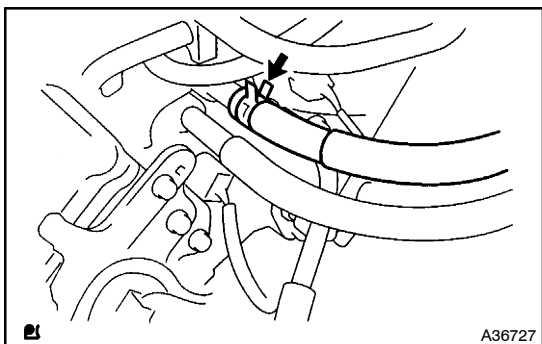


CYLINDER HEAD GASKET (1MZ-FE)

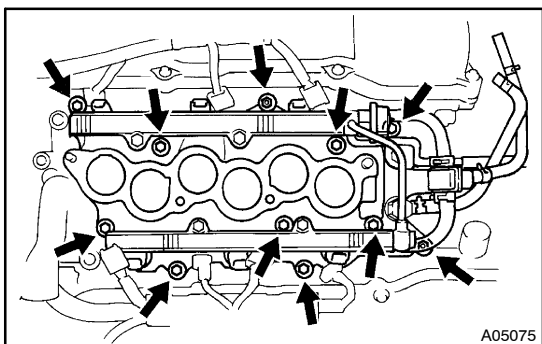
14016-01

REPLACEMENT

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11-49)
2. DRAIN COOLANT (See page 6-31)
3. DRAIN ENGINE OIL
4. REMOVE EXHAUST PIPE NO.1 SUPPORT BRACKET
5. REMOVE EXHAUST PIPE ASSY FRONT (See page 5-8)
6. REMOVE EGR PIPE SUB-ASSY NO.1
7. REMOVE EXHAUST MANIFOLD SUB-ASSY RH
8. REMOVE V-BANK COVER SUB-ASSY (See page 4-156)
9. REMOVE FRONT SUSPENSION UPPER BRACE CENTER (W/ FRONT SUSPENSION BRACE UPPER CENTER)
10. REMOVE AIR CLEANER ASSEMBLY WITH HOSE (See page 10-18)
11. REMOVE INTAKE AIR SURGE TANK (See page 4-143)
12. SEPARATE FUEL PIPE SUB-ASSY NO.1 (See page 4-87)



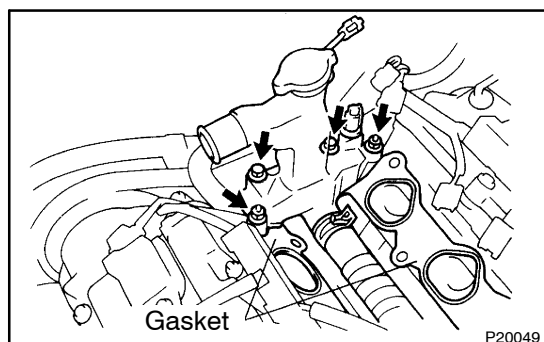
13. DISCONNECT HEATER INLET WATER HOSE



14. REMOVE INTAKE MANIFOLD

- (a) Disconnect the injector connectors.
- (b) Remove the 9 bolts, 2 nuts and intake manifold with delivery pipe.

15. DISCONNECT RADIATOR HOSE INLET

**16. REMOVE WATER OUTLET**

- (a) Disconnect the water temperature sensor connector and ground cable.
- (b) Remove the 2 bolts and 2 nuts.
- (c) Disconnect the water bypass hose, and remove the water outlet.
- (d) Remove the 2 gaskets.

17. REMOVE FRONT WHEEL RH**18. REMOVE FRONT FENDER APRON SEAL RH****19. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1**
(See page 14-141)**20. REMOVE VANE PUMP V BELT**
(See page 14-141)**21. REMOVE ENGINE MOVING CONTROL ROD**
(See page 14-156)**22. REMOVE ENGINE MOUNTING STAY NO.2 RH**
(See page 14-156)**23. REMOVE GENERATOR BRACKET NO.2****24. REMOVE CRANKSHAFT PULLEY**
(See page 14-174)

SST 09213-54015 (91651-60855), 09330-00021, 09950-50013 (09951-05010, 09952-05010, 09953-05010, 09954-05030)

