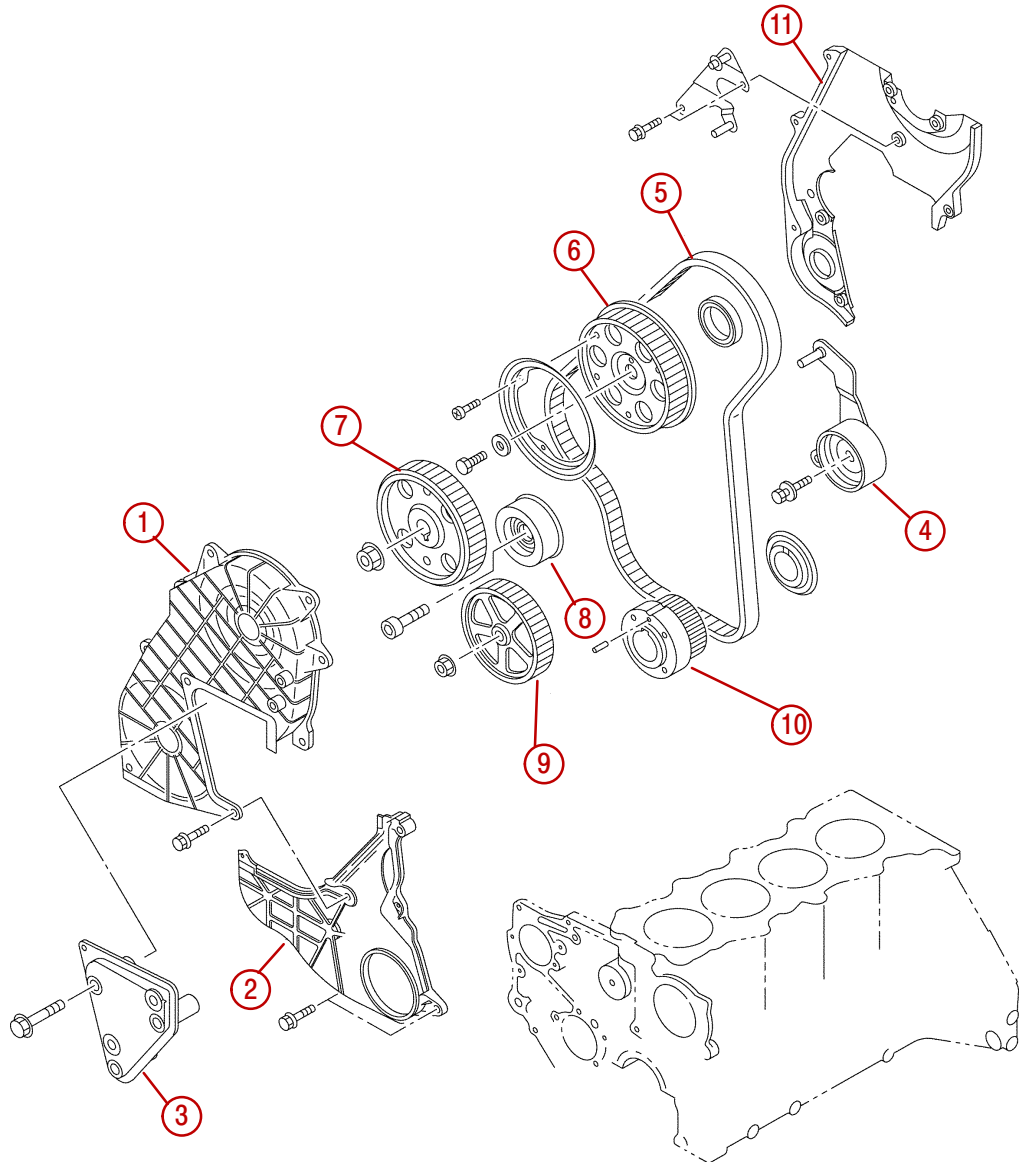


Timing Belt And Related Components



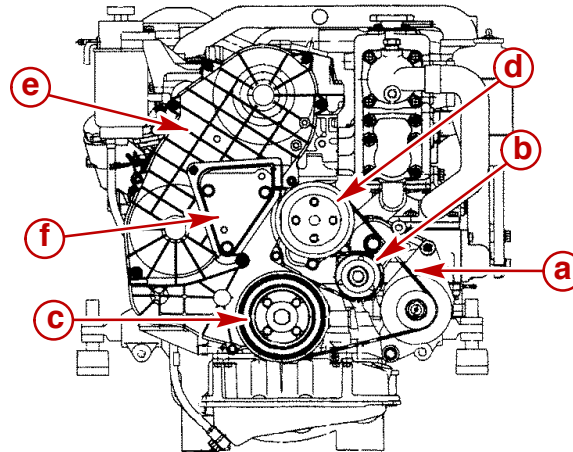
- 1** - Upper Timing Cover
- 2** - Lower Timing Cover
- 3** - Engine Plate
- 4** - Tensioner Pulley Assembly
- 5** - Timing Belt
- 6** - Camshaft Pulley

