

Telephone:
Fax:
VAT Registration No.:

Name:		Manufacturer:	Land Rover
Address:		Model:	
		Year:	1994
		Registration:	
Tel - Private:		Mileage:	
Tel - Business:		Job number:	

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

Land Rover recommend replacement at the following intervals:

200 Tdi:

Every 60,000 miles or 5 years - normal conditions.
Every 30,000 miles or 2,5 years - adverse conditions.

300 Tdi:

Every 72,000 miles or 6 years - normal conditions.
Every 36,000 miles or 3 years - adverse conditions.

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.

Repair Times - hrs

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Discovery 2,5 DI 1990-94	
Check and adjust	3,80
Check and adjust - AC	4,10
Remove and install	4,10
Remove and install - AC	4,30

Special Tools

Special Tools

200 Tdi:

- Crankshaft pulley/damper holding tool - Land Rover No.LST 127.
- Flywheel timing pin - Land Rover No.LST 128.
- Injection pump timing pin - Land Rover No.LST 129.

300 Tdi:

- Crankshaft pulley/damper holding tool - Land Rover No.LRT-12-080.
- Flywheel timing pin - Land Rover No.LRT-12-044.
- Injection pump timing pin - Land Rover No.LRT-12-045.

Special Precautions

Special Precautions

- Disconnect battery earth lead.
- DO NOT turn crankshaft or camshaft when timing belt removed.
- Remove glow 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.
- Check diesel injection pump timing after belt replacement.

Removal

Removal

WARNING: Certain engines can suffer from premature wear of the front edge of the timing belt. Dependent on the VIN and previous repair history of the engine, the fitting of modified parts may be necessary. Refer to dealer.

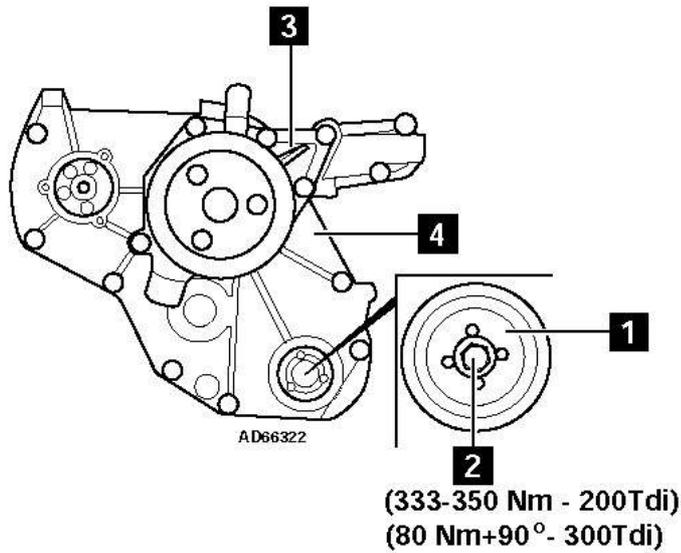
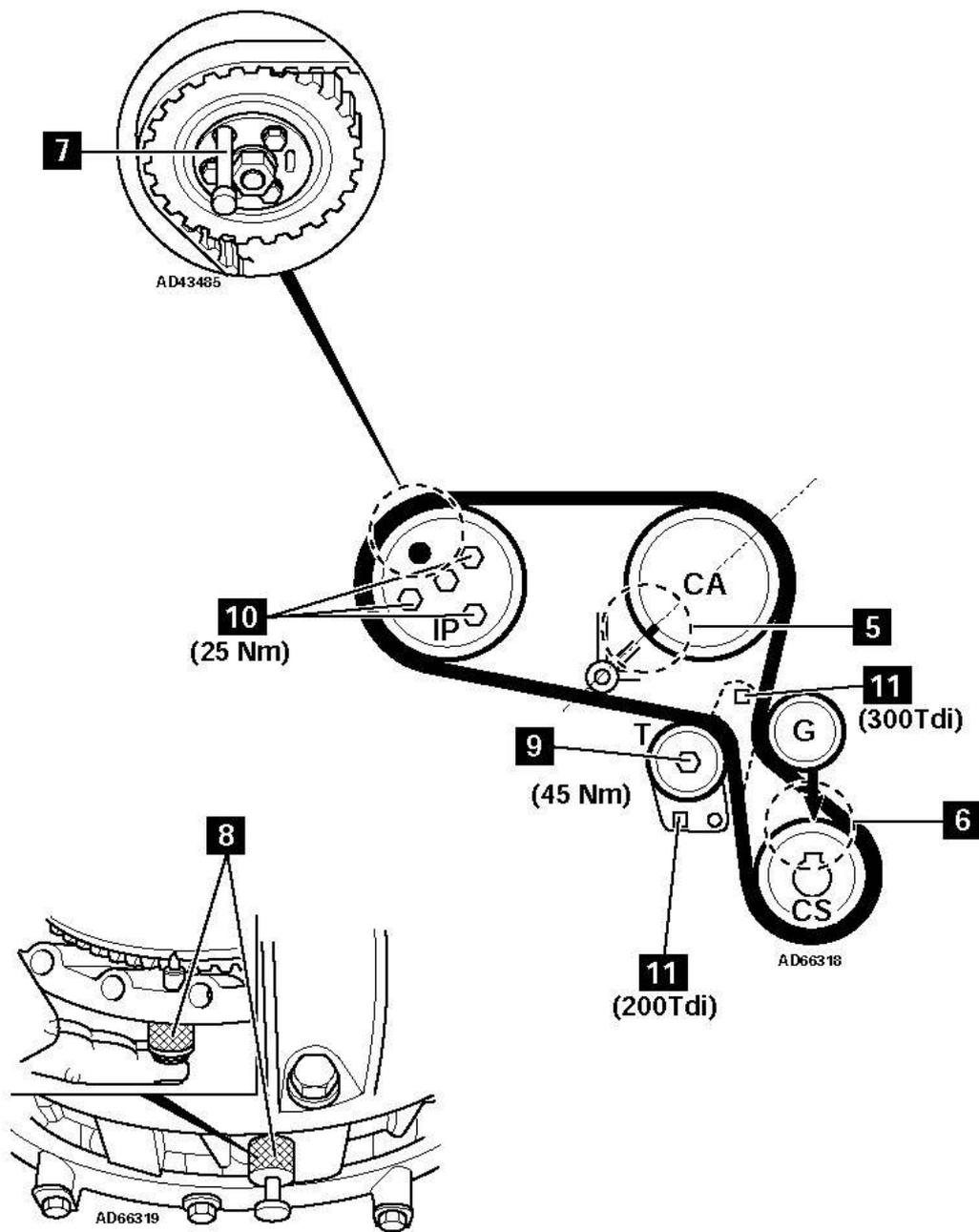
1. Remove:
 - Auxiliary drive belts.
 - Top radiator hose.
 - Cooling fan and viscous coupling (LH thread).
 - Cooling fan cowling.
2. Hold crankshaft pulley/damper. Use tool No.LST 127 or LRT-12-080. Remove crankshaft pulley bolt [2].
3. Remove:
 - Crankshaft pulley [1].
 - Crankshaft damper (if fitted).
 - 200 Tdi: Water pump [3].
 - Air filter/turbocharger hose.
 - Alternator.
 - PAS pump.
 - Timing belt cover [4].
4. Turn crankshaft clockwise to TDC on No.1 cylinder. Ensure timing marks aligned [5] & [6].
5. Lock flywheel with timing pin. MT: Remove blanking plug from lower bell housing. Insert timing pin [8]. AT: Remove two bolts and blanking plate from engine backplate. Insert timing pin in largest bolt hole. Tool No.LST 128 or LRT-12-044.
6. Insert timing pin in injection pump sprocket. Tool No.LST 129 or LRT-12-045 [7].
7. Remove:
 - Tensioner bolt [9].
 - Tensioner.
 - Timing belt.

