TIMING GEAR CASE SUB–ASSY (5L–E)

170BX–01

REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB–ASSY NO.1
2. REMOVE ENGINE UNDER COVER ASSY REAR
3. DRAIN ENGINE COOLANT (See page 16–18)
4. DRAIN ENGINE OIL (See page 17–24)
5. REMOVE AIR CLEANER ASSY (See page 14–91)
6. REMOVE RADIATOR SUPPORT SEAL UPPER
7. REMOVE RADIATOR HOSE NO.1
8. REMOVE RADIATOR HOSE NO.2
9. DISCONNECT HEATER WATER INLET HOSE A
10. DISCONNECT HEATER WATER OUTLET HOSE A (FROM HEATER UNIT)
11. REMOVE VANE PUMP V BELT (See page 14–77)
12. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (W/ AIR CONDITIONING) (See page 14–77)
13. REMOVE FAN AND GENERATOR V BELT (W/O AIR CONDITIONING) (See page 14–77)

HINT:

Loosen the 4 fan pulley nuts.

14. REMOVE FAN AND GENERATOR V BELT (W/ AIR CONDITIONING) (See page 14–77)

HINT:

Loosen the 4 fan pulley nuts.

15. REMOVE FLUID COUPLING ASSY (See page 14–99)
16. REMOVE FAN SHROUD
17. REMOVE INTAKE PIPE
18. REMOVE INTAKE FLANGE (See page 10–19)
19. REMOVE VENTURI ASSY (See page 10–19)
20. REMOVE STARTER ASSY (See page 19–11)
21. REMOVE INJECTION PIPE SET (See page 11–46)
22. REMOVE IDLE PULLEY BRACKET (W/ AIR CONDITIONING)
23. SEPARATE COMPRESSOR AND MAGNETIC CLUTCH (W/ AIR CONDITIONING) (See page 14–91)
24. REMOVE COMPRESSOR MOUNTING BRACKET NO.1 (W/ AIR CONDITIONING)
25. REMOVE VANE PUMP DRIVE PULLEY (W/O AIR CONDITIONING) (See page 14–99)
26. REMOVE VANE PUMP DRIVE PULLEY (W/ AIR CONDITIONING) (See page 14–99)
27. REMOVE CRANKSHAFT PULLEY (See page 14–99)

    SST 09213–54015 (91651–60855), 09330–00021, 09950–50013 (09951–05010, 09952–05010, 09953–05010, 09953–05020, 09954–05030)
28. REMOVE RADIATOR HOSE HOSE CLAMP
29. REMOVE TIMING CHAIN OR BELT COVER SUB–ASSY (See page 14–99)
30. REMOVE TIMING BELT GUIDE
31. SET NO.1 CYLINDER TO TDC/COMPRESSION (See page 14–99)
32. REMOVE TIMING BELT (See page 14–99)
33. REMOVE INJECTION PUMP DRIVE PULLEY (See page 11–48)

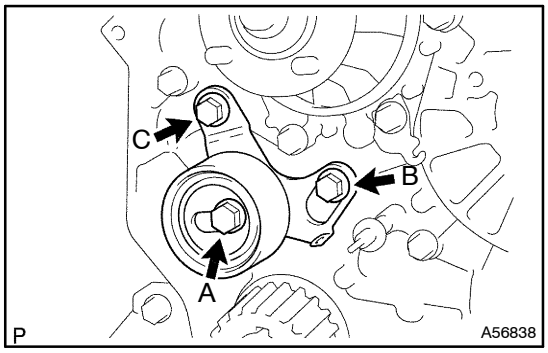
    SST 09213–14010 (91651–60865), 09330–00021, 09950–50013 (09951–05010, 09952–05010, 09953–05010, 09954–05021)
34. REMOVE INJECTION OR SUPPLY PUMP ASSY (See page 11–48)

35. REMOVE CAMSHAFT TIMING PULLEY (See page 14–106)
SST 09950–50013 (09951–05010, 09952–05010, 09953–05010, 09954–05021), 09960–10010 (09962–01000, 09963–01000)