- 7** - Injection Pump Pulley
- 8** - Idle Pulley
- 9** - Oil Pump Pulley
- 10** - Crankshaft Pulley
- 11** - Dust Cover

77151

Removal

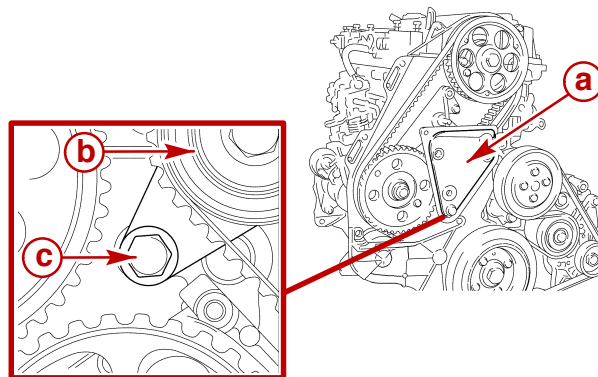
1. Remove engine drive belts.
2. Remove crankshaft pulley.
3. Remove water pump pulley.
4. Remove engine plate.
5. Remove upper timing belt cover.



77121

- a** - Serpentine Belt
- b** - Belt Tensioner
- c** - Crankshaft Pulley
- d** - Water Pump Pulley
- e** - Upper Timing Belt Cover
- f** - Engine Plate

6. Reinstall bolt from engine plate for timing belt tensioner. Torque the bolt.

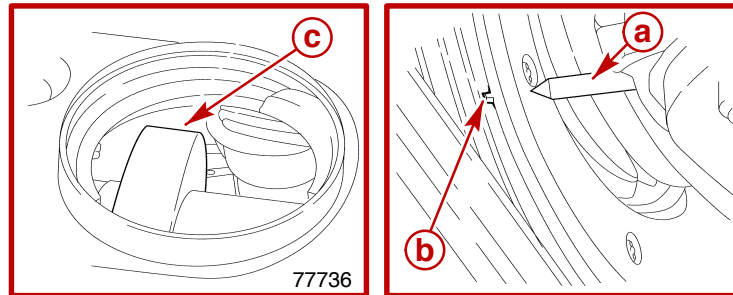


77127

- a** - Engine Plate
- b** - Timing Belt Tensioner
- c** - Bolt

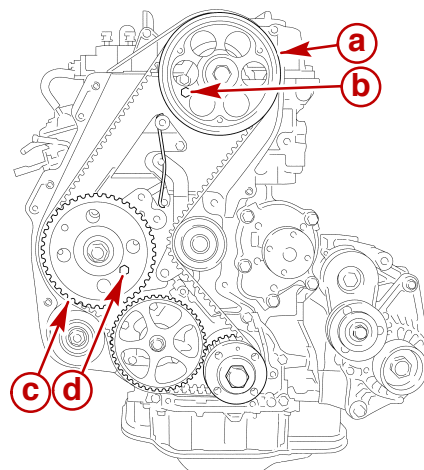
Description		Nm	lb-in.	lb-ft
Bolt, Tensioner	M10 x 1.5	38		28

7. Remove lower timing belt cover.
8. Turn the crankshaft in direction of engine rotation until cylinder number 1 is on TDC. The pointer on the oil pump must align with the mark on the crankshaft pulley and exhaust camshaft pair of lobes for cylinder number 1 points upwards.



