170K7–01

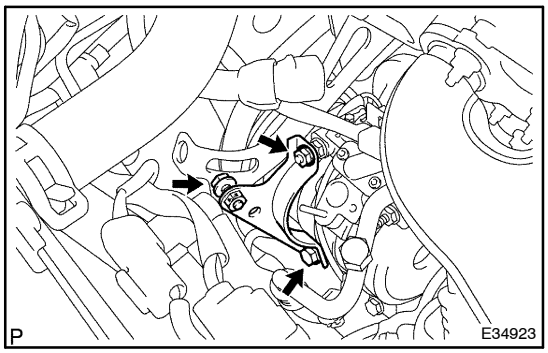
REPLACEMENT

1. REMOVE FRONT WHEELS
2. REMOVE ENGINE UNDER COVER NO.1
3. REMOVE FRONT FENDER APRON SEAL RH
4. DRAIN ENGINE OIL

(a) Install a new gasket after draining engine oil.

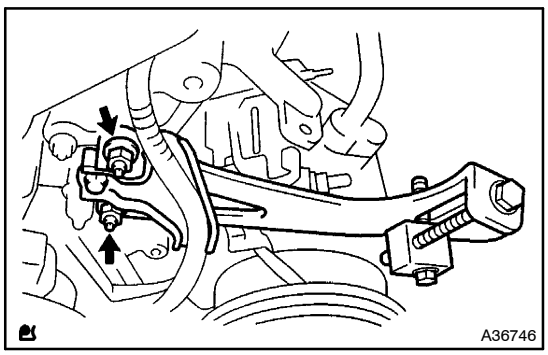
Torque: 45 N·m (459 kgf·cm, 33 ft·lbf)

5. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (See page 14–5)
6. REMOVE VANE PUMP V BELT (See page 14–5)
7. REMOVE ENGINE MOVING CONTROL ROD (See page 14–24)
8. REMOVE ENGINE MOUNTING STAY NO.2 RH
9. REMOVE GENERATOR BRACKET NO.2
10. REMOVE EXHAUST PIPE SUPPORT BRACKET NO.1
11. REMOVE EXHAUST PIPE ASSY FRONT (See page 15–2)



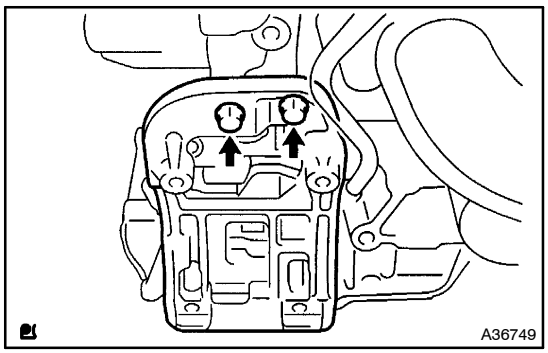
12. SEPARATE COMPRESSOR AND MAGNETIC CLUTCH

(a) Remove the 2 bolts, nut and drive belt adjusting bar bracket.



(b) Remove the 2 nuts and the generator bracket adjusting bar together with the wire harness clamp bracket.

(c) Disconnect the compressor, magnetic clutch connector and wire harness clamp.

