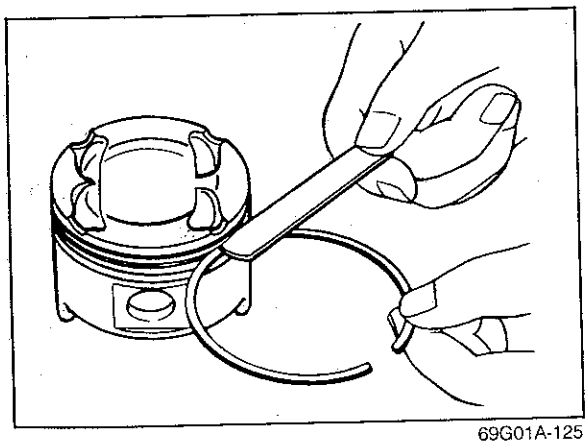
76G01A-130

3. Check the piston to cylinder clearance.

Clearance:
0.036—0.075 mm (0.0014—0.0030 in)
Maximum: 0.15 mm (0.0059 in)

4. If the clearance exceeds the maximum, replace the piston or rebore the cylinders to fit oversize pistons.

Caution
If the piston is replaced, replace the piston rings also.

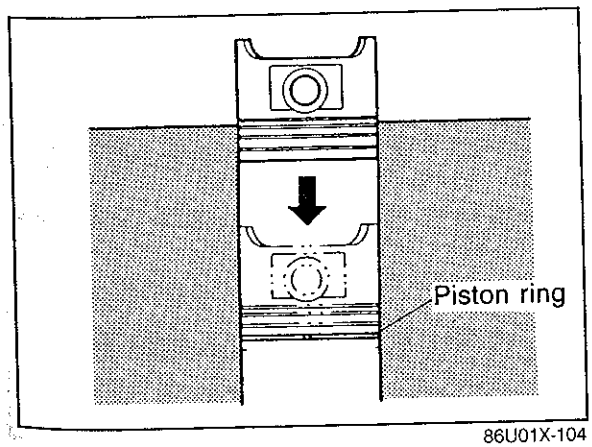

69G01A-125

Piston and Piston Ring

1. Measure the piston ring to ring land clearance around the entire circumference using a new piston ring.

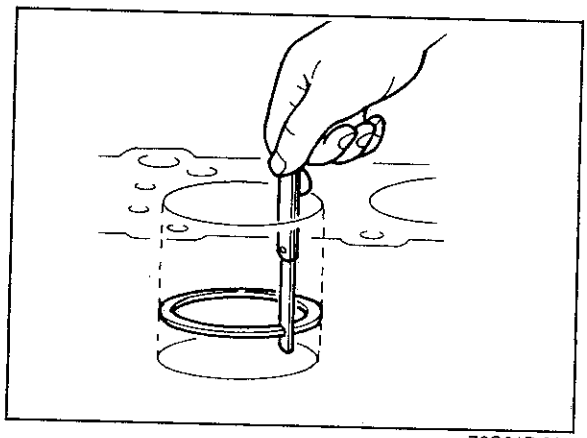
Clearance (Top and Second):
0.03—0.07 mm (0.001—0.003 in)
Maximum: 0.15 mm (0.006 in)

2. If the clearance exceeds the maximum, replace the piston.



86U01X-104

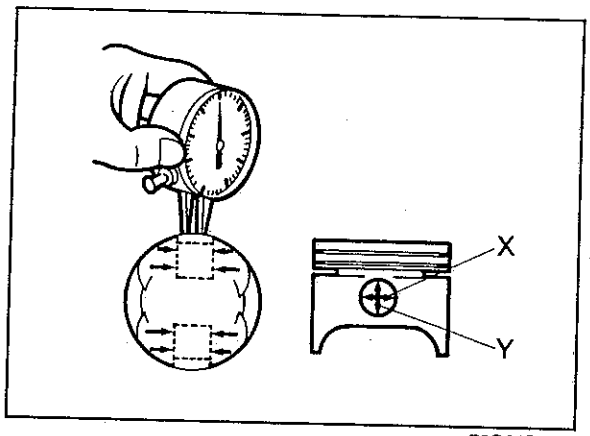
3. Inspect the piston rings for damage, abnormal wear, or breakage. Replace if necessary.
4. Insert the piston ring into the cylinder by hand and push it to the bottom of the ring travel in using the piston.



76G01B-065

5. Measure each piston ring end gap with a feeler gauge. Replace if necessary.

End gap
Top : 0.20—0.35 mm (0.008—0.014 in)
Second: 0.15—0.30 mm (0.006—0.012 in)
Oil rail : 0.20—0.70 mm (0.008—0.028 in)
Maximum: 1.0 mm (0.039 in)

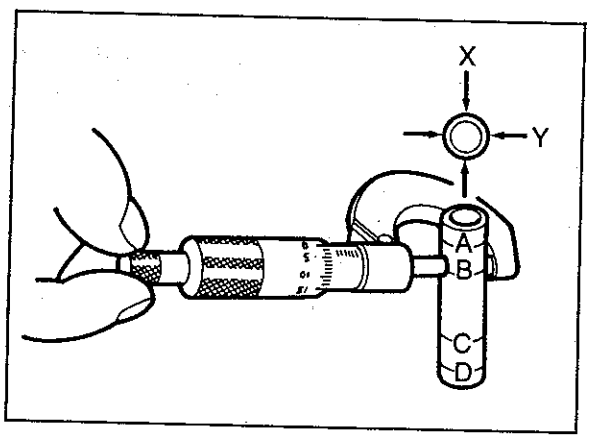


76G01B-066

Piston and Piston Pin

1. Measure the piston pin hole diameter in X and Y directions at four points.

Diameter:
21.988—21.998 mm (0.8657—0.8661 in)



76G01B-067

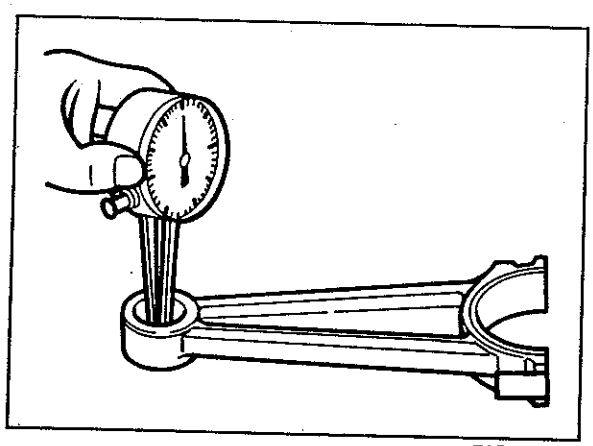
2. Measure the piston pin diameter.

Diameter:
21.987—21.993 mm (0.8656—0.8659 in)

3. Determine the piston pin to piston clearance by subtracting the two figures.

Clearance:
–0.005—0.011 mm (–0.0002—0.0004 in)

4. If the clearance exceeds the specification, replace the piston and/or piston pin.



76G01B-068

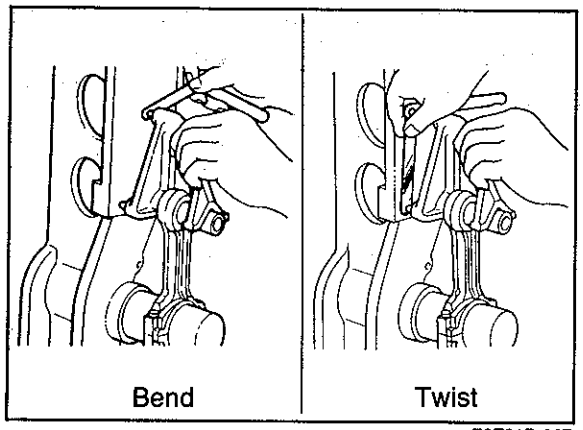
Connecting Rod

1. Measure the connecting rod small end bore.

Diameter:
22.003—22.014 mm (0.8663—0.8667 in)

2. Check the clearance between the small end bore and piston pin.

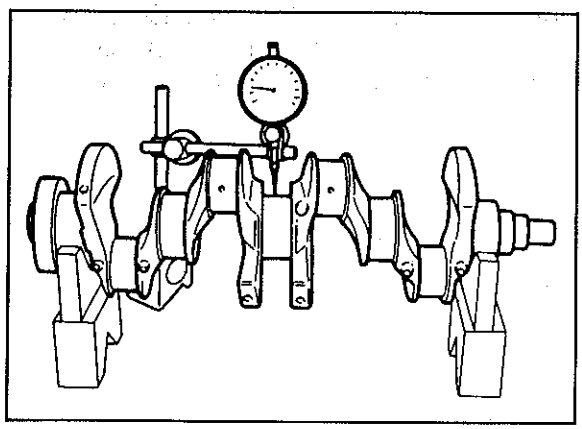
Clearance:
0.010—0.027 mm (0.0004—0.0011 in)



76F01B-027

3. Check each connecting rod for bending or twisting. Repair or replace if necessary.

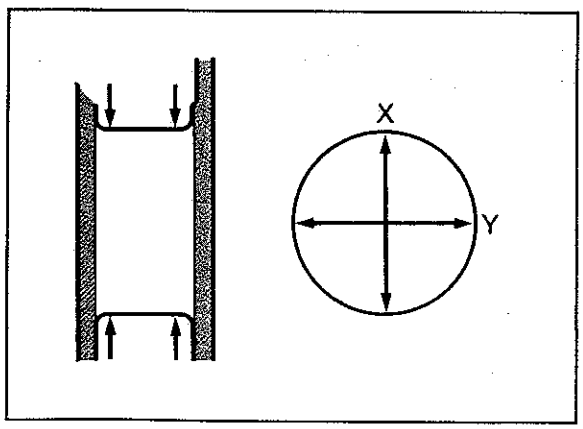
Bend: 0.24 mm (0.0094 in) max.
Twist: 0.57 mm (0.0224 in) max.


86U01X-109

Crankshaft

1. Check the journals and pins for damage, scoring, or oil hole clogging.
2. Set the crankshaft on V-blocks.
3. Check the crankshaft runout at the center journal. Replace if necessary.

Runout: 0.03 mm (0.0012 in) max.

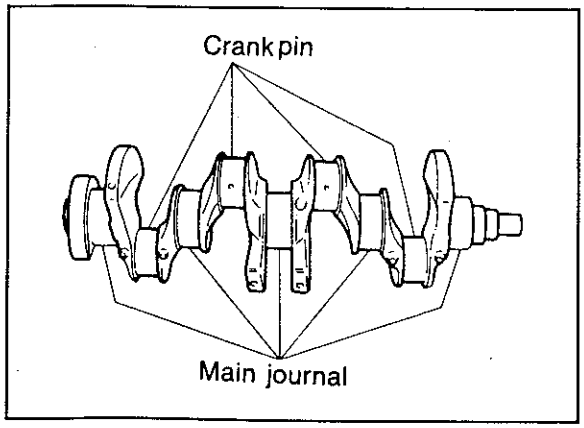


76G01A-131

4. Measure each journal diameter in X and Y directions at two points.

Main journal
Diameter:
59.937—59.955 mm (2.3597—2.3604 in)
Out-of-round: 0.05 mm (0.0020 in) max.

Crankpin journal
Diameter:
50.940—50.955 mm (2.0055—2.0061 in)
Out-of-round: 0.05 mm (0.0020 in) max.



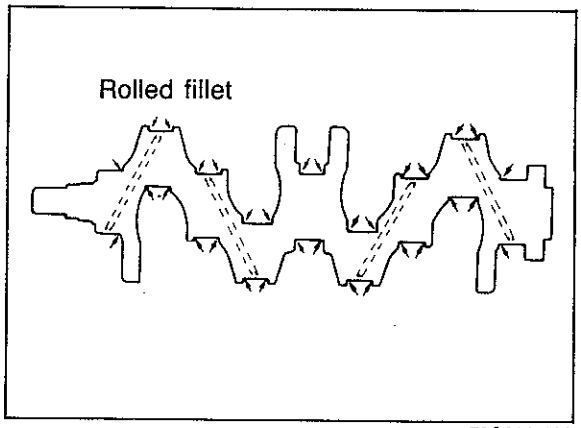
76G01A-132

5. If the diameter is less than the minimum, grind the journals to match undersize bearings.

Undersize bearing: 0.25 mm (0.010 in), 0.50 mm (0.020 in), 0.75 mm (0.030 in)

Main journal diameter undersize mm (in)

Bearing size		Journal diameter
0.25 (0.010) undersize	No.1,2,4,5	59.693—59.711 (2.3501—2.3508)
	No.3	59.687—59.705 (2.3499—2.3506)
0.50 (0.020) undersize	No.1,2,4,5	59.443—59.461 (2.3403—2.3410)
	No.3	59.437—59.455 (2.3400—2.3407)
0.75 (0.030) undersize	No.1,2,4,5	59.193—59.211 (2.3304—2.3311)
	No.3	59.187—59.205 (2.3302—2.3309)

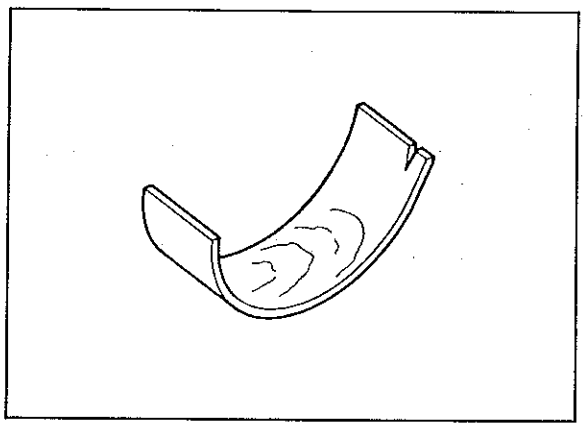


76G01A-133

Crankpin journal diameter undersize mm (in)

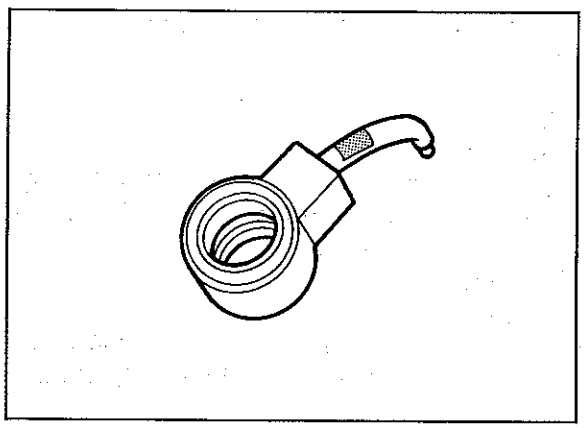
Bearing size	Journal diameter
0.25 (0.010) undersize	50.690—50.705 (1.9957—1.9963)
0.50 (0.020) undersize	50.440—50.455 (1.9858—1.9864)
0.75 (0.030) undersize	50.190—50.205 (1.9760—1.9766)

Caution
Do not grind the rolled fillet area.



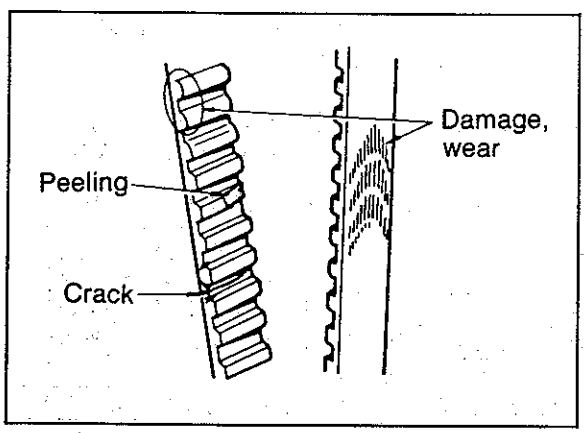
79G01C-077

Main Bearing and Connecting Rod Bearing
Check the main bearings and the connecting rod bearings for peeling, scoring, or other damage.



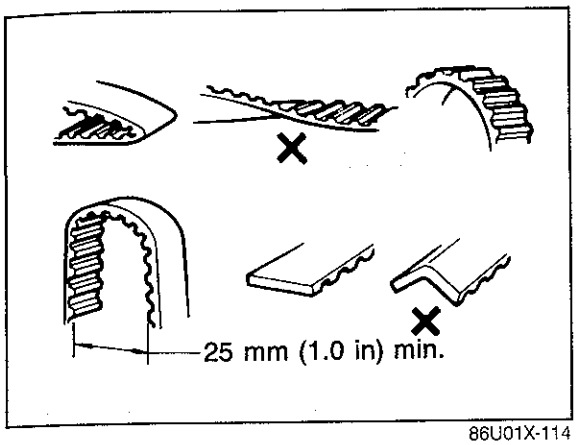
76G01B-069

Oil Jet
1. Check that the oil passage is not clogged.
2. Check that the check ball is not stuck.



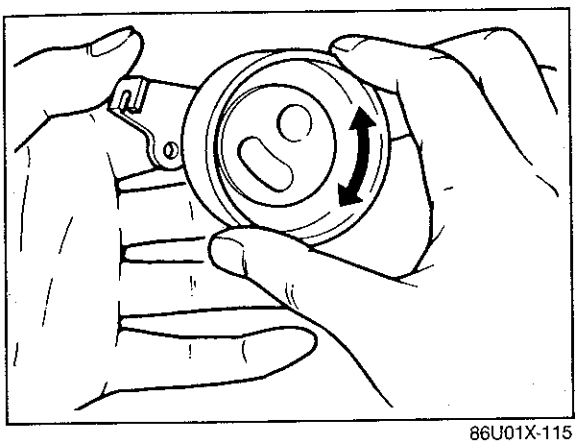
86U01X-113

Timing Belt
1. Replace the timing belt if there is any oil or grease on it.
2. Check the timing belt for damage, wear, peeling, cracks, or hardening. Replace if necessary.



86U01X-114

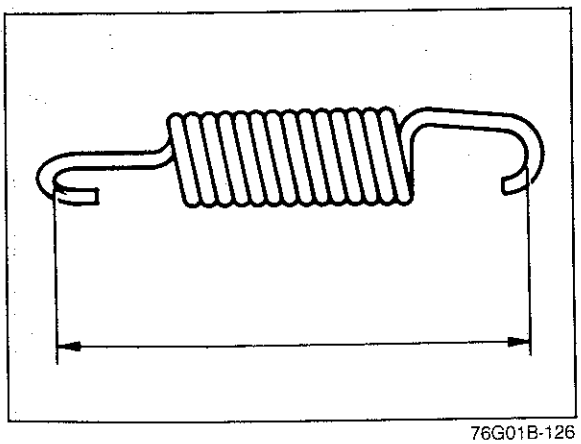
Caution
a) Never forcefully twist, turn inside out, or bend the timing belt.
b) Be careful not to allow oil or grease on the belt.



86U01X-115

Timing Belt Tensioner and Idler Pulley
Check the timing belt tensioner and idler pulley for smooth rotation and abnormal noise. Replace if necessary.

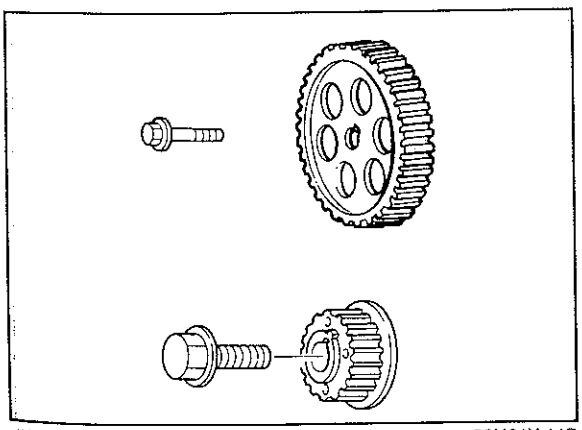
Caution
Do not clean the tensioner with cleaning fluids. If necessary, use a soft rag to wipe it clean, and avoid scratching it.