- a** - Pointer
- b** - Mark
- c** - Exhaust Camshaft Pair Of Lobes For Cylinder Number 1

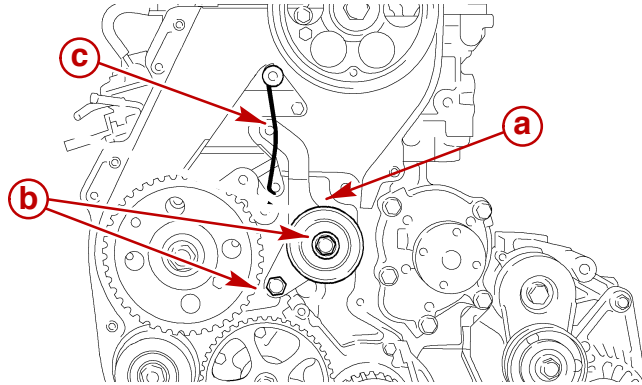
9. Install TDC alignment bolt in camshaft pulley
10. Install TDC alignment bolt in injection pump drive pulley.



- a** - Camshaft Pulley
- b** - TDC Alignment Bolt, M6
- c** - Injection Pump Pulley
- d** - TDC Alignment Bolt, M8

77129

11. Loosen mounting bolts for timing belt tensioner pulley assembly. Remove tensioner spring and tensioner pulley assembly.

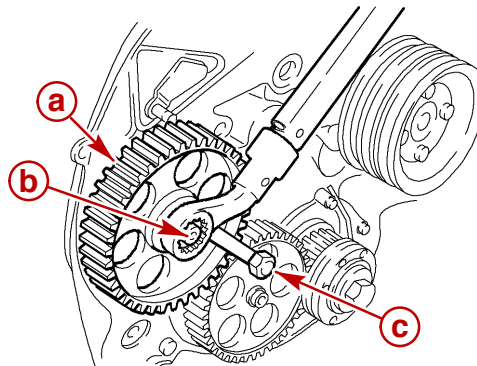


77152

- a** - Tensioner Pulley Assembly
- b** - Mounting Bolts
- c** - Tensioner Spring

12. Mark direction of the timing belt and remove timing belt.

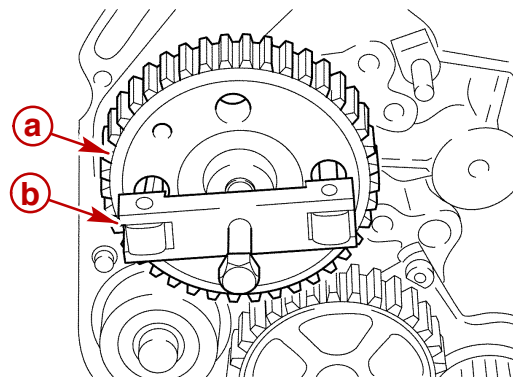
13. With TDC alignment bolt in place, remove injection pump drive pulley retaining nut.



77299

- a** - Injection Pump Pulley
- b** - TDC Adjustment Bolt (M8)
- c** - Pulley Nut

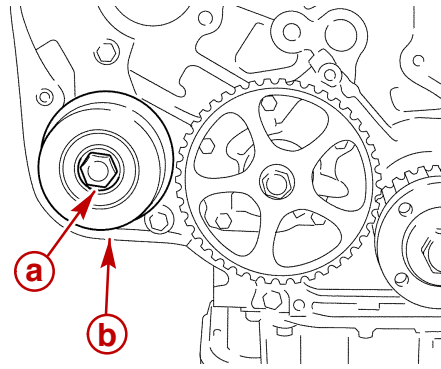
14. Remove TDC alignment bolt. Remove injection pump drive pulley using special tool. Note woodruff key in shaft (hidden).



77156

- a** - Injection Pump Pulley
- b** - Special Tool

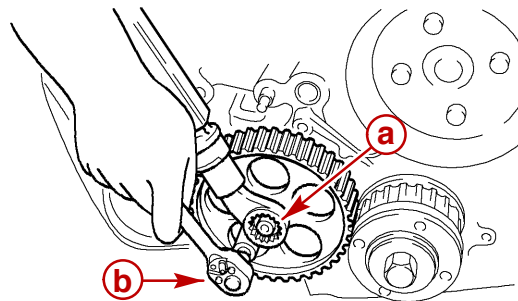
15. Remove pulley bolt and remove timing belt idler pulley.



77153

- a** - Pulley Bolt
- b** - Idler Pulley

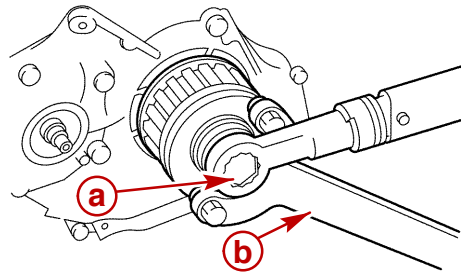
16. Remove the oil pump drive pulley. Counterhold using a separate wrench.



