

Important note

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The intervals and procedures given are subject to alteration by the manufacturer at any time. Check the regularly updated Timing Belts section on our website to ensure that you are kept informed of any changes that may occur between issues of the Autodata CD.

<http://www.autodata-cd.com>

Timing belt replacement intervals

The information relating to timing belt replacement intervals is additional to the main purpose of this CD, but is included to provide guidance to garages and for customer advice.

Where possible the recommended intervals have been compiled from vehicle manufacturers' information. In a few instances no recommendation has been made by the manufacturer and the decision to replace the belt must be made from the evidence of a thorough examination of the condition of the existing belt.

Apart from the visible condition of the belt, which is explained fully later in this section, there are several other factors which must be considered when checking a timing belt:

1. Is the belt an original or a replacement.
2. When was the belt last replaced and was it at the correct mileage.
3. Is the service history of the vehicle known.
4. Has the vehicle been operated under arduous conditions which might warrant a shorter replacement interval.
5. Is the general condition of other components in the camshaft drive, such as the tensioner, pulleys, and other ancillary components driven by the timing belt, typically the water pump, sound enough to ensure that the life of the replacement belt will not be affected.
6. If the condition of the existing belt appears good, can you be satisfied that the belt will not fail before the next check or service is due.
7. If the belt does fail, have you considered the consequences. If the engine is an INTERFERENCE type then considerable expensive damage may well be the result.
8. The cost of replacing a belt as part of a routine service could be as little as 5 to 10% of the repair cost following a belt failure. Make sure your customer is aware of the consequences.
9. If in doubt about the condition of the belt - RENEW it.

Replacement Interval Guide

Replacement Interval Guide

Volkswagen recommend check at the first 60,000 miles and then every 20,000 miles (replace if necessary). The vehicle manufacturer has not recommended a timing belt replacement interval for this engine.

The previous use and service history of the vehicle must always be taken into account.

Check For Engine Damage

Check For Engine Damage

CAUTION: This engine has been identified as an INTERFERENCE engine in which the possibility of valve-to-piston damage in the event of a timing belt failure is **MOST LIKELY** to occur. A compression check of all cylinders should be performed before removing the cylinder head(s).

Repair Times - hrs

Repair Times - hrs

Lupo 1,4 16V 1998-03	
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Remove and install	1,90
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Special Tools

Special Tools

- Camshaft locking tool (except ARC/ARR/AVY) - No.T10016.
- Camshaft locking tools (ARC/ARR/AVY) - No.T10074.
- Crankshaft pulley holding tool (except ARC/ATN/AUS/AVY/AZD/BCB) - No.3415.
- Crankshaft pulley holding tool (ARC/ATN/AUS/AVY/AZD/BCB) - No.T10028.

Special Precautions

Special Precautions

- Disconnect battery earth lead.
- DO NOT turn crankshaft or camshaft when timing belt removed.
- Remove spark plugs to ease turning engine.
- Turn engine in normal direction of rotation (unless otherwise stated).
- DO NOT turn engine via camshaft or other sprockets.
- Observe all tightening torques.

Removal - Timing Belt

Removal

1. Raise and support front of vehicle.
2. Remove:
 - Upper engine cover.
 - Air filter assembly.
 - Timing belt upper cover [1].
3. Turn crankshaft clockwise to TDC on No.1 cylinder. Ensure timing marks on crankshaft pulley aligned [2].
4. Ensure camshaft sprocket locating holes aligned:
 - Except ARC/ARR/AVY: [3]
 - ARC/ARR/AVY: [4]
5. If locating holes are not aligned: Turn crankshaft one turn clockwise.
6. Fit locking tool(s) to camshaft sprockets:
 - Except ARC/ARR/AVY: [5]. Tool No.T10016.
 - ARC/ARR/AVY: [21]. Tool No.T10074.

NOTE: Ensure locking tool(s) located correctly in cylinder head.

7. Remove:
 - PAS reservoir. DO NOT disconnect hoses.
 - RH engine undershield.

Except Polo Classic:

8. Support engine.
9. Remove:
 - RH engine mounting.
 - RH engine mounting bracket.
10. Lower engine until crankshaft pulley bolt accessible.

All models:

11. Remove auxiliary drive belt.
12. Fit crankshaft pulley holding tool:
 - Except ARC/ATN/AUS/AVY/AZD/BCB - tool No.3415.
 - ARC/ATN/AUS/AVY/AZD/BCB - tool No.T10028.
13. Slacken crankshaft pulley bolt [6].
14. Remove:
 - Holding tool. Tool No.3415 or T10028.
 - Crankshaft pulley bolt [6].
 - Crankshaft pulley [7].
15. Fit two washers to crankshaft pulley bolt [6].
16. Fit crankshaft pulley bolt [6]. Lightly tighten bolt.
17. Remove:
 - Auxiliary drive belt guide pulley (models with AC).
 - Auxiliary drive belt tensioner.
 - Timing belt lower cover [8].
18. Slacken tensioner pulley bolt [9].
19. Turn tensioner pulley anti-clockwise to release tension on belt.
20. Remove timing belt.

NOTE: Mark direction of rotation on belt with chalk if belt is to be reused.

