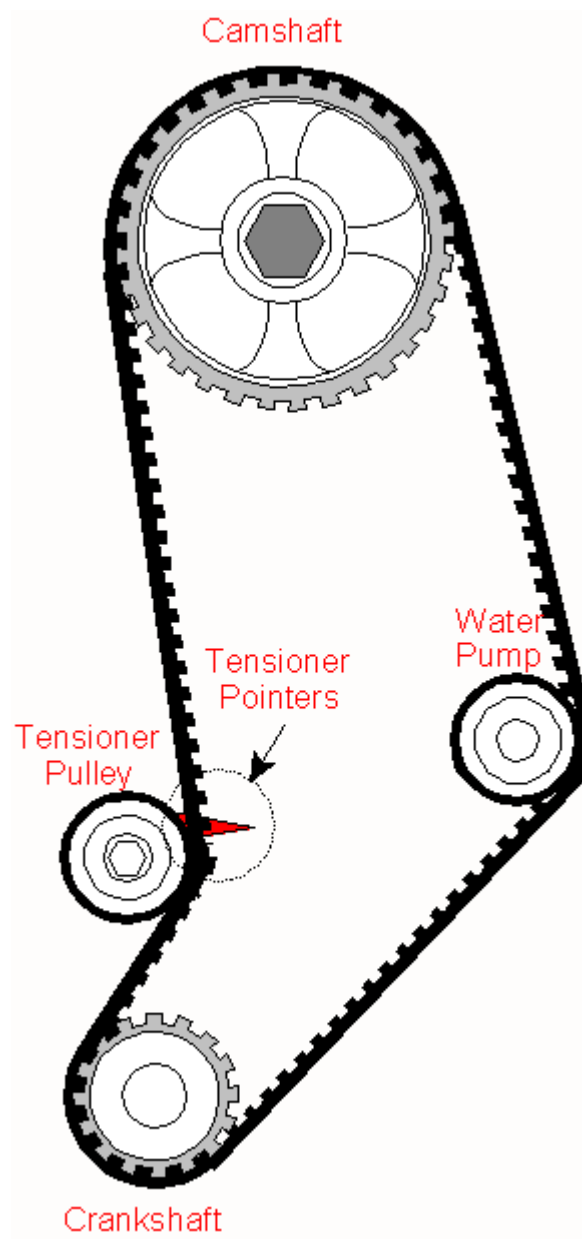
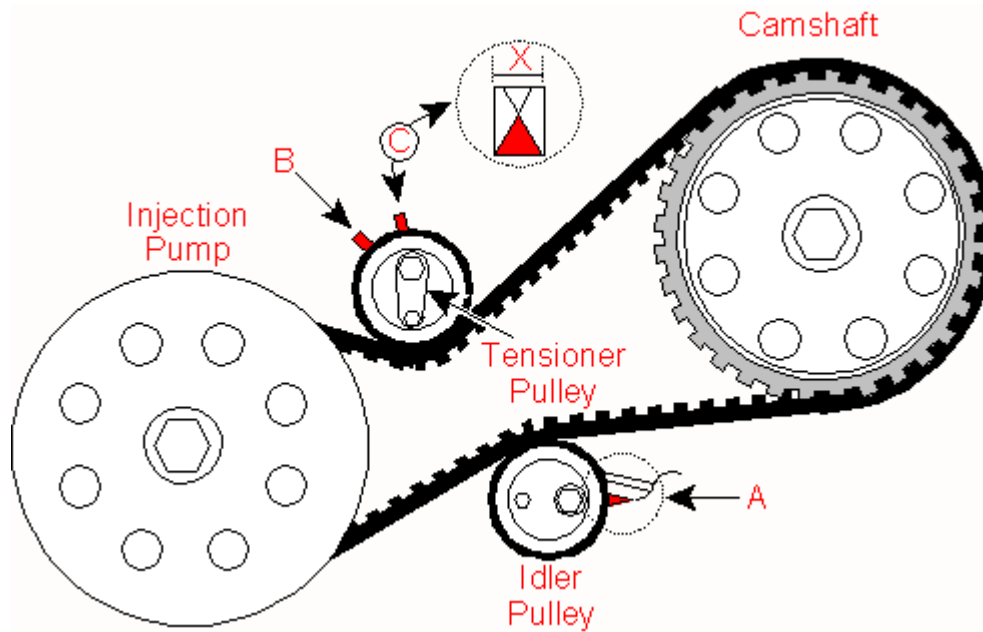