77159

- a** - Pulley Nut
- b** - Separate Wrench

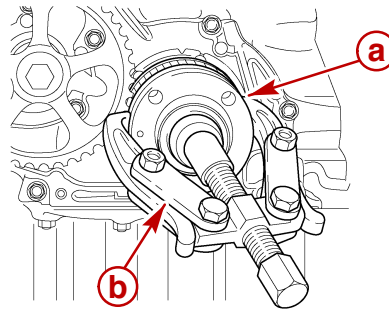
17. Remove fastening bolt for timing belt drive pulley, counterhold using special tool.



77140

- a** - Timing Belt Drive Pulley Bolt
- b** - Special Tool

18. Remove timing belt drive pulley from crankshaft using puller.



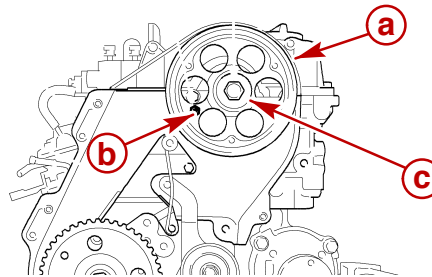
77141

- a** - Timing Belt Drive Pulley
- b** - Puller

19. Lock the camshaft pulley with TDC alignment bolt.

20. Remove pulley bolt from camshaft pulley.

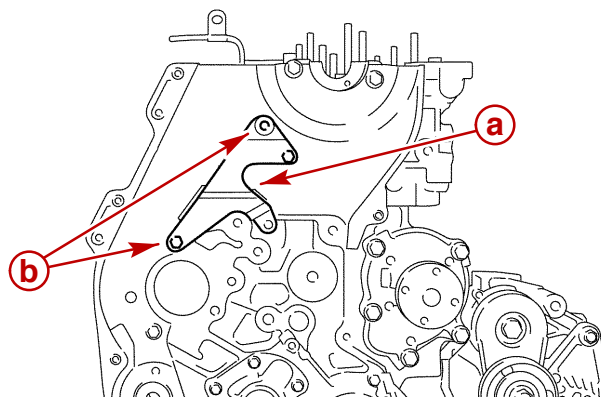
21. Remove TDC alignment bolt and remove camshaft pulley.



77152

- a** - Camshaft Pulley
- b** - TDC Alignment Bolt (M6)
- c** - Pulley Bolt

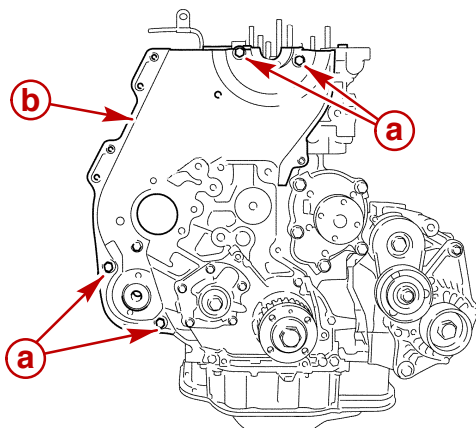
22. Loosen bolts and remove tensioner spring retainer plate.



77157

- a** - Tensioner Spring Retainer Plate
- b** - Plate Bolts

23. Loosen bolts and remove dust cover.



77157

- a** - Bolts
- b** - Dust Cover

Cleaning

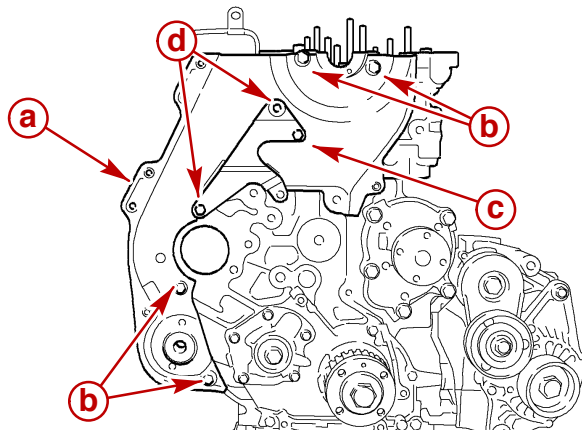
1. Clean all parts with solvent and dry with compressed air.

Inspection

1. Inspect timing covers for warp, cracks and wear from belts and pulleys. Replace covers if worn or damaged.
2. Inspect pulleys and belts for wear or damage. Replace as necessary.