76G01B-126

Timing Belt Tensioner Spring
Check the free length of the tensioner spring. Replace if necessary.

Free length: 53.3 mm (2.098 in)



86U01X-117

Timing Belt Pulley and Camshaft Pulley
Inspect the pulley teeth for wear, deformation, or other damage. Replace if necessary.

Caution
Do not clean the pulley with cleaning fluids. If necessary, use a rag to wipe it clean.

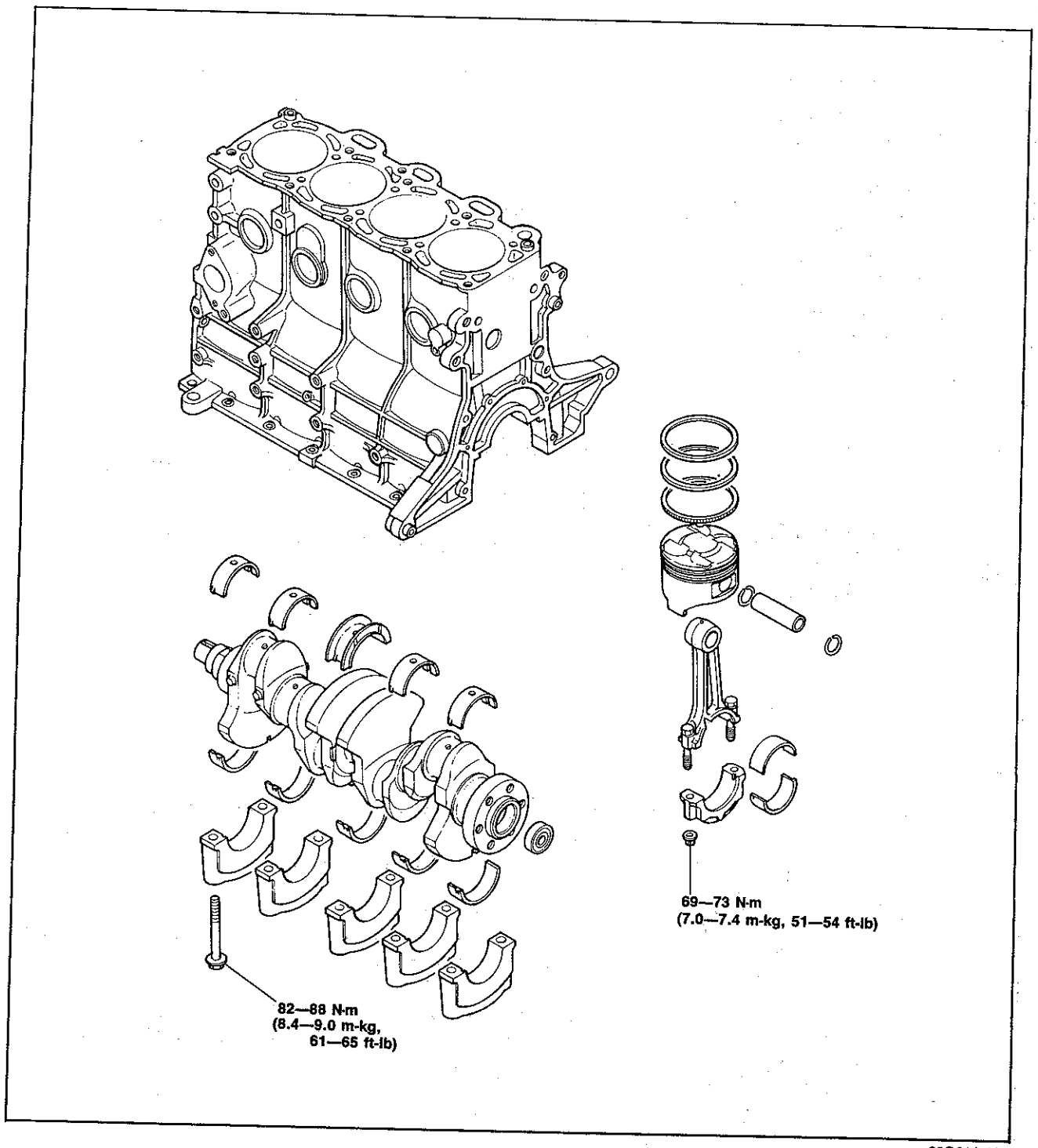
Timing Belt Cover (lower and upper)
Inspect the timing belt covers for damage or cracks. Replace if necessary.

ASSEMBLY

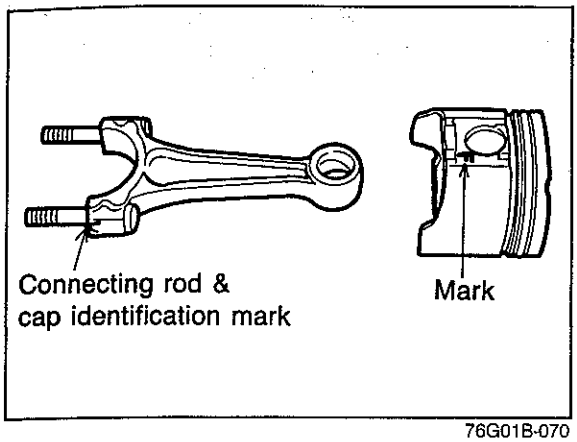
1. Clean all parts before reinstallation.
2. Apply new engine oil to all sliding and rotating parts.
3. Replace plain bearings if they are peeling, burned, or otherwise damaged.
4. Tighten all bolts and nuts to the specified torques.

Caution
Do not reuse gaskets or oil seals.

CYLINDER BLOCK—I
Torque Specifications



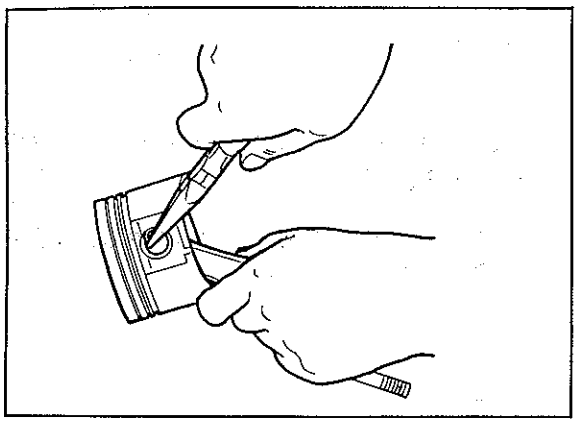
69G01A-139



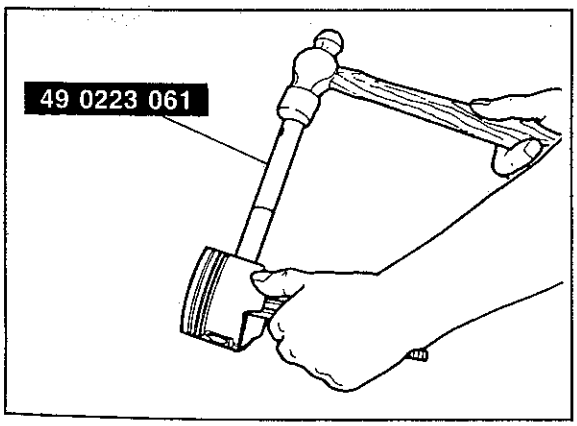
76G01B-070

Connecting Rod

1. Align the identification mark to the cap of large end of connecting rod and **F** mark on the piston as shown in the figure.
2. Apply a coat of engine oil to the circumference of each piston pin and to the small end of each connecting rod.

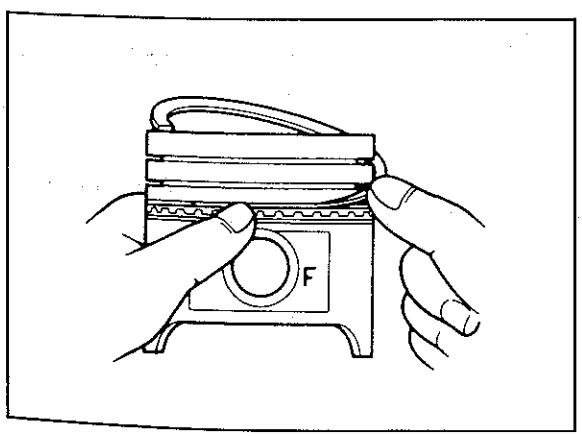

76G01B-071

3. Set a clip into the clip groove in one side of the piston.



76G01B-072

4. Insert the piston pin into the piston and connecting rod from the opposite side of the piston with the **SST** .
5. Tap the piston pin in until it touchs the clip. Install the other clip into the groove in the piston.
6. Check the oscillation torque of the connecting rod. (Refer to page 1B—33.)



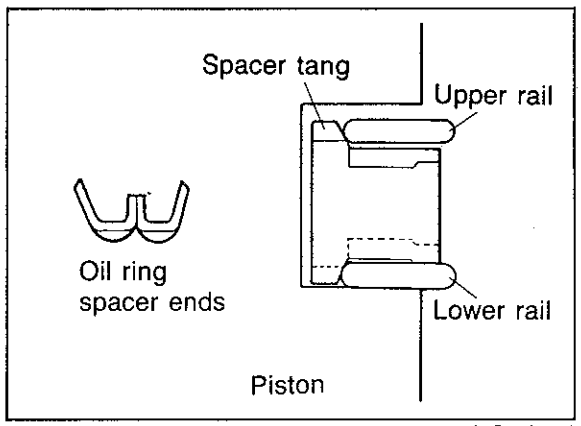
69G01A-144

Piston Ring

1. Install the three-piece oil rings on the pistons.
   (1) Apply engine oil to the oil ring spacer and rails.
   (2) Install the oil ring spacer so that the opening faces upward.
   (3) Install the upper rail and lower rail.

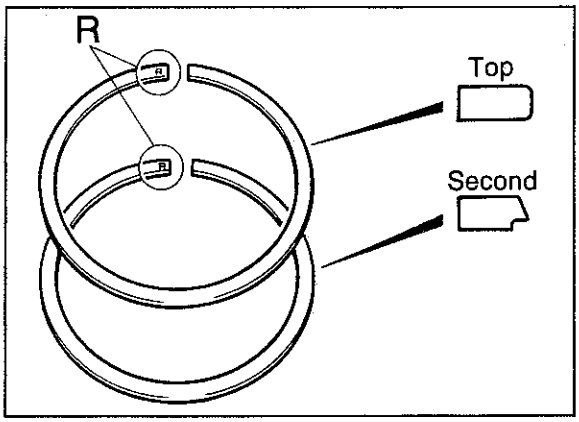
Note

a) The upper rail and lower rail are the same.
b) Each rail can be installed with either face upward.



69G01A-145

2. Check that both rails are expanded by the spacer tangs as shown in the figure by checking that both rails turn smoothly in both directions.

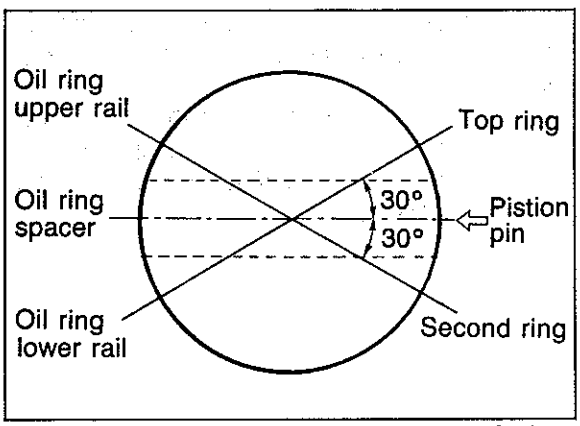


86U01X-121

3. Install the second ring to the piston first, then install the top ring. Use a piston ring expander.

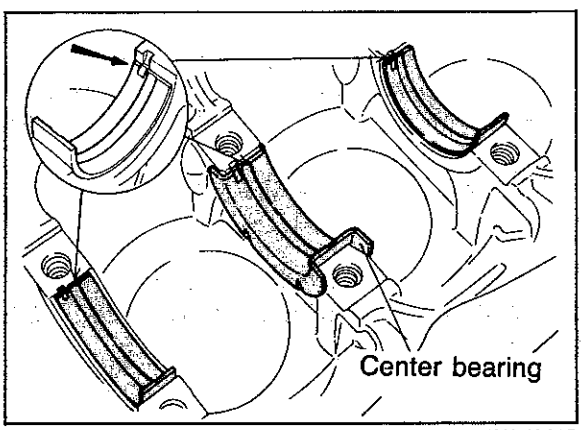
Caution
The rings must be installed with the "R" marks facing upward.

4. Apply a liberal amount of clean engine oil to the second and top piston rings.



69G01A-147

5. Position the opening of each ring as shown in the figure.

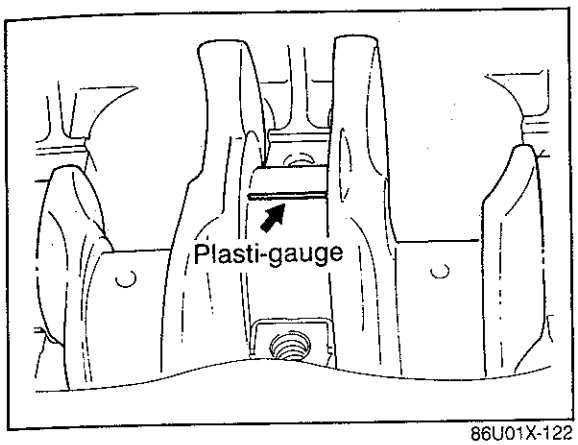


86U01X-215

Crankshaft

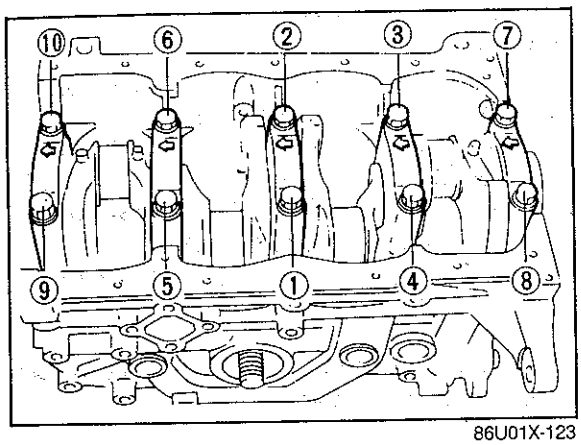
1. Before installing the crankshaft, inspect the main bearing oil clearances as described.

Note
The bearing with thrust shoulders is the center bearing in the cylinder block.



86U01X-122

Oil clearance inspection
(1) Remove any foreign material and oil from the journals and bearings.
(2) Install the upper main bearings in the cylinder block.
(3) Set the crankshaft into the cylinder block.
(4) Position the plasti-gauge on top of the journals in the axial direction.

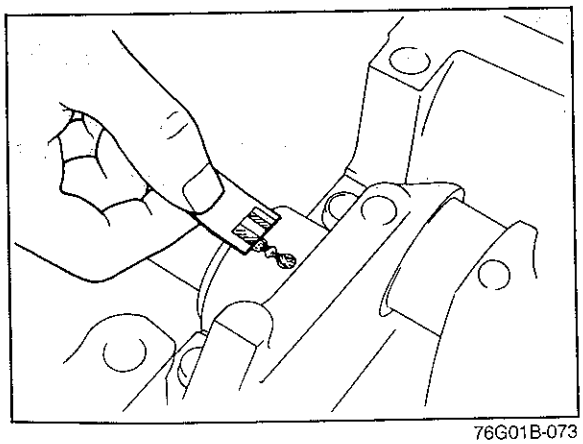


86U01X-123

(5) Install the main bearing caps along with the lower main bearings according to the cap number and ⬅ mark.
(6) Tighten the caps in two or three steps in the order in the figure.

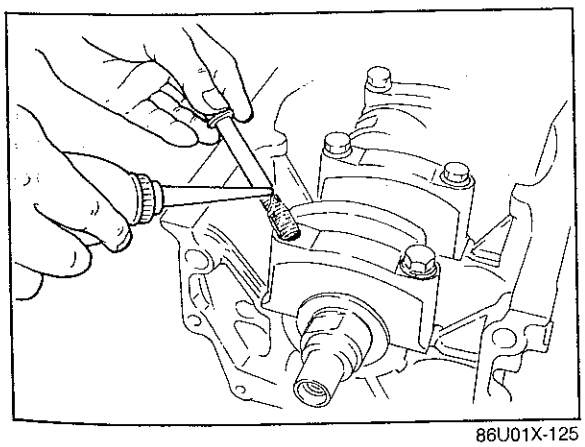
Tightening torque:
82—88 N·m (8.4—9.0 m-kg, 61—65 ft-lb)

Caution
Do not rotate the crankshaft when measuring the oil clearances.

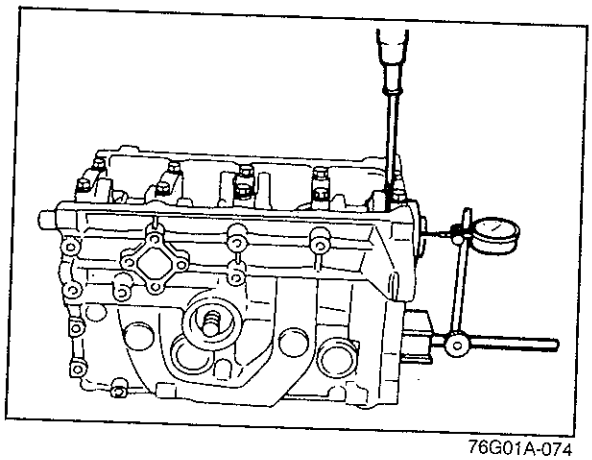

76G01B-073

(7) Remove the main bearing caps, and measure the plasti-gauge at each journal at the widest point for the smallest clearance, and at the narrowest point for the largest clearance.
If the oil clearance exceeds specification, grind the crankshaft and use undersize main bearings. (Refer to page 1B—45.)

Oil clearance
No. 1, 2, 4, 5:
0.025—0.043 mm (0.0010—0.0017 in)
No. 3:
0.031—0.049 mm (0.0012—0.0019 in)
Maximum: 0.08 mm (0.0031 in)


86U01X-125

2. Apply a liberal amount of engine oil to the main bearings and main journals.
3. Install the crankshaft and the main bearing caps according to the cap number and ⬅ mark.

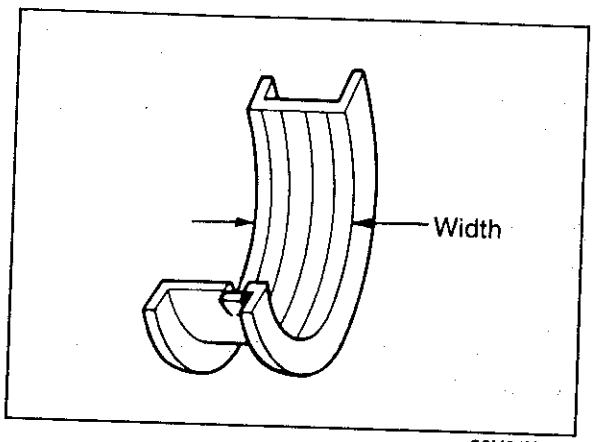


76G01A-074

4. Inspect the crankshaft end play.

End play:
0.08—0.18 mm (0.0031—0.0071 mm)
Maximum: 0.30 mm (0.012 in)

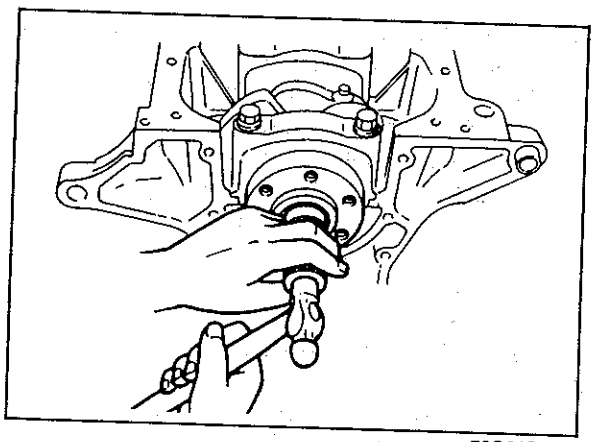
5. If the end play exceeds specification, grind the crankshaft and use undersize center main bearing.



