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Accessory Drive - TDV8 3.6L Diesel -

Torque Specifications

Item	Nm	lb-ft
65 mm cooling fan belt idler pulley bolt	48	35
80 mm cooling fan belt idler pulley bolt	80	59
Cooling fan belt tensioner bolts	25	18
Accessory drive belt tensioner bolts	25	18

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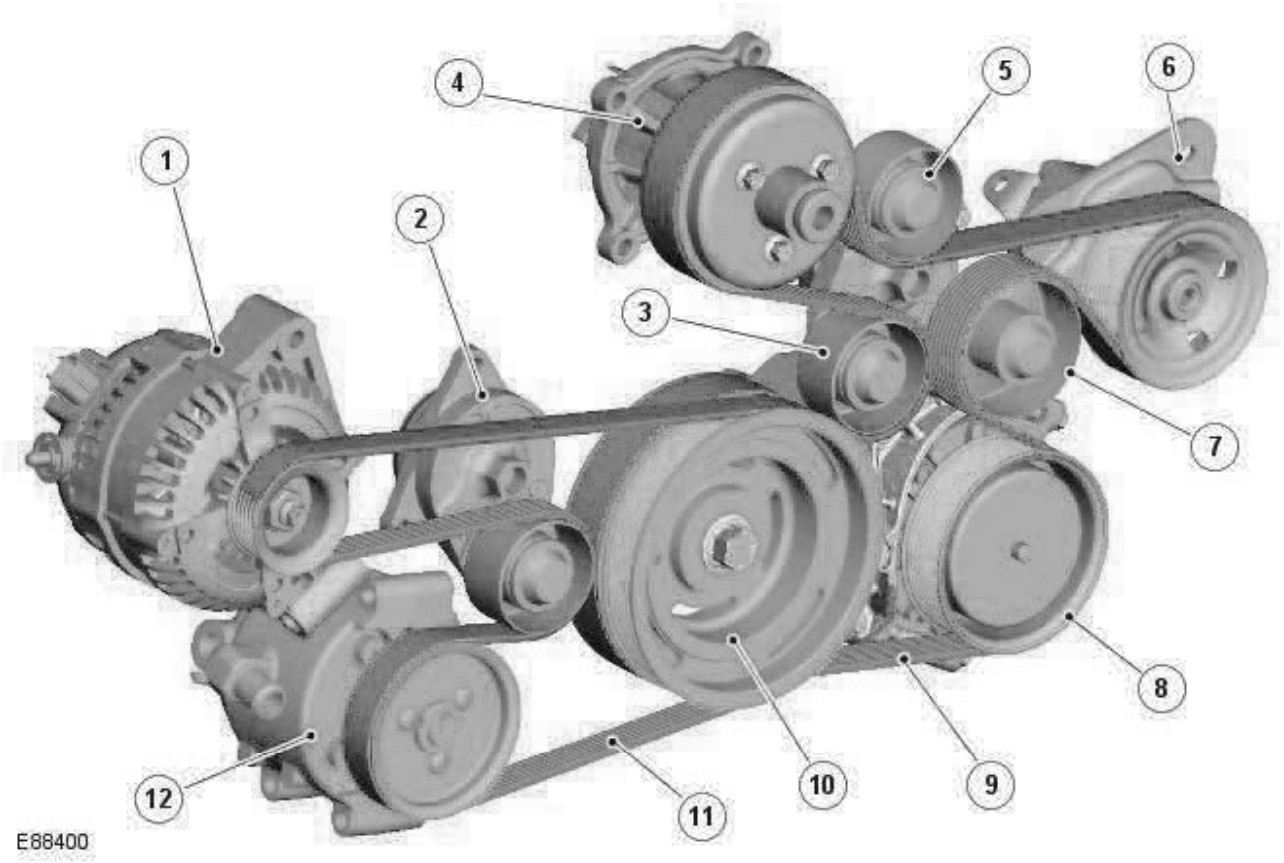
Description and Operation

COMPONENT LOCATION



Item	Part Number	Description
1	-	Generator
2	-	Tensioner assembly
3	-	Tensioner assembly
4	-	Engine cooling fan/coolant pump
5	-	Idler assembly
6	-	Power steering pump
7	-	Idler assembly
8	-	Air Conditioning (A/C) compressor
9	-	Primary accessory drive belt
10	-	Crankshaft pulley
11	-	Secondary accessory drive belt
12	-	Dynamic Response pump

The engine crankshaft pulley drives the accessory components, which comprise the generator, power steering pump, A/C compressor, coolant pump and Dynamic Response pump, via one of two accessory drive belts.