36. REMOVE TIMING BELT NO.2 COVER (See page 14–106)

37. REMOVE WATER PUMP ASSY (See page 16–16)

38. REMOVE CRANKSHAFT TIMING PULLEY (See page 14–117)
SST 09950–50013 (09951–05010, 09952–05010, 09953–05010, 09953–05020, 09954–05010)



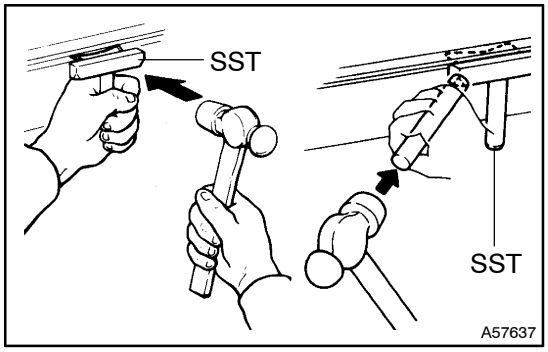
39. REMOVE TIMING BELT IDLER SUB–ASSY NO.1
(a) Remove the 2 bolts (A and B).
(b) Loosen the bolt (C), and remove the timing belt idler No.1.

40. REMOVE TIMING BELT IDLER SUB–ASSY NO.2
(a) Remove the bolt, timing belt idler No.2 and spacer.

41. REMOVE STIFFENER PLATE RH (MTM)

42. REMOVE STIFFENER PLATE LH (MTM)

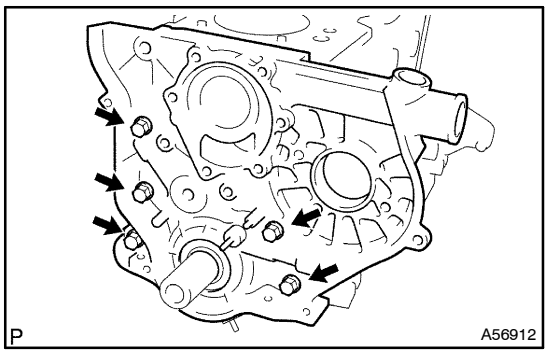
43. REMOVE DIFFERENTIAL CARRIER ASSY FRONT (See page 29–13)



44. REMOVE OIL PAN SUB–ASSY
(a) Remove the 16 bolts and 2 nuts.
(b) Insert the blade of SST between the oil pan and cylinder block, and cut off applied sealer and remove the oil pan.
SST 09032–00100

NOTICE:
- **Do not use SST for the timing belt case side and rear oil seal retainer.**
- **Be careful not to damage the oil pan flange.**

45. REMOVE OIL STRAINER SUB–ASSY
(a) Remove the 2 bolts, 2 nuts, oil strainer and gasket.



46. REMOVE TIMING GEAR CASE SUB–ASSY
(a) Remove the 5 bolts, timing gear case and gasket.

47. INSTALL TIMING GEAR CASE SUB–ASSY

(a) Place a new gasket on the cylinder block.

(b) Install the timing gear case with the 5 bolts.

Torque: 23 N·m (230 kgf·cm, 17 ft·lbf)

48. INSTALL OIL STRAINER SUB–ASSY

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

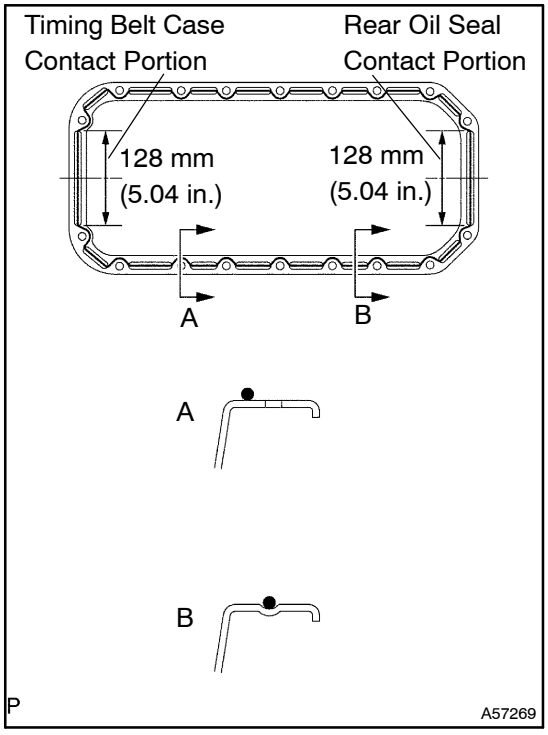
Torque:
21 N·m (210 kgf·cm, 15 ft·lbf) for nut
18 N·m (180 kgf·cm, 13 ft·lbf) for bolt

