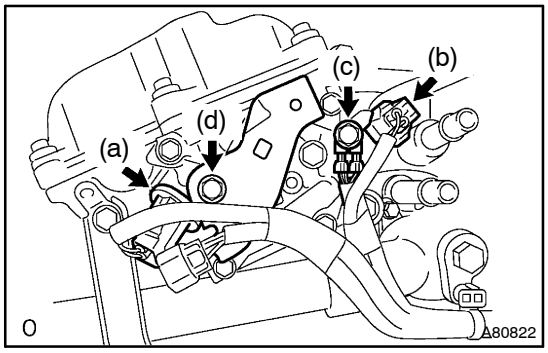
CYLINDER HEAD GASKET NO.2 (3MZ–FE)

141RR–01

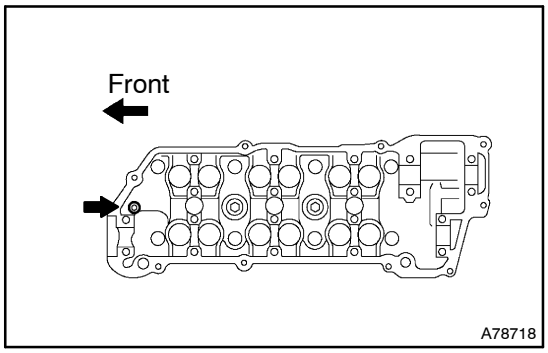
REPLACEMENT

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11–1)
2. DRAIN ENGINE COOLANT (See page 16–7)
3. DRAIN ENGINE OIL
4. REMOVE FR WIPER ARM LH (See page 66–7)
5. REMOVE FR WIPER ARM RH (See page 66–7)
6. REMOVE COWL TOP VENTILATOR LOUVER SUB–ASSY (See page 66–7)
7. REMOVE WINDSHIELD WIPER LINK ASSY (See page 66–7)
8. REMOVE COWL PANEL SUB–ASSY
9. REMOVE FRONT SUSPENSION BRACE SUB–ASSY UPPER CENTER
10. REMOVE V–BANK COVER SUB–ASSY (See page 14–24)
11. REMOVE AIR CLEANER CAP SUB–ASSY
12. REMOVE AIR CLEANER FILTER ELEMENT SUB–ASSY
13. REMOVE AIR CLEANER CASE
14. REMOVE EMISSION CONTROL VALVE SET (See page 14–24)
15. REMOVE INTAKE AIR SURGE TANK (See page 14–24)
16. DISCONNECT FUEL PIPE SUB–ASSY NO.1 (See page 14–24)
17. DISCONNECT HEATER INLET WATER HOSE (See page 14–76)
18. REMOVE INTAKE MANIFOLD (See page 14–24)
19. REMOVE RADIATOR HOSE INLET
20. REMOVE WATER OUTLET (See page 14–24)
21. REMOVE RADIATOR HOSE OUTLET
22. REMOVE WATER INLET PIPE
23. REMOVE OIL LEVEL GAGE SUB–ASSY
24. REMOVE OIL LEVEL GAGE GUIDE
25. REMOVE FRONT WHEEL RH
26. REMOVE ENGINE UNDER COVER NO.1
27. REMOVE FRONT FENDER APRON SEAL RH
28. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (See page 14–5)
29. REMOVE VANE PUMP V BELT (See page 14–5)
30. REMOVE ENGINE MOVING CONTROL ROD (See page 14–24)
31. REMOVE ENGINE MOUNTING STAY NO.2 RH (See page 14–24)
32. REMOVE GENERATOR BRACKET NO.2
33. REMOVE CRANKSHAFT PULLEY (See page 14–49)
34. REMOVE TIMING BELT NO.1 COVER
35. REMOVE TIMING BELT NO.2 COVER (See page 14–49)
36. REMOVE ENGINE MOUNTING BRACKET RH
37. REMOVE TIMING BELT GUIDE NO.2
38. REMOVE TIMING BELT (See page 14–49)
39. REMOVE TIMING BELT IDLER SUB–ASSY NO.2
40. REMOVE CAMSHAFT TIMING PULLEY (See page 14–66)
41. REMOVE TIMING BELT NO.3 COVER (See page 14–66)
42. DISCONNECT EXHAUST PIPE ASSY FRONT (See page 15–2)
43. REMOVE EXHAUST MANIFOLD CONVERTER SUB–ASSY NO.2 (See page 14–24)
44. REMOVE IGNITION COIL ASSY
45. REMOVE CYLINDER HEAD COVER SUB–ASSY LH (See page 14–7)