86U01X-216

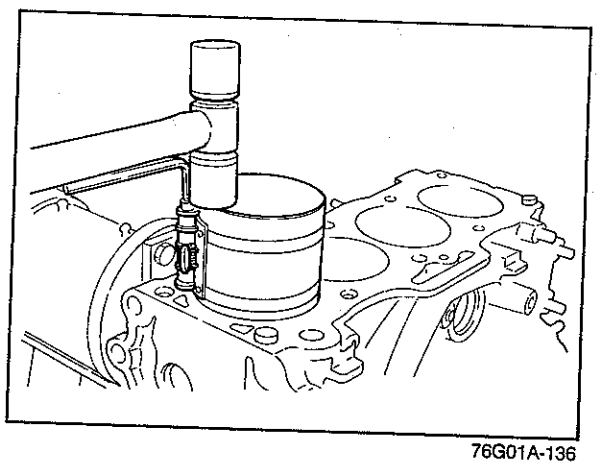
Center main bearing width
Standard:
27.94—27.99 mm (1.1000—1.1020 in)
0.25 mm (0.010 in) undersize:
28.04—28.09 mm (1.1040—1.1059 in)
0.50 mm (0.020 in) undersize:
28.12—28.17 mm (1.1071—1.1091 in)
0.75 mm (0.030 in) undersize:
28.20—28.25 mm (1.1102—1.1122 in)

Note
Wider thrust width is available only in undersize center main bearing.



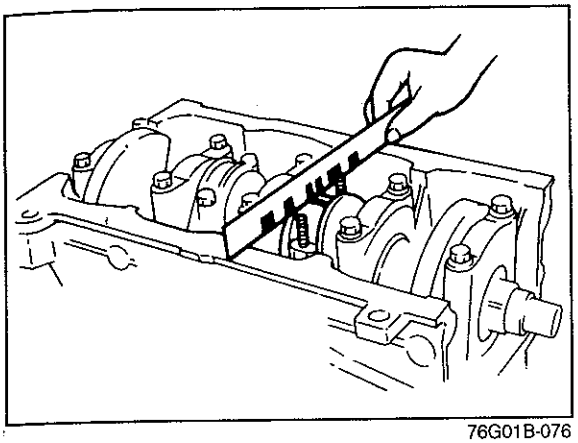
76G01B-075

Pilot Bearing
1. Apply engine oil to the outer circumference of the bearing.
2. Set a piece of pipe (outer diameter 30—34 mm, 1.18—1.34 in) against the outer race of the bearing, then tap it evenly into the crankshaft.
3. Lubricate the bearing with grease.



76G01A-136

Piston and Connecting Rod Assembly
1. Apply a liberal amount of clean engine oil to the cylinder walls, piston, and rings.
2. Check the piston rings for the end gap alignment.
3. Insert each piston assembly into the cylinder block with the **F** mark facing the front of the engine. Use a piston installer tool (commercially available).



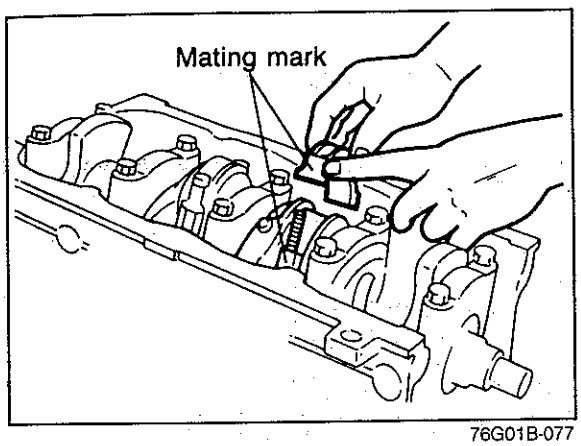
76G01B-076

Connecting Rod Cap

1. Check the connecting rod bearing clearances using the same procedure as used for the main bearing oil clearance.

Connecting rod cap tightening torque:
69—73 N·m (7.0—7.4 m-kg, 51—54 ft-lb)

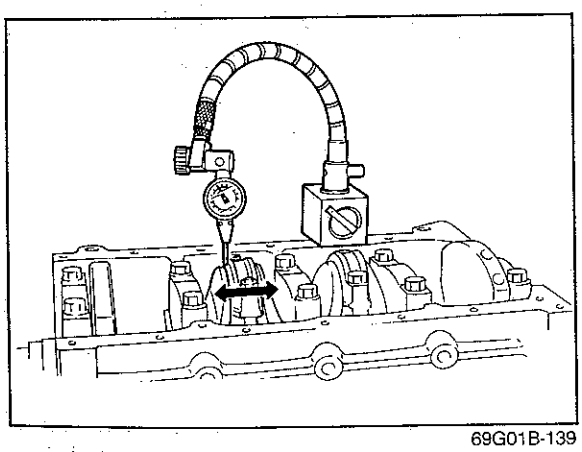
Oil clearance:
0.027—0.067 mm (0.0011—0.0026 in)
Maximum: 0.10 mm (0.0039 in)



76G01B-077

Caution
Align the alignment marks on the cap and on the connecting rod when installing the connecting rod cap.

2. If the oil clearance exceeds specification grind the crankshaft and use undersize bearings. (Refer to page 1B—46.)

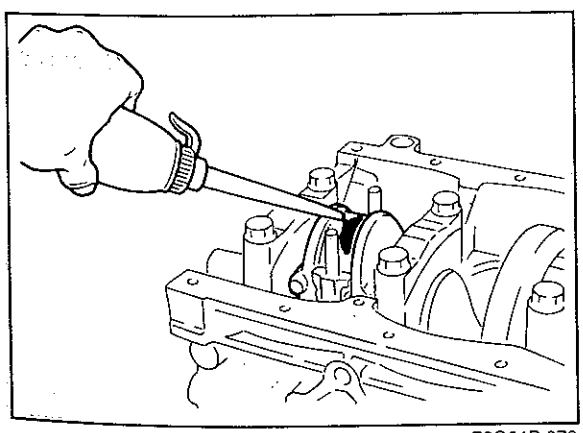


69G01B-139

3. Check the side clearance of each connecting rod without the cap installed.

Side clearance:
0.110—0.262 mm (0.004—0.0103 in)
Maximum: 0.30 mm (0.012 in)

If the clearance exceeds the maximum, replace the connecting rod.

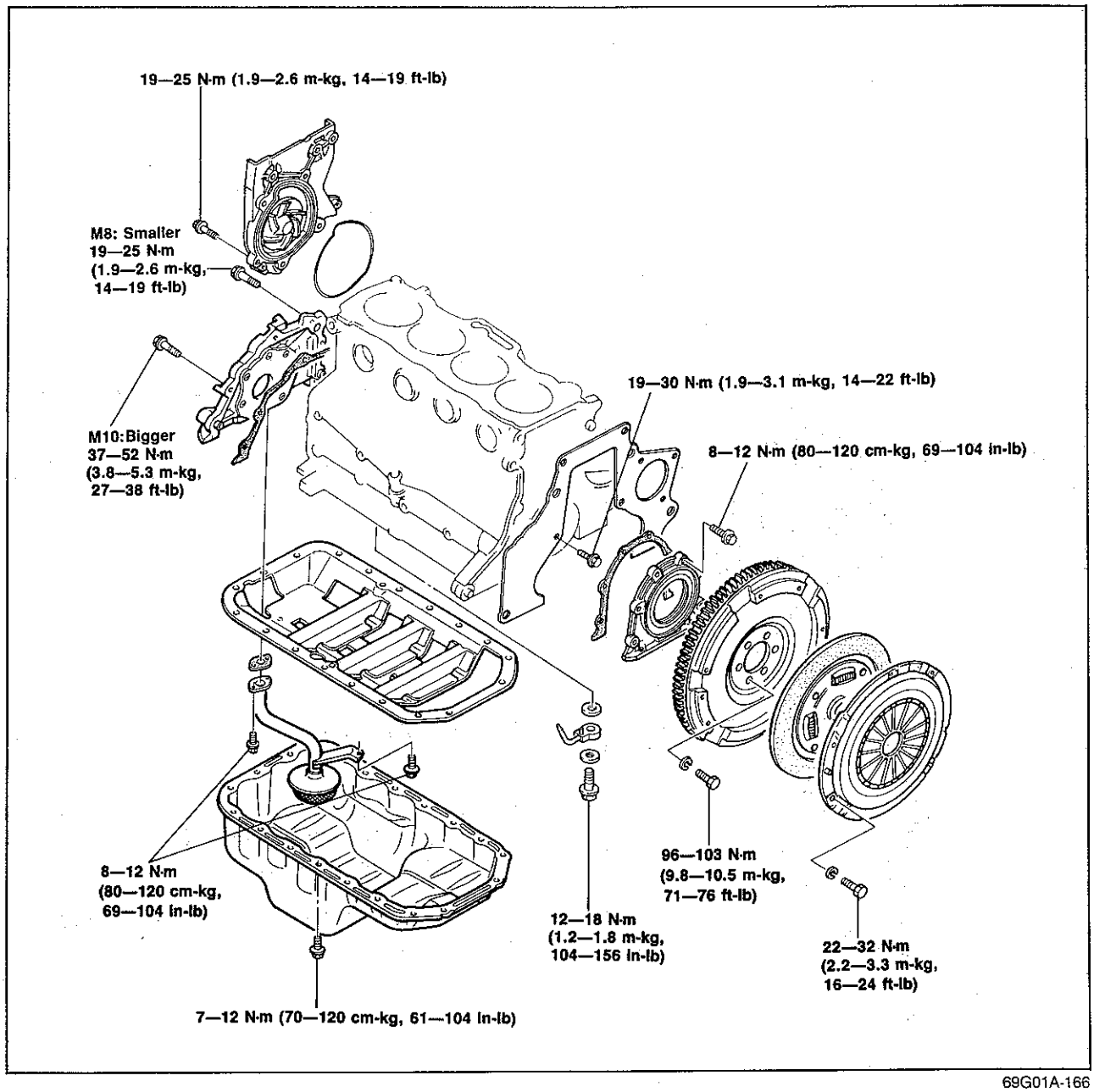


76G01B-078

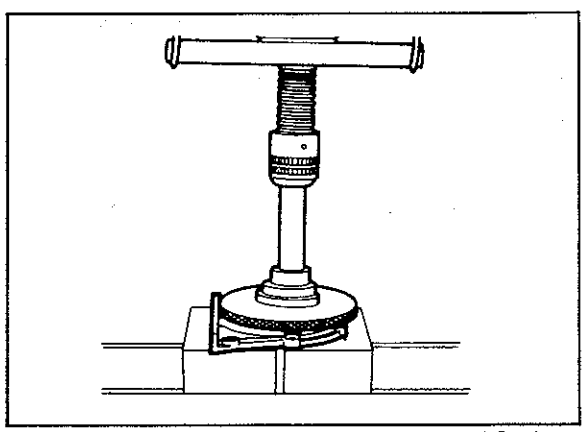
4. Apply a liberal amount of engine oil to the crankpin journal and connecting rod bearing.
5. Install the connecting rod cap with the alignment marks aligned.

Tightening torque:
69—73 N·m (7.0—7.4 m-kg, 51—54 ft-lb)

CYLINDER BLOCK—II
Torque Specifications



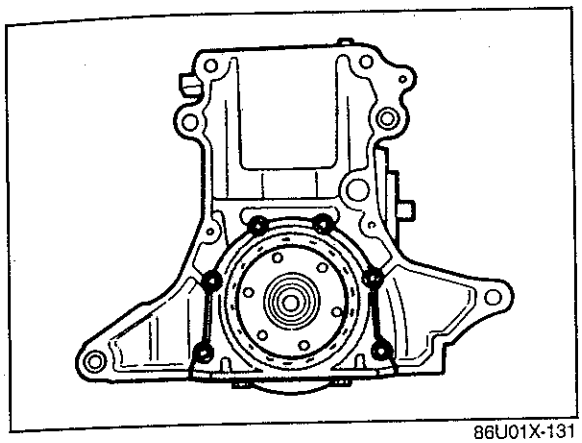
69G01A-166



4BG01A-158

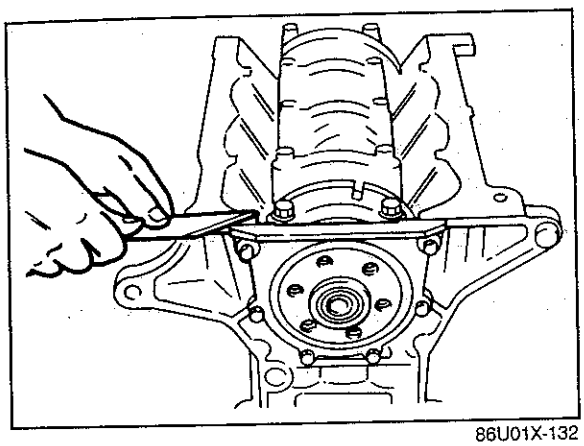
Rear Cover

1. Apply engine oil to the rear cover, oil seal and oil seal lip.
2. Press the oil seal into the rear cover.


86U01X-131

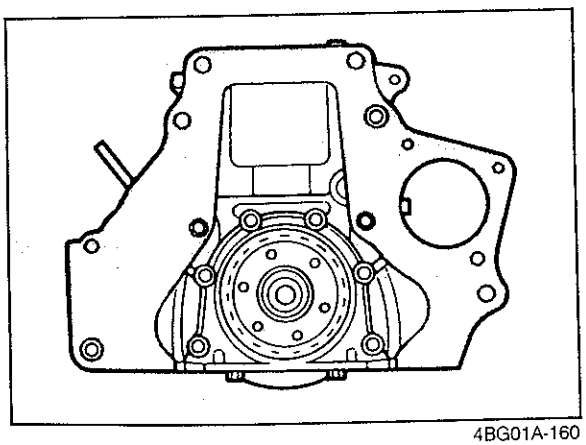
3. Install the rear cover and a new gasket.

Tightening torque:
8—12 N·m (80—120 cm-kg, 69—104 in-lb)


86U01X-132

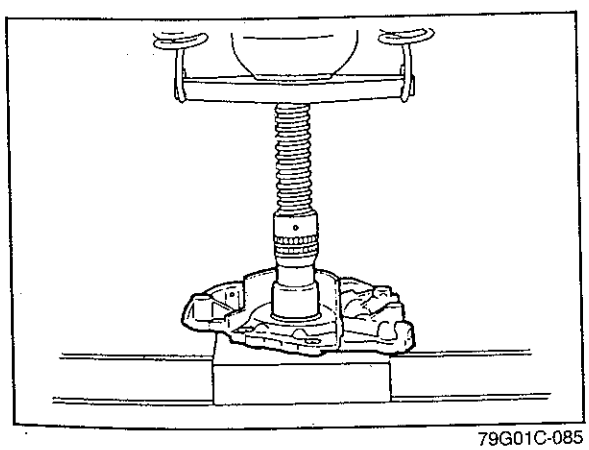
4. Cut away the portion of the gasket that projects out from the rear cover assembly toward the oil pan side.

Caution
Do not scratch the rear cover assembly.

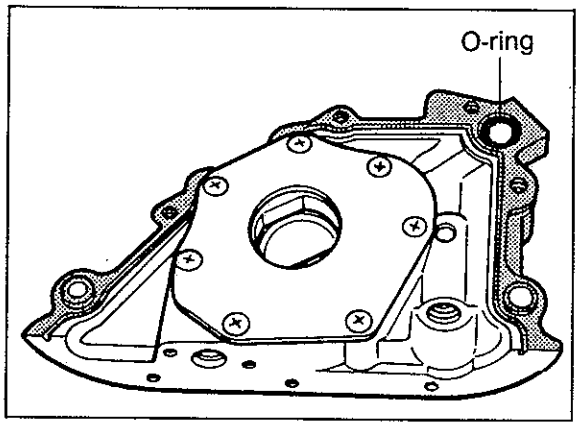

4BG01A-160

End Plate
Install the end plate.

Tightening torque:
19—30 N·m (1.9—3.1 m-kg, 14—22 ft-lb)


79G01C-085

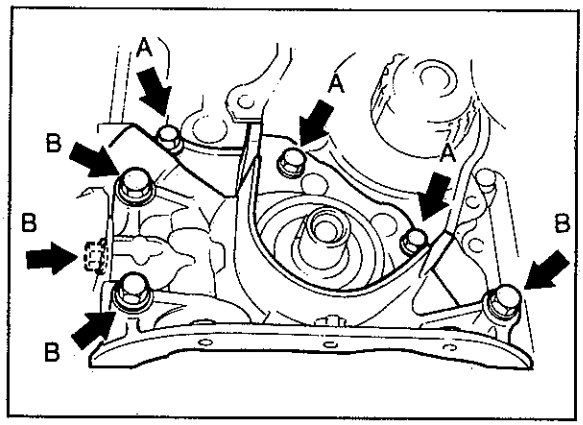
Oil Pump
1. Apply engine oil to a new oil pump oil seal and the oil pump body.
2. Press the oil seal into the oil pump body.



86U01X-133

3. Apply engine oil to the oil seal lip.
4. Remove any dirt or other material from the contact surfaces.
5. Apply a continuos bead of silicon sealant to the contact surface of the oil pump.

Caution
Do not allow any sealant to get into the oil hole.

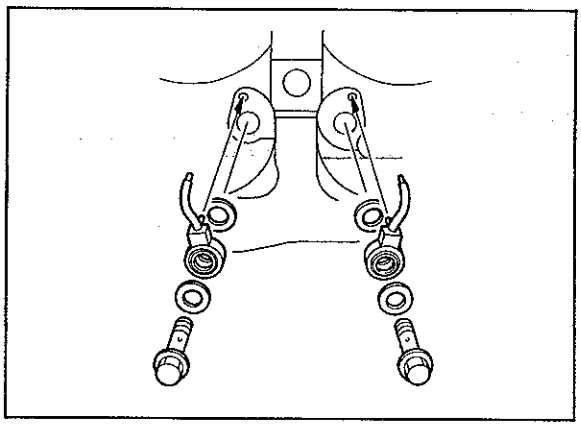


76G01A-137

6. Install a new O-ring into the pump body.
7. Install the oil pump.

Tightening torque
Ⓐ: 19—25 N·m
(1.9—2.6 m-kg, 14—19 ft-lb)
Ⓑ: 37—52 N·m
(3.8—5.3 m-kg, 27—38 ft-lb)

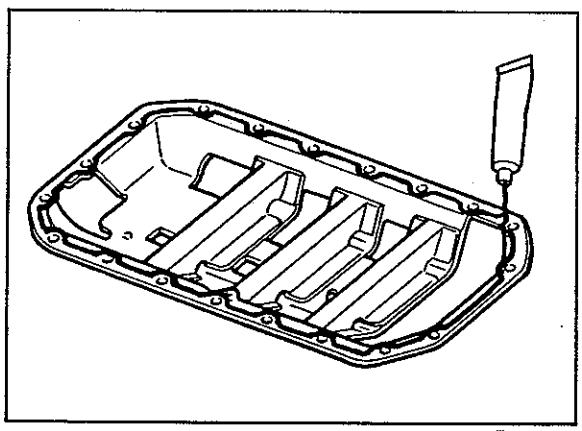
8. Remove any sealant which has been squeezed out.


76G01B-079

Oil Jet
Install the oil jet as shown in the figure.