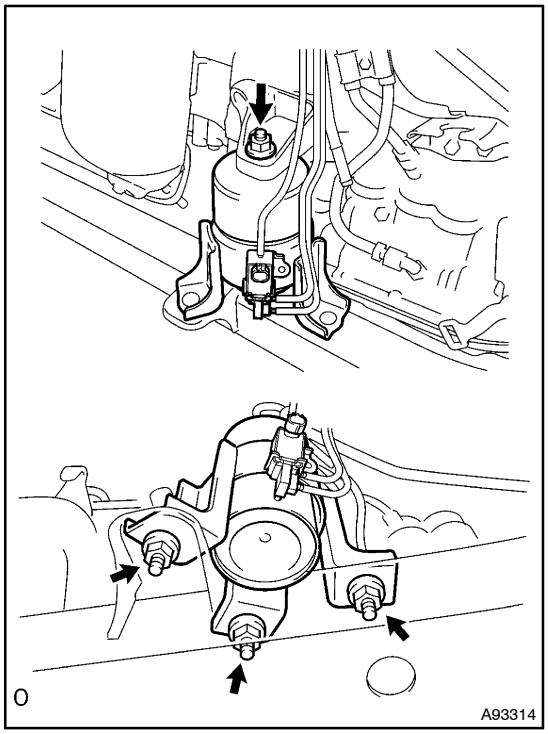


13. REMOVE COMPRESSOR MOUNTING BRACKET NO.1

(a) Remove the 2 bolts and mounting bracket.

14. REMOVE OIL LEVEL GAGE SUB–ASSY

15. REMOVE OIL LEVEL GAGE GUIDE

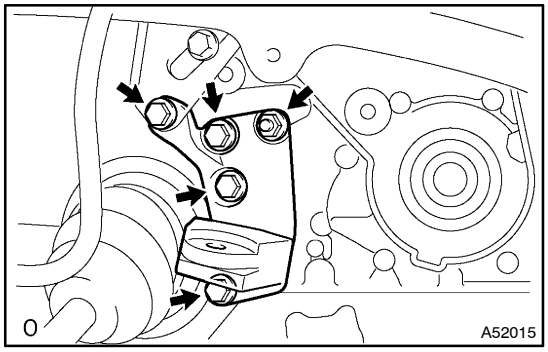


16. REMOVE ENGINE MOUNTING

(a) Remove the 4 nuts and disconnect the engine mounting insulator FR.

NOTICE:

Do not remove the engine mounting insulator.



(b) Remove the 4 bolts, nut and engine mounting bracket RH.

17. REMOVE CRANKSHAFT PULLEY (See page 14–49)

18. REMOVE TIMING BELT NO.1 COVER (See page 14–49)

19. REMOVE TIMING BELT NO.2 COVER (See page 14–49)

20. REMOVE TIMING BELT GUIDE NO.2

21. REMOVE TIMING BELT (See page 14–49)

22. REMOVE TIMING BELT IDLER SUB–ASSY NO.1

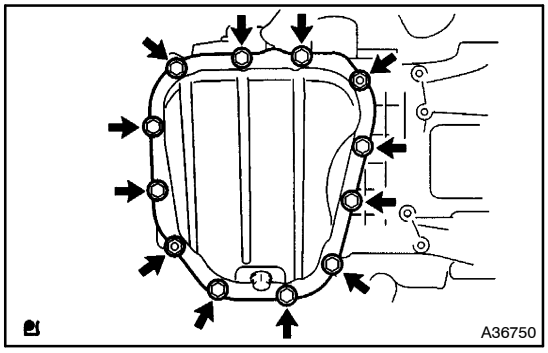
(a) Using a socket hexagon wrench 10, remove the pivot bolt, timing belt idler and plate washer.

23. REMOVE TIMING BELT IDLER SUB–ASSY NO.2

24. REMOVE CAMSHAFT TIMING PULLEY (See page 14–49)

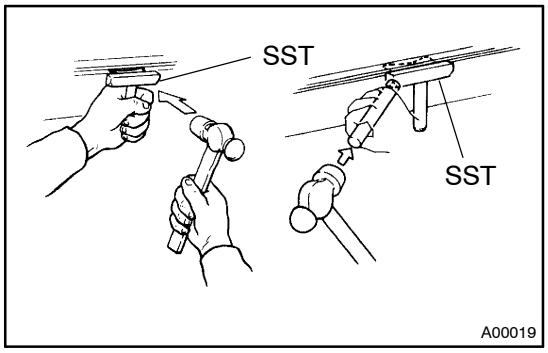
25. REMOVE TIMING BELT NO.3 COVER (See page 14–56)

26. REMOVE CRANKSHAFT TIMING PULLEY (See page 14–85)



27. REMOVE OIL PAN SUB–ASSY NO.2

(a) Remove the 10 bolts and 2 nuts.



