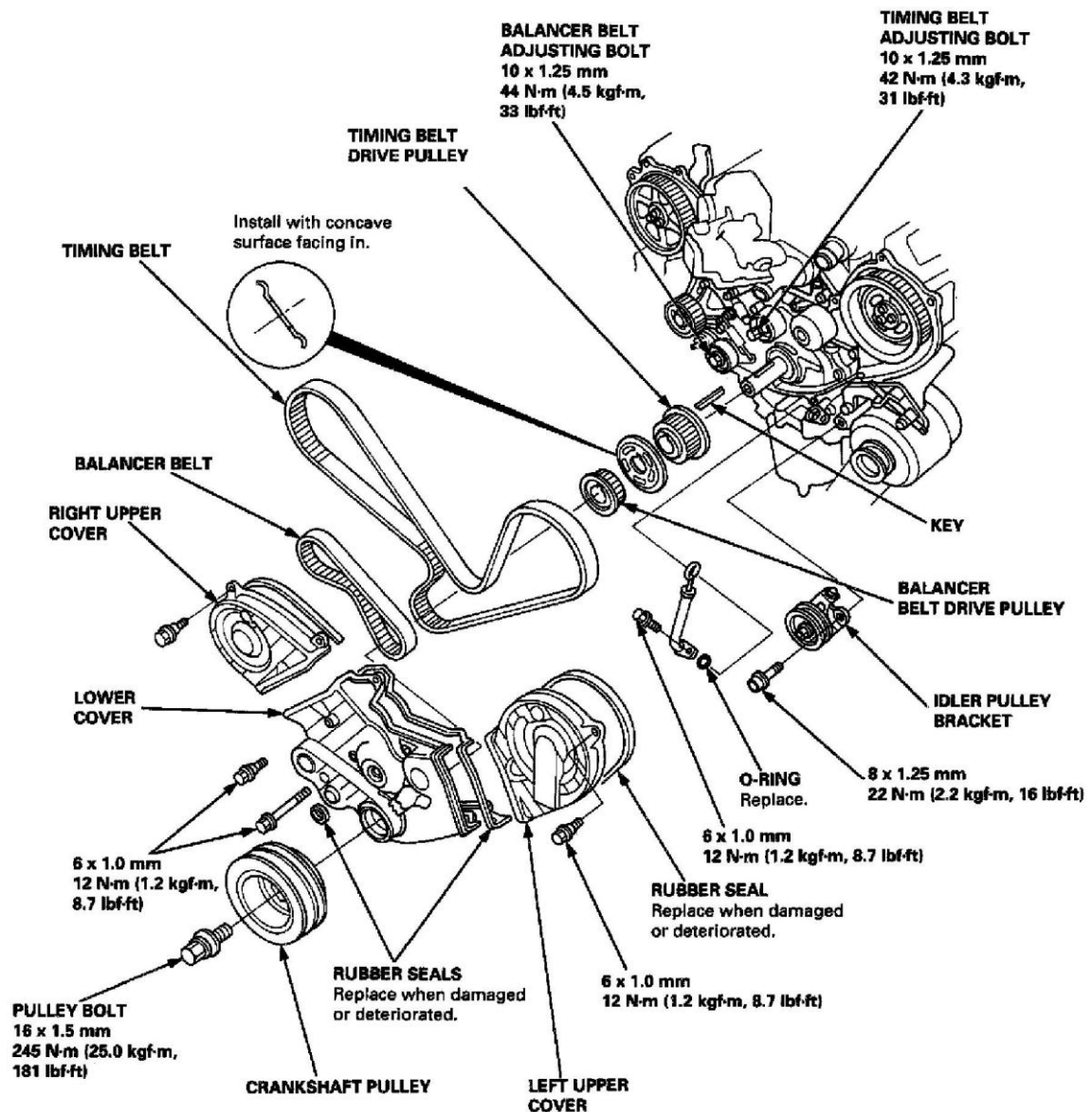




Acura 3.5RL V6-3.5L 2001

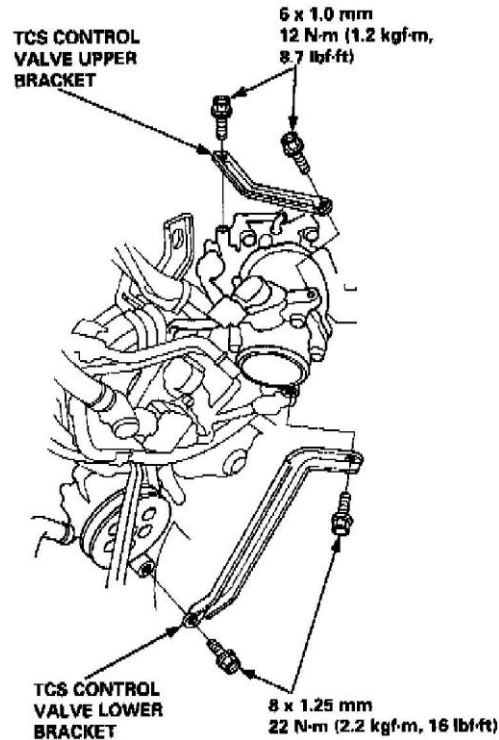


Timing Belt: Service and Repair Removal and Installation REMOVAL

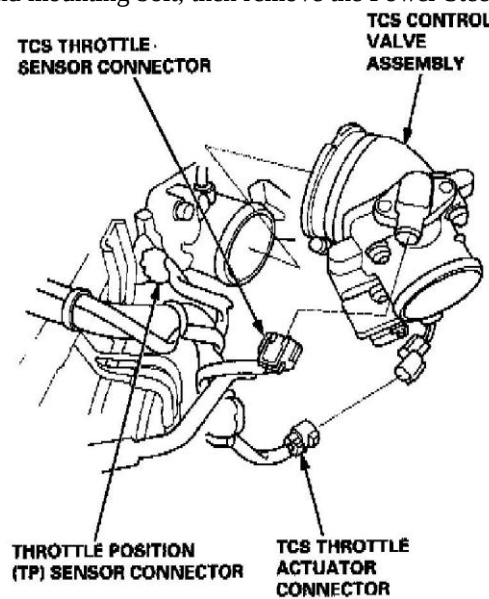
NOTE:

- Replace the timing belt and timing balance belt at 105,000 miles (168,000 km) according to the maintenance schedule (normal conditions, severe conditions). If the vehicle regularly is driven in one or more of the following conditions, replace the timing belt and timing balancer belt at 60,000 miles (U.S.A.) 100,000 km (Canada).

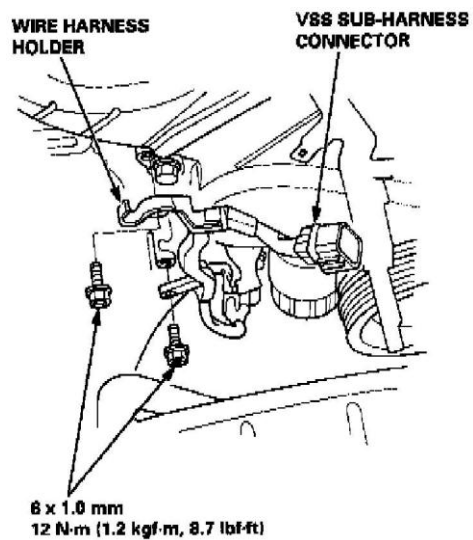
- In very high temperatures (over 110°F, 43°C).
 - In very low temperatures (under -20°F, -29°C).
 - Turn the crankshaft pulley so the No. 1 piston is at Top Dead Center (TDC) before removing the belt.
 - Inspect the water pump before installing the timing belt.
1. Remove the engine cover.
 2. Remove the intake air duct and air cleaner housing assembly.
 3. Loosen the mounting bolt, lock bolt and adjusting rod, then remove the alternator belt.
 4. Loosen the idler pulley center nut and adjusting bolt, then remove the Air Conditioning (A/C) compressor belt.