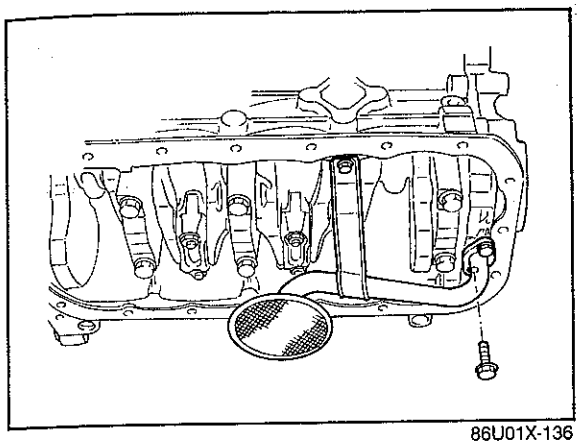
Tightening torque: 12—18 N·m
(1.2—1.8 m-kg, 104—156 in-lb)

Caution
The shapes of the No.1, 3 cylinders jet valves and No.2, 4 jet valves are different.


76F01B-019

Stiffener
1. Remove any dirt of other material from the contact surface.
2. Apply a continuous bead of silicon sealant to the stiffener along the inside of the bolt holes, and overlap the ends.
3. Install the stiffener.

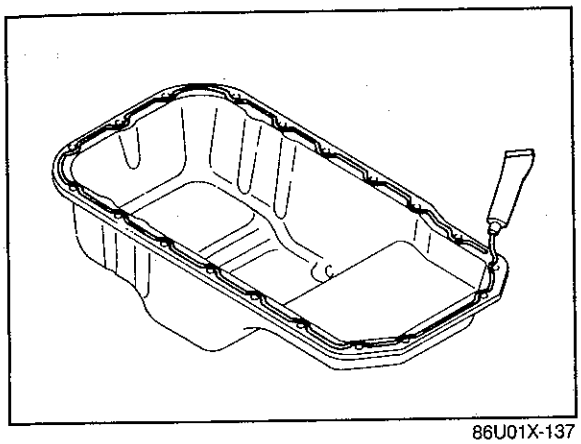
Tightening torque:
7—12 N·m (70—120 cm-kg, 61—104 in-lb)



86U01X-136

Oil Strainer
Install the oil strainer and a new gasket.

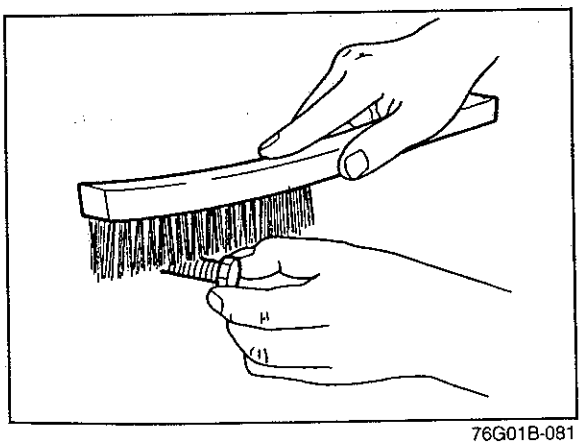
Tightening torque:
8—12 N·m (80—120 cm-kg, 69—104 in-lb)



86U01X-137

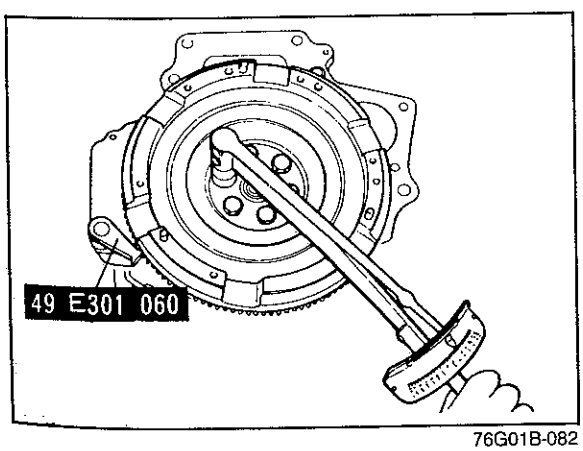
Oil Pan
1. Apply a continuous bead of silicon sealant to the oil pan along the inside of the bolt holes, and overlap the ends.
2. Install the oil pan.

Tightening torque:
7—12 N·m (70—120 cm-kg, 61—104 in-lb)



76G01B-081

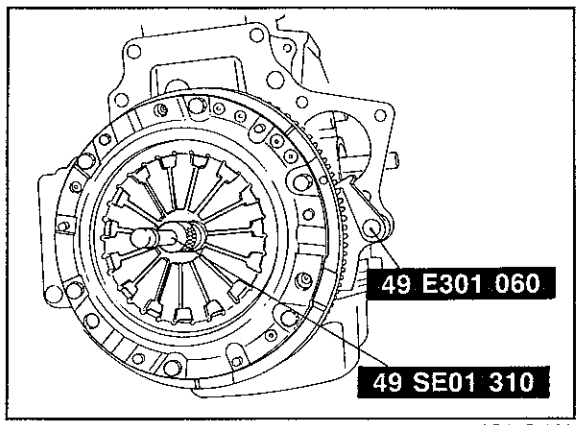
Flywheel
1. Remove any old sealant from the bolts and bolt holes. If old sealant can not be removed from the bolt, replace it.
2. Apply sealant to the bolt threads.



76G01B-082

3. Install, and tighten the flywheel with the **SST**.

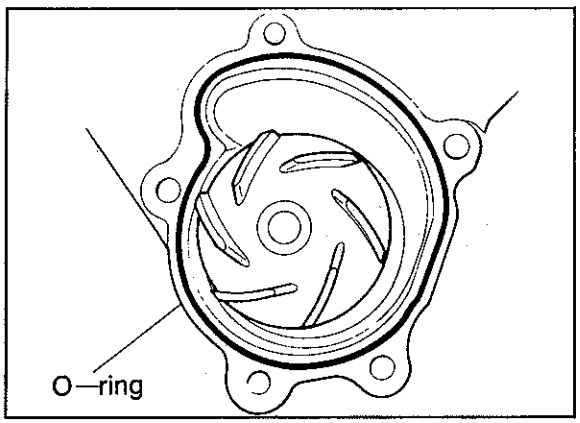
Tightening torque:
96—103 N·m (9.8—10.5 m-kg, 71—76 ft-lb)



76G01B-083

Clutch Disc and Clutch Cover
Install the clutch disc and clutch cover using the **SST**. (Refer to Section 6.)

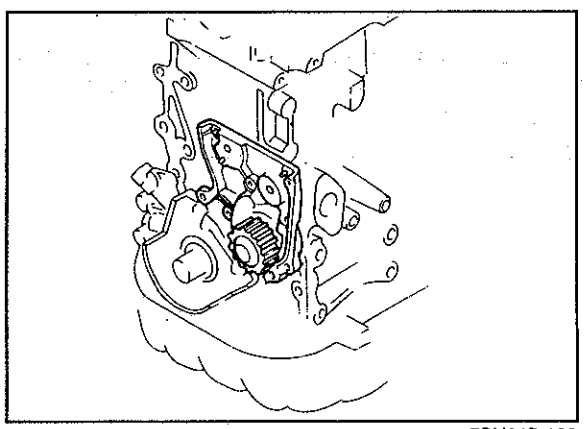
Tightening torque:
22—32 N·m (2.2—3.3 m-kg, 16—24 ft-lb)



86U01X-142

Water Pump
1. Remove all dirt, grease, and other material from the water pump mounting surface.
2. Place a new O-ring in position.

Caution
Do not reuse the original O-ring.

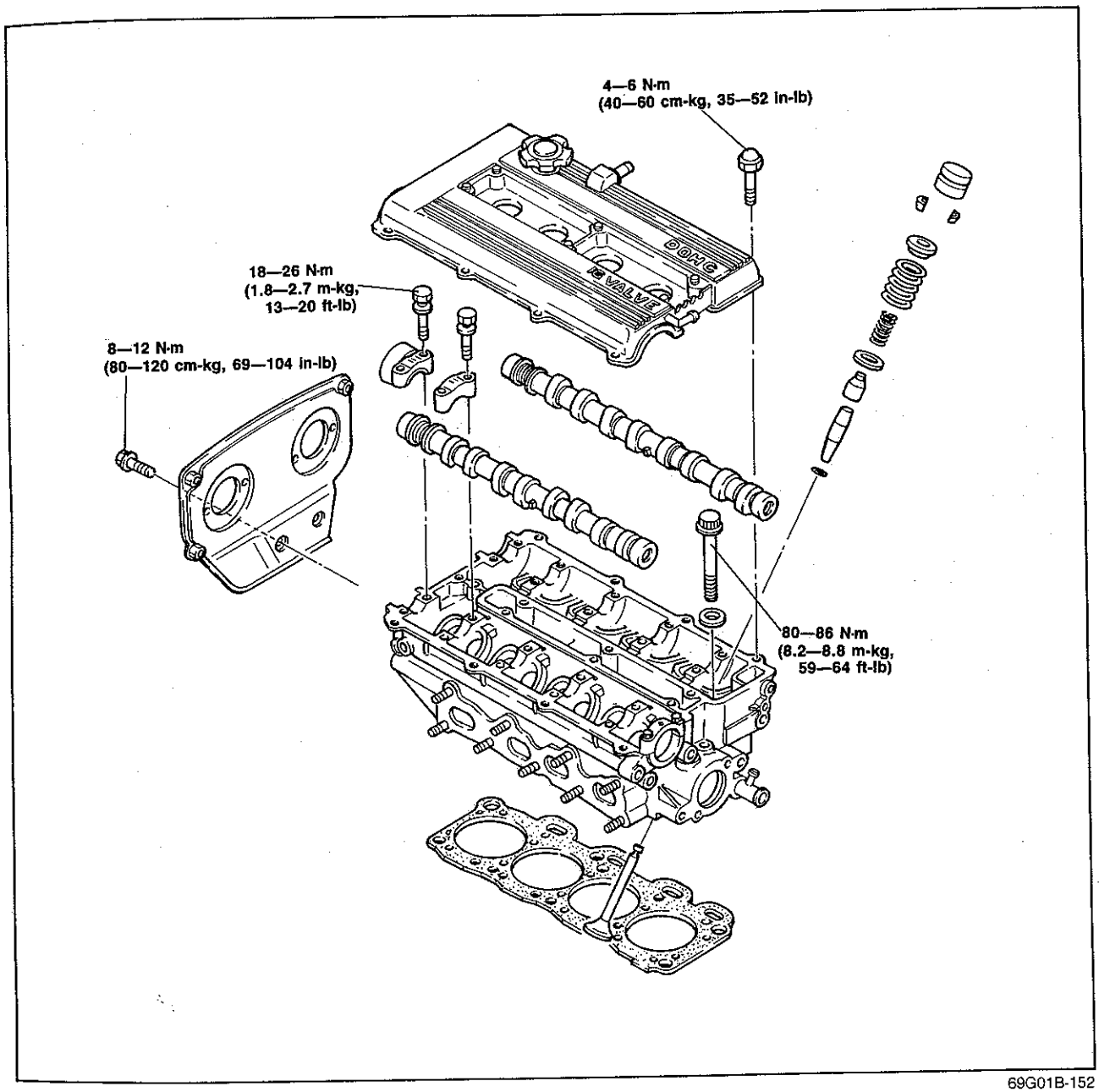


7BU01B-103

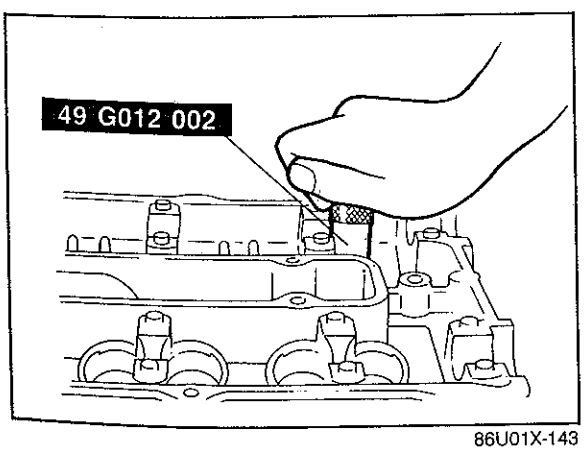
3. Install the water pump.

Tightening torque:
19—25 N·m (1.9—2.6 m-kg, 14—19 ft-lb)

CYLINDER HEAD
Torque Specifications



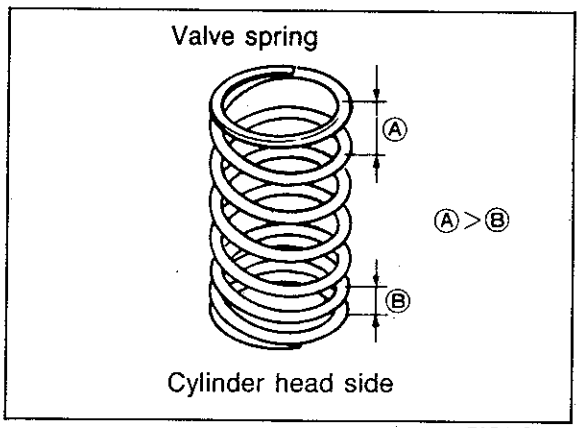
69G01B-152



86U01X-143

Valve Seal

1. Apply engine oil to the inside of the new valve seal.
2. Install the valve seal onto the valve guide with the **SST**.

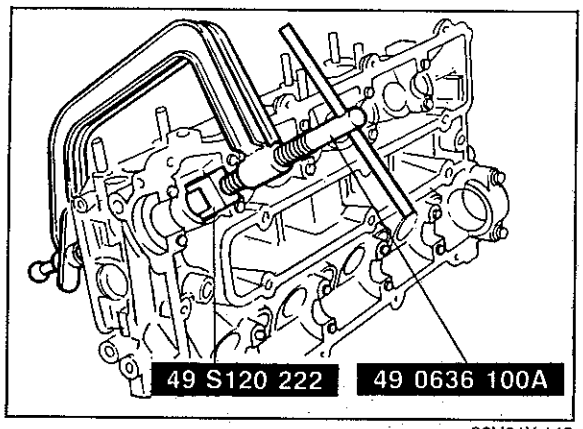


76G01B-084

Valve and Valve Spring

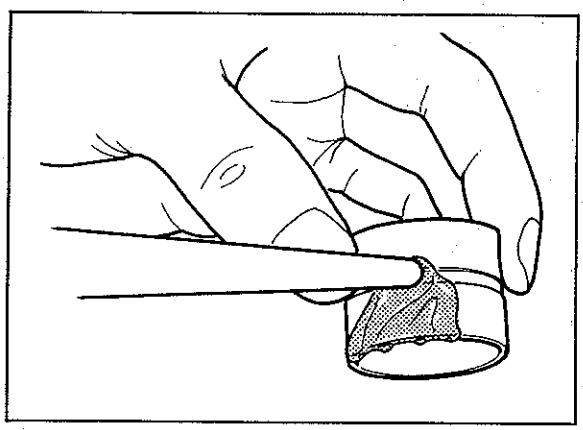
1. Install the lower spring seat.
2. Install the valve.
3. Install the valve springs and the upper spring seat.

Note
Install the outer and inner valve spring with the closer pitch toward the cylinder head.



86U01X-145

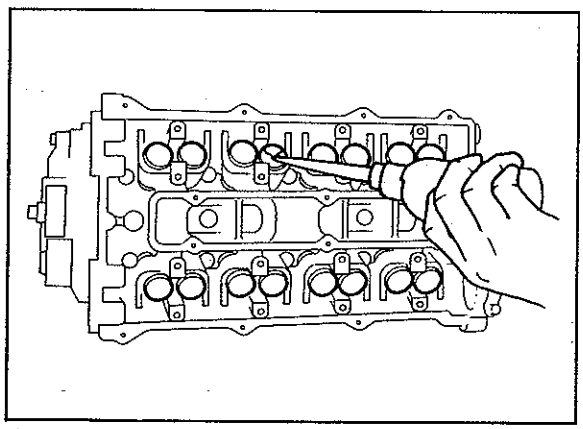
4. Compress the valve spring with the **SST**; then install the valve keepers.
5. Tap the end of the valve stem lightly two or three times with a plastic hammer to confirm that the keepers are all fully seated.



76G01B-085

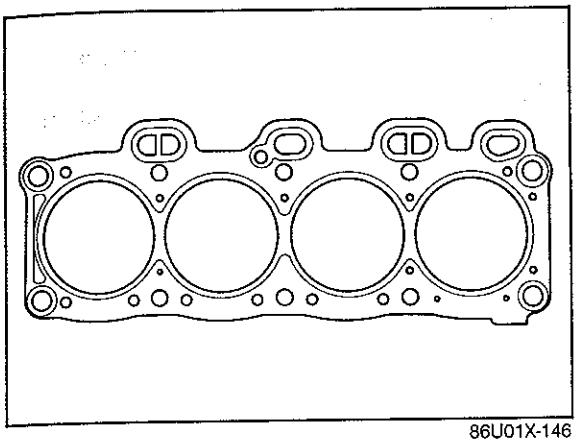
Hydraulic Lash Adjuster (HLA)

1. Apply engine oil to the sliding surface.



76G01B-086

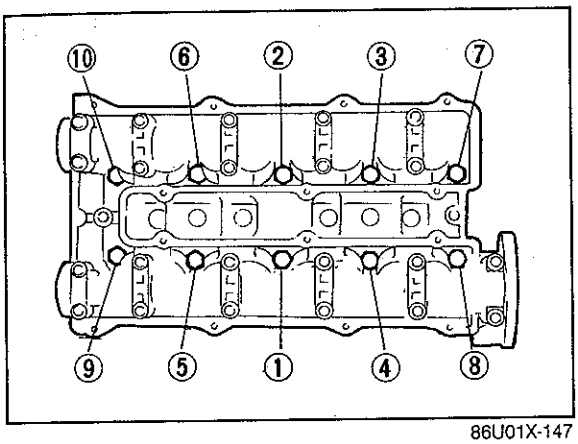
2. Install the HLA in the position from which they were removed.
3. Check for free movement.



86U01X-146

Cylinder Head

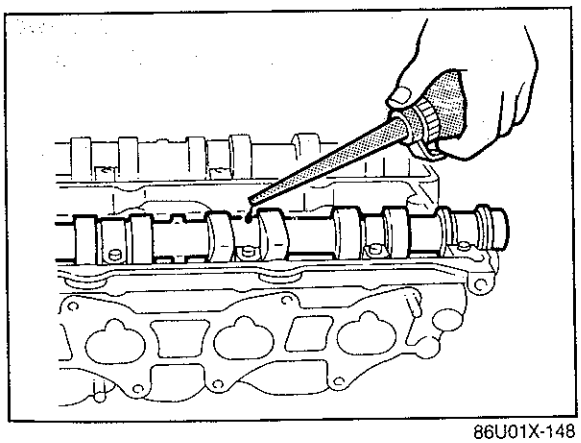
1. Thoroughly remove all dirt, oil, or other material from the top of the cylinder block.
2. Place the new cylinder head gasket in position.



86U01X-147

3. Install the cylinder head.
4. Apply engine oil to the bolt threads and seat faces.
5. Tighten the cylinder head bolts in two or three steps in the order shown in the figure.

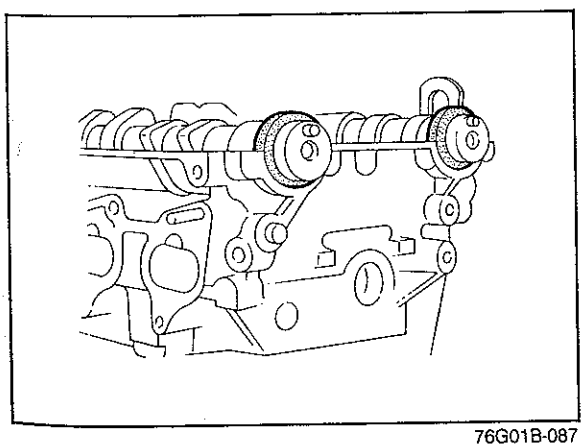
Tightening torque:
80—86 N·m (8.2—8.8 m-kg, 59—64 ft-lb)



86U01X-148

Camshaft

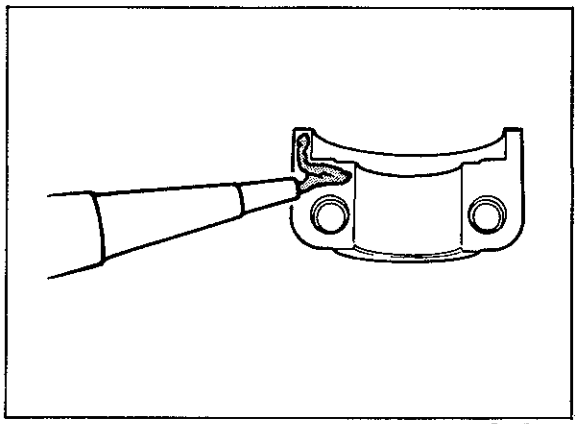
1. Apply a liberal amount of engine oil to the journals and bearings.
2. Place the camshaft in position with the dowel pin facing straight up.