The primary belt is an 8-ribbed, maintenance free poly-V type belt which is 28.5 mm wide. The secondary belt is a 6 rib, maintenance free poly-V type belt which is 21.4 mm wide. The belts are automatically pre-loaded by tensioners (one per belt) and routed over deflection idler pulleys in order to maintain sufficient grip between the belt and the driven pulleys. This ensures slip-free drive of the accessory components.

The poly-V type belts are designed to achieve fit-for-life performance through normal use (due to the risk of off-road stone damage, the belt is inspected periodically and, if necessary, replaced. Refer to the vehicles service schedule for more information). The belts unique rib profile provides higher dimensional accuracy, whilst the surface of the ribs themselves have been specially treated to reduce noise.

Engine durability during wading is protected by sealed bearings on the belt idlers and tensioners. The generator, A/C compressor and starter motor are also fully sealed.

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Diagnosis and Testing

Overview

There is an additional drive belt on diesel engines for the fuel injection pump, this section covers basic checks for both.

For information on the description and operation of the system:
REFER to: Accessory Drive (303-05D Accessory Drive - TDV8 3.6L Diesel, Description and Operation).

Inspection and verification

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious mechanical faults.

Visual inspection

Mechanical
• Drive belt condition (cracking/damage/contamination) • Idler assembly • Generator • Engine cooling fan • Tensioner assembly • Engine coolant pump • Power steering pump • Air conditioning (A/C) compressor • Torsional vibration damper • Dynamic response pump • Tensioner assembly • Accessory drive belt • Security/Correct fitment of the fuel injection pump cover • Fuel injection pump belt condition (cracking/damage/contamination) • Fuel injection pump belt tensioner assembly • Fuel injection pump • Fuel injection pump belt

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

CAUTION: If the engine is run without the accessory drive belts connected to eliminate driven components, diagnostic trouble codes, (DTCs) may be set which must be cleared before the vehicle is returned to the owner. The engine should not be run for more than 2-3 minutes with the belts disconnected. Failure to follow this instruction may result in damage to the vehicle.

4. **4.** Use the approved diagnostic system or a scan tool to retrieve any DTCs before moving onto the symptom chart or DTC index.
    - Make sure that all DTCs are cleared following rectification.

Symptom chart (accessory drive belt)

Symptom	Possible cause	Action
Noise	• Belt condition • Belt tension • Pulleys misaligned • Driven components (including tensioners)	Check the belt condition (see visual inspection). Check the tensioner function. Check the pulley alignment. Check the driven components for excessive resistance to rotation. Rectify as necessary.
Drive belt does not hold tension	• Belt condition • Tensioner fault	Check the belt condition (see visual inspection). Check the tensioner function. Rectify as necessary.

Symptom chart (fuel injection pump belt)

Symptom	Possible causes	Action
Noise	• Belt condition • Belt fouling	Check the belt condition (see visual inspection). Check the belt cover for indications of fouling (this may indicate a pump misalignment). The belt tensioner must be

Symptom	Possible causes	Action
	cover • Tensioner bearing failure • Fuel injection pump failure	renewed if the belt is removed, making a check of the bearing impractical. Remove the belt, check the fuel injection pump pulley for security. Check the fuel injection pump for excessive resistance to rotation (excessive resistance in the pump will cause the pulley securing nut to loosen as a design feature). Check for diagnostic trouble codes (DTCs) indicating a pump malfunction.
Drive belt does not hold tension	• Belt condition • Tensioner fault	Check the belt condition (see visual inspection). Check the tensioner function. Rectify as necessary.
Loss of drive (with no drive to the fuel injection pump, the engine will not run)	• Belt broken/stripped teeth • Drive pulleys loose	Investigate the cause of the belt breakage/damage (a belt broken at a 45 degree angle normally indicates a shear, a break straight across the belt normally indicates that the belt has been crimped). Check the fuel injection pump for excessive resistance to rotation (excessive resistance in the pump will cause the pulley securing nut to loosen as a design feature). Check for DTCs indicating a pump malfunction.

