

Driveshaft -

Front Drive (Propeller) Shaft

Item	Specification
Type	One piece, variable length steel tube.
Constant velocity joints	Plunging type, fitted at front and rear.

Rear Drive (Propeller) Shaft

Item	Specification
Type	Two piece, variable length steel tube with isolated centre bearing and swaged front section to provide controlled collapse of the shaft during a crash.
Constant velocity joints	Plunging constant velocity joints are positioned at the front and centre of the shaft with a fixed, Hookes type universal joint at the rear.

Torque Specifications

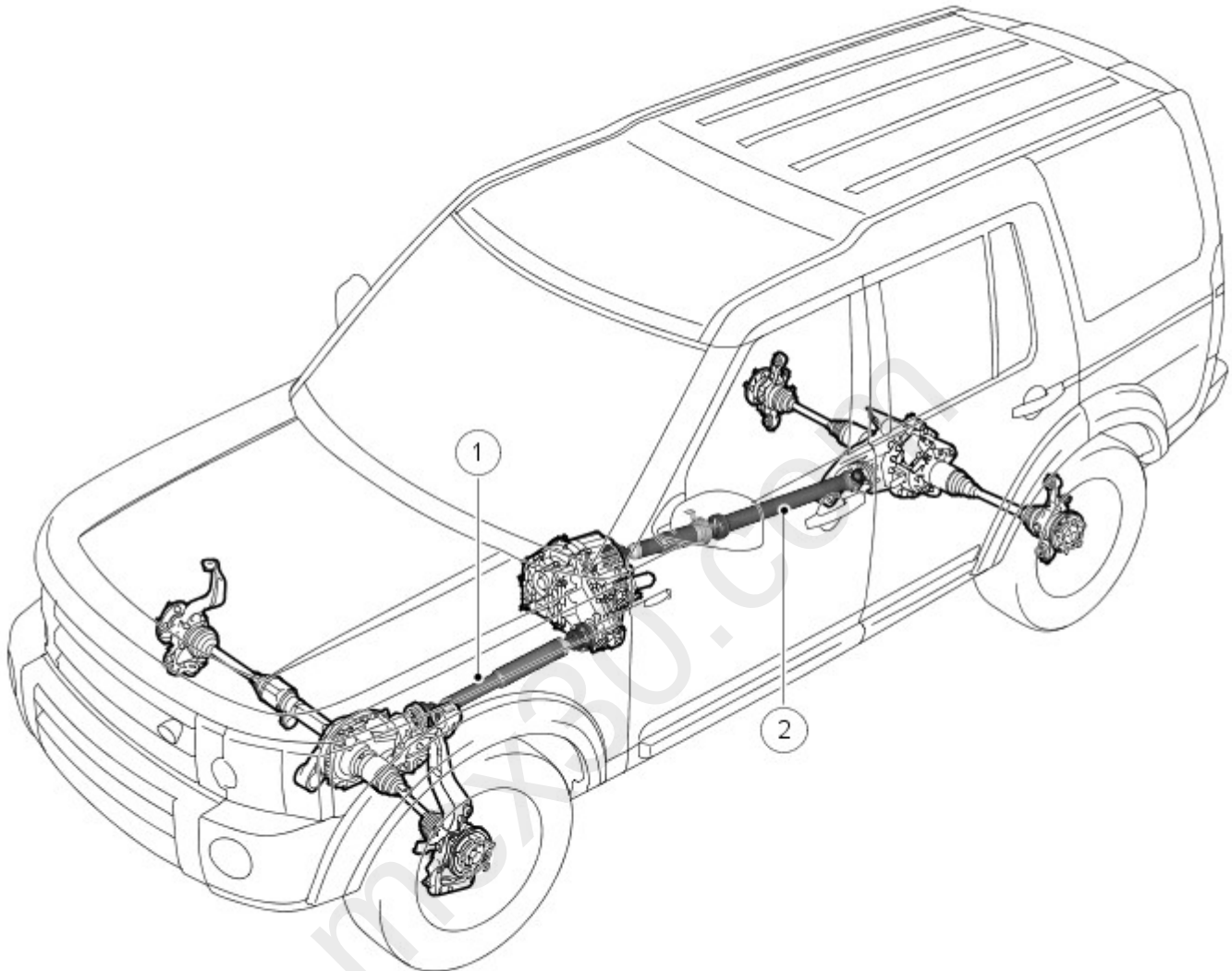
Description	Nm	lb-ft
* Front driveshaft to front axle drive flange Torx bolts:		
Stage 1	45	33
Stage 2	Further 90°	Further 90°
* Front driveshaft to transfer case drive flange Torx bolts:		
Stage 1	45	33
Stage 2	Further 90°	Further 90°
* Rear driveshaft to rear axle drive flange Torx bolts	150	110
Rear driveshaft to transfer case drive flange Torx bolts	73	54
Rear driveshaft center bearing bolts	30	22
Fuel tank heat shield bolts	5	4
Fuel tank heat shield nuts	3	2

*** New 'Patched' Torx bolts must be installed**

Driveshaft - Driveshaft

Description and Operation

Drive shaft Component Location



E46304

Item	Part Number	Description
1	-	Front drive shaft
2	-	Rear drive shaft

GENERAL