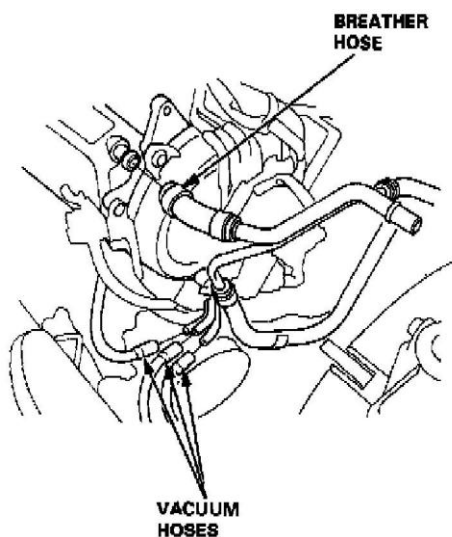
5. Remove the TCS control valve upper and lower brackets.
6. Loosen the adjusting bolt, locknut and mounting bolt, then remove the Power Steering (P/S) pump belt.



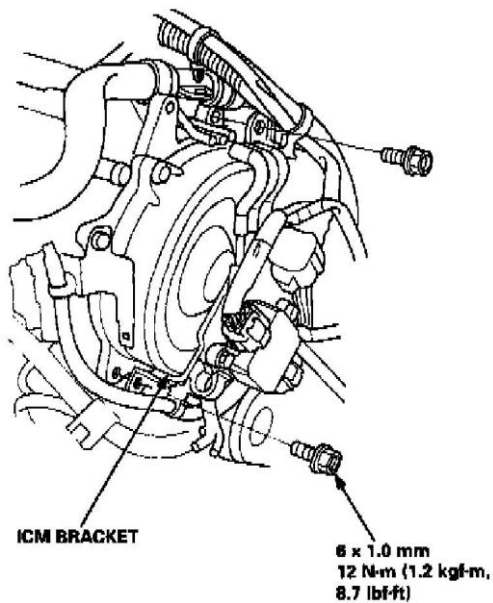
7. Disconnect the TCS throttle sensor connector, the TCS throttle actuator connector, and the Throttle Position (TP) sensor connector, then remove the TCS control valve assembly.



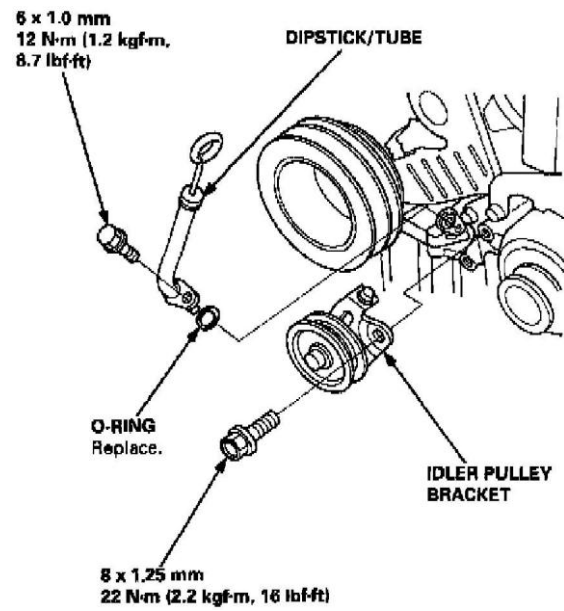
8. Disconnect the Vehicle Speed Sensor (VSS) sub-harness connector, then remove the wire harness holder.



9. Remove the breather hose and vacuum hoses.

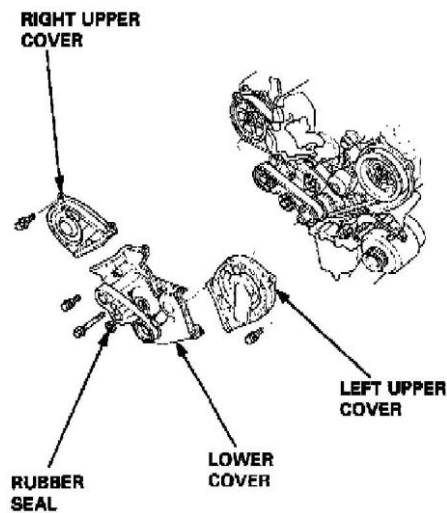


10. Remove the vacuum hoses and Ignition Control Module (ICM) bracket.



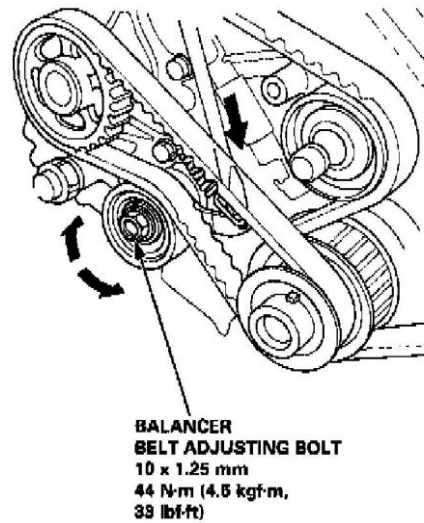
Mounting Bolts

11. Remove the idler pulley bracket, dipstick and tube.
12. Remove the crankshaft pulley.

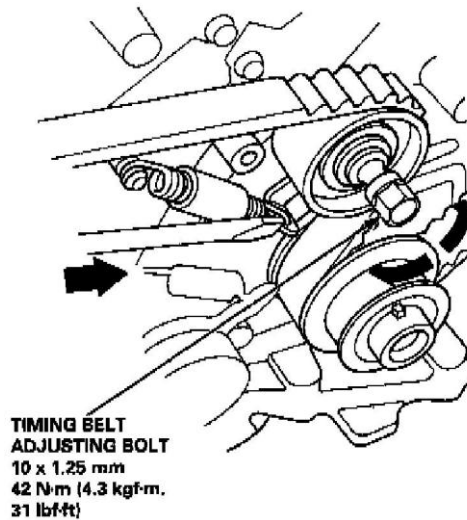


13. Remove the upper and lower covers.

NOTE: Do not use the upper and lower covers for storing removed items.



14. Loosen the balancer belt adjusting bolt 180°. Push the tensioner to remove tension from the balancer belt, then retighten the adjusting bolt.
15. Remove the balancer belt.



16. Loosen the timing belt adjusting bolt 180°. Push the tensioner to remove tension from the timing belt, then retighten the adjusting bolt.
17. Remove the timing belt.

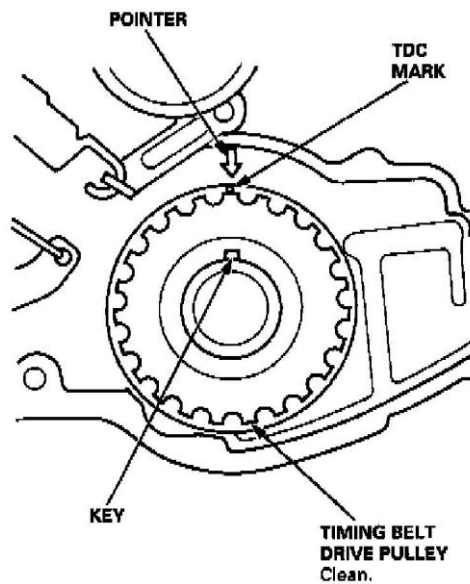
INSTALLATION

Install the timing belt and balancer belt in the reverse of removal; only key points are described here.

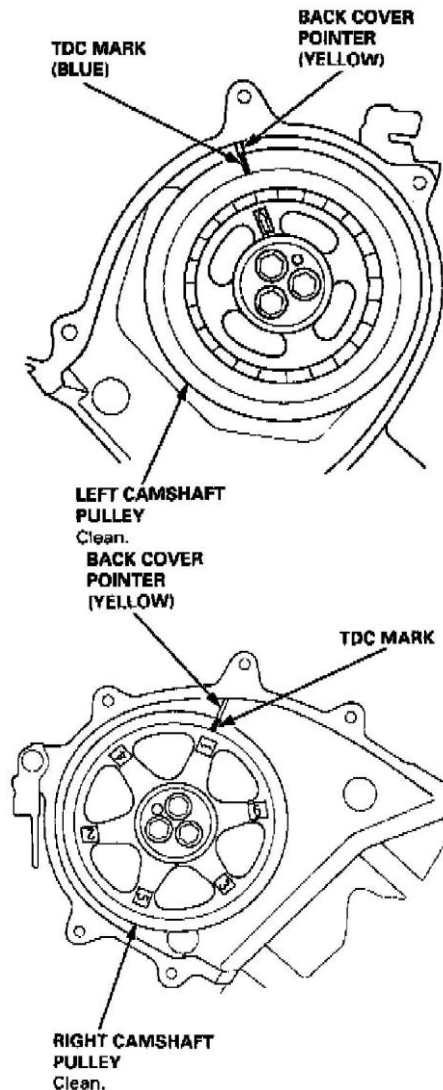
CAUTION: Do not rotate the crankshaft pulley or cam pulleys with the timing belt removed. The pistons hit the valves and cause damage.