76G01B-087

Camshaft Oil Seal

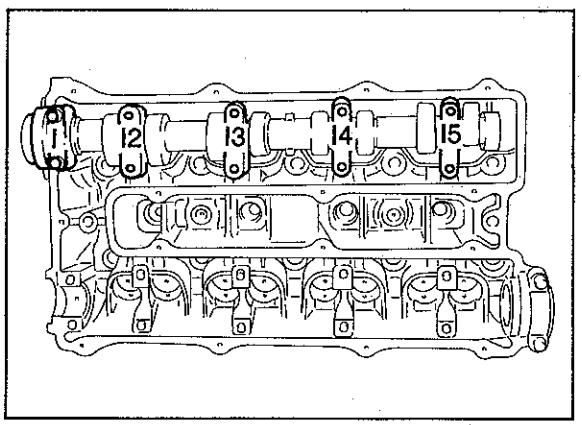
1. Apply liberal amount of clean engine oil to the camshaft oil seal and cylinder head.
2. Install the camshaft oil seal.



76G01B-088

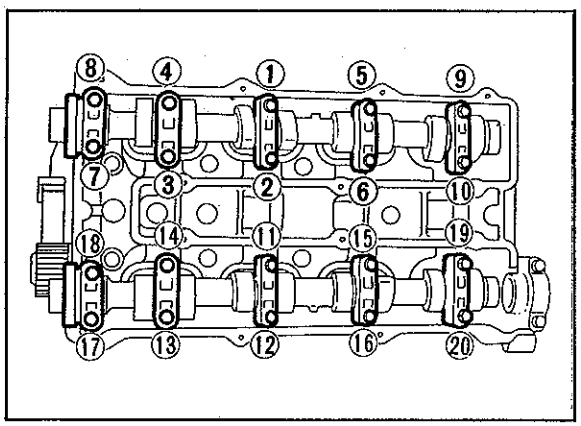
Camshaft Cap

1. Apply liberal amount of clean engine oil to the cam lobes and journals.
2. Apply silicon sealant to the front camshaft cap surface.



76G01B-089

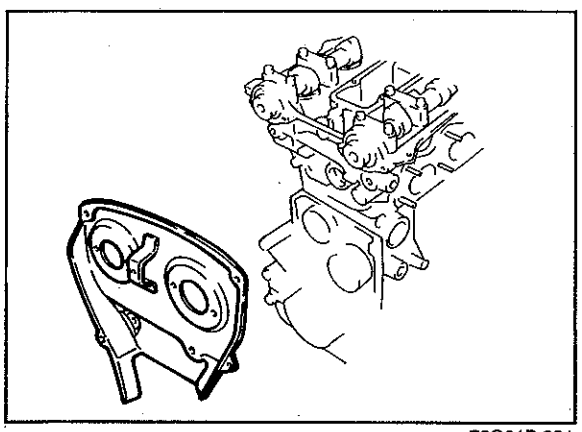
3. Position the camshaft caps according to the cap number and mark.



76G01B-090

4. Install the camshaft caps. Tighten the bolts in two or three steps in the order shown in the figure.

Tightening torque:
18—26 N·m (1.8—2.7 m-kg, 13—20 ft-lb)

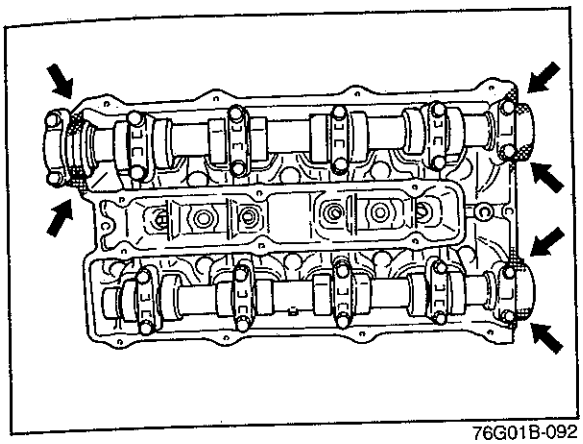


76G01B-091

Seal Plate

Install the seal plate.

Tightening torque:
8—12 N·m (80—120 cm-kg, 69—104 in-lb)

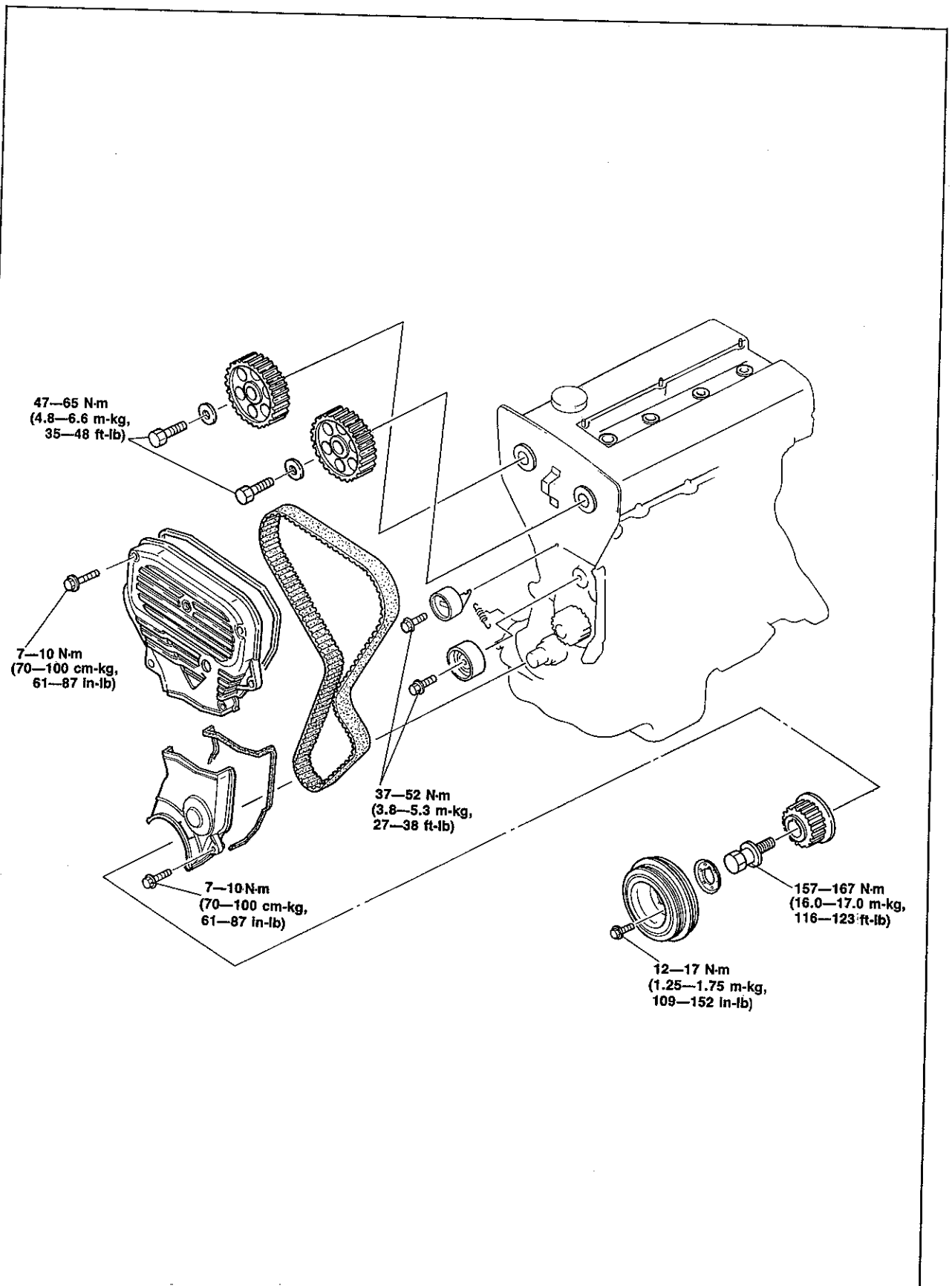

76G01B-092

Cylinder Head Cover

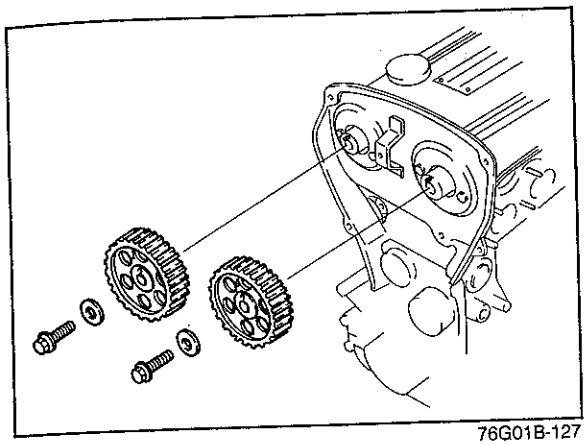
1. Apply silicon sealant to the shaded area shown in the figure.
2. Install the cylinder head cover.

Tightening torque:
4—6 N·m (40—60 cm-kg, 35—52 in-lb)

TIMING BELT
Torque Specifications

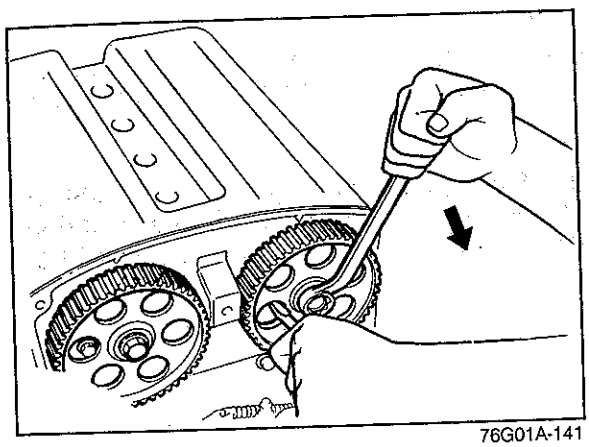


69G01B-160


76G01B-127

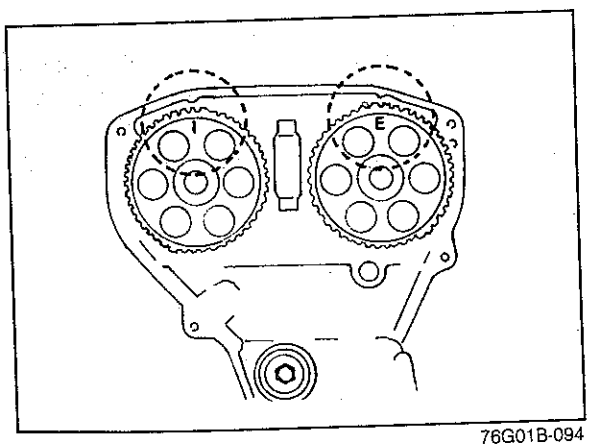
Camshaft Pulley

1. Install the camshaft pulley on the camshaft with the dowel pin fit into the hole at the **I** mark (intake side) and **E** mark (exhanst side).


76G01A-141

2. Tighten the camshaft pulley lock bolt.

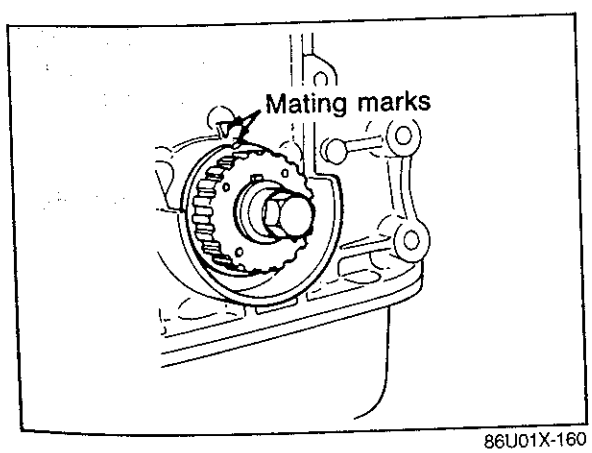
Tightening torque:
47—65 N·m (4.8—6.6 m-kg, 35—48 ft-lb)



76G01B-094

3. Align the mating mark on the camshaft pulleys with the alignment mark on the seal plate.

Note
For intake side camshaft pulley, align "I" mark.
For exhanst side camshaft pulley, align "E" mark.



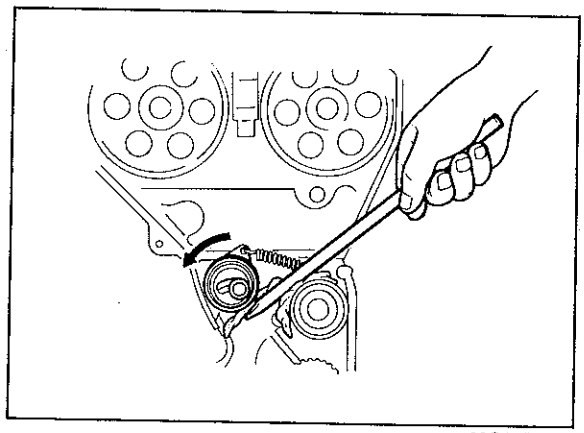
86U01X-160

Timing Belt Pulley

1. Reverse the direction of the **SST** (ring gear brake).
2. Install the crankshaft key.
3. Install the timing belt pulley on the crankshaft.

Tightening torque: 157—167 N·m
(16.0—17.0 m-kg, 116—123 ft-lb)

4. Release the ring gear brake.
5. Align the timing belt pulley and the pump body alignment marks.

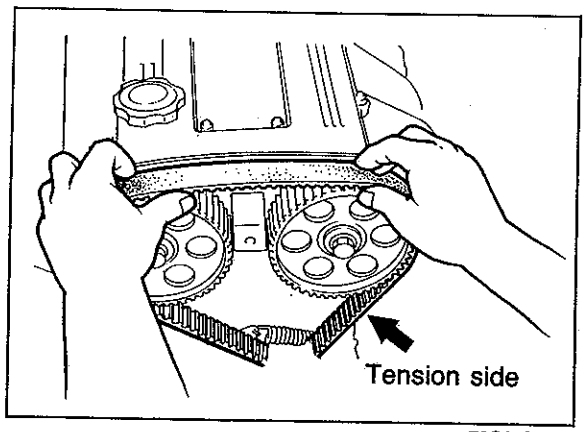


69G01B-165

Timing Belt Idler Pulley
Install the timing belt idler pulley.

Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)

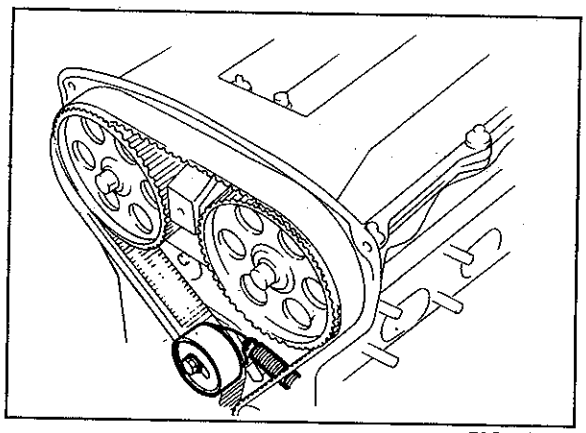
Timing Belt Tensioner
1. Install the timing belt tensioner and tensioner spring.
2. Tentatively secure the tensioner with the spring fully extended.



76G01B-095

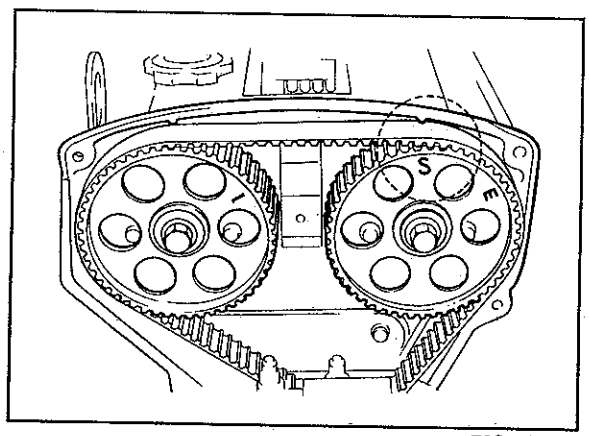
Timing Belt
1. Install the timing belt so that there is no looseness at the tension side, and at the two camshaft pulleys.

Caution
a) If the timing belt is being reused, it must be reinstalled to rotate in the original direction.
b) Check that there is no oil, grease, or dirt on the timing belt.



79G01C-097

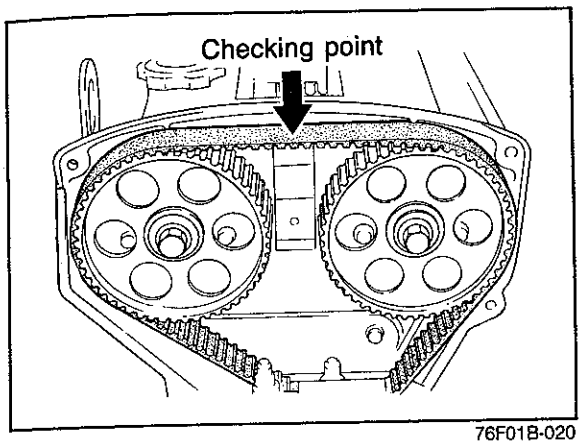
2. Loosen the tensioner lock bolt.
3. Turn the crankshaft twice in the direction of rotation.
4. Check that the mating marks are correctly aligned. If not aligned, remove the timing belt and tensioner, and repeat the above-mentioned procedure.



76G01B-096

5. Turn the crankshaft to align the **S** mark of the right side camshaft pulley with seal plate mating mark.
6. Tighten the timing belt tensioner lock bolt.

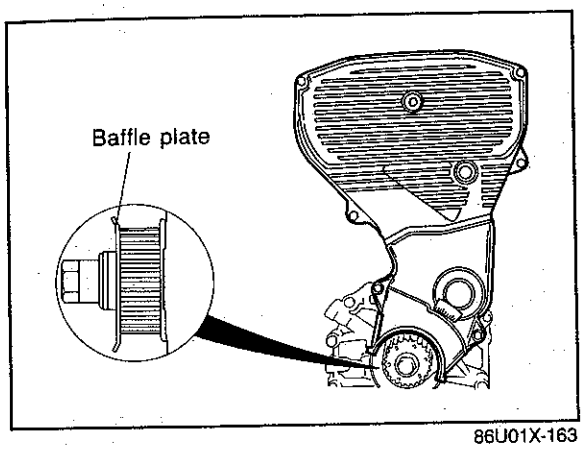
Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)



76F01B-020

7. Then turn the crankshaft and align the mating marks. Check the timing belt deflection. If the deflection is not correct, loosen the tensioner lock bolt and repeat steps 3—5 above. Replace the tensioner spring if necessary.

