1994 Lexus LS 400 V8-4.0L (1UZ-FE) Timing Belt Replacement part 1
INSTALLATION OF TIMING BELT
1. Install crankshaft timing pulley.

(a) Align the pulley set key on the crankshaft with the key groove of the timing pulley.

(b) Using SST 09223-46011, and a hammer, tap in the timing pulley, facing the flange side rearward.

2. Install No.1 idler pulley.

(a) Apply adhesive to 2 or 3 threads of the pulley bolt end.

Adhesive: Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent.
(b) Using a 10 mm hexagon wrench, install the plate washer and idler pulley with the pulley bolt. Torque the pulley bolt.

**Torque: 350 kg.cm. (25 ft.lbf., 34 Nm).**

(c) Check that the idler pulley bracket moves smoothly.

3. Install No.2 idler pulley.

(a) Install the idler pulley with the pulley bolt. Torque the pulley bolt.

**Torque: 350 kg.cm. (25 ft.lbf., 34 Nm).**

(b) Check that the idler pulley moves smoothly.

4. Temporarily install timing belt. **NOTICE:** The engine should be cold.
(a) Using the crankshaft pulley bolt, turn the crankshaft and align the timing marks of the crankshaft timing pulley and oil pump body.

(b) Remove any oil or water on the crankshaft timing pulley, oil pump pulley, water pump pulley, No.1 idler pulley and No.2 idler pulley, and keep them clean.

(c) Align the installation mark on the timing belt with the dot mark of the crankshaft timing pulley.

(d) Install the timing belt on the crankshaft timing pulley, No.1 idler pulley and No.2 idler pulley.

5. Install timing belt guide (crankshaft angle sensor plate).
Install the belt guide, facing the cup side outward.

6. Install timing belt cover spacer.

(a) Install the gasket to the spacer.

(b) Install the cover spacer.

7. Install No.1 timing belt cover.

(a) Install the gasket to the timing belt cover.
(b) Install the timing belt cover with the 4 bolts.

8. Install fan bracket.

Install the fan bracket with the 2 bolts and 2 nuts.

**Torque:**

- 12 mm head  160 kg.cm. (12 ft.lb., 16 Nm).
- 14 mm head  310 kg.cm. (22 ft.lb., 30 Nm).
**HINT:** Each bolt length is indicated in the illustration.

**Bolt length:**

A 106 mm (4.17 in.) for 12 mm head.
B 114 mm (4.49 in.) for 14 mm head.

9. Install crankshaft pulley.

(a) Align the pulley set key with the key groove of the crankshaft pulley.

(b) Using **SST 09223-46011**, and a hammer, tap in the crankshaft pulley.
(C) Using **SST 09213-70010 and 09330-00021**, install and torque the pulley bolt.

**Torque: 2,500 kg.cm. (181 ft.lb., 245 Nm).**

10. Install RT camshaft timing pulley.

(a) Align the camshaft knock pin with the knock pin groove of the timing pulley, and slide on the timing pulley.

(b) Slide the timing pulley on the camshaft, facing the "RH" mark forward.

![Image of SST tool安装](image.png)

(c) Using **SST 09278-54012**, install and torque the pulley bolt.

**Torque: 1,100 kg.cm. (80 ft.lb., 108 Nm).**

11. Install LH camshaft timing pulley.

(a) Align the camshaft knock pin with the knock pin groove of the timing pulley, and slide on the timing pulley.

(b) Slide the timing pulley on the camshaft, facing the "LH" mark forward.
(c) Using **SST 09278-54012**, install and torque the pulley bolt.

**Torque: 1,100 kg.cm. (80 ft.lb., 108 Nm).**

12. Set No.1 cylinder to TDC/compression.

(a) (Crankshaft pulley position) Turn the crankshaft pulley, and align its groove with the "0" timing mark of the No.1 timing belt cover.
(b) (Camshaft timing pulley position) Using **SST 09278-54012**, turn the camshaft timing pulley, and align the timing marks of the camshaft timing pulley and timing belt rear plate.

13. Install timing belt to LH camshaft timing pulley.

(a) Check that the installation mark on the timing belt matches the end of the fan bracket.

(b) Remove any oil or water on the LH camshaft pulley and keep it clean.
(c) Using **SST 09278-54012**, slightly turn the LH camshaft timing pulley clockwise. Align the installation mark on the timing belt with the timing mark of the camshaft timing pulley, and hang the timing belt on the LH camshaft timing pulley.