(b) Insert the blade of SST between oil pan No. 1 and oil pan No. 2. Cut through the sealer and remove the oil pan No. 2.

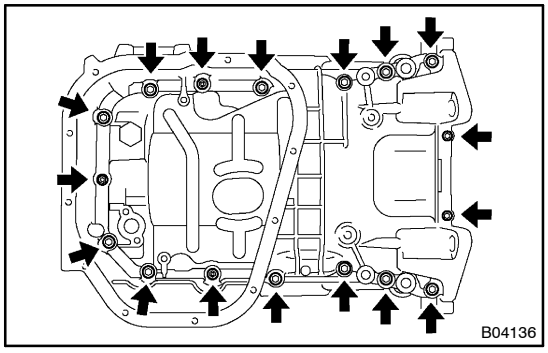
SST 09032–00100

NOTICE:

Do not damage the contact surfaces of oil pan No. 1 and oil pan No. 2.

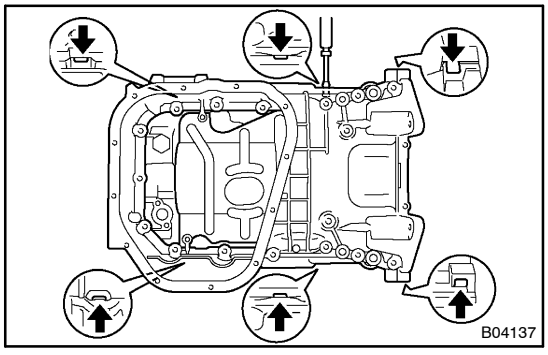
28. REMOVE OIL STRAINER SUB–ASSY

(a) Remove the bolt, 2 nuts, oil strainer and gasket.



29. REMOVE OIL PAN SUB–ASSY

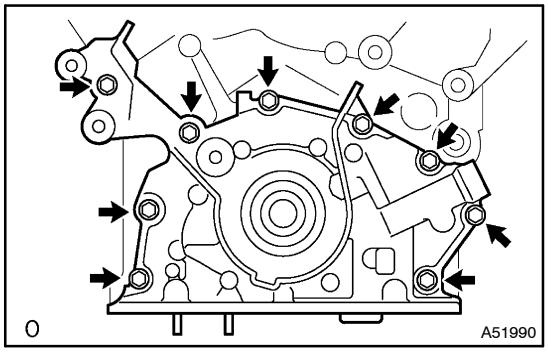
(a) Uniformly loosen and remove the 15 bolts and 2 nuts as shown in the illustration.



(b) Using a screwdriver, remove the oil pan by prying between the cylinder block and the oil pan.

NOTICE:

Be careful not to damage the contact surfaces of the oil pan and cylinder block.

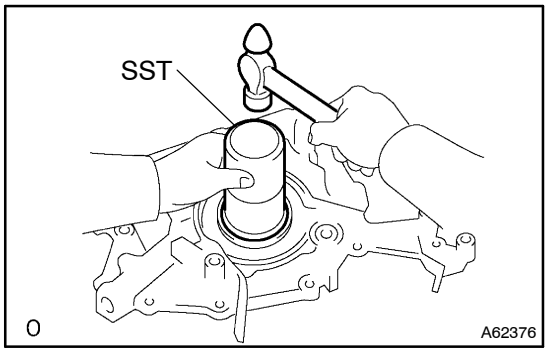


30. REMOVE OIL PUMP ASSY

(a) Remove the 9 bolts.

(b) Using a screwdriver, remove the oil pump by prying between the oil pump and main bearing cap.

(c) Remove the O–ring.