Belt deflection (98 N, 10 kg, 22 lb)
New : 8.5—9.5 mm (0.33—0.37 in)
Used: 9.0—10.0 mm (0.35—0.39 in)

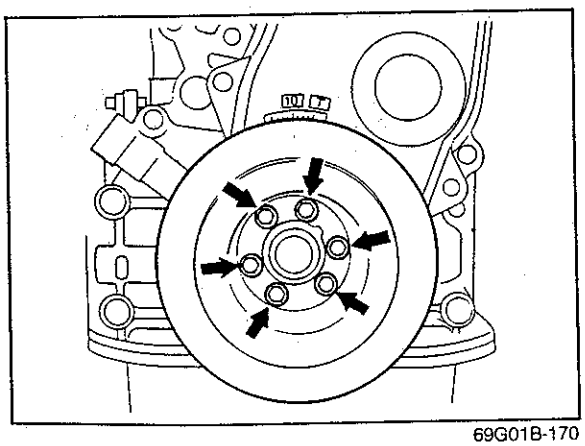


86U01X-163

Baffle Plate
Position the baffle plate on the timing belt pulley.

Timing Belt Cover
Install the lower timing belt cover, upper timing belt cover, and new gaskets.

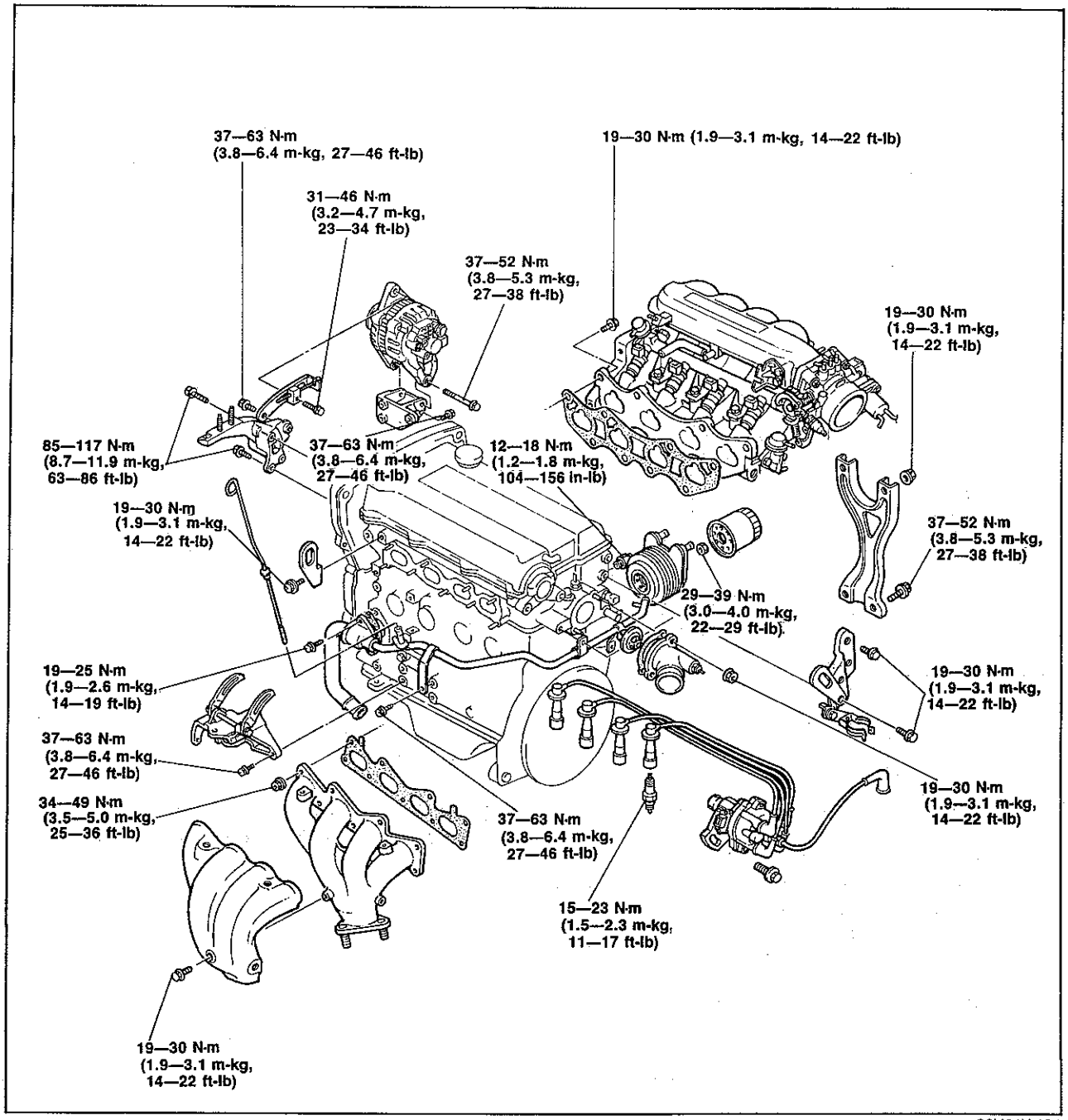
Tightening torque:
7—10 N·m (70—100 cm-kg, 61—87 in-lb)


69G01B-170

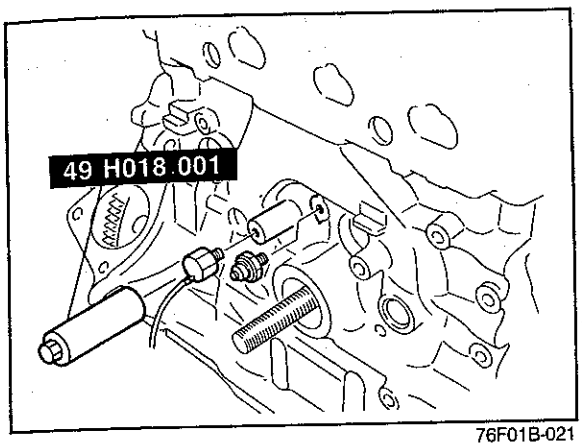
Crankshaft Pulley
Install the crankshaft pulley.

Tightening torque: 12—17 N·m
(1.25—1.75 m-kg, 109—152 in-lb)

AUXILIARY PARTS
Torque Specifications



86U01X-164



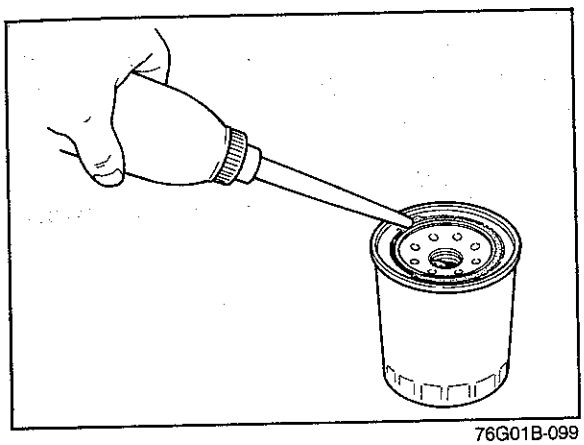
76F01B-021

Knock Sensor
Install the knock sensor with the **SST**.

Tightening torque:
20—34 N·m (2.0—3.5 m-kg, 14—25 ft-lb)

Oil Pressure Switch
Install the oil pressure switch.

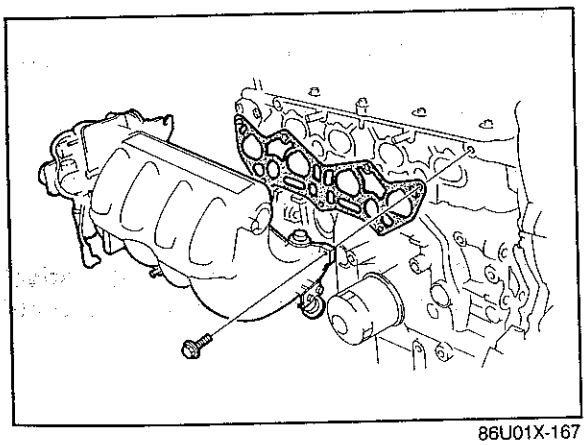
Tightening torque: 12—18 N·m
(1.2—1.8 m-kg, 104—156 in-lb)


76G01B-099

Oil Cooler
Install the oil cooler.

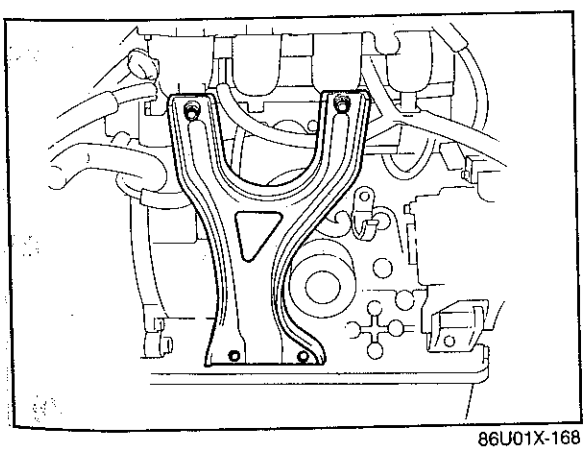
Tightening torque:
29—39 N·m (3.0—4.0 m-kg, 22—29 ft-lb)

Oil Filter
1. Apply a small amount of engine oil to the rubber seal of the new filter.
2. Install the oil filter and tighten it by hand until the rubber seal contacts the base.
3. Then tighten the filter 1 and 1/6 turn with a wrench.


86U01X-167

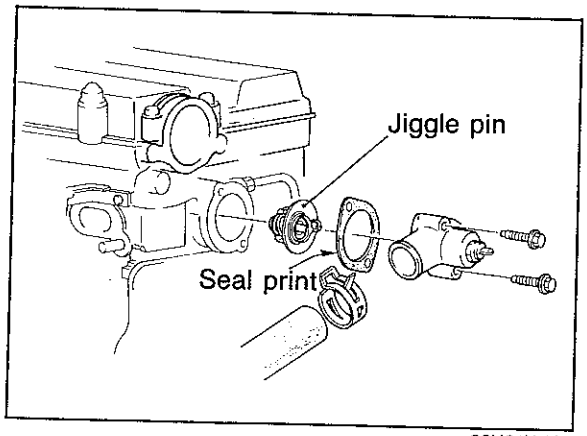
Intake Manifold Assembly
1. Place the new gasket in position.
2. Install the intake manifold assembly.
3. Tighten the nuts in two or three steps.

Tightening torque:
19—30 N·m (1.9—3.1 m-kg, 14—22 ft-lb)


86U01X-168

Intake Manifold Bracket
Install the intake manifold bracket.

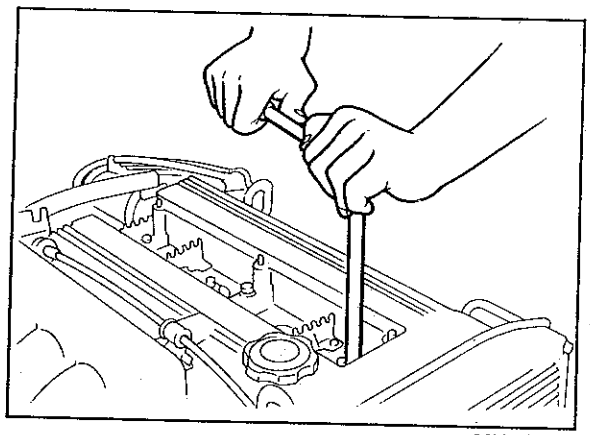
Tightening torque:
19—30 N·m (1.9—3.1 m-kg, 14—22 ft-lb)



86U01X-169

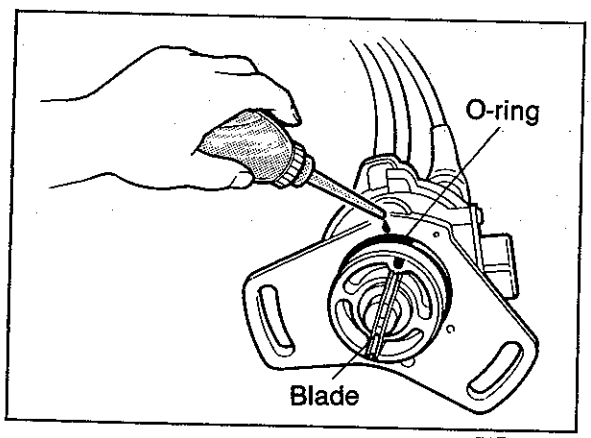
Thermostat and Thermostat Cover
1. Install the thermostat into the cylinder head with the jiggle pin at the top.
2. Position a new gasket with the printed side facing the cylinder head.
3. Install the thermostat cover.

Tightening torque:
19—30 N·m (1.9—3.1 m-kg, 14—22 ft-lb)


86U01X-219

Spark Plug
1. Apply anti-seize compound or molybdenum-based lubricant to the spark plug threads.
2. Install the spark plugs.

Tightening torque:
15—23 N·m (1.5—2.3 m-kg, 11—17 ft-lb)



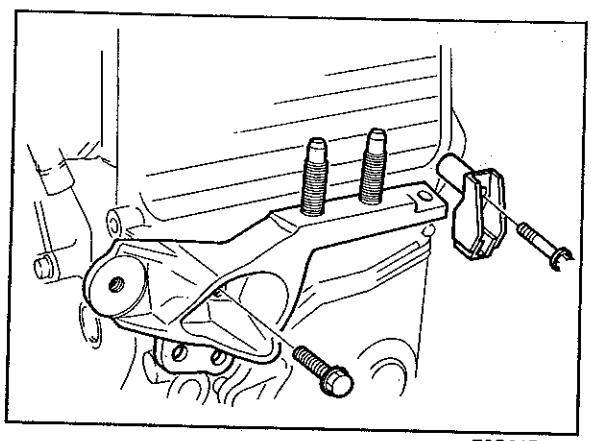
76F01B-022

Distributor
1. Apply engine oil to the O-ring, and position it on the distributor.
2. Apply engine oil to the blade.
3. Install the distributor.
4. Loosely tighten the distributor mounting bolt.

Note
The distributor blade and the distributor drive groove are offset to prevent mistake installation.

Center Cover
Install the center cover.

Tightening torque:
8—12 N·m (80—120 cm-kg, 69—104 in-lb)

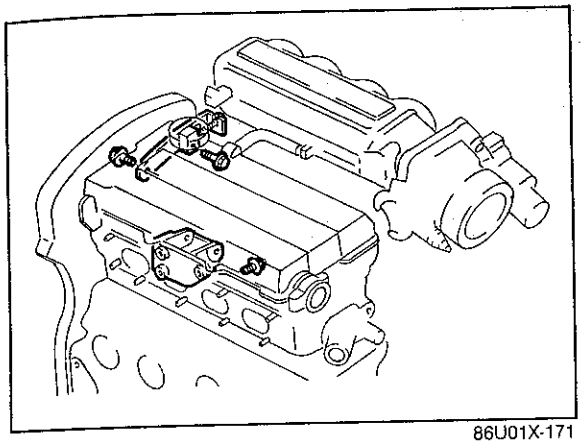

76G01B-101

Engine Mount Bracket
1. Install the engine mount bracket.

Tightening torque:
85—117 N·m (8.7—11.9 m-kg, 63—86 ft-lb)

2. Install the stay to the engine mount bracket.

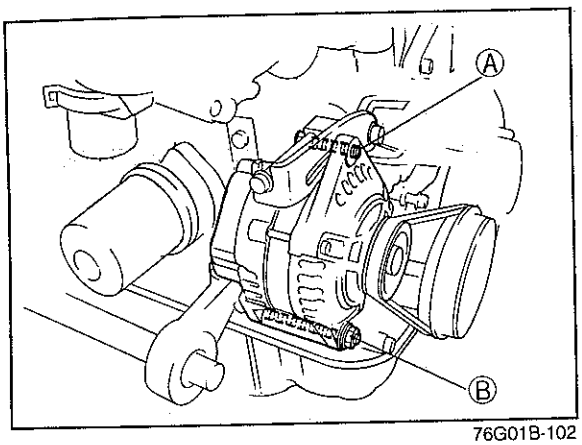
Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)


86U01X-171

Alternator

1. Install the alternator strap and bracket.

Tightening torque:
37—63 N·m (3.8—6.4 m-kg, 27—46 ft-lb)

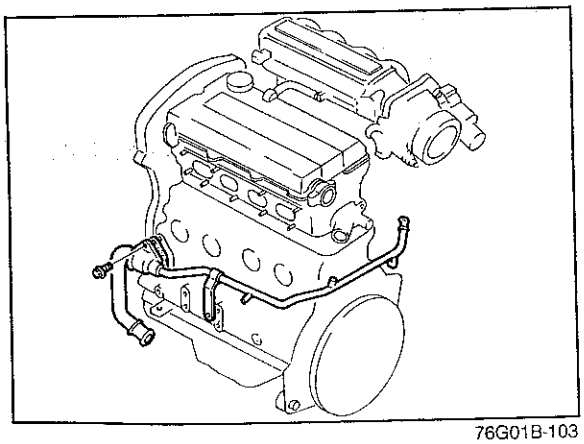


76G01B-102

2. Install the alternator.

Tightening torque
Ⓐ: 31—46 N·m
(3.2—4.7 m-kg, 23—34 ft-lb)
Ⓑ: 37—52 N·m
(3.8—5.3 m-kg, 27—38 ft-lb)

3. Install the alternator drive belt, and adjust the belt deflection. (Refer to page 1B—6.)


76G01B-103

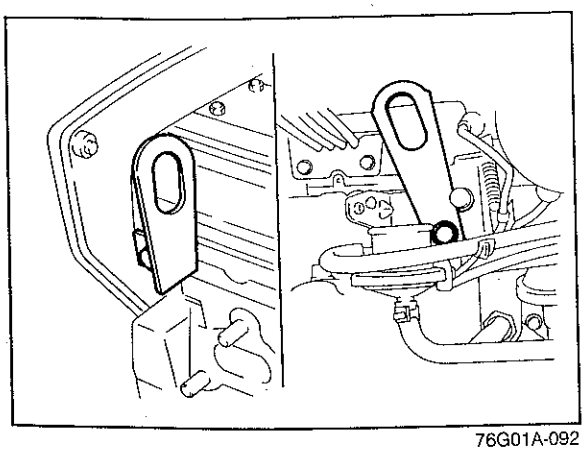
Coolant Inlet Pipe and Bypass Pipe

1. Install the coolant inlet pipe.

Tightening torque:
19—25 N·m (1.9—2.6 m-kg, 14—19 ft-lb)

2. Apply vegetable oil to the O-ring.
3. Install the coolant bypass pipe.

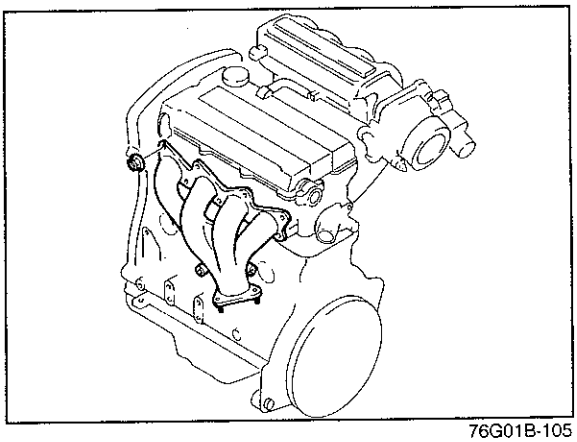
Tightening torque:
37—63 N·m (3.8—6.4 m-kg, 27—46 ft-lb)


76G01A-092

Engine Hanger

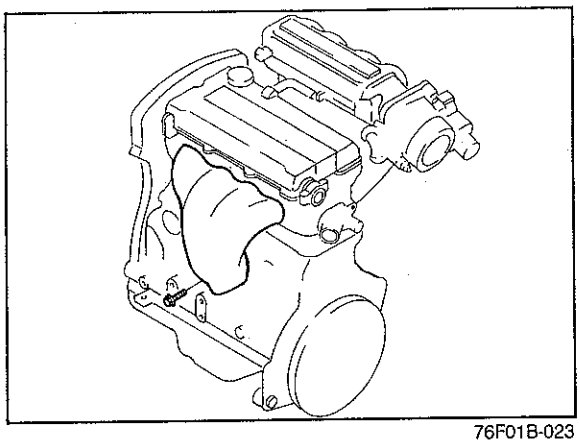
Install the front and rear engine hangers.