25. REMOVE TIMING BELT NO.1 COVER**26. REMOVE TIMING BELT NO.2 COVER**
(See page 14-174)**27. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING BRACKET****28. REMOVE TIMING BELT GUIDE NO.2****29. REMOVE TIMING BELT**
(See page 14-211)**30. REMOVE TIMING BELT IDLER SUB-ASSY NO.2****31. REMOVE CAMSHAFT TIMING PULLEY**
(See page 14-180)

SST 09960-10010 (09962-01000, 09963-01000), 09249-63010

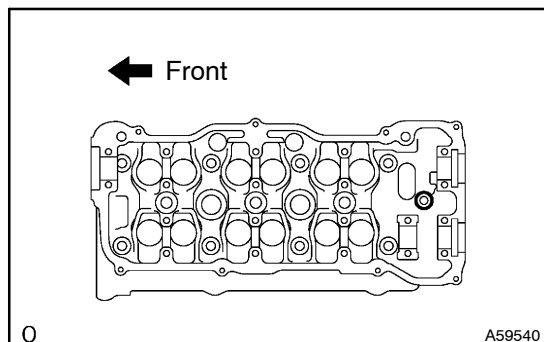
32. REMOVE TIMING BELT NO.3 COVER**33. REMOVE VANE PUMP ASSY**
(See page 14-156)**34. REMOVE IGNITION COIL ASSY****35. REMOVE CYLINDER HEAD COVER SUB-ASSY**

36. REMOVE CAMSHAFT

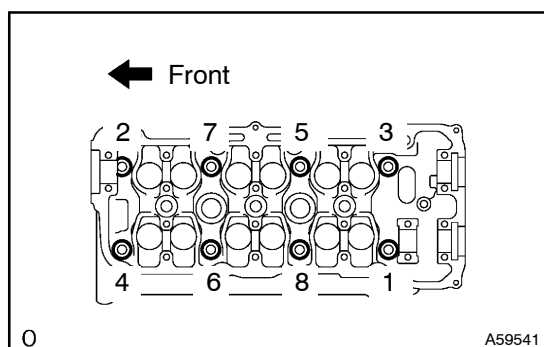
(See page 14-180)

37. REMOVE NO.2 CAMSHAFT

(See page 14-180)

**38. REMOVE CYLINDER HEAD SUB-ASSY**

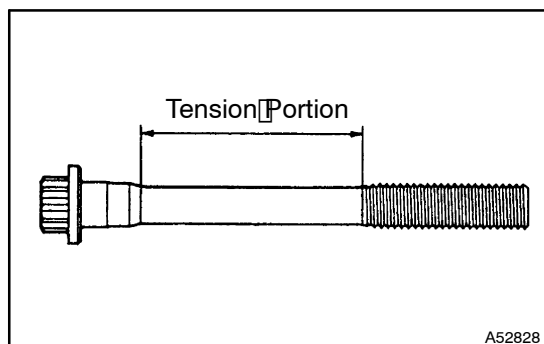
(a) Using an 8 mm hexagon wrench, remove the hexagon bolt.



(b) Uniformly loosen the 8 cylinder head bolts, in several passes, in the sequence shown. Remove the 8 cylinder head bolts and plate washers.

NOTICE:

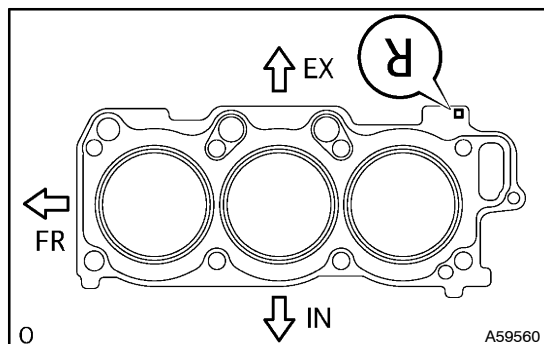
- Be careful not to drop washers into the cylinder head.
- Head warpage or cracking could result from removing bolts in an incorrect order.

39. REMOVE CYLINDER HEAD GASKET**40. INSPECT CYLINDER HEAD SET BOLT**

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

Standard outside diameter:**8.95 – 9.05 mm (0.3524 – 0.3563 in.)****Minimum outside diameter: 8.75 mm (0.3775 in.)**

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

**41. INSTALL CYLINDER HEAD GASKET**

(a) Place a new cylinder head gasket on the cylinder block surface with the R mark upward.