(d) Using **SST 09278-54012**, align the timing marks of the LH camshaft pulley and timing belt rear plate.

(e) Check that the timing belt has tension between the crankshaft timing pulley and LH camshaft timing pulley.


(a) Remove any oil or water on the RH camshaft pulley and water pump pulley, and
(b) Using **SST 09278-54012**, slightly turn the RH camshaft timing pulley clockwise. Align the installation mark on the timing belt with the timing mark of the camshaft timing pulley, and hang the timing belt on the RH camshaft timing pulley.

(c) Using **SST 09278-54012**, align the timing marks of the RH camshaft pulley and timing belt rear plate.

(d) Check that the timing belt has tension between the timing RH camshaft timing pulley and LH camshaft timing pulley.

15. Set timing belt tensioner.
(a) Using a press, slowly press in the push rod using 100-1,000 kg. (220-2,205 lb., 981-9,807 Nm) of pressure.

(b) Align the holes of the push rod and housing, pass a 1.27 mm hexagon wrench through the holes to keep the setting position of the push rod.

(c) Release the press.

(d) Install the dust boot to the tensioner.

16. Install timing belt tensioner.
(a) Temporarily install the tensioner with the 2 bolts.
(b) Alternately tighten the 2 bolts.

**Torque: 270 kg.cm. (20 ft.lb., 26 Nm).**

(c) Using pliers, remove the 1.27mm hexagon wrench from the tensioner.

17. Check valve timing.
(a) Slowly turn the crankshaft pulley 2 revolutions from TDC to TDC.

**NOTICE:** Always turn the crankshaft pulley clockwise.

(b) Check that each pulley aligns with the timing marks as shown in the illustration. If the marks do not align, remove the timing belt and reinstall it.

18. Install **spark plugs**.
Using a 16 mm plug wrench, install the 8 spark plugs.

**Torque: 180 kg.cm. (13 ft.lb., 18 Nm).**

19. Install drive belt tensioner.

Install the belt tensioner with the bolt and 2 nuts.

**Torque: 160 kg.cm. (12 ft.lb., 16 Nm).**

**HINT:** Use bolt 106 mm (4.17 in.) in length.

20. Install generator.
(a) Install the generator and oil cooler pipe bracket with the bolt and nut.

**Torque: 380 kg.cm. (27 ft.lb., 37 Nm).**

(b) Install the 2 oil cooler pipes with the pipe clamp and bolt.

(c) Connect the generator connector and wire.

(d) Connect the generator wire with the nut.

(e) Install the clamp of the generator wire to the generator cover.

21. Install RH distributor housing.
Install the distributor housing with the 3 bolts.

**Torque:** 185 kg.cm. (13 ft.lb., 18 Nm).

**HINT:**
- The RH distributor is marked with "R."
- Each bolt length is indicated in the illustration.

**Bolt length:**
- A 38 mm (1.50 in.).
- B 96 mm (3.78 in.).

22. Install LH distributor housing.
(a) Install the distributor housing with the 3 bolts.

**Torque: 185 kg.cm. (13 ft.lb., 18 Nm).**

**HINT:**
- The LH distributor is marked with "L."
- Each bolt length is indicated in the illustration.

**Bolt length:**
- A 38 mm (1.50 in.).
- B 80 mm (3.15 in.).

23. Install distributor rotors.

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(a) Align the protrusion of the distributor rotor with the groove of the camshaft timing pulley.

(b) Install the distributor rotor with the 2 bolts. Install the 2 distributor rotors.

**Torque: 39 kg.cm. (34 in.lb., 3.8 Nm).**

24. Install **distributor caps**.
Install the distributor cap with the 3 bolts. Install the 2 distributor caps.

25. Install RH No.2 timing belt cover.

(a) Install the 4 gaskets to the timing belt cover.
(b) Install the wire grommet to the timing belt cover.
(c) Fit the timing belt cover, matching it with the fan bracket.
(d) Fit the timing belt cover holes, matching them with the 2 grommets on the distributor.
(e) Install the timing belt cover with the 5 bolts.

**Torque:**
10 mm head bolt  80 kg.cm. (69 in.lb., 7.8 Nm).
12 mm head bolt  160 kg.cm. (12 ft.lb., 16 Nm).

**HINT:** (12 mm head bolt) Use bolts 106 mm (4.17 in.) in length.

(f) Install the wire clamp to the timing belt cover.
(g) Connect the camshaft position sensor connector.
(h) (Ex. Calif.) Install the camshaft position sensor connector to the ignition coil bracket.