31. INSTALL OIL PUMP ASSY

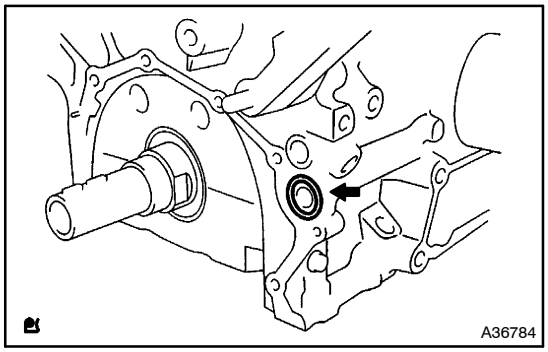
(a) Using SST and a hammer, tap in a new oil seal until its surface is flush with the oil pump body edge.
SST 09223–00010

NOTICE:

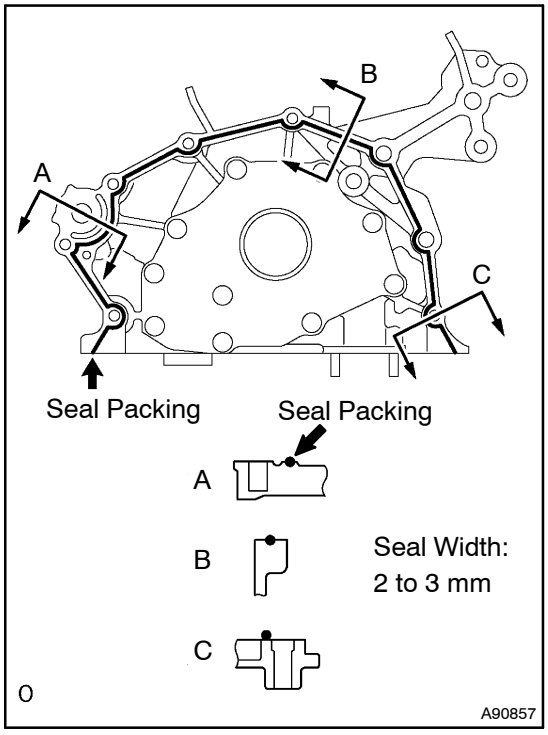
- **Be careful not to tap the oil seal at an angle.**
- **Keep the gap between the oil pump body edge and the oil seal free from contamination.**

(b) Apply a small amount of MP grease to the oil seal lip.

(c) Remove any old seal packing material from the contact surface.



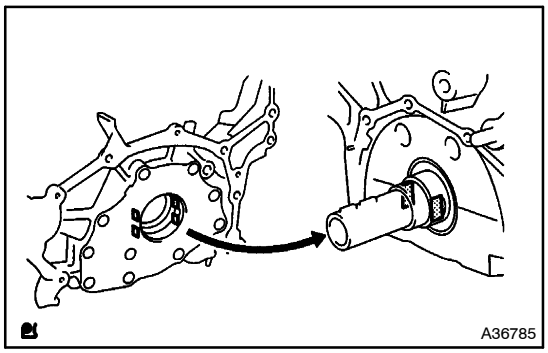
(d) Apply a light coat of engine oil to a new O–ring and place it on the cylinder block.



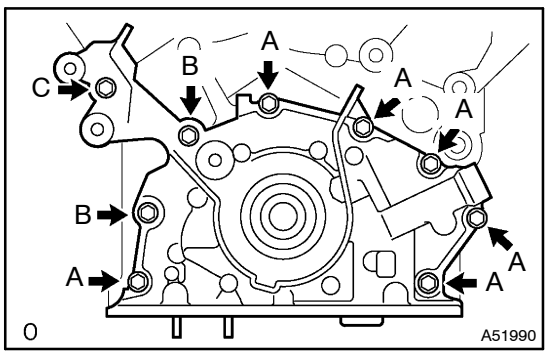
(e) Apply a continuous bead of seal packing (seal width: 2 to 3 mm (0.08 to 0.12 in.)) as shown in the illustration.
Seal packing: Part No. 08226–00080 or equivalent

NOTICE:

