TOYOTA — TIMING BELT

MODEL: Corolla 1997-2001. Series: AE112R
ENGINE: 7A-FE, 1.8L

REMOVAL

INTERFERENCE ENGINE. In the event of timing belt failure, it is probable that valve to piston damage has occurred. A compression test should be carried out on all cylinders before removing the cylinder head.

1. Remove alternator drive belt and water pump pulley.
2. Remove spark plugs.
3. Remove cylinder head cover.
4. Turn the crankshaft pulley and align its groove with the timing mark 'O' of the No.1 timing belt cover. Check that the hole of the camshaft timing pulley is aligned with the timing mark of the bearing cap. If not, turn the crankshaft one revolution.
5. Remove crankshaft pulley.
6. Remove timing belt covers.
7. Remove timing belt guide.
8. Loosen the mounting bolt of the idler pulley and shift the pulley to the left as far as it will go and temporarily tighten it.
9. Remove the timing belt.

Note: If reusing the timing belt, draw a direction arrow on the belt (in the direction of engine revolution), and place matchmarks on the pulleys and timing belt.

10. Remove the idler pulley and tension spring.

INSTALLATION

1. Measure the free length of the tension spring. If not as specified, replace the tension spring.
   Free length: 31.8 mm
   Measure the tension or tension spring at specified installed length. If the installed tension is not as specified, replace the tension spring.
   Installed tension:
   47.5 - 51.5 N at 37.6 mm
2. Install the idler pulley with the bolt. Do not tighten the bolt yet.
3. Install the tension spring.
4. Push the pulley toward the left as far as it will go and tighten the bolt.
5. Turn the hexagonal wrench head portion of the camshaft, and align the 'E' mark side hole of the camshaft timing pulley with the timing mark of the bearing cap. Using the crankshaft pulley bolt, turn the crankshaft and align the timing marks of the crankshaft timing pulley and oil pump body.
6. Install the timing belt. Check that there is no slackness between the crankshaft timing pulley and camshaft timing pulley.

Note: If reusing the timing belt, align the points marked during removal, and install the belt with the arrow pointing in the direction of engine rotation.

7. Loosen the idler pulley bolt. Slowly turn the crankshaft two revolutions from TDC to TDC.

Caution: Always turn the crankshaft clockwise.

8. Check that each pulley aligns with the timing marks. If the timing marks do not align, remove the timing belt and reinstall it.
9. Tighten the idler pulley bolt.
10. Check the timing belt deflection midway between the camshaft timing pulley and crankshaft timing pulley. If not within specification, readjust with the idler pulley.
    Deflection: 5 - 6 mm
11. Remove the temporarily installed crankshaft pulley bolt.
12. Install the crankshaft pulley guide with the cup side facing outward.
13. Install the No.1 timing belt cover.
14. Install the No.2, and No.3 timing belt covers.
15. Align the pulley set key with the key groove of the pulley, and install the pulley and bolt.
16. Install cylinder head cover.
17. Install the spark plugs.
18. Install water pump pulley and alternator drive belt.

SPECIAL TOOLS

Spark plug remover: 09155-16100
Crankshaft pulley bolt remover/installer: 09213-54015, 09330-00021
Crankshaft pulley remover: 09213-60017 (09213-00020, 09213-00030, 09213-00060)