NOTE: When installing only the balancer belt, go to step 12.

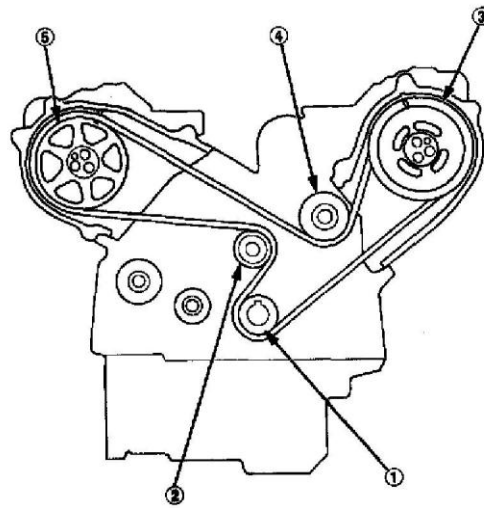
1. Remove the spark plugs.
2. Remove the balancer belt drive pulley and timing belt guide plate.



3. Set the timing belt drive pulley so that the No. 1 piston is at Top Dead Center (TDC). Align the TDC mark on the timing belt drive pulley with the pointer on the oil pump.



4. Set the camshaft pulleys so that the No. 1 piston is at TDC. Align the TDC marks on the camshaft pulleys to the pointers on the back covers.



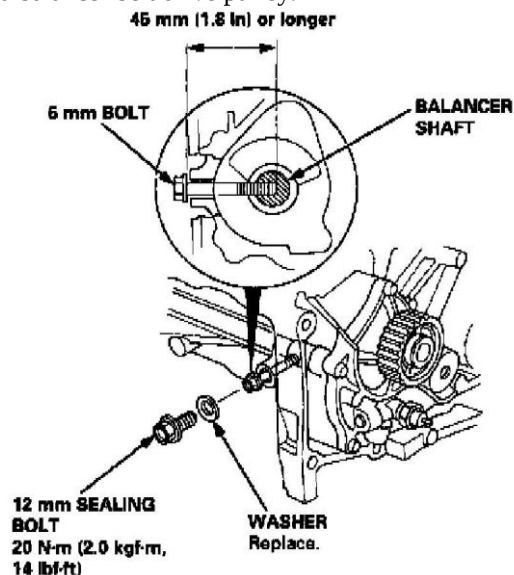
5. Install the timing belt in the sequence shown.

(1) Timing belt drive pulley (crankshaft) -> (2) Adjusting pulley -> (3) Left camshaft pulley -> (4) Water pump pulley -> (5) Right camshaft pulley.

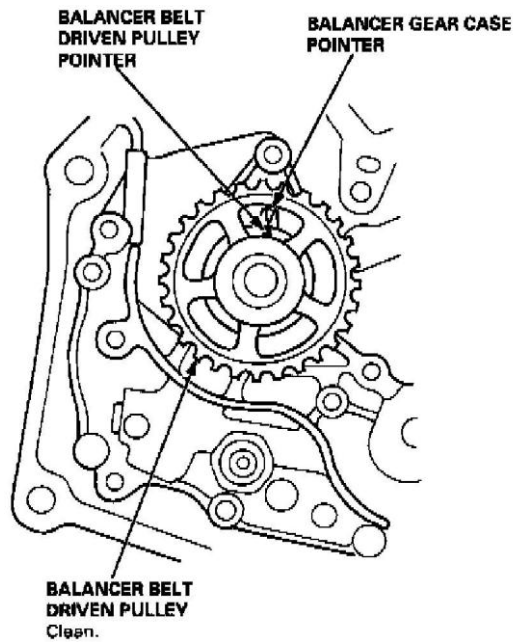
NOTE:

- For easier installation, turn the right camshaft pulley clockwise about a half tooth from the TDC position. - Make sure the timing belt drive pulley and camshaft pulleys are at TDC.

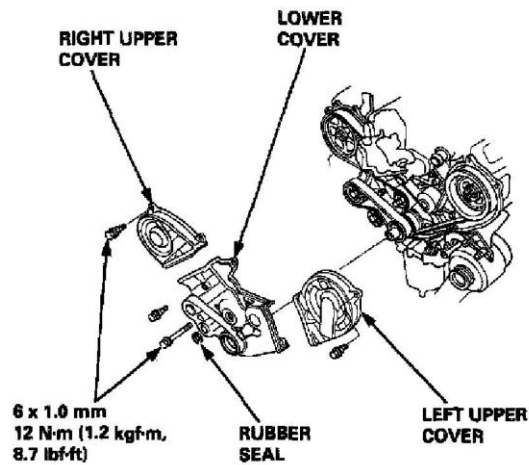
6. Loosen and retighten the timing belt adjusting bolt to tension the timing belt.
7. Install the lower cover and crankshaft pulley.
8. Rotate the crankshaft pulley about five or six turns clockwise so the timing belt positions on the pulleys.
9. Adjust the timing belt tension.
10. Remove the crankshaft pulley and lower cover.
11. Install the timing belt guide plate and balancer belt drive pulley.



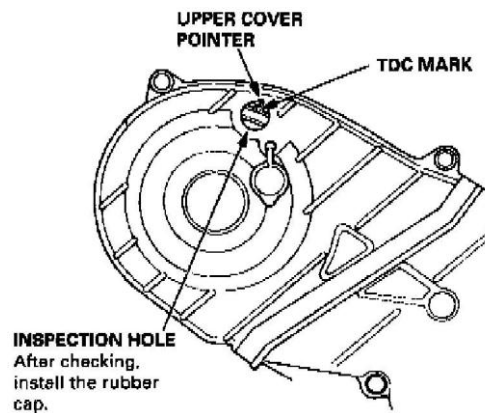
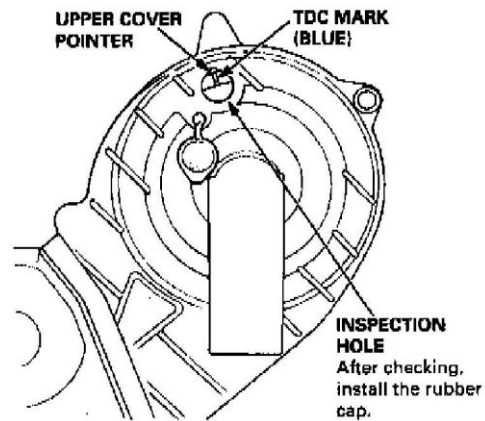
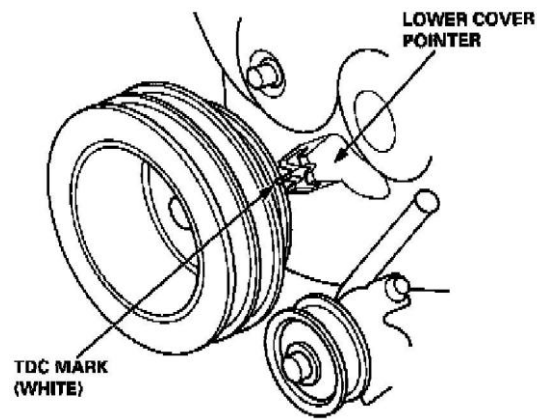
12. Align the maintenance hole and the balancer shaft hole. Insert a 6 mm bolt that is at least 45 mm (1.8 inch) long into the balancer shaft.