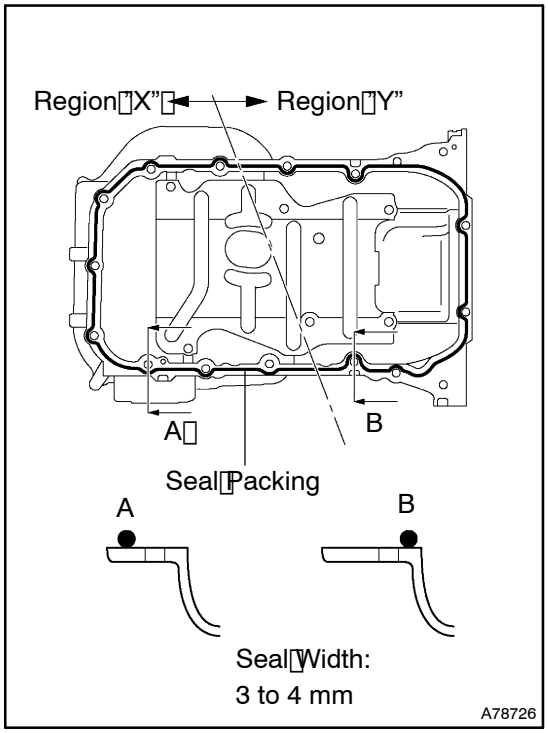
- **Remove any oil from contact surface.**
- **Apply seal packing to the inner side of the bolt holes.**
- **Install the oil pump within 3 minutes after applying seal packing.**
- **Do not expose the seal to engine oil for at least 2 hours after installing the oil pump.**



(f) Align the key of the oil pump drive gear with the key way located on the crankshaft, and slide the oil pump into place.



(g) Install the oil pump by tightening the 9 bolts uniformly.
Torque:
8.0 N·m (82 kgf·cm, 71 in.·lbf) for bolt A
20 N·m (204 kgf·cm, 15 ft·lbf) for bolt B
43 N·m (438 kgf·cm, 32 ft·lbf) for bolt C



32. INSTALL OIL PAN SUB–ASSY

(a) Remove any old seal packing from the contact surface.

(b) Apply a continuous bead of seal packing (seal width: 3 to 4 mm (0.12 to 0.16 in.)) as shown in the illustration.

Seal packing: Part No. 08826–00080 or equivalent

NOTICE:

- **Remove any oil from the contact surface.**
- **Apply seal packing to the outer side of the bolt holes in region "X".**
- **Apply seal packing to the inner side of the bolt holes in region "Y".**
- **Install the oil pan within 3 minutes after applying seal packing.**
- **Do not expose the seal to engine oil for at least 2 hours after installing.**

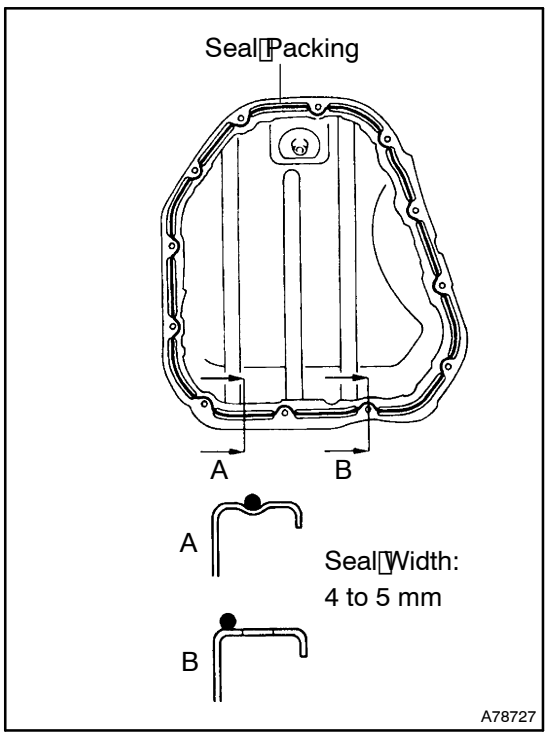
(c) Install the oil pan with the 15 bolts and 2 nuts. Tighten the bolts uniformly in several steps.