BELT REPLACEMENT INTERVAL

150,000 km

RECOMMENDED REPAIR TIME

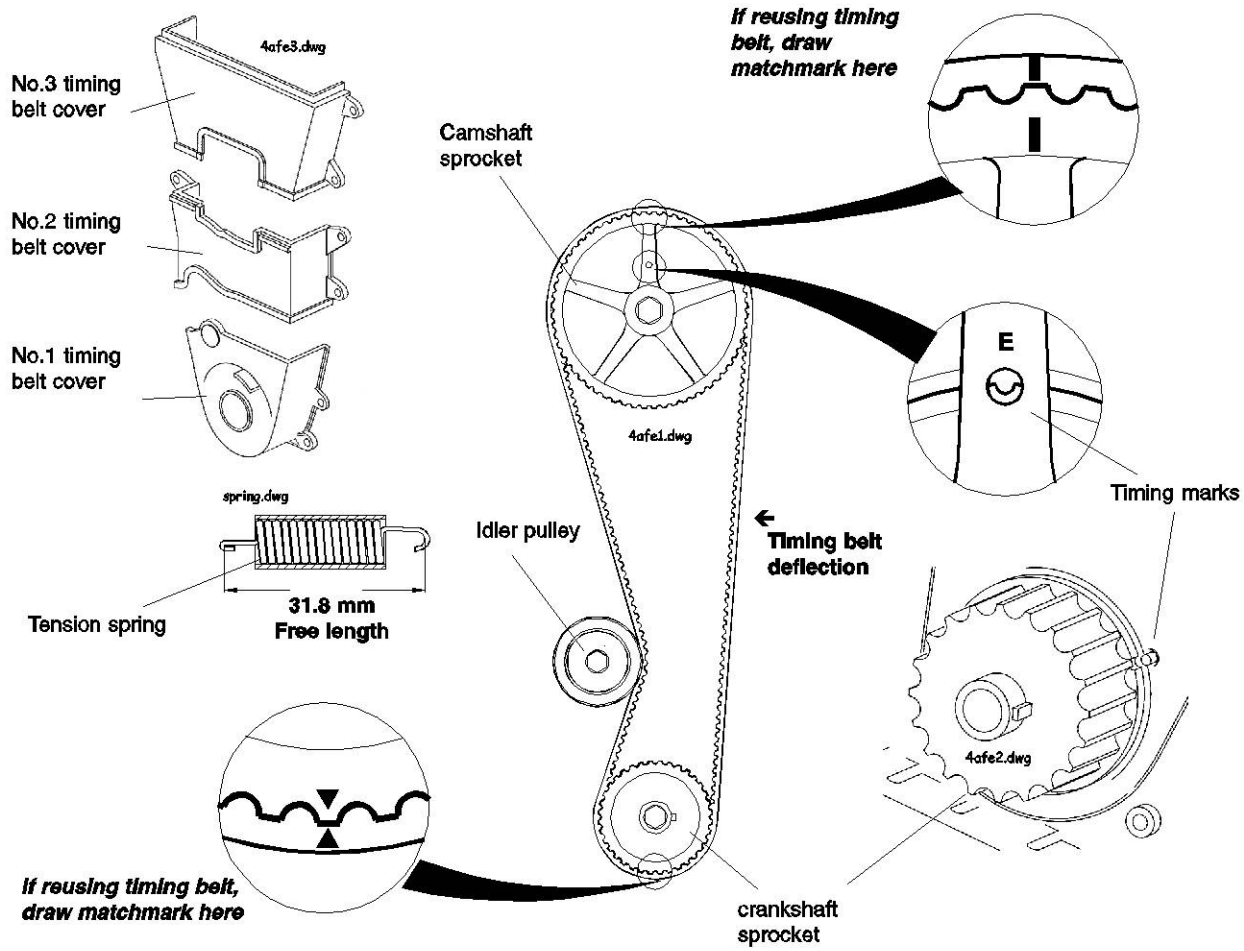
2.5 hours. Add 0.5 hour for AC and PS.

*May not include time to remove/install associated component(s).

TIGHTENING TORQUE

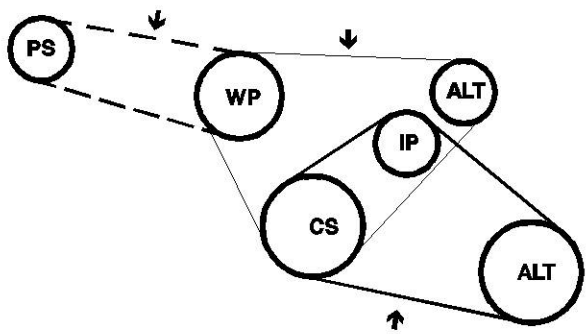
Idler pulley bolt: 37 Nm
Crankshaft pulley bolt: 118 Nm
Water pump pulley bolt: 9.3 Nm

Note: Diagrams are not to scale and for presentation only.
They may not show real shape and size of the components.



TIMING BELT	
MANUFACTURER NUMBER	NAM
DEFLECTION (mm)	5 - 6

AUXILIARY DRIVE BELTS			
BELT	DEFLECTION (mm) under 10kg (98N) load		SIZE (WxL)(mm)
	NEW	USED	
ALT	7 - 9	11.5 - 13.5	NAM
PS	5 - 6	6 - 8	NAM
AC	6 - 7	8.5 - 9.5	NAM



AC- Air conditioning pulley
ALT - Alternator pulley
CS - Crankshaft pulley
IP - Idler pulley
TP - Tensioner pulley
WP - Water pump pulley