Tightening torque:
19—30 N·m (1.9—3.1 m-kg, 14—22 ft-lb)


76G01B-105

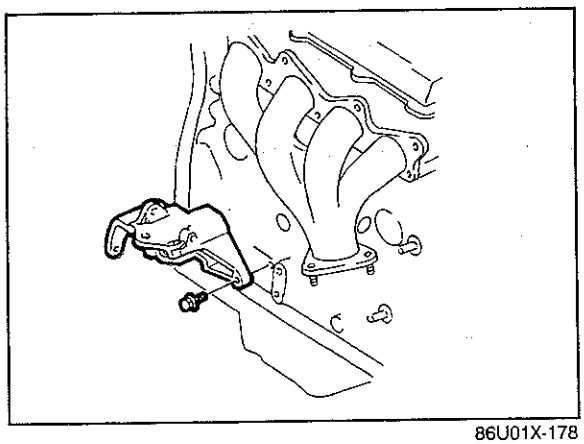
Exhaust Manifold Assembly
1. Place the new gaskets in position with the ridge facing the cylinder head.
2. Install the exhaust manifold assembly.
3. Tighten the nuts in two or three steps.

Tightening torque:
34—49 N·m (3.5—5.0 m-kg, 25—36 ft-lb)


76F01B-023

Exhaust Manifold Insulator
Install the exhaust manifold insulator.

Tightening torque:
19—30 N·m (1.9—3.1 m-kg, 14—22 ft-lb)


86U01X-178

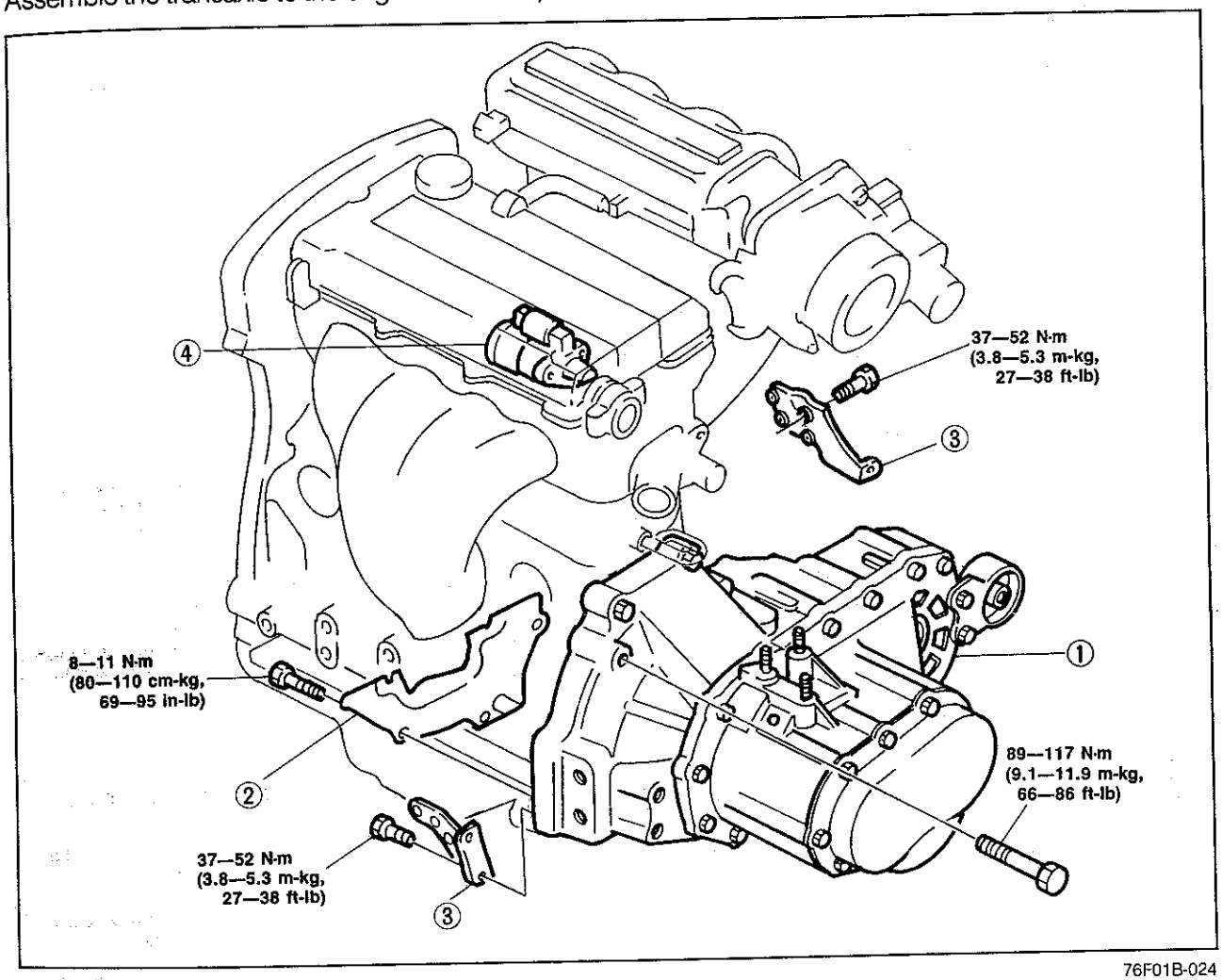
P/S Oil Pump Bracket
Install the P/S oil pump bracket.

Tightening torque:
37—63 N·m (3.8—6.4 m-kg, 27—46 ft-lb)

INSTALLATION

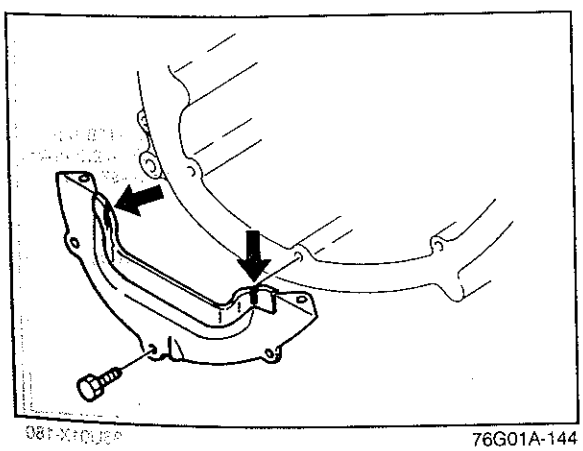
TRANSAXLE ASSEMBLY

Assemble the transaxle to the engine in the sequence shown in the figure referring to the installation note.



76F01B-024

1. Transaxle
2. Clutch under cover
3. Gusset plate
4. Starter



76G01A-144

Installation Note
Clutch under cover

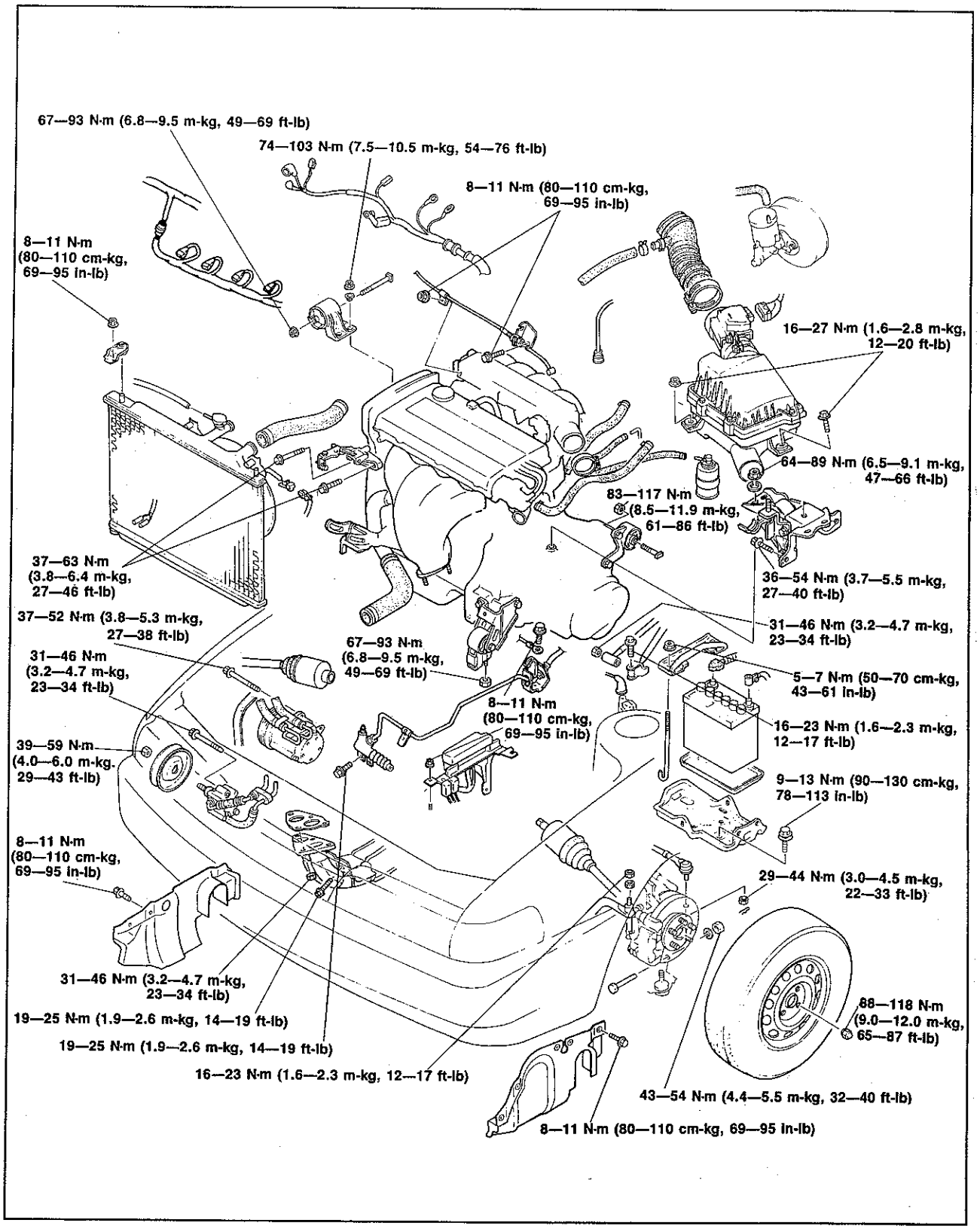
Before installation, fill the notches with silicon as shown in the figure.

ENGINE INSTALLATION

Install the engine and transaxle assembly.

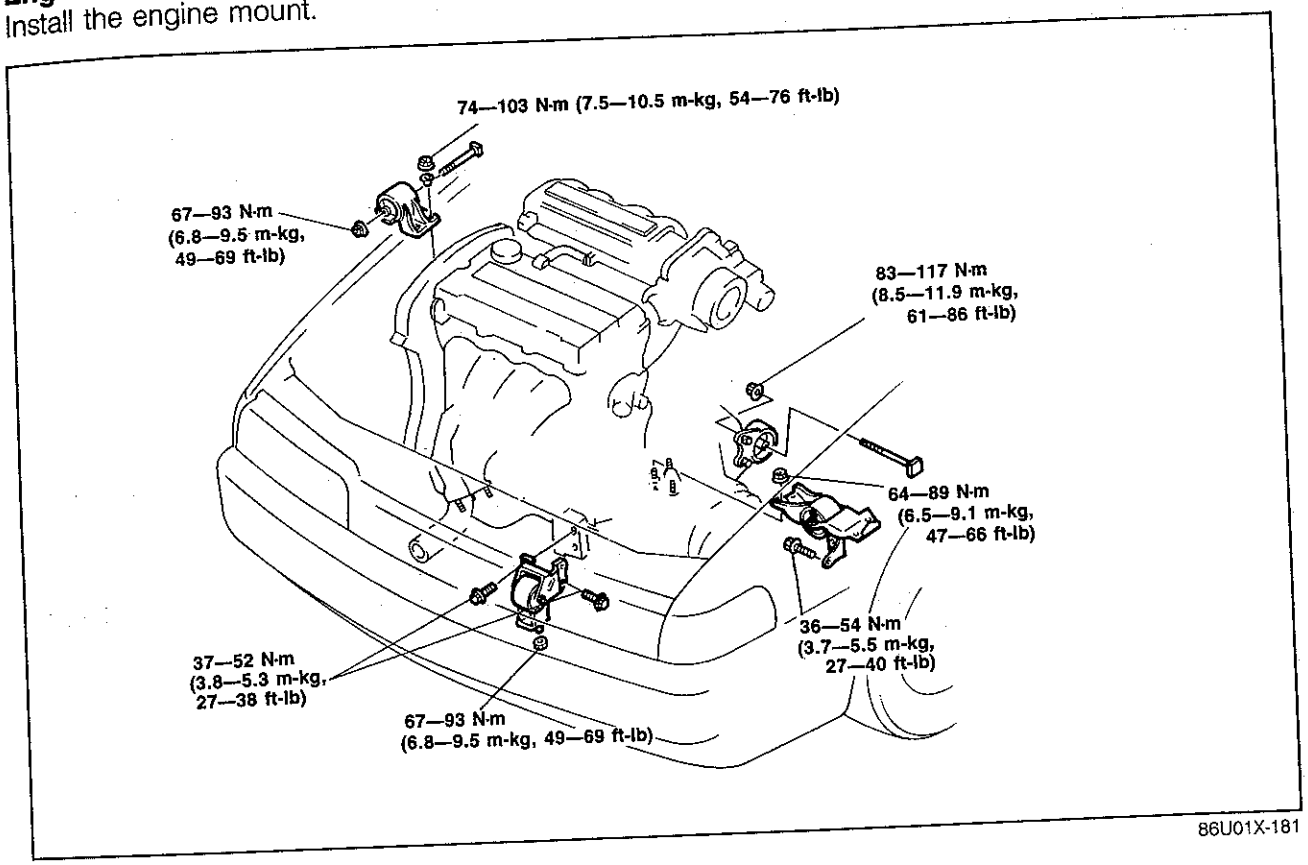
Warning: Be sure the vehicle is securely supported.

Torque Specifications

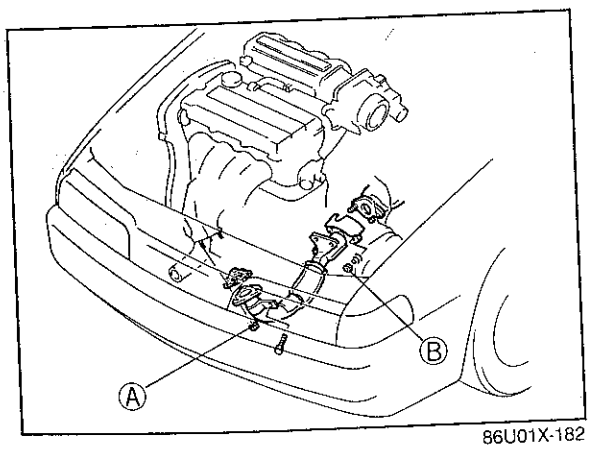


86U01X-180

Engine Mount
Install the engine mount.



86U01X-181



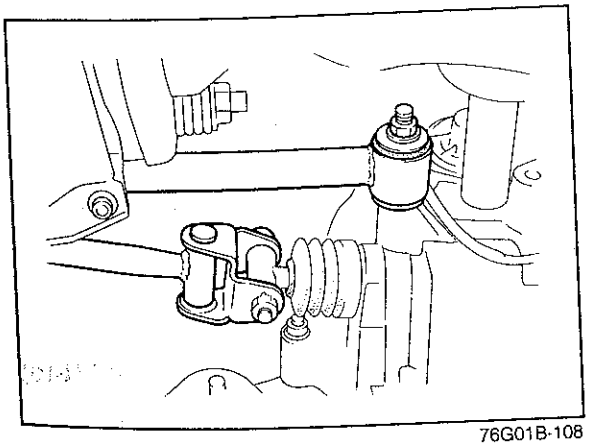
86U01X-182

Exhaust Pipe
1. Install the exhaust pipe.

Tightening torque
Ⓐ: 31—46 N·m (3.2—4.7 m-kg, 23—34 ft-lb)
Ⓑ: 64—89 N·m (6.5—9.1 m-kg, 47—66 ft-lb)

2. Tighten the bracket bolt.

Tightening torque:
19—25 N·m (1.9—2.6 m-kg, 14—19 ft-lb)

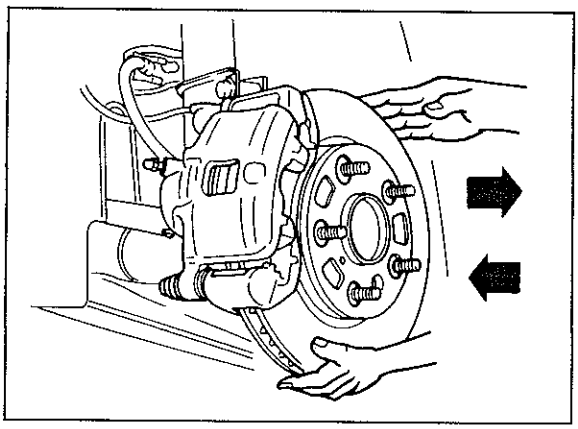

76G01B-108

Extension Bar
Install the extension bar to the transaxle.

Tightening torque:
31—46 N·m (3.2—4.7 m-kg, 23—34 ft-lb)

Change Rod
Install the change rod to the transaxle.

Tightening torque:
16—23 N·m (1.6—2.3 m-kg, 12—17 ft-lb)


86U01X-184

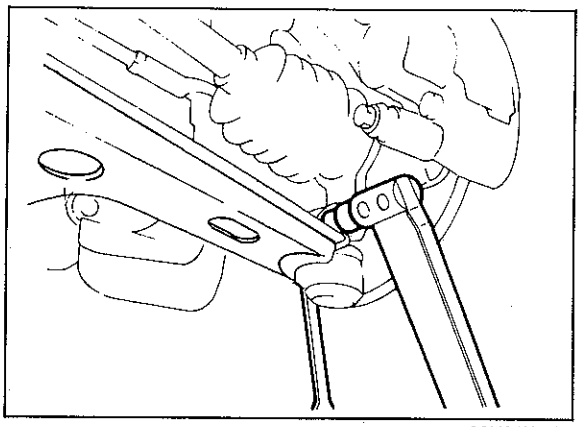
Driveshaft

1. Apply grease to the end of the driveshaft.
2. Install the driveshaft and a new clip.

Caution

a) When installing the driveshaft, be careful not to damage the oil seal.

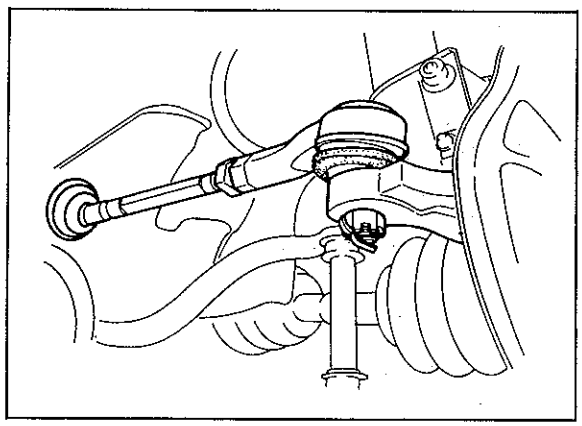
b) After installation, pull the front hub outward to confirm that the driveshaft is securely held by the clip.


86U01X-185

Lower Arm

Install the lower arm ball-joint to the knuckle; then tighten the lock nut.