Torque:
8.0 N·m (82 kgf·cm, 71 in.·lbf) for 10 mm head
20 N·m (204 kgf·cm, 15 ft·lbf) for 12 mm head

33. INSTALL OIL STRAINER SUB–ASSY

(a) Install a new gasket and the oil strainer with the bolt and 2 nuts.

Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)



34. INSTALL OIL PAN SUB–ASSY NO.2

(a) Remove any old seal packing from the contact surface.

(b) Apply a continuous bead of seal packing (seal width: 4 to 5 mm (0.16 to 0.20 in.)) as shown in the illustration.

Seal packing: Part No. 08826–00080 or equivalent

NOTICE:

- **Remove any oil from the contact surface.**
- **Apply seal packing to the inner side of the bolt holes.**
- **Install the oil pan within 3 minutes after applying seal packing.**
- **Do not expose the seal to engine oil for at least 2 hours after installing.**

(c) Install the oil pan with the 10 bolts and 2 nuts.

Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)

35. INSTALL CRANKSHAFT POSITION SENSOR

36. INSTALL COMPRESSOR AND MAGNETIC CLUTCH (See page 14–24)

37. INSTALL OIL LEVEL GAGE GUIDE

38. INSTALL OIL LEVEL GAGE SUB–ASSY

39. INSTALL TIMING BELT IDLER SUB–ASSY NO.1

(a) Using a socket hexagon wrench 10, install the plate washer and timing belt idler with the pivot bolt.
Torque: 34 N·m (347 kgf·cm, 25 ft·lbf)

40. INSTALL TIMING BELT IDLER SUB–ASSY NO.2
Torque: 43 N·m (438 kgf·cm, 32 ft·lbf)

41. INSTALL TIMING BELT NO.3 COVER (See page 14–56)

42. INSTALL CAMSHAFT TIMING PULLEY (See page 14–56)

43. INSTALL TIMING BELT (See page 14–49)

44. INSTALL CHAIN TENSIONER ASSY NO.1 (See page 14–49)

45. INSTALL TIMING BELT GUIDE NO.2 (See page 14–49)

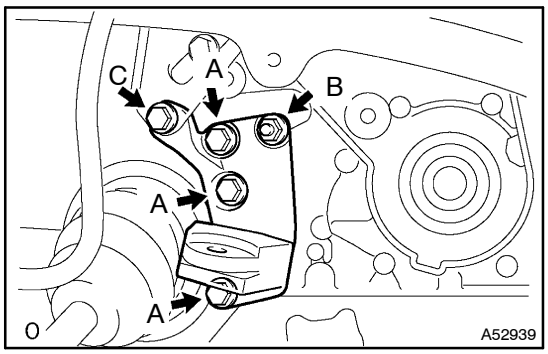
46. INSTALL TIMING BELT NO.2 COVER

(a) Visually check for cracks and breaks on the gasket of the timing belt cover.

If water has entered as a result of damage to the gasket, replace the timing belt cover.

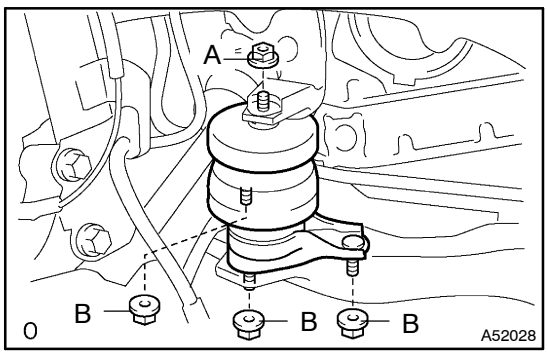
(b) Install the timing belt cover.
Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)