VOLKSWAGEN TRANSPORTER 2.5L (ACV Diesel Engine) 1995-99 Timing Belt Installation

Timing Belt Diagram (Front)



Timing Belt Diagram (Rear)



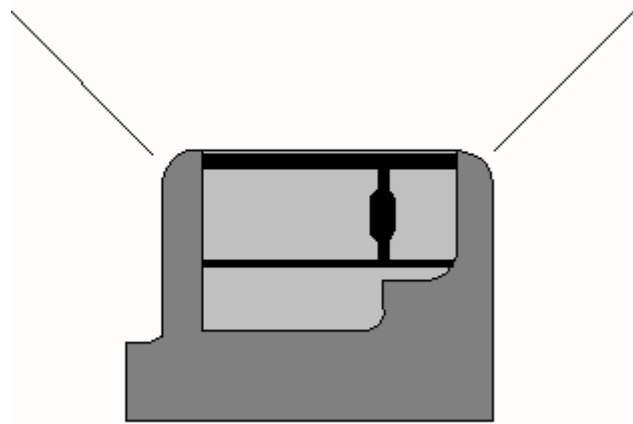
Special Tools

The following special tools are required to change the timing belts on these engines.

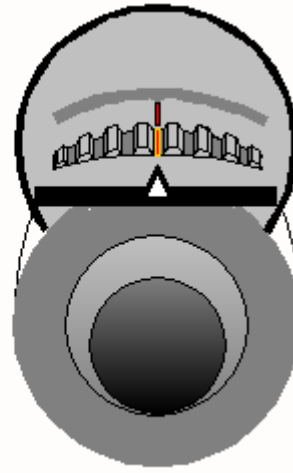
Tool.....	VW Part #
Camshaft Setting Bar.....	2065A
Crankshaft Pulley Holding Tool.....	3248/A
Dial Indicator (Gauge) Adaptor.....	3313
Sprocket Holding Tool.....	3036
Tensioner Pulley Spanner.....	3355

Removal

1. Remove auxiliary drive belts.
2. Remove grille and intercooler bracket.
3. Remove bonnet lock and hinge platforms.
4. Move radiator forward.
5. Remove timing belt upper cover, injection pump belt cover and valve cover.
6. Rotate engine clockwise until the flywheel timing marks align as per the diagram below.

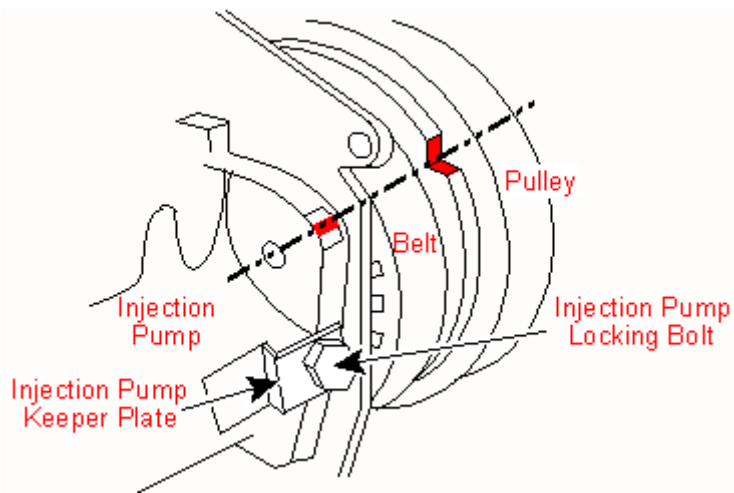


Flywheel



Front Pulley

7. If the injection pump marks do not align as below, rotate a full turn.



8. Hold rear camshaft sprocket with Sprocket Holding Tool #3036.
9. Remove rear camshaft sprocket bolt.
10. Remove injection pump belt tensioner.
11. Remove rear camshaft sprocket and injection pump belt.
12. Fit Camshaft Setting Bar #2065A to rear of camshaft.
13. Centralise bar to camshaft using feeler gauges.
14. Remove crankshaft pulley centre bolt.
15. Remove crankshaft pulley outer bolts and pulley.
16. Remove lower timing belt cover.
17. Loosen front tensioner bolt.
18. Move tensioner away from belt and temporarily tighten bolt.