49. INSTALL OIL PAN SUB–ASSY

(a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the oil pan and cylinder block.

- Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.
- Thoroughly clean all components to remove all the loose material.
- Using a non–residue solvent, clean both sealing surfaces.

NOTICE:
Do not use a solvent which will affect the painted surfaces.



(b) Apply seal packing to the oil pan as shown in the illustration.

HINT:
Apply at least 5 mm (0.20 in.) (preferably slightly more) of seal packing to the portions of the oil pan in contact with the timing belt case and rear oil seal retainer.

Seal packing: Part No. 08826–00080 or equivalent

- Install a nozzle that has been cut to a 4 – 5 mm (0.16 – 0.20 in.) opening.

HINT:
Avoid applying an excessive amount to the surface. Be particularly careful near oil passages.

- Parts must be assembled within 5 minutes of application. Otherwise the material must be removed and reapplied.
- Immediately remove nozzle from the tube and reinstall cap.

(c) Install be oil pan with the 16 bolts and 2 nuts. Uniformly tighten the bolts the bolts and nuts in several passes.

Torque: 18 N·m (180 kgf·cm, 13 ft·lbf)

50. INSTALL STIFFENER PLATE LH (MTM)

Torque:
37 N·m (380 kgf·cm, 27 ft·lbf) (M10)
69 N·m (700 kgf·cm, 51 ft·lbf) (M12)

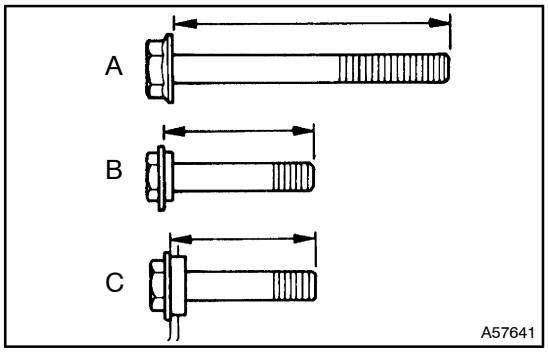
51. INSTALL STIFFENER PLATE RH (MTM)
Torque:
37 N·m (380 kgf·cm, 27 ft·lbf) (M10)
69 N·m (700 kgf·cm, 51 ft·lbf) (M12)

52. INSTALL DIFFERENTIAL CARRIER ASSY FRONT (See page 29–13)

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

(a) Install the spacer and timing belt idler No.2 with the bolt.
Torque: 33 N·m (340 kgf·cm, 24 ft·lbf)

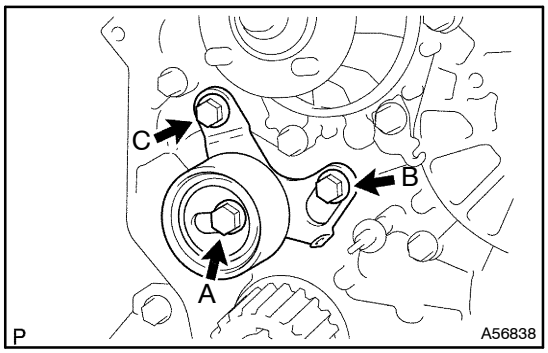
(b) Check that the timing belt idler No.2 moves smoothly.



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

HINT:

- The bolt lengths for bolt types A, B and C shown in the illustration are:
  A: 76.5 mm (3.012 in.)
  B: 42.9 mm (1.689 in.), Color: Yellow
  C: 41.3 mm (1.626 in.), Color: Silver
- Bolt C is combined with the timing belt idler No.1.