Installation

1. Install the front dust cover and tensioner spring retainer plate. Torque bolts.

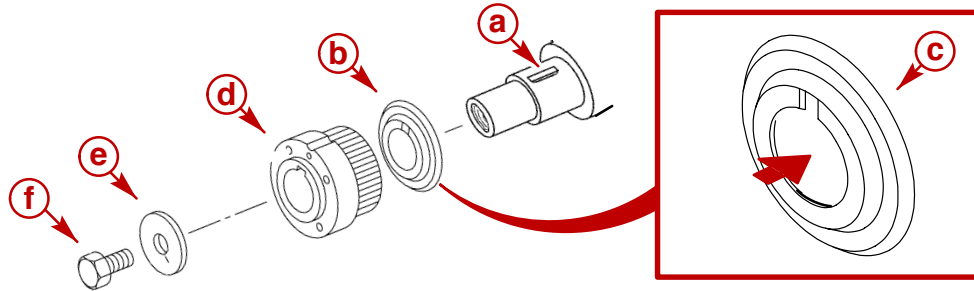


77294

- a** - Dust Cover
- b** - Cover Bolts
- c** - Tension Spring Retainer Plate
- d** - Plate Bolts

Description		Nm	lb-in.	lb-ft
Bolts, Front Dust Cover	M6 x 1.0	9.8	87	
Bolts, Tensioner Spring Retainer Plate	M6 x 1.0	9.8	87	

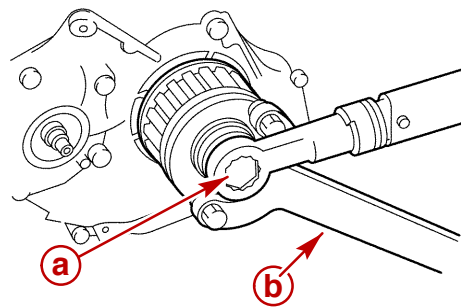
2. Install crankshaft timing belt pulley and parts in order. Concave side of belt guide flange **MUST** face the cylinder block.



77085

- a** - Woodruff Key
- b** - Belt Guide Flange
- c** - Concave Side
- d** - Crankshaft Timing Belt Pulley
- e** - Flat Washer
- f** - Bolt

3. Counterhold the crankshaft pulley using special tool and torque crankshaft pulley bolt.



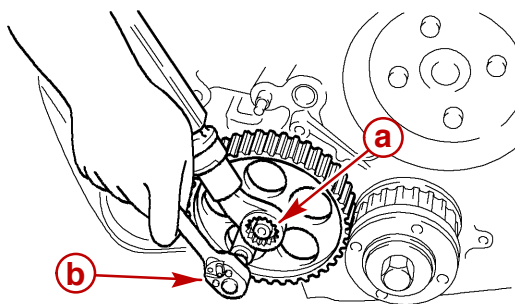
77296

- a** - Pulley Bolt
- b** - Special Tool

Description		Nm	lb-in.	lb-ft
Bolt, Crankshaft	M16 x 1.5	196		144

4. Install oil pump pulley to oil pump shaft.

5. Install oil pump pulley nut. Counterhold pulley using a separate wrench. Torque nut.

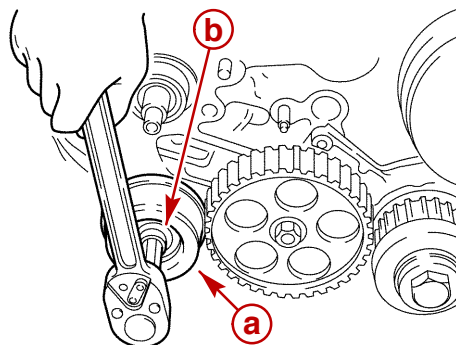


77159

- a** - Pulley Nut
- b** - Separate Wrench

Description		Nm	lb-in.	lb-ft
Nut, Oil Pump Pulley	M10 x 1.25	44		33

6. Install the idle pulley. Torque pulley bolt.

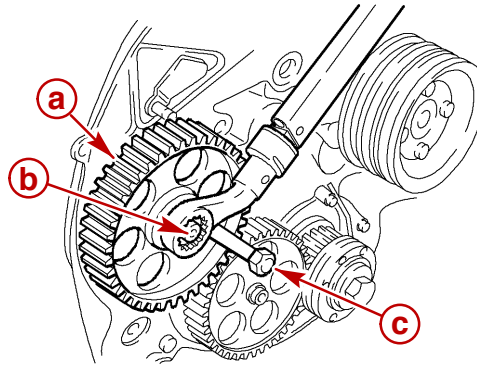


77298

- a** - Idle Pulley
- b** - Pulley Bolt

Description		Nm	lb-in.	lb-ft
Bolt, Idle Pulley	M12 x 1.25	80		59

7. Ensure that woodruff key is installed and install injection pump pulley.
8. Lock injection pump pulley using TDC alignment bolt.
9. Install and torque injection pump pulley nut.