13. Check alignment of the pointers.
14. Set the timing belt drive pulley so that the No. 1 piston is at TDC.
15. Install the balancer belt drive pulley, then install the balancer belt.
16. Loosen and retighten the balancer belt adjusting bolt to tension the balancer belt.
17. Remove the 6 mm bolt. Install the sealing bolt in the maintenance hole. Use a new washer.
18. Install the crankshaft pulley, then rotate the crankshaft pulley about five or six turns clockwise so that the balancer belt positions on the pulleys.
19. Adjust the balancer belt tension.
20. Remove the crankshaft pulley.



21. Install the upper and lower covers, then install the crankshaft pulley.



22. Check that the crankshaft pulley and camshaft pulleys are at TDC.
23. If the camshaft and crankshaft pulleys are not positioned at TDC, remove the timing belt and adjust the positioning, then reinstall the timing belt.
24. After installation, adjust the tension of each belt.
 - See Drive Belts, Mounts, Brackets and Accessories / Drive Belt / Adjustments.

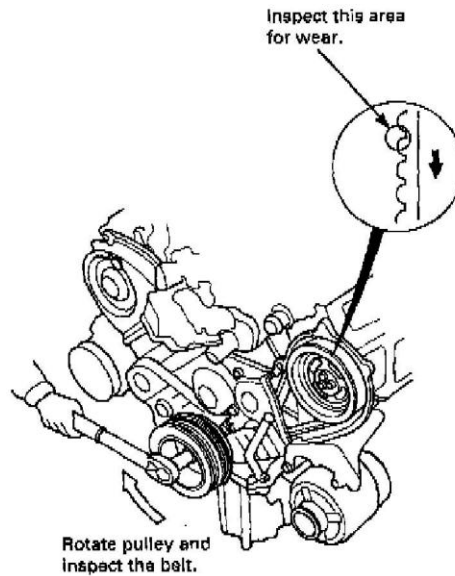
Timing Belt: Service and Repair

Inspection and Adjustment

TIMING BELT

Inspection

1. Remove the left upper cover.



2. Inspect the timing belt for cracks and oil or coolant soaking.

NOTE:

- Replace the belt if oil or coolant soaked.
- Remove any oil or solvent that gets on the belt. Tension Adjustment

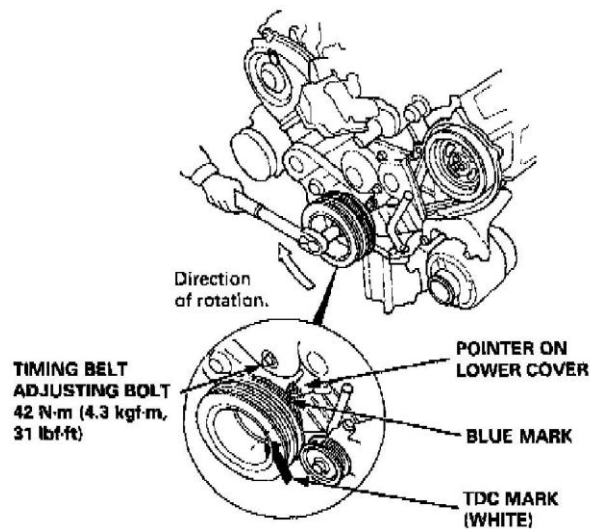
CAUTION:

- Always adjust the timing belt tension with the engine cold.
- Do not rotate the crankshaft when the adjusting bolt is loose.

NOTE:

- The tensioner is spring-loaded to apply tension to the belt automatically after making the following adjustment.
- Inspect the timing belt before adjusting the belt tension.
- Always rotate the crankshaft clockwise when viewed from the pulley side. Rotating it counterclockwise may result in improper adjustment of the belt tension.

1. Remove the left upper cover.
2. Set the No. 1 piston at TDC.

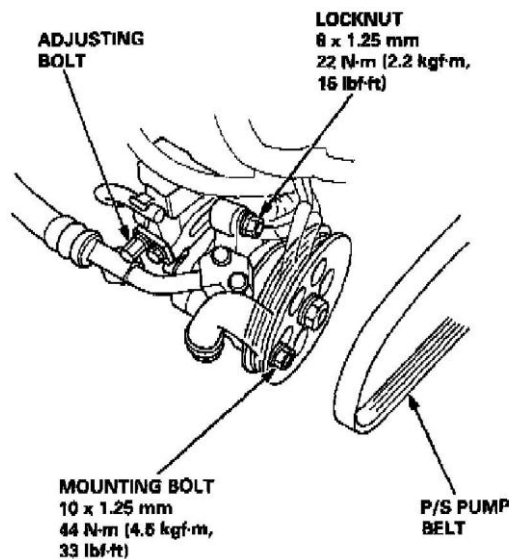


3. Rotate the crankshaft clockwise ten teeth on the camshaft pulley (The blue mark on the crankshaft pulley should line up with the pointer on the lower cover).
4. Loosen the timing belt adjusting 180°.
5. Tighten the adjusting bolt, torque to 42 Nm (4.3 kgs.cm, 31 ft. lbs.).

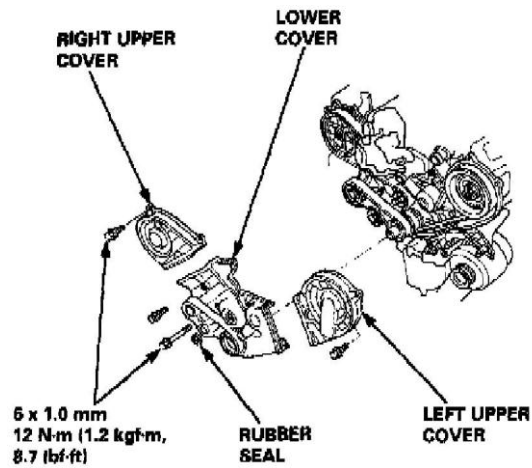
BALANCER BELT

Inspection

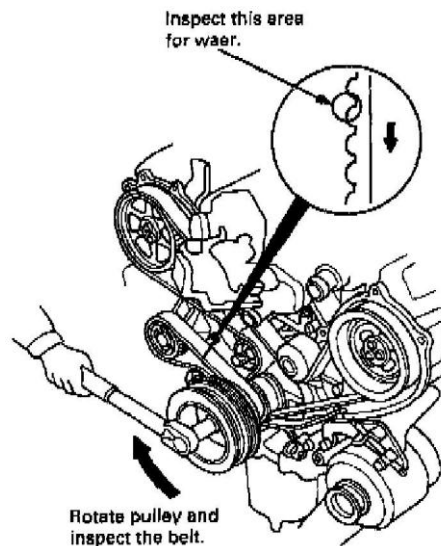
1. Remove the engine cover.
2. Remove the intake air duct and air cleaner housing assembly.
3. Loosen the mounting bolt, lock bolt and adjusting rod, then remove the alternator belt.
4. Loosen the idler pulley center nut and adjusting bolt, then remove the Air Conditioning (A/C) compressor belt.
5. Remove the TCS control valve upper and lower brackets.



6. Loosen the adjusting bolt, locknut and mounting bolt, then remove the Power Steering (P/S) pump belt.
7. Disconnect the TCS throttle sensor connector and TCS throttle actuator connector, then remove the TCS control valve assembly.
8. Disconnect the Vehicle Speed Sensor (VSS) sub-harness connector, then remove the wire harness holder.
9. Remove the breather hose and vacuum hoses.
10. Remove the vacuum hoses and Ignition Control Module (ICM) bracket.
11. Remove the crankshaft pulley.
12. Remove the idler pulley, the dipstick, and the dipstick tube.



13. Remove the upper and lower covers.



14. Inspect the balancer belt for cracks and oil or coolant soaking.

NOTE:

- Replace the belt if oil or coolant soaked.
- Remove any oil or solvent that gets on the belt. Tension Adjustment

CAUTION:

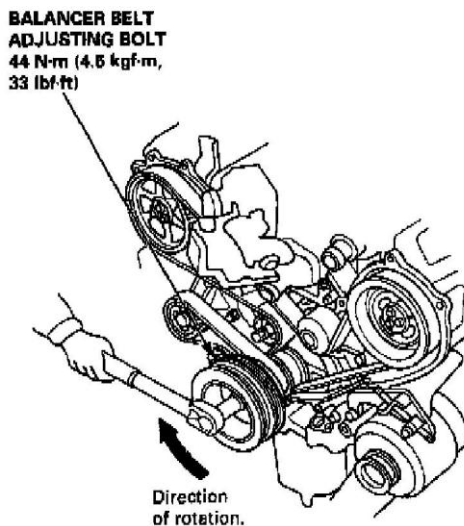
- Always adjust the balancer belt tension with the engine cold.
- Do not rotate the crankshaft when the adjusting bolt is loose.