Installation - Timing Belt

Installation

1. Ensure locking tool(s) fitted to camshaft sprockets:
 - Except ARC/ARR/AVY: [5]. Tool No.T10016.
 - ARC/ARR/AVY: [21]. Tool No.T10074.
2. Ensure timing mark on crankshaft sprocket aligned [10].
NOTE: Align ground tooth on crankshaft sprocket.
3. Remove - ARC/ARR/AVY:
 - Guide pulley bolt [22].
 - Guide pulley [23].
4. Tighten tensioner pulley bolt finger tight [9]. Ensure baseplate is supported by bolt [11].
5. Fit timing belt in anti-clockwise direction, starting at water pump sprocket.
6. Fit - ARC/ARR/AVY:
 - Guide pulley [23].
 - Guide pulley bolt [22].
7. Tighten guide pulley bolt [22]. Tightening torque: 50 Nm.
8. Turn tensioner pulley clockwise [12]until pointer [13]aligned with notch in baseplate [14].
9. Tighten tensioner pulley bolt to 20 Nm [9].
10. Remove locking tool(s) from camshaft sprockets:
 - Except ARC/ARR/AVY: [5]. Tool No.T10016.
 - ARC/ARR/AVY: [21]. Tool No.T10074.

11. Turn crankshaft two turns clockwise to TDC on No.1 cylinder. Ensure timing marks on crankshaft sprocket aligned [10].
12. Ensure locking tool(s) can be inserted into camshaft sprockets:
 - Except ARC/ARR/AVY: [5]. Tool No.T10016.
 - ARC/ARR/AVY: [21]. Tool No.T10074.
13. Ensure pointer [13]aligned with notch in baseplate [14].
14. If not: Repeat tensioning procedure.
15. Apply firm thumb pressure to belt at ▼. Pointer [13]and notch in baseplate [14]must move apart.
16. Release thumb pressure from belt at ▼.
17. Turn crankshaft two turns clockwise to TDC on No.1 cylinder.
18. Ensure pointer [13]aligned with notch in baseplate [14].
19. Remove crankshaft pulley bolt [6].
20. Install:
 - Timing belt lower cover [8].
 - Crankshaft pulley [7].
 - New oiled crankshaft pulley bolt [6].
21. Fit crankshaft pulley holding tool:
 - Except ARC/ATN/AUS/AVY/AZD/BCB - tool No.3415.
 - ARC/ATN/AUS/AVY/AZD/BCB - tool No.T10028.
22. Tighten crankshaft pulley bolt [6]. Tightening torque: 90 Nm + 90°.
23. Remove holding tool. Tool No.3415 or T10028.
24. Install components in reverse order of removal.
25. Except Polo Classic: Tighten bolts securing engine mounting bracket to engine. Tightening torque: 50 Nm.
26. Lupo/Polo: Tighten engine mounting:
 - Bolts securing engine mounting to body - 20 Nm + 45°. Use new bolts.
 - Bolts securing intermediate bracket to engine mounting bracket - 40 Nm + 90°. Use new bolts.
 - Bolt securing intermediate bracket to engine mounting - 50 Nm.
27. Golf/Bora: Tighten engine mounting:
 - Long bolts securing engine mounting to body - 40 Nm + 90°. Use new bolts.
 - Short bolts securing engine mounting to body - 25 Nm.
 - Bolts securing engine mounting to engine mounting bracket - 60 Nm + 90°. Use new bolts.

Removal - Exhaust Camshaft Drive Belt

Removal

1. Remove timing belt as described previously.
2. Slacken tensioner pulley bolt [15].
3. Turn tensioner pulley clockwise to release tension on belt.
4. Remove:
 - Tensioner pulley bolt [15].
 - Tensioner pulley [16].
 - Drive belt.

NOTE: Mark direction of rotation on belt with chalk if belt is to be reused.

Installation - Exhaust Camshaft Drive Belt

Installation

1. Ensure locking tool(s) fitted to camshaft sprockets:
 - Except ARC/ARR/AVY: [5]. Tool No.T10016.
 - ARC/ARR/AVY: [21]. Tool No.T10074.
2. Fit drive belt in clockwise direction, starting at top of inlet camshaft sprocket.

3. Ensure belt is taut between sprockets on non-tensioned side.
4. Turn tensioner pulley clockwise until pointer in position as shown [17].
5. Install:
 - Tensioner pulley [16].
 - Tensioner pulley bolt [15].
6. Tighten tensioner pulley bolt finger tight [15].

NOTE: Ensure lug in baseplate [18]18157is located in cylinder head hole.
7. Turn tensioner anti-clockwise [19]until pointer [20]aligned with lug in baseplate [18].
8. Tighten tensioner pulley bolt to 20 Nm [15].
9. Fit timing belt as described previously.
10. Remove locking tool(s) from camshaft sprockets:
 - Except ARC/ARR/AVY: [5]. Tool No.T10016.
 - ARC/ARR/AVY: [21]. Tool No.T10074.
11. Turn crankshaft two turns clockwise to TDC on No.1 cylinder. Ensure timing mark on crankshaft sprocket aligned [10].
12. Ensure locking tool(s) can be inserted into camshaft sprockets:
 - Except ARC/ARR/AVY: [5]. Tool No.T10016.
 - ARC/ARR/AVY: [21]. Tool No.T10074.
13. Ensure pointer [20]aligned with lug in baseplate [18].
14. If not: Repeat tensioning procedure.
15. Apply firm thumb pressure to belt at ▼. Pointer [20]and lug in baseplate [18]must move apart.
16. Release thumb pressure from belt at ▼.
17. Turn crankshaft two turns clockwise to TDC on No.1 cylinder.
18. Ensure pointer [20]aligned with lug in baseplate [18].
19. Install components in reverse order of removal.