Tightening torque:
43—54 N·m (4.4—5.5 m-kg, 32—40 ft-lb)

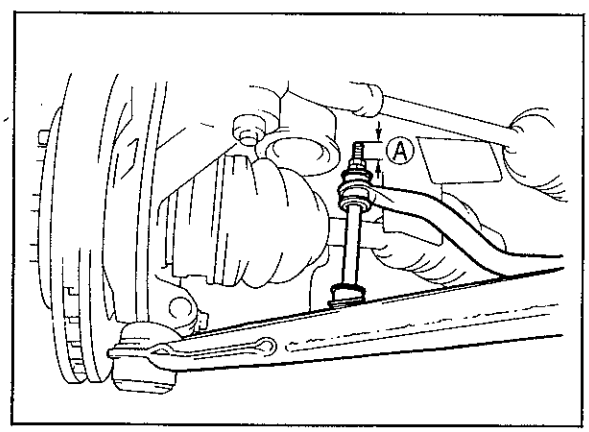

86U01X-186

Tie-Rod End

1. Install the tie-rod end to the knuckle.

Tightening torque:
29—44 N·m (3.0—4.5 m-kg, 22—33 ft-lb)

2. Install the cotter pin.



86U01X-187

Stabilizer Control Rod

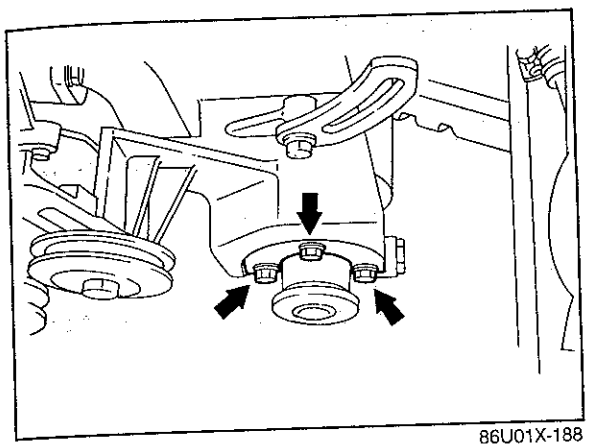
Install and adjust the front stabilizer control rods.

Dimension A: 20.1 mm (0.79 in)

Tightening torque:
16—23 N·m (1.6—2.3 m-kg, 12—17 ft-lb)

Install the front wheel.

Tightening torque:
88—118 N·m (9.0—12.0 m-kg, 65—87 ft-lb)


86U01X-188

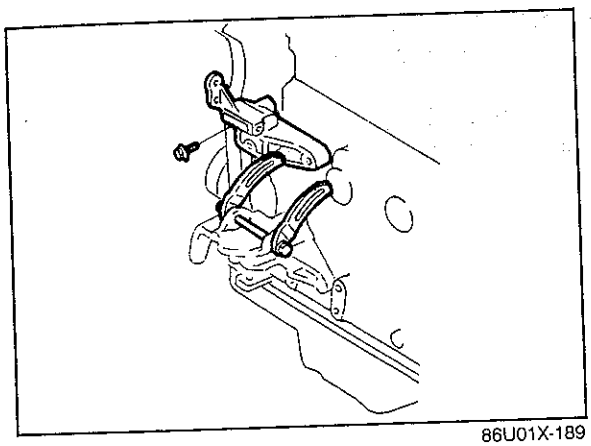
P/S Oil Pump

1. Install the P/S oil pump.

   Tightening torque:
   31—46 N·m (3.2—4.7 m-kg, 23—34 ft-lb)

2. Tighten the pulley lock nut.

   Tightening torque:
   39—59 N·m (4.0—6.0 m-kg, 29—43 ft-lb)


86U01X-189

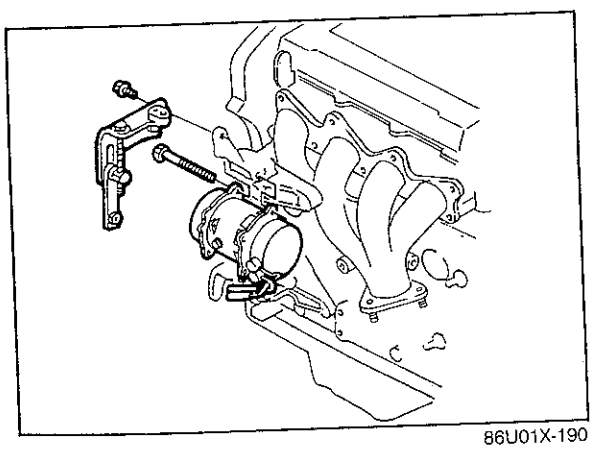
A/C Compressor

1. Install the A/C compressor strap to the P/S oil pump bracket.

   Tightening torque:
   19—25 N·m (1.9—2.6 m-kg, 14—19 ft-lb)

2. Install the A/C compressor bracket.

   Tightening torque:
   37—63 N·m (3.8—6.4 m-kg, 27—46 ft-lb)

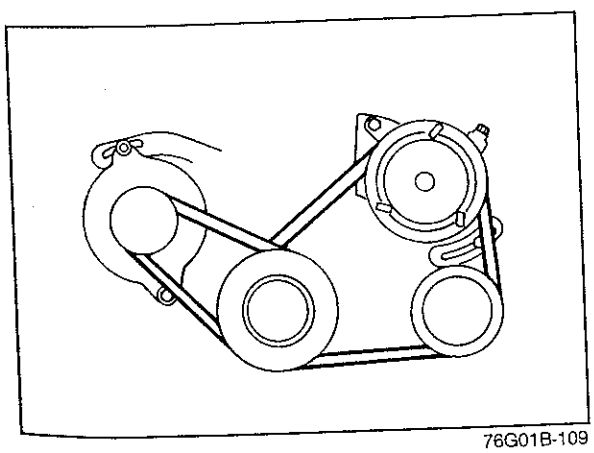

86U01X-190

3. Install the A/C compressor.
4. Install the A/C compressor upper bracket.

   Tightening torque:
   37—63 N·m (3.8—6.4 m-kg, 27—46 ft-lb)

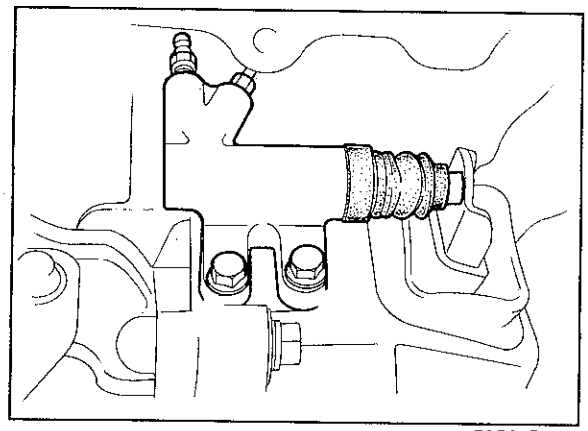
5. Tighten to the lock nut and mounting bolts.

   Tightening torque:
   37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)


76G01B-109

Drive Belt

Install the drive belt and adjust the belt deflection. (Refer to page 1B—6.)



76G01B-110

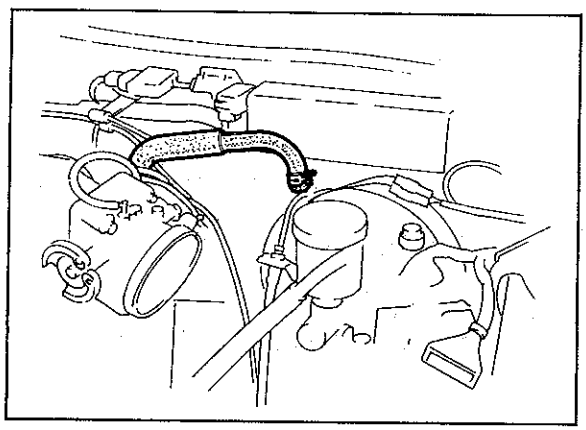
Clutch Release Cylinder

1. Set the pipe bracket in position.

   Tightening torque:
   8—11 N·m (80—110 cm-kg, 69—95 in-lb)

2. Install the clutch release cylinder.

   Tightening torque:
   19—25 N·m (1.9—2.6 m-kg, 14—19 ft-lb)



76F01B-025

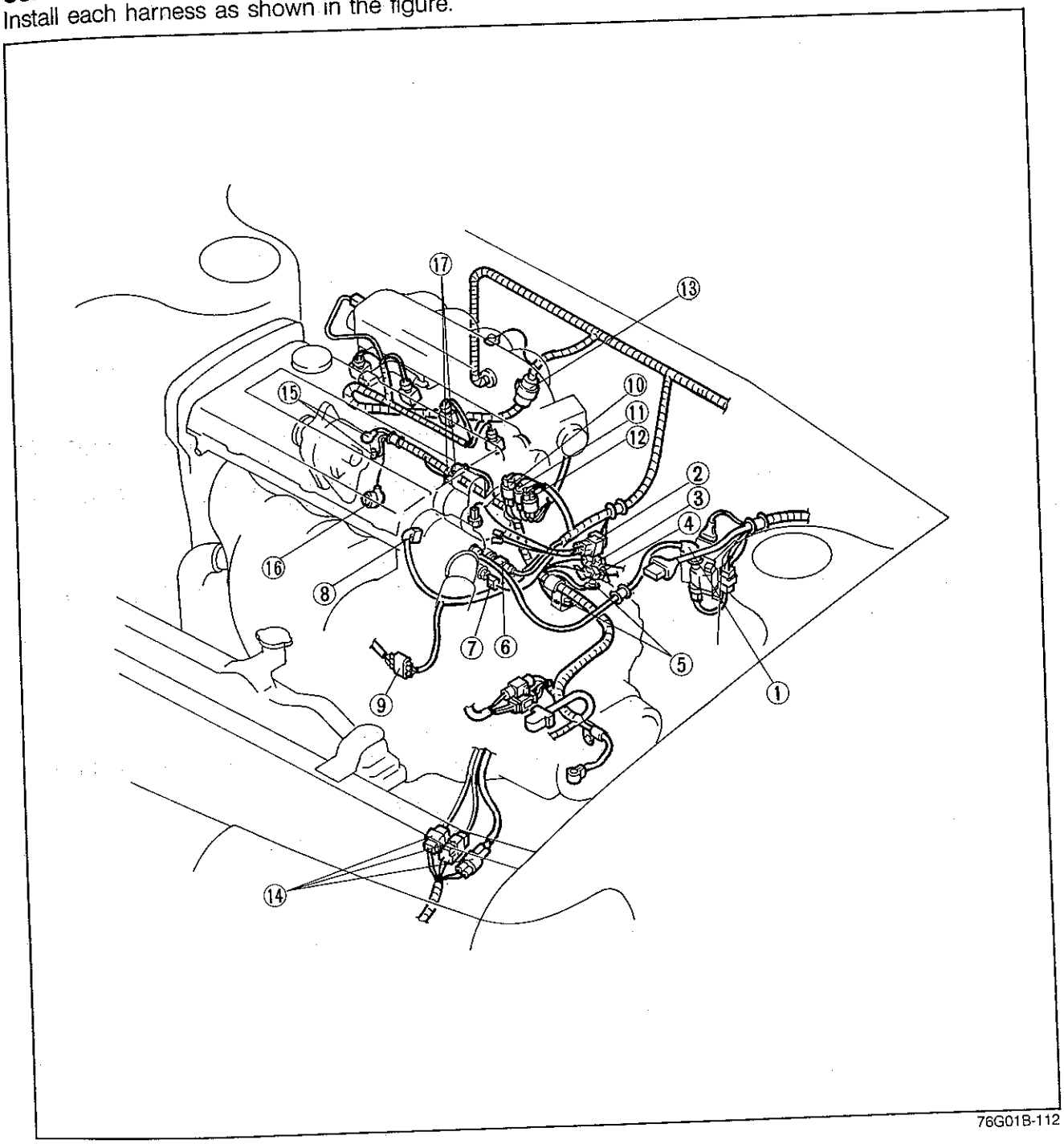
Speedometer Cable

Install the speedometer cable.

Brake Vacuum Hose

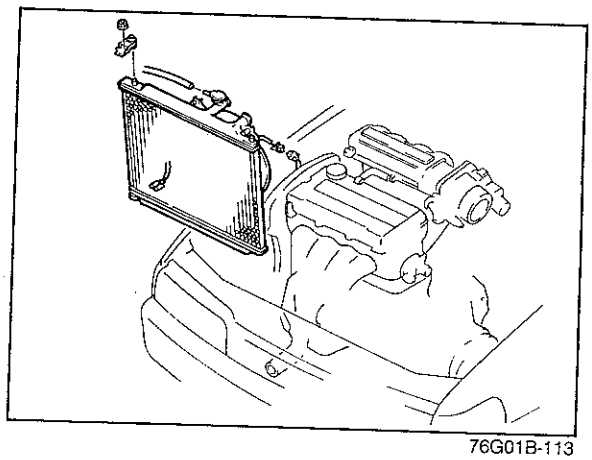
Connect the brake vacuum hose.

Connector Location
Install each harness as shown in the figure.



76G01B-112

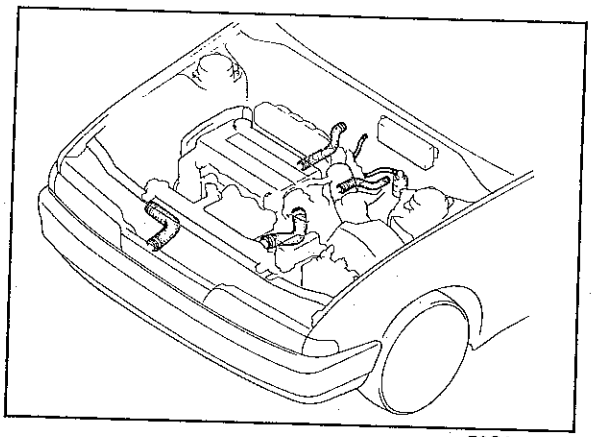
1. IG coil
2. Heat gauge unit
3. Speed sensor
4. P/S switch
5. Engine ground
6. Water temperature sensor
7. Water thermo switch
8. Crank angle sensor
9. Oxygen sensor
10. Linear solenoid
11. Solenoid valve (idle speed control)
12. Throttle position sensor
13. Injection harness
14. Transmission harness
15. Alternator
16. Oil pressure switch
17. Starter


76G01B-113

Radiator
1. Install the radiator and cooling fan.

Tightening torque:
8—11 N·m (80—110 cm-kg, 69—95 in-lb)

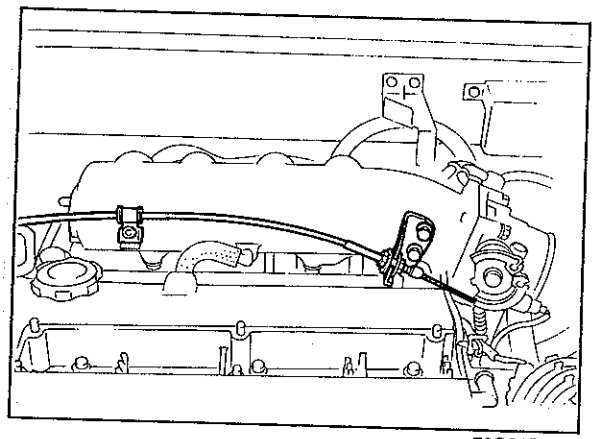
2. Connect the radiator harness.


76G01B-114

3. Connect the upper and lower radiator hoses.

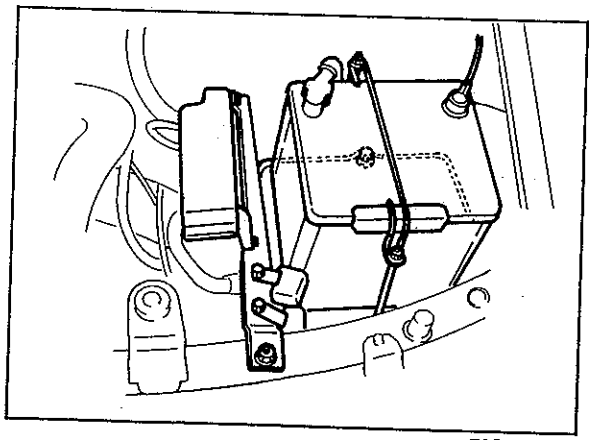
Note
a) Position the hose clamp in the original location on the hose.
b) Squeeze the clamp lightly with large pliers to ensure a good fit.

Heater Hose and Fuel Hose
Connect the heater hoses and the fuel hoses.


76G01B-115

High-Tension Lead
Connect the high-tension lead to the ignition coil.

Accelerator Cable
Install the accelerator cable.


76G01A-148

Battery and Battery Carrier
1. Install the battery carrier.

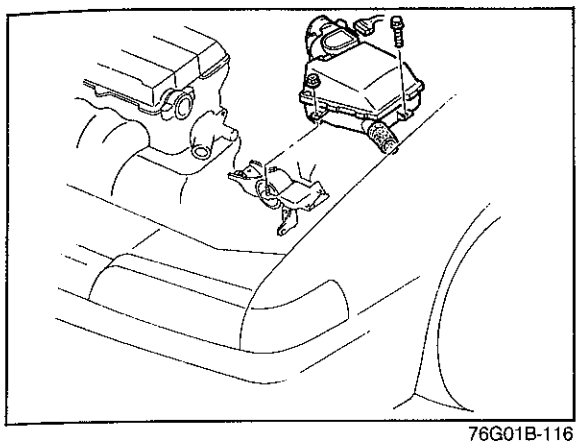
Tightening torque:
9—13 N·m (90—130 cm-kg, 78—113 in-lb)

2. Install the fuse box.

Tightening torque:
8—11 N·m (80—110 cm-kg, 69—95 in-lb)

3. Install the battery tray and battery.

Tightening torque:
5—7 N·m (50—70 cm-kg, 43—61 in-lb)



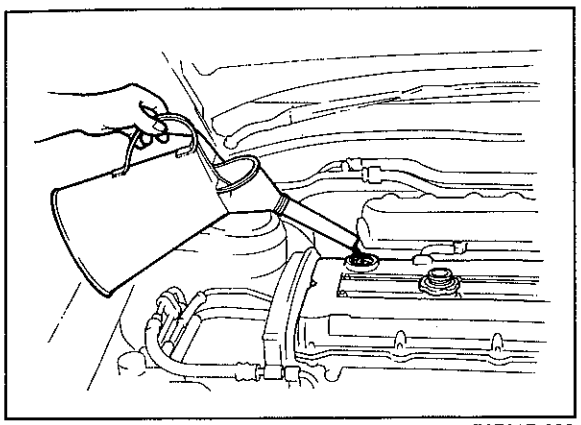
76G01B-116

Air Cleaner Assembly

1. Install the air cleaner assembly.

Tightening torque:
16—27 N·m (1.6—2.8 m-kg, 12—20 ft-lb)

2. Connect the air flow sensor connector and air intake pipe.



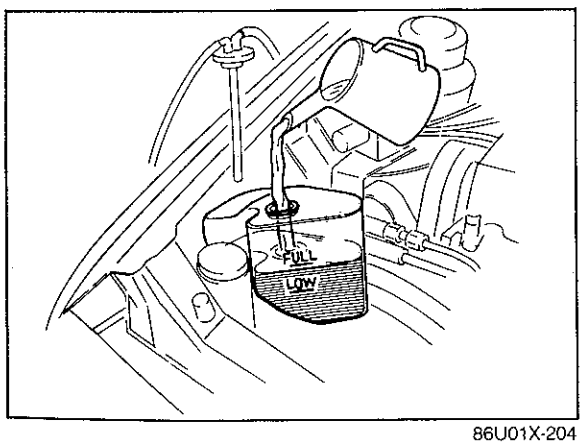
76F01B-026

Engine Oil

Add the specified amount and type of engine oil. (Refer to Section 2.)

Coolant

Close the drain plug, fill the radiator and reservoir tank with the specified amount and type of coolant. (Refer to Section 3.)



86U01X-204

Check Engine Condition

1. Check for leaks.
2. Perform engine adjustments if necessary.
3. Perform a road test.
4. Recheck the oil and coolant levels.