Installation

Installation

1. Slacken injection pump sprocket bolts [10].
2. Fit timing belt. Ensure belt is taut on non-tensioned side.
3. Fit tensioner ensuring it is located on dowel pin.
4. Insert torque wrench in square hole [11].
NOTE: Ensure torque wrench held in a vertical position.
5. 200 Tdi: Apply a torque of 21,7 Nm to tension belt. Used belt: 16,3 Nm.
300 Tdi: Apply a torque of 11 Nm to tension belt.
6. Tighten tensioner bolt [9]. Tightening torque: 45 Nm.
7. Tighten injection pump sprocket bolts [10]. Tightening torque: 25 Nm.
8. Remove timing pins [7] & [8].
9. Turn crankshaft two turns clockwise. Repeat tensioning procedure. This is important to avoid premature timing belt failure.

10. Turn crankshaft two turns clockwise. Ensure flywheel timing pin can be inserted.
11. Ensure timing marks aligned.
12. Insert timing pin in injection pump sprocket.
13. If timing pin cannot be inserted: Slacken injection pump sprocket bolts [10].
14. Turn sprocket hub until timing pin can easily be inserted. Tighten injection pump sprocket bolts [10]. Tightening torque: 25 Nm.
15. Install components in reverse order of removal.
16. 200 Tdi: Coat threads of crankshaft pulley/damper bolt [2]and internal bore of crankshaft pulley/damper [1]with 'Loctite 242'.
17. 300 Tdi: Coat internal bore of crankshaft pulley/damper with grease [1].
18. Tighten crankshaft pulley/damper bolt [2]. 200 Tdi: 333-350 Nm. 300 Tdi: 80 Nm + 90°.
19. Refill cooling system.



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