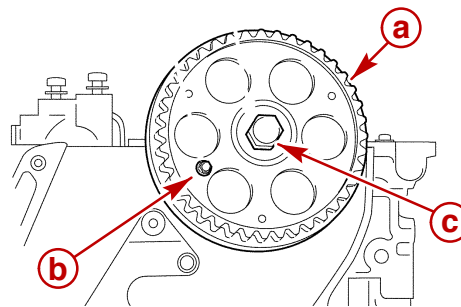


77299

- a** - Injection Pump Pulley
- b** - TDC Alignment Bolt (M8)
- c** - Injection Pump Pulley Bolt

Description		Nm	lb-in.	lb-ft
Nut, Injection Pump Pulley	M14 x 1.5	69		51

10. Ensure that woodruff key is installed and install camshaft pulley.
11. Install the camshaft pulley and lock the pulley with TDC alignment bolt.
12. Install and torque the camshaft pulley bolt.

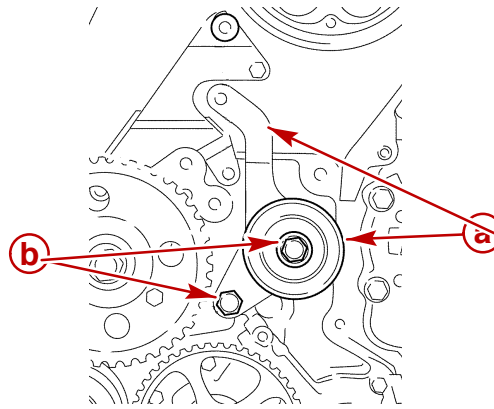


77300

- a** - Camshaft Pulley
- b** - TDC Alignment Bolt (M6)
- c** - Camshaft Pulley Bolt

Description		Nm	lb-in.	lb-ft
Bolt, Camshaft Pulley	M12 x 1.5	64		47

13. Install the tensioner pulley assembly. Temporarily hand-tighten mounting bolts.



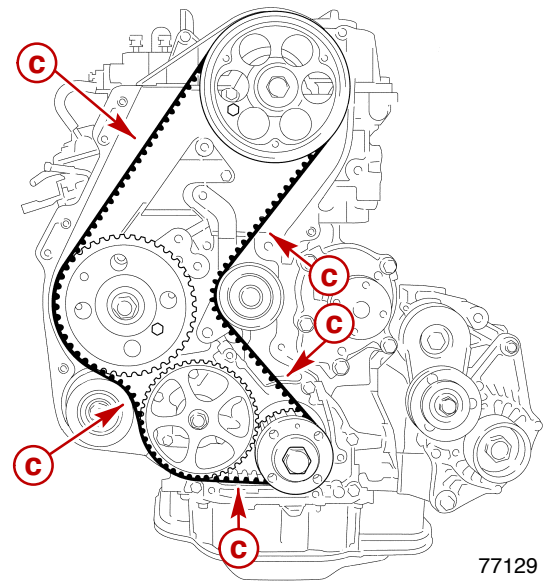
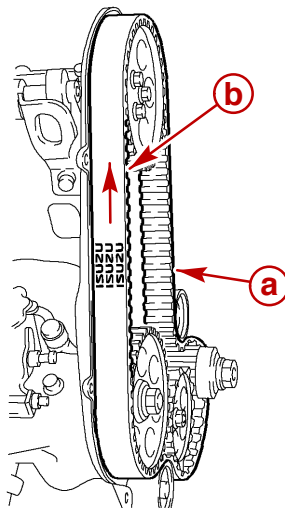
77152

- a - Tension Pulley Assembly
- b - Mounting Bolt

14. Note the direction of timing belt operation and install accordingly. Ensure that belt is taut between adjacent pulleys.

⚠ CAUTION

To ensure proper operation of engine systems, the timing belt must be taut from the crankshaft drive pulley around all other drive pulleys including the tension pulley.