(a) Install the timing belt idler No.1 with the 3 bolts.

(b) Tighten the bolt (C).
Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

55. INSTALL CRANKSHAFT TIMING PULLEY (See page 14–117)
SST 09223–46011

56. INSTALL WATER PUMP ASSY (See page 16–16)

57. INSTALL TIMING BELT NO.2 COVER (See page 14–106)

58. INSTALL CAMSHAFT TIMING PULLEY (See page 14–106)
SST 09960–10010 (09962–01000, 09963–01000)

59. INSTALL INJECTION DR SUPPLY PUMP ASSY (See page 11–48)

60. INSTALL INJECTION PUMP DRIVE PULLEY (See page 11–48)
SST 09213–14010 (91651–60865), 09330–00021

61. INSPECT TIMING BELT (See page 14–99)

62. INSPECT TIMING BELT IDLER SUB–ASSY NO.1 (See page 14–99)

63. INSPECT IDLER TENSION SPRING (See page 14–99)

64. INSPECT WATER PUMP ASSY (See page 14–99)

65. SET NO.1 CYLINDER TO TDC/COMPRESSION (See page 14–99)

66. INSTALL TIMING BELT (See page 14–99)
SST 09960–10010 (09962–01000, 09963–01000)

67. CHECK VALVE TIMING (See page 14–99)

68. INSTALL TIMING BELT GUIDE (See page 14–99)

69. INSTALL TIMING CHAIN OR BELT COVER SUB–ASSY (See page 14–99)

70. INSTALL RADIATOR HOSE HOSE CLAMP (See page 14–99)

71. INSTALL CRANKSHAFT PULLEY (See page 14–99)
SST 09213–54015 (91651–60855), 09330–00021
72. INSTALL VANE PUMP DRIVE PULLEY (W/O AIR CONDITIONING) (See page 14–99)
73. INSTALL VANE PUMP DRIVE PULLEY (W/ AIR CONDITIONING) (See page 14–99)
74. INSTALL COMPRESSOR MOUNTING BRACKET NO.1 (W/ AIR CONDITIONING) (See page 14–91)
75. INSTALL COMPRESSOR AND MAGNETIC CLUTCH (W/ AIR CONDITIONING) (See page 14–91)
76. INSTALL IDLE PULLEY BRACKET (W/ AIR CONDITIONING) (See page 14–91)
77. INSTALL INJECTION PIPE SET (See page 11–46)
78. INSTALL STARTER ASSY (See page 19–11)
79. INSTALL VENTURI ASSY (See page 10–19)
80. INSTALL INTAKE FLANGE (See page 10–19)
81. INSTALL INTAKE PIPE (See page 10–19)
82. INSTALL FAN SHROUD (See page 16–20)
83. TEMPORARILY TIGHTEN FLUID COUPLING ASSY (See page 14–99)
84. INSTALL FAN AND GENERATOR V BELT (W/O AIR CONDITIONING) (See page 14–77)
85. INSTALL FAN AND GENERATOR V BELT (W/ AIR CONDITIONING) (See page 14–77)
86. TIGHTEN FLUID COUPLING ASSY (See page 14–99)
87. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (W/ AIR CONDITIONING) (See page 14–77)
88. INSTALL VANE PUMP V BELT (See page 14–77)
89. INSTALL AIR CLEANER ASSY (See page 14–91)
90. BLEED INJECTION PIPE (See page 11–46)
91. ADD ENGINE COOLANT (See page 16–18)
92. ADD ENGINE OIL (See page 17–24)
93. CHECK FOR ENGINE COOLANT LEAKS (See page 16–18)
94. CHECK FOR ENGINE OIL LEAKS
95. CHECK FOR FUEL LEAKS (See page 11–46)
96. INSTALL ENGINE UNDER COVER ASSY REAR (See page 14–91)
97. INSTALL ENGINE UNDER COVER SUB–ASSY NO.1 (See page 14–91)