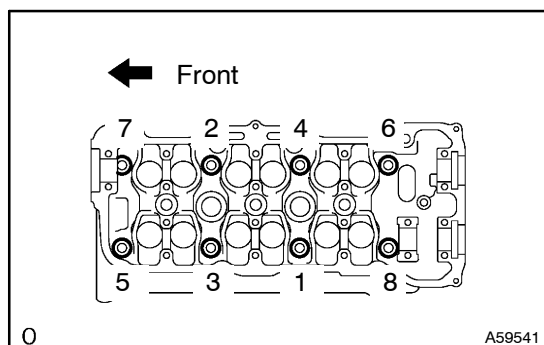
NOTICE:

- Remove any oil from the contact surface.
- Be careful of the installation direction.
- Place the cylinder head quietly in order not to damage the gasket at the bottom part of the head.

42. INSTALL CYLINDER HEAD SUB-ASSY**NOTICE:**

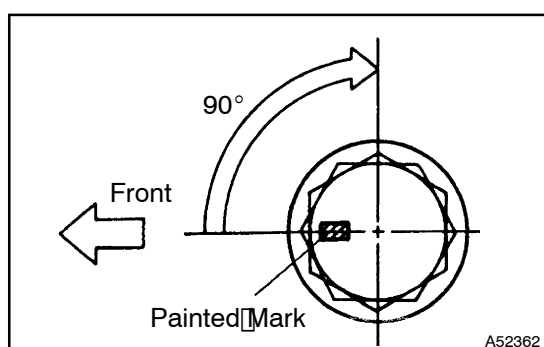
The cylinder head bolts are tightened in 2 progressive steps.

- (a) Apply a light coat of engine oil on the threads and under the heads of the cylinder head bolts.
- (b) Install the plate washer to the cylinder head bolt.

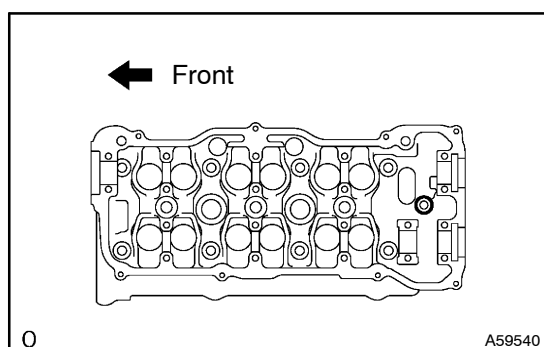


- (c) Install and uniformly tighten the 8 cylinder head bolts, in several passes, in the sequence shown.

Torque: 54 N·m (551 kgf·cm, 40 ft·lbf)



- (d) Mark the front side of each cylinder head bolt head with paint.
- (e) Retighten the cylinder head bolts by 90° in the sequence shown.
- (f) Check that the painted mark is now at a 90° angle to the front.



- (g) Using an 8 mm socket hexagon wrench, install the hexagon bolt.

Torque: 19 N·m (189 kgf·cm, 14 ft·lbf)

43. INSTALL NO.2 CAMSHAFT

(See page 14-180)

44. INSTALL CAMSHAFT

(See page 14-180)

45. INSTALL CYLINDER HEAD COVER SUB-ASSY

(See page 14-143)

46. INSTALL IGNITION COIL ASSY

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

47. INSTALL VANE PUMP ASSY

(See page 4-156)

48. INSTALL TIMING BELT NO.3 COVER

(See page 4-180)

49. INSTALL CAMSHAFT TIMING PULLEY

(See page 4-180)

SST 09960-10010 (09962-01000, 09963-01000), 09249-63010

50. INSTALL TIMING BELT IDLER SUB-ASSY NO.2

Torque: 43 N·m (438 kgf·cm, 32 ft·lb)

51. INSPECT TIMING BELT

(See page 4-174)

52. INSTALL TIMING BELT

(See page 4-211)

SST 09960-10010 (09962-01000, 09963-01000)

53. INSTALL CHAIN TENSIONER ASSY NO.1

(See page 4-174)

54. INSTALL TIMING BELT GUIDE NO.2

(See page 4-174)

55. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING BRACKET

Torque: 28 N·m (286 kgf·cm, 21 ft·lb)

56. INSTALL TIMING BELT NO.2 COVER

(See page 4-174)