47. INSTALL TIMING BELT NO.1 COVER (See page 14–49)



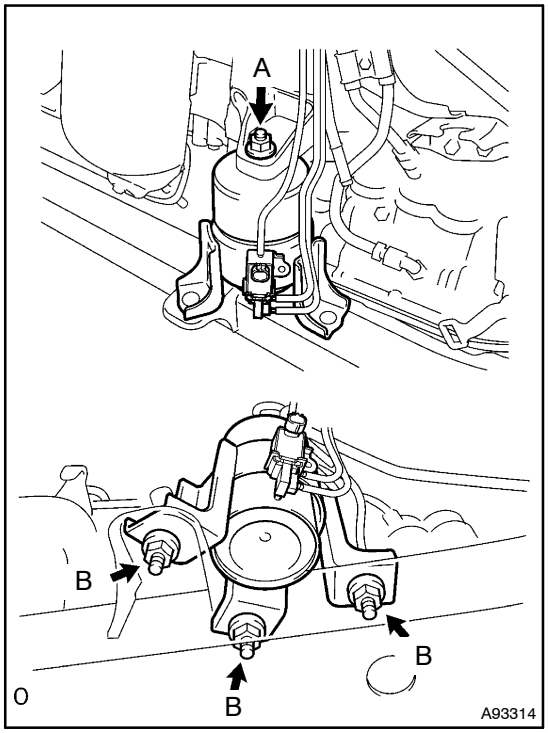
48. INSTALL ENGINE MOUNTING

(a) Install the engine mounting bracket RH with the 4 bolts and nut.
Torque:
54 N·m (551 kgf·cm, 40 ft·lbf) for bolt A
54 N·m (551 kgf·cm, 40 ft·lbf) for nut B
43 N·m (438 kgf·cm, 32 ft·lbf) for bolt C



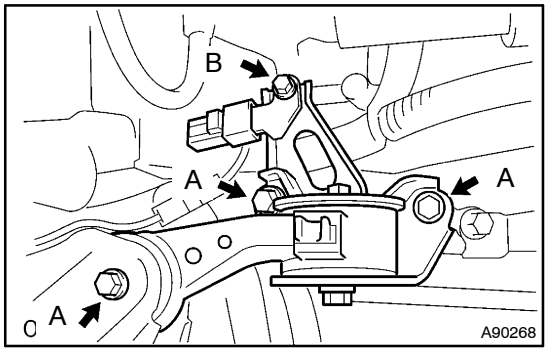
(b) Install the engine mounting insulator RH with the 4 nuts.
Torque:
95 N·m (969 kgf·cm, 70 ft·lbf) for nut A
87 N·m (887 kgf·cm, 64 ft·lbf) for nut B

HINT:
First, loosely install the nut labeled (A) with your hand. Then use a wrench to install the 3 nuts labeled (B). Finally, use a wrench to tighten nut (A).



(c) Install the engine mounting insulator FR with the nuts.
Torque:
87 N·m (887 kgf·cm, 64 ft·lbf) for nut A
52 N·m (530 kgf·cm, 38 ft·lbf) for nut B

49. INSTALL CRANKSHAFT PULLEY (See page 14–49)
50. INSTALL GENERATOR BRACKET NO.1
Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)
51. INSTALL COMPRESSOR AND MAGNETIC CLUTCH
(a) Install the compressor with the 3 bolts.
Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)
(b) Install the adjusting bar bracket with the bolt and nut.
Torque: 25 N·m (255 kgf·cm, 18 ft·lbf) for bolt
52. INSTALL ENGINE MOUNTING STAY NO.2 RH
Torque: 64 N·m (653 kgf·cm, 47 ft·lbf)



53. INSTALL ENGINE MOVING CONTROL ROD
(a) Install the control rod and bracket with the 4 bolts.
Torque:
64 N·m (653 kgf·cm, 47 ft·lbf) for bolt A
23 N·m (235 kgf·cm, 17 ft·lbf) for bolt B

54. INSTALL VANE PUMP V BELT (See page 14–5)
55. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (See page 14–5)
56. ADD ENGINE OIL
57. CHECK FOR ENGINE OIL LEAKS (See page 14–1)