NOTE:

- The tensioner is spring-loaded to apply tension to the belt automatically after making the following adjustment.
- Inspect the balancer belt before adjusting the belt tension
- Always rotate the crankshaft clockwise when viewed from the pulley side. Rotating it counterclockwise may result in improper adjustment of the belt tension.

1. Remove the engine cover.
2. Remove the intake air duct and air cleaner housing assembly.
3. Loosen the mounting bolt, lock bolt and adjusting rod, then remove the alternator belt.
4. Loosen the idler pulley center nut and adjusting bolt, then remove the Air Conditioning (A/C) compressor belt.
5. Loosen the adjusting bolt, locknut and mounting bolt, then remove the Power Steering (P/S) pump belt.
6. Remove the TCS control valve upper and lower brackets.
7. Disconnect the TCS throttle sensor connector and TCS throttle actuator connector, then remove the TCS control valve assembly.

8. Disconnect the Vehicle Speed Sensor (VSS) sub-harness connector, then remove the wire harness holder.
9. Remove the breather hose and vacuum hoses.
10. Remove the vacuum hoses and Ignition Control Module (ICM) bracket.
11. Remove the crankshaft pulley.
12. Remove the upper and lower covers.
13. Set the No. 1 piston at TDC.
14. Rotate the crankshaft clockwise one turn.
15. Loosen the balancer belt adjusting bolt 180°.



16. Tighten the adjusting bolt, torque to 44 Nm (4.5 kgs.cm, 33 ft. lbs.).

Timing Belt: Service and Repair

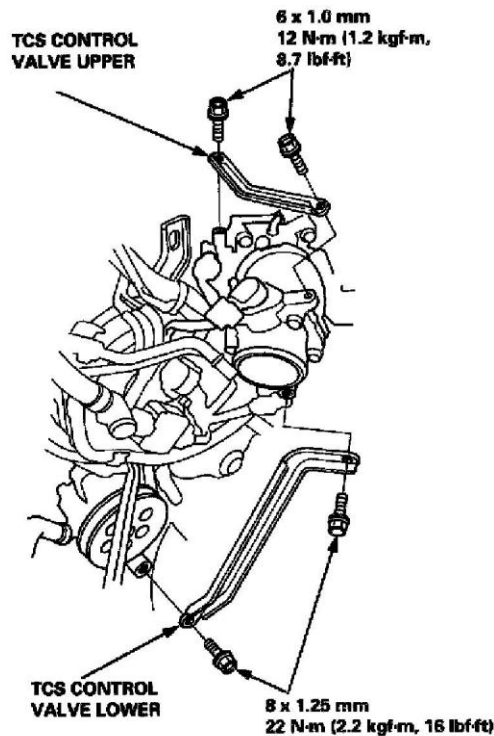
Timing Belt and Balancer

Belt Removal

NOTE:

- Replace the timing belt and timing balance belt at 105,000 miles (168,000 km) according to the maintenance schedule (normal conditions, severe conditions). If the vehicle regularly is driven in one or more of the following conditions, replace the timing belt and timing balancer belt at 60,000 miles (U.S.A.) 100,000 km (Canada).
- In very high temperatures (over 110°F, 43°C).
- In very low temperature (under -20°F, -29°C).
- Turn the crankshaft pulley so the No. 1 piston is at top dead center (TDC) before removing the belt.
- Inspect the water pump before installing the timing belt.

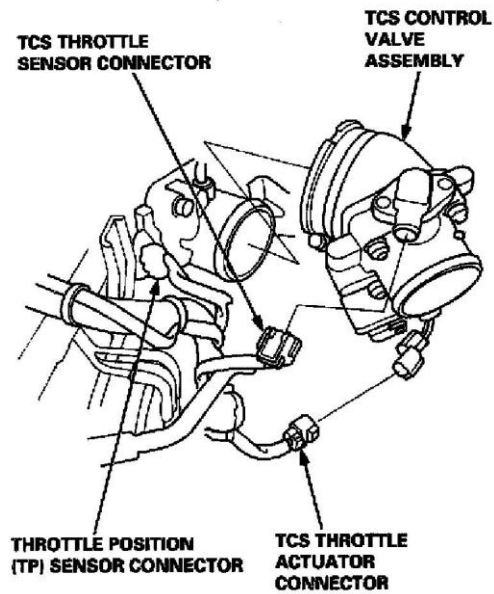
1. Remove the engine cover.
2. Remove the intake air duct and air cleaner housing assembly.
3. Loosen the mounting bolt, lock bolt and adjusting rod, then remove the alternator belt.
4. Loosen the idler pulley center nut and adjusting bolt, then remove the air conditioning (A/C) compressor belt.



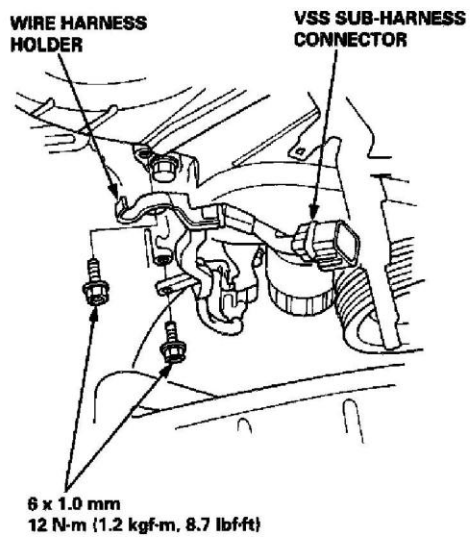
5. Remove the TCS control valve upper and lower

NOTE: Refer to Brakes when installing the brackets.

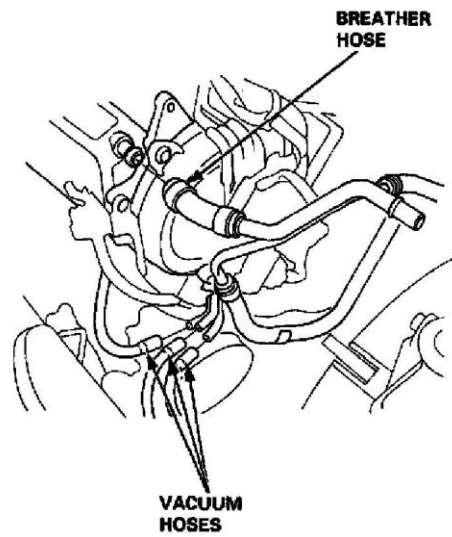
6. Loosen the adjusting bolt, locknut and mounting bolt, then remove the power steering (P/S) pump belt.



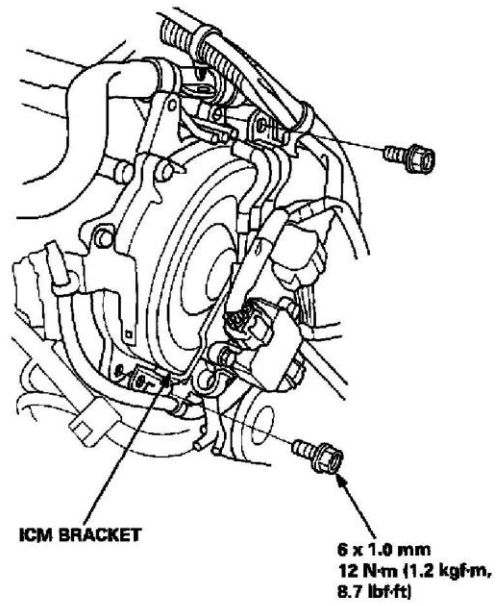
7. Disconnect the TCS throttle sensor connector, the TCS throttle actuator connector, and the throttle position (TP) sensor connector, then remove the TCS control valve assembly.