DTC index

• NOTE: Generic scan tools may not read the codes listed, or may read only 5-digit codes. Match the 5 digits from the scan tool to the first 5 digits of the 7-digit code listed to identify the fault (the last 2 digits give extra information read by the manufacturer-approved diagnostic system).

• NOTE: For a full list of ECM DTCs.
REFER to: Electronic Engine Controls (303-14D Electronic Engine Controls - TDV8 3.6L Diesel, Diagnosis and Testing).

DTC	Description	Possible causes	Action
P151B00	Idle air control system RPM lower than expected	• Oil level • Driven component fault • Engine compression	Check the engine oil level and condition. Check the driven components (generator, air conditioning compressor, etc). Rectify as necessary. Check the engine compressions only once other options are ruled out. Rectify as necessary. Clear the DTCs and test for normal operation.
P151C00	Idle air control - RPM higher than expected	• Oil level • Driven component fault • Engine compression	Check the engine oil level and condition. Check the driven components (generator, air conditioning compressor, etc). Rectify as necessary. Check the engine compressions only once other options are ruled out. Rectify as necessary. Clear the DTCs and test for normal operation.

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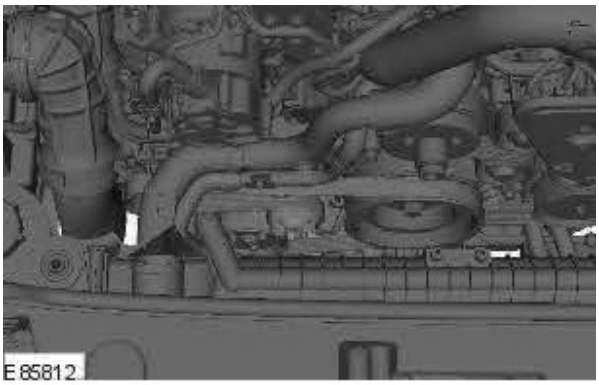
Accessory Drive - TDV8 3.6L Diesel - Accessory Drive Belt

Removal and Installation

Removal



1. Disconnect the battery ground cable.
   For additional information, refer to: Specifications (414-00 Battery and Charging System - General Information, Specifications).
2. Raise and support the vehicle.
3. Remove the viscous coupling.
   For additional information, refer to: Cooling Fan (303-03E Engine Cooling - TDV8 3.6L Diesel, Removal and Installation).
4. Remove the accessory drive belt.
   - Release the tension from the belt.

Installation

1. To install, reverse the removal procedure.
   - Clean and inspect the drive pulleys for damage.

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Accessory Drive - TDV8 3.6L Diesel - Accessory Drive Belt Tensioner

Removal and Installation

Removal

1. Disconnect the battery ground cable.
For additional information, refer to: Specifications (414-00 Battery and Charging System - General Information, Specifications).

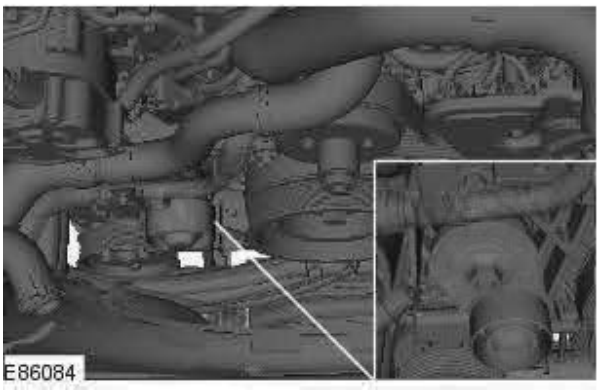
2. WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

Raise and support the vehicle.

3. Remove the accessory drive belt.
For additional information, refer to: Accessory Drive Belt (303-05D Accessory Drive - TDV8 3.6L Diesel, Removal and Installation).

4. Remove the accessory drive belt tensioner.

- Remove the 2 bolts.



Installation

1. To install, reverse the removal procedure.

- Tighten the bolts to 25 Nm (18 lb.ft).