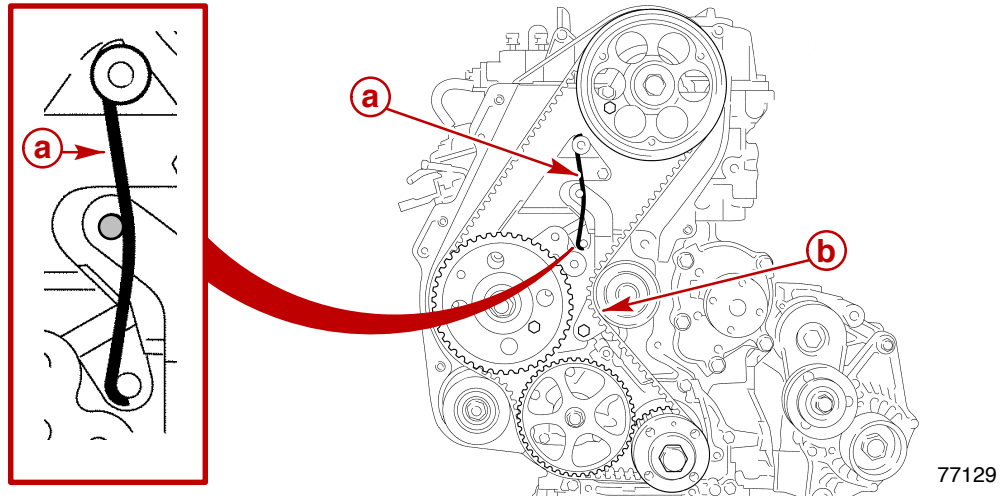


77129

- a - Timing Belt
- b - Direction Of Operation
- c - Taut Belt Between Pulleys

15. Install tension spring. Ensure that tensioner pulley rests against belt under spring load.

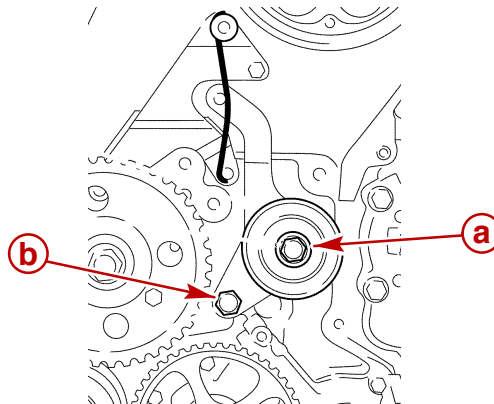
NOTE: Slightly loosen tensioner pulley bolts if necessary.



- a** - Tension Spring
- b** - Tension Pulley Load On Belt

16. Remove camshaft and injection pump TDC alignment bolts.

17. Torque tensioner pulley assembly upper mounting bolt. Temporarily hand-tighten lower bolt.



- a** - Upper Bolt
- b** - Lower Bolt

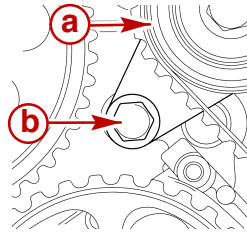
Description		Nm	lb-in.	lb-ft
Bolt, Tensioner Pulley Assembly	M10 x 1.5	38		28

18. Using the crankshaft drive pulley bolt, turn crankshaft approximately 780° in direction of engine rotation to cylinder number 1 TDC. Verify belt installation and timing.

19. Install the lower timing belt cover. Torque bolts.

Description		Nm	lb-in.	lb-ft
Bolt, Lower Timing Belt Cover	M6 x 1.0	9.8	87	

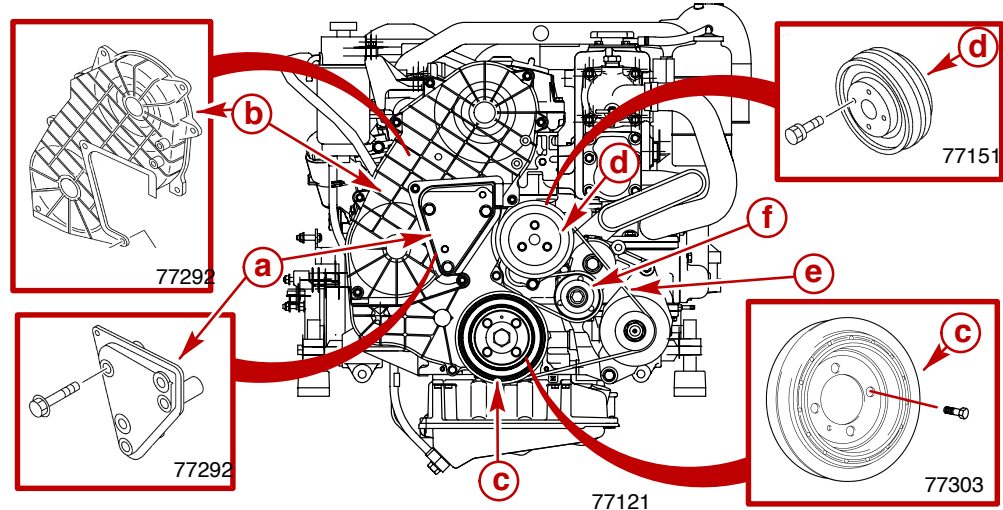
20. Remove and retain tensioner pulley assembly lower bolt.