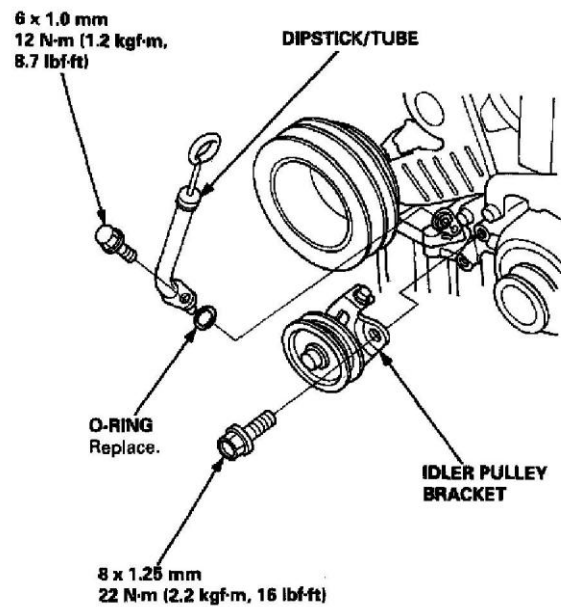
8. Disconnect the vehicle speed sensor (VSS) sub-harness connector, then remove the wire harness holder.



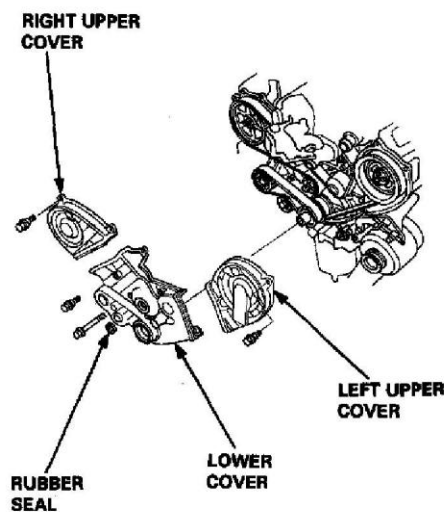
9. Remove the breather hose and vacuum hoses.



10. Remove the vacuum hoses and ignition control module (ICM) bracket.

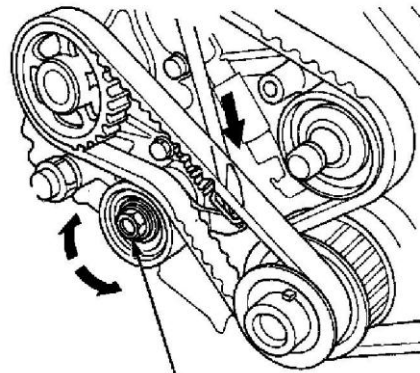


11. Remove the idler pulley bracket, dipstick and tube.
12. Remove the crankshaft pulley.



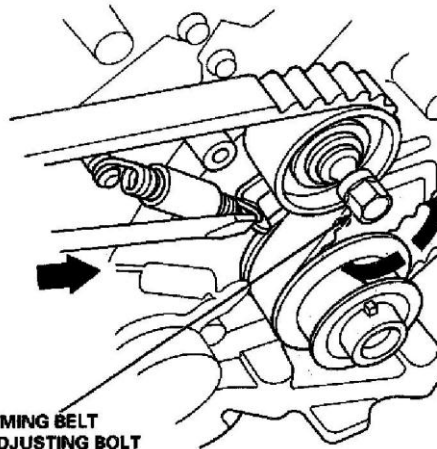
13. Remove the upper and lower covers.

NOTE: Do not use the upper and lower covers for storing removed items.



**BALANCER
BELT ADJUSTING BOLT**
10 x 1.25 mm
44 N·m (4.5 kgf·m,
33 lbf·ft)

14. Loosen the balancer belt adjusting bolt 180°. Push the tensioner to remove tension from the balancer belt, then retighten the adjusting bolt.
15. Remove the balancer belt.



**TIMING BELT
ADJUSTING BOLT**
10 x 1.25 mm
42 N·m (4.3 kgf·m,
31 lbf·ft)

16. Loosen the timing belt adjusting bolt 180°. Push the tensioner to remove tension from the timing belt, then retighten the adjusting bolt.
17. Remove the timing belt.

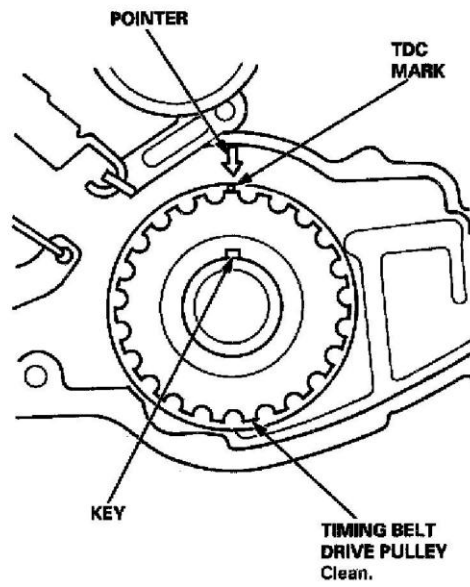
Installation

Install the timing belt and balancer belt in the reverse order of removal; only key points are described here.

CAUTION: Do not rotate the crankshaft pulley or camshaft pulleys with the timing belt removed. The pistons may hit the valves and cause damage.

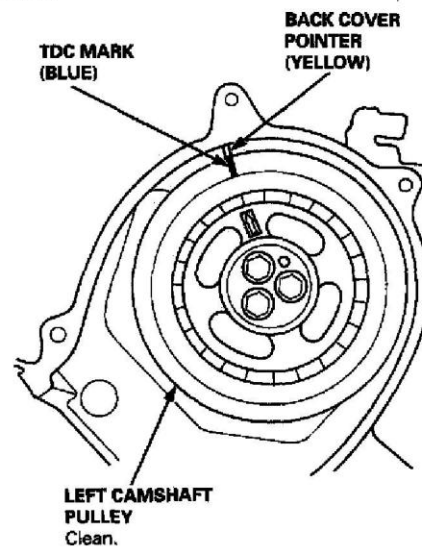
NOTE: When installing only the balancer belt, go to step 12.

1. Remove the spark plugs.
2. Remove the balancer belt drive pulley and timing belt guide plate.

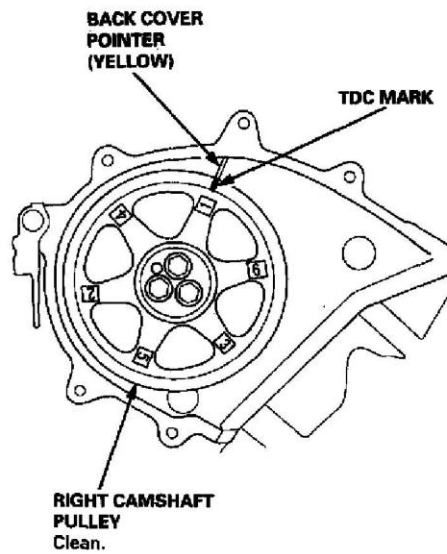


3. Set the timing belt drive pulley so that the No. 1 piston is at top dead center (TDC). Align the TDC mark on the timing belt drive pulley with the pointer on the oil pump.