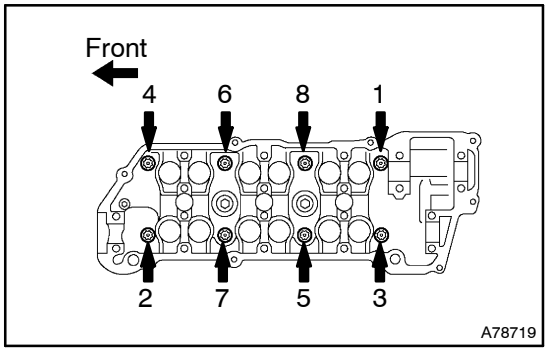
46. REMOVE NO.3 CAMSHAFT SUB–ASSY (See page 14–66)
47. REMOVE NO.4 CAMSHAFT SUB–ASSY (See page 14–66)



48. REMOVE CYLINDER HEAD LH
(a) Disconnect the VVT sensor connector.
(b) Disconnect the camshaft timing oil control valve connector.
(c) Remove the bolt and disconnect the ground cable.
(d) Remove the bolt and wire harness clamp bracket.



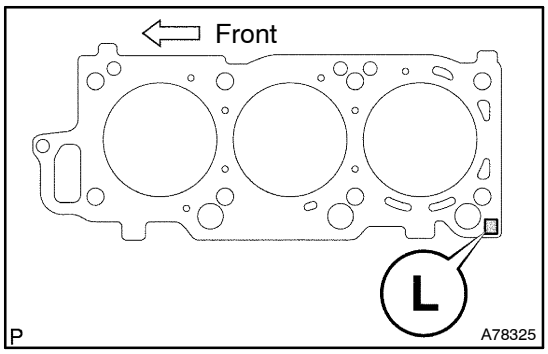
(e) Using a socket hexagon wrench 8, remove the hexagon bolt.



(f) Uniformly loosen the 8 cylinder head bolts in the sequence shown in the illustration. Remove the 8 cylinder head bolts and plate washers.

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

49. REMOVE CYLINDER HEAD GASKET NO.2
50. INSPECT CYLINDER HEAD SET BOLT (See page 14–76)



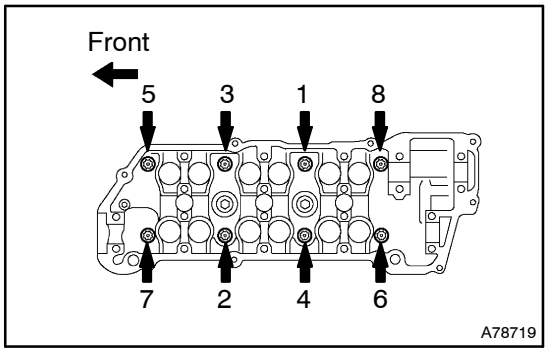
51. INSTALL CYLINDER HEAD GASKET NO.2
(a) Place a new cylinder head gasket on the cylinder block with the L mark, as shown in the illustration.

NOTICE:
- **Remove any oil from the contact surface.**
- **Be careful of the installation direction.**
- **To avoid damage to the gasket, place the cylinder head on the gasket carefully.**

52. INSTALL CYLINDER HEAD LH

NOTICE:

The cylinder head bolts are tightened in 2 successive steps.

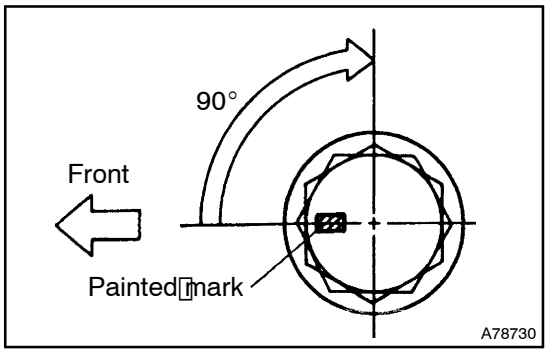


(a) Apply a light coat of engine oil on the threads of the cylinder head bolts.

(b) Install the plate washer to the cylinder head bolt.

(c) Uniformly install and tighten the 8 cylinder head bolts in the sequence shown in the illustration.