77127

- a** - Tensioner Pulley
- b** - Lower Bolt

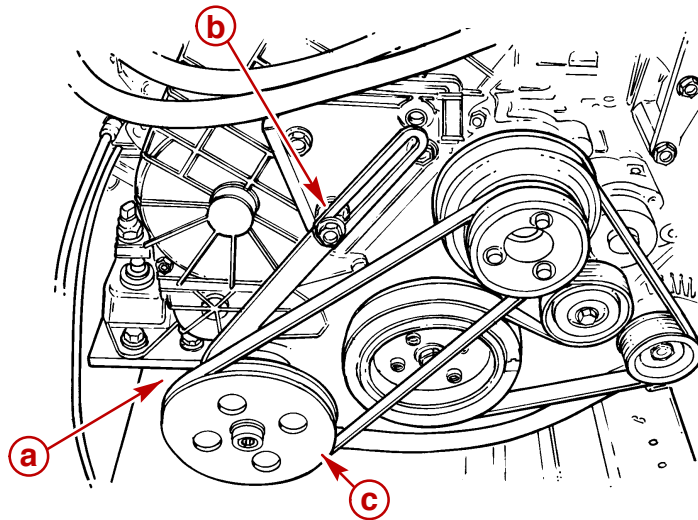
- 21. Install engine plate. Torque bolts, including tensioner pulley assembly lower bolt.
- 22. Install upper timing belt cover. Torque bolts.
- 23. Install the crankshaft damper pulley to the crankshaft timing belt drive pulley. Torque bolts.
- 24. Install water pump pulley. Torque bolts.
- 25. Install serpentine belt. Ensure that tensioner returns to initial position.



- a** - Engine Plate
- b** - Upper Timing Belt Cover
- c** - Crankshaft Damper Pulley
- d** - Water Pump Pulley
- e** - Serpentine Belt
- f** - Belt Tensioner

Description		Nm	lb-in.	lb-ft
Bolt, Engine Plate	M10 x 1.5	40		30
Bolt, Upper Timing Belt Cover	M6 x 1.0	9.8	87	
Bolt, Crankshaft Damper Pulley	M8 x 1.25	20		15
Bolt, Water Pump Pulley	M6 x1.0	9.8	87	

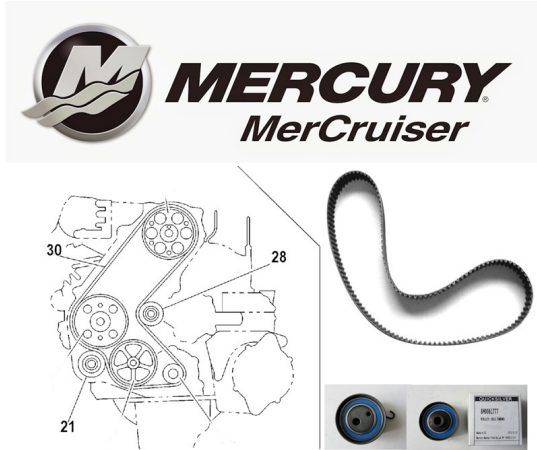
26. Install power steering belt, if equipped.
27. Pivot the power steering pump to adjust belt. Approximately 3/16 in. (5 mm) deflection should be measured at midpoint between the pulleys on the longest span.
28. Tighten mounting and tensioning bolts and nuts securely.



77321

- a** - Mounting Bolts (Hidden)
- b** - Tensioning Stud And Nut
- c** - Power Steering Pump / Pulley

Komplett sett med registerreim, strammehjul og Idle Pulley - Klikk på bildet for å legge i handlekurven:



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