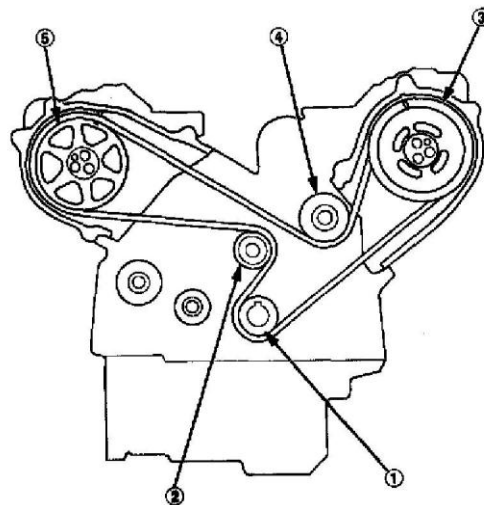
LEFT:



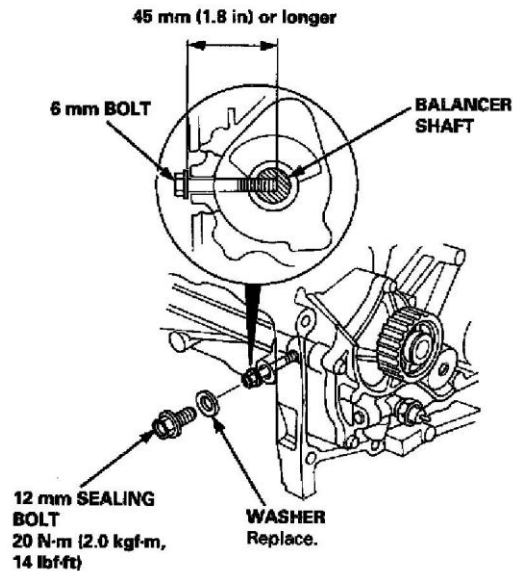
RIGHT:



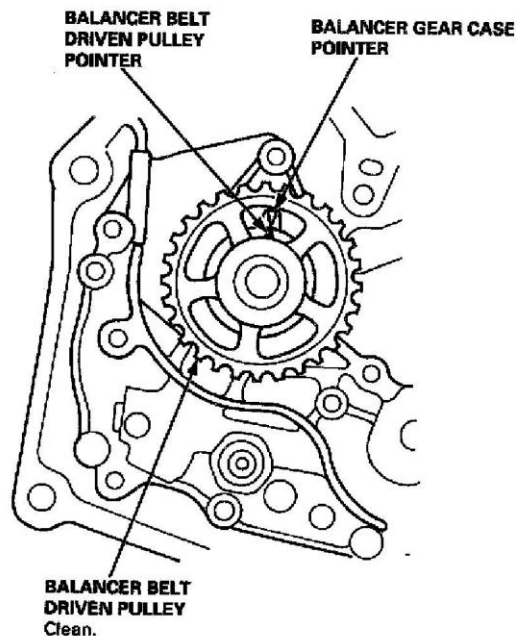
4. Set the camshaft pulleys so that the No. 1 piston is at TDC. Align the TDC marks on the camshaft pulleys to the pointers on the back covers.



5. Install the timing belt in the sequence.
 (1) Timing belt drive pulley (crankshaft) -> (2) Adjusting pulley -> (3) Left camshaft pulley -> (4) Water pump pulley -> (5) Right camshaft pulley.
 NOTE:
 - For easier installation, turn the right camshaft pulley clockwise about a half tooth from the TDC position. - Make sure the timing belt drive pulley and camshaft pulleys are at TDC.
6. Loosen and retighten the timing belt adjusting bolt to tension the timing belt.
7. Install the lower cover and crankshaft pulley.
8. Rotate the crankshaft pulley about 5 or 6 turns clock wise so the timing belt positions on the pulleys.
9. Adjust the timing belt tension.
10. Remove the crankshaft pulley and lower cover.
11. Install the timing belt guide plate and balancer belt drive pulley.

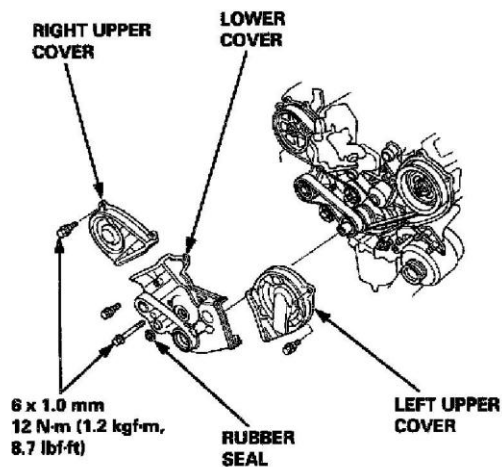


12. Align the maintenance hole and the balancer shaft hole. Insert a 6 mm bolt that is at least 45 mm (1.8 inch) long into the balancer shaft.

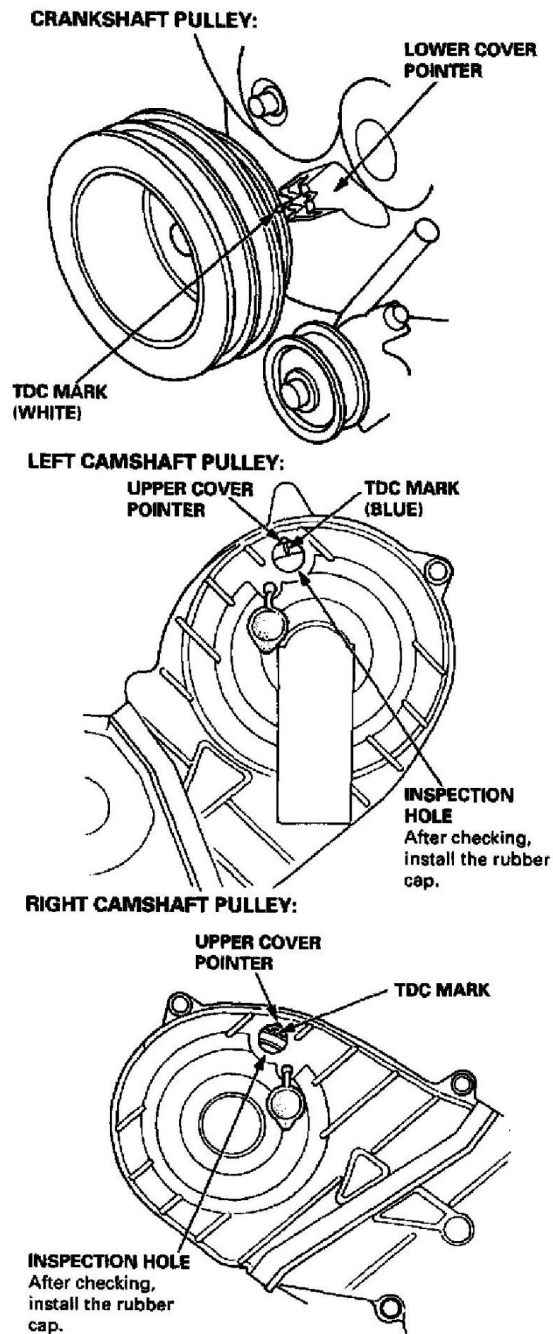


13. Check alignment of the pointers.

14. Set the timing belt drive pulley so that the No. 1 piston is at TDC.
15. Install the balancer belt drive pulley, then install the balancer belt.
16. Loosen and retighten the balancer belt adjusting bolt to tension the balancer belt.
17. Remove the 6 mm bolt. Install the sealing bolt in the maintenance hole. Use a new washer.
18. Install the crankshaft pulley, then rotate the crankshaft pulley about 5 or 6 turns clockwise so that the balancer belt positions on the pulleys.
19. Adjust the balancer belt tension.
20. Remove the crankshaft pulley.



21. Install the upper and lower covers, then install the crankshaft pulley.



22. Check that the crankshaft pulley and camshaft pulleys are at TDC.
23. If the camshaft and crankshaft pulleys are not positioned at TDC, remove the timing belt and adjust the positioning following the procedure, then reinstall the timing belt.
24. After installation, adjust the tension of each belt.
 - See Starting and Charging for alternator belt tension adjustment.
 - See Heating and Air Conditioning for A/C compressor belt tension adjustment. -
 - See Steering and Suspension for P/S pump belt tension adjustment.

Timing Belt: Adjustments

Timing Belt Adjustment

Tension Adjustment

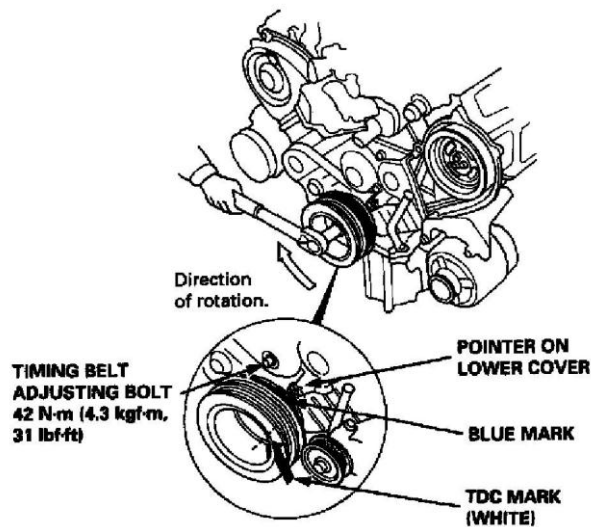
CAUTION:

- Always adjust the timing belt tension with the engine cold.
- Do not rotate the crankshaft when the adjusting bolt is loose.