57. INSTALL TIMING BELT NO.1 COVER

(See page 4-174)

58. INSTALL CRANKSHAFT PULLEY

(See page 4-174)

SST 09213-54015 (91651-60855), 09330-00021

59. INSTALL GENERATOR BRACKET NO.2

Torque: 28 N·m (286 kgf·cm, 21 ft·lb)

60. INSTALL ENGINE MOUNTING STAY NO.2 RH

(See page 4-156)

61. INSTALL ENGINE MOVING CONTROL ROD

(See page 4-156)

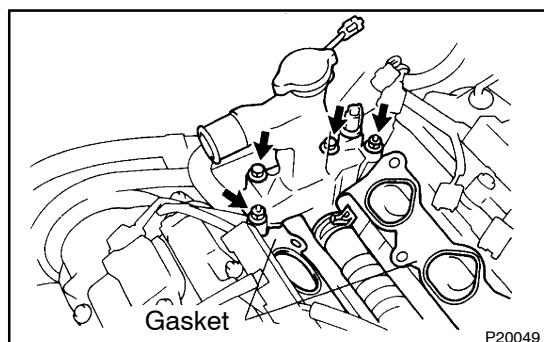
62. INSTALL VANE PUMP V BELT

(See page 4-141)

63. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1

(See page 4-141)

64. INSPECT DRIVE BELT DEFLECTION AND TENSION (REFERENCE) (See page 4-137)

**65. INSTALL WATER OUTLET**

- (a) Install 2 new gaskets to the cylinder head.
- (b) Connect the water outlet to the bypass hose.
- (c) Install the water outlet with the 2 bolts, 2 nuts and 2 plate washers. Alternately tighten the bolts and nuts.

Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)

NOTICE:

Do not scratch the seal surface of the water outlet with the stud bolt.

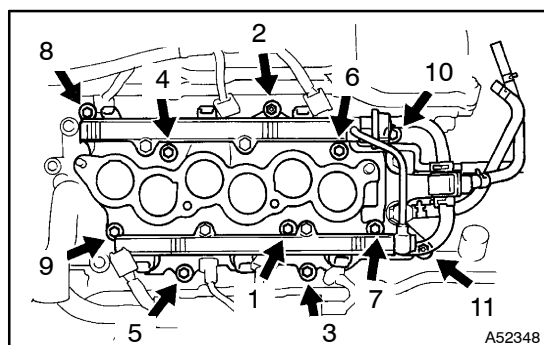
66. INSTALL INTAKE MANIFOLD

- (a) Install the intake manifold with the 9 bolts, 2 plate washers and 2 nuts. Uniformly tighten the bolts and nuts, in several passes, in the sequence shown.

Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)

- (b) Retighten the water outlet mounting bolts and nuts.

Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)

**67. CONNECT FUEL PIPE SUB-ASSY NO.1**

(See page 14-156)

68. INSTALL INTAKE AIR SURGE TANK

(See page 14-143)

69. INSTALL AIR CLEANER ASSEMBLY WITH HOSE (See page 10-18)**70. CONNECT VACUUM HOSE (See page 14-156)****71. INSTALL FRONT SUSPENSION UPPER BRACE CENTER
(W/ FRONT SUSPENSION BRACE UPPER CENTER)****72. INSTALL V-BANK COVER SUB-ASSY**

(See page 14-156)

73. INSTALL EXHAUST MANIFOLD SUB-ASSY RH

(See page 14-156)

74. INSTALL EGR PIPE SUB-ASSY NO.1

(See page 14-156)

75. INSTALL EXHAUST PIPE ASSY FRONT

(See page 15-8)

76. INSTALL EXHAUST PIPE NO.1 SUPPORT BRACKET

(See page 15-8)

77. INSTALL FRONT WHEEL RH

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

78. ADD ENGINE OIL**79. ADD COOLANT (See page 16-31)****80. INSPECT OIL LEAK****81. CHECK ENGINE COOLANT LEAK (See page 16-31)****82. INSPECT FUEL LEAK****83. CHECK EXHAUST GAS LEAK**

84. INSPECT IGNITION TIMING (See page 14-137)

SST 09843-18040, 09843-18020

85. INSPECT ENGINE IDLE SPEED (See page 14-137)

SST 09843-18040

86. INSPECT COMPRESSION (See page 14-137)

SST 09992-00500

87. INSPECT CO/HC (See page 14-137)