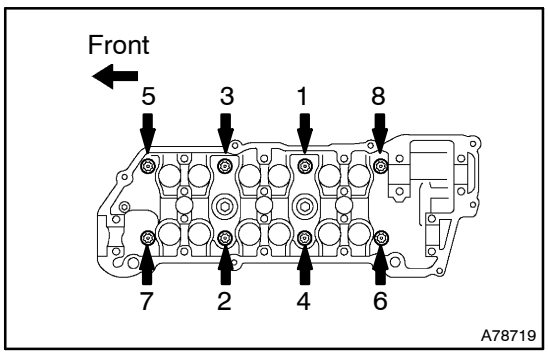
Torque: 54 N·m (550 kgf·cm, 40 ft·lbf)



(d) Mark the front side of each cylinder head bolt head with paint as shown in the illustration.

(e) Retighten the cylinder head bolts by 90° in the same sequence as step (c).

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



(g) Using a socket hexagon wrench 8, install the hexagon bolt.

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

(h) Install the wire harness clamp bracket with the bolt.

Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)

(i) Connect the ground cable with the bolt.

Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)

53. INSTALL NO.4 CAMSHAFT SUB–ASSY (See page 14–66)

54. INSTALL NO.3 CAMSHAFT SUB–ASSY (See page 14–66)

55. INSTALL CYLINDER HEAD COVER SUB–ASSY LH (See page 14–7)

56. INSTALL IGNITION COIL ASSY

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

57. INSTALL EXHAUST MANIFOLD CONVERTER SUB–ASSY NO.2 (See page 14–24)

58. CONNECT EXHAUST PIPE ASSY FRONT (See page 15–2)

59. INSTALL TIMING BELT NO.3 COVER (See page 14–66)

60. INSTALL CAMSHAFT TIMING PULLEY (See page 14–66)

61. INSTALL TIMING BELT IDLER SUB–ASSY NO.2

62. INSPECT TIMING BELT (See page 14–49)

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

64. INSTALL TIMING BELT TENSIONER ASSY (See page 14–49)

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

66. INSTALL ENGINE MOUNTING BRACKET RH
Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)
67. INSTALL TIMING BELT NO.2 COVER (See page 14–49)
68. INSTALL TIMING BELT NO.1 COVER (See page 14–49)
69. INSTALL CRANKSHAFT PULLEY (See page 14–49)
70. INSTALL GENERATOR BRACKET NO.2
Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)
71. INSTALL ENGINE MOUNTING STAY NO.2 RH (See page 14–24)
72. INSTALL ENGINE MOVING CONTROL ROD (See page 14–24)
73. INSTALL VANE PUMP V BELT (See page 14–5)
74. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1
(See page 14–5)
75. INSPECT V BELT (See page 14–1)
76. INSTALL OIL LEVEL GAGE GUIDE
77. INSTALL OIL LEVEL GAGE SUB–ASSY
78. INSTALL WATER INLET PIPE
79. CONNECT RADIATOR HOSE OUTLET
80. INSTALL WATER OUTLET (See page 14–24)
81. CONNECT RADIATOR HOSE INLET
82. INSTALL INTAKE MANIFOLD (See page 14–24)
83. CONNECT HEATER INLET WATER HOSE
84. CONNECT FUEL PIPE SUB–ASSY NO.1 (See page 14–24)
85. INSTALL INTAKE AIR SURGE TANK (See page 14–24)
86. INSTALL EMISSION CONTROL VALVE SET (See page 14–24)
87. INSTALL AIR CLEANER CASE
88. INSTALL AIR CLEANER CAP SUB–ASSY
89. CONNECT VACUUM HOSES (See page 14–24)
90. INSTALL V–BANK COVER SUB–ASSY (See page 14–24)
91. INSTALL FRONT SUSPENSION BRACE SUB–ASSY UPPER CENTER
Torque: 80 N·m (816 kgf·cm, 59 ft·lbf)
92. INSTALL COWL PANEL SUB–ASSY
93. INSTALL WINDSHIELD WIPER LINK ASSY (See page 66–7)
94. INSTALL COWL TOP VENTILATOR LOUVER SUB–ASSY (See page 66–7)
95. INSTALL FR WIPER ARM LH (See page 66–7)
96. INSTALL FR WIPER ARM RH (See page 66–7)
97. INSTALL FRONT WHEEL RH
98. ADD ENGINE OIL
99. ADD ENGINE COOLANT (See page 16–7)
100. CHECK FOR ENGINE OIL LEAKS
101. CHECK FOR ENGINE COOLANT LEAKS (See page 16–1)
102. INSPECT FOR FUEL LEAKS
103. CHECK FOR EXHAUST GAS LEAKS
104. INSPECT IGNITION TIMING (See page 14–1)
105. INSPECT ENGINE IDLE SPEED (See page 14–1)
106. INSPECT COMPRESSION (See page 14–1)
107. INSPECT CO/HC (See page 14–1)