NOTE:

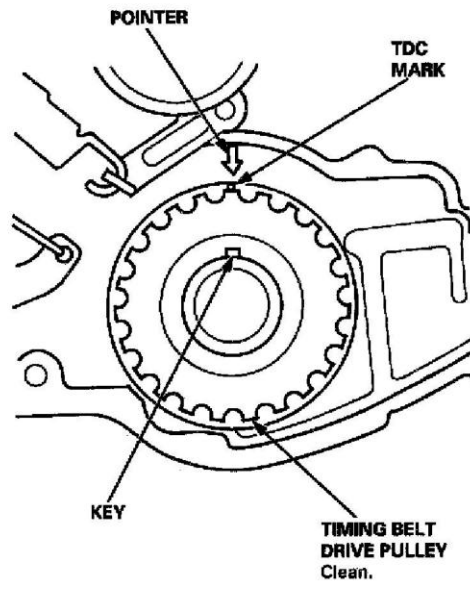
- The tensioner is spring-loaded to apply tension to the belt automatically after making the following adjustment.
- Inspect the timing belt before adjusting the belt tension.
- Always rotate the crankshaft clockwise when viewed from the pulley side. Rotating it counter clockwise may result in improper adjustment of the belt tension.

1. Remove the left upper cover.
2. Set the No. 1 piston at TDC.

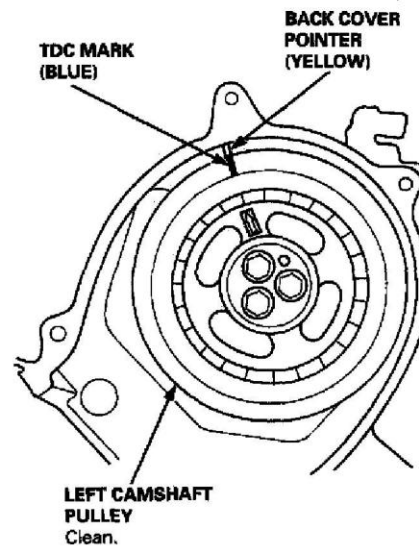


3. Rotate the crankshaft clockwise ten teeth on the camshaft pulley. The blue mark on the crankshaft pulley should line up with the pointer on the lower cover.
4. Loosen the timing belt adjusting bolt 180°.
5. Tighten the adjusting bolt. torque to 42 Nm (4.3 kgf, 31 ft. lbs.).

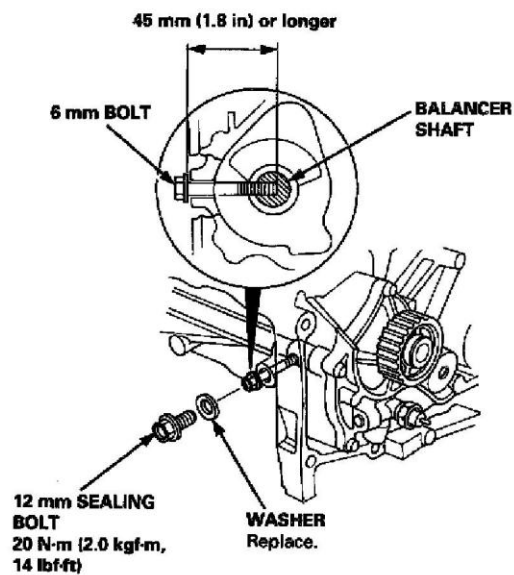
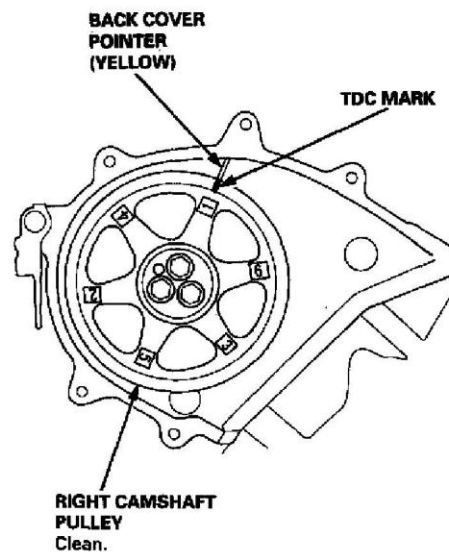
Timing Component Alignment Marks: Locations

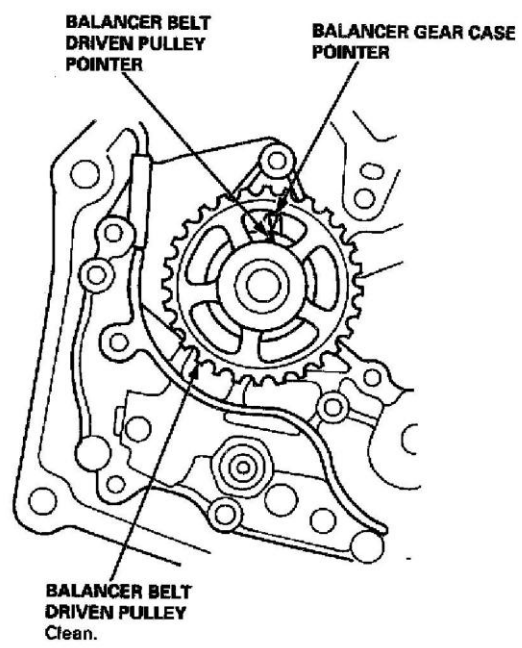


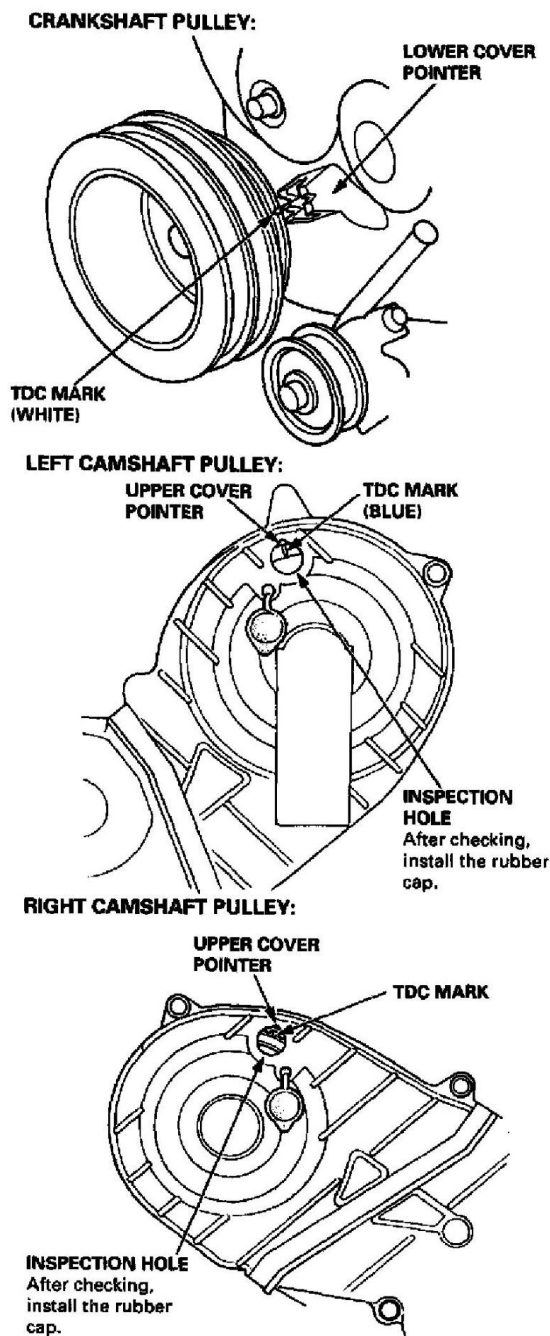
LEFT:



RIGHT:







CAUTION: Incorrect removal or installation of the timing belt can result in damage to internal engine components.

For complete Timing Belt Removal and Installation information: See: Timing Belt/Service and Repair