19. Remove front timing belt.

Installation

1. Ensure that the flywheel timing marks are aligned.
2. Loosen the camshaft sprocket bolt half a turn.
3. Gently tap the camshaft sprocket to loosen it from the taper.



Sprocket should be free to turn on the taper without tilting.

4. Fit timing belt in the following order keeping belt taut between sprockets:
Crankshaft
Water Pump
Camshaft
Tensioner
5. Loosen tensioner bolt.
6. Slowly rotate tensioner clockwise until the right edges of the tensioner pointers align.
(Using special tool 3355)



To prevent tensioner damage, do not tension past the point where the right edges align.

7. Torque Tensioner Bolt.
8. Re-check flywheel timing marks.
9. Hold front camshaft sprocket with tool 3036.
10. Torque front camshaft bolt (Check bolt mark for the appropriate torque).
11. Remove camshaft setting bar.
12. Refit lower timing belt cover.
13. Refit crankshaft pulley using new centre bolt.



Lightly oil threads and contact surfaces on new crankshaft pulley centre bolt.

14. Using tool 3248/A, hold crankshaft pulley and torque centre and outer bolts.
15. Remove plug from rear of injection pump.
16. Install dial indicator with adaptor 3313.
17. Ensure that the timing marks are aligned.
18. Loosen injection pump locking bolt and remove keeper plate.
19. Set dial indicator to zero.
20. Using tool 3036, slowly rotate injection pump pulley clockwise.
21. Continue until dial indicator reading ceases to decrease.



Should the dial indicator increase instead of decrease, rotate pulley anticlockwise.
Continue until dial indicator reading ceases to decrease.

22. Reset dial indicator to zero.
23. Check timing marks are approximately aligned.
24. Using tool 3036, slowly rotate injection pump pulley anti-clockwise.
(Until dial indicator reads 0.55 mm)
25. Torque injection pump locking bolt (without fitting the keeper plate).
26. Recheck that the flywheel timing marks are aligned.
27. Fit injection pump belt with rear camshaft sprocket.
28. Lightly tighten sprocket bolt until sprocket can just be turned by hand.
29. Ensure guide pulley pointer is aligned with the cylinder head flange contour (A on diagram).
(Loosen guide pulley nut and rotate pulley with hex key to align and re-torque nut)
30. Fit tensioner.
31. Ensure tab (B on diagram) engages in the cutout.
32. Tighten tensioner bolt finger tight.
33. Using a hex key, rotate tensioner pulley anti-clockwise until pointers (C on diagram) align.



To prevent tensioner damage, the front pointer should not go past the rear pointer.

34. Using tool 3036, hold the rear camshaft sprocket and torque the sprocket bolt.
35. Loosen injection pump locking bolt and refit the keeper plate.
36. Torque injection pump locking bolt.
37. Rotate engine two complete turns clockwise.
38. Ensure flywheel timing marks are aligned.
39. Ensure that the right edges of the front timing belt tensioner are aligned.
(If not, repeat tensioning procedure)
40. Ensure that the injection pump belt tensioner front pointer is aligned.
(If not within dimensions X on diagram, repeat tensioning procedure)
41. Refit timing belt upper cover, injection pump belt cover and valve cover.
42. Refit radiator.
43. Refit bonnet lock and hinge platforms.
44. Refit grille and intercooler bracket.
45. Refit auxiliary drive belts.

Tightening Torques

Camshaft Bolt Front (marked 8.8).....	85 Nm.
Camshaft Bolt Front (marked 10.9).....	100 Nm.
Camshaft Bolt Rear.....	160 Nm.
Crankshaft Bolt Centre.....	160 Nm. + 180°
Crankshaft Bolts Outer.....	20 Nm. + 90°
Fuel Injection Pump Locating Bolt.....	25 Nm.
Guide Nut Rear.....	20 Nm.
Tensioner Bolt Front.....	20 Nm.
Tensioner Bolt Rear.....	15 Nm.

R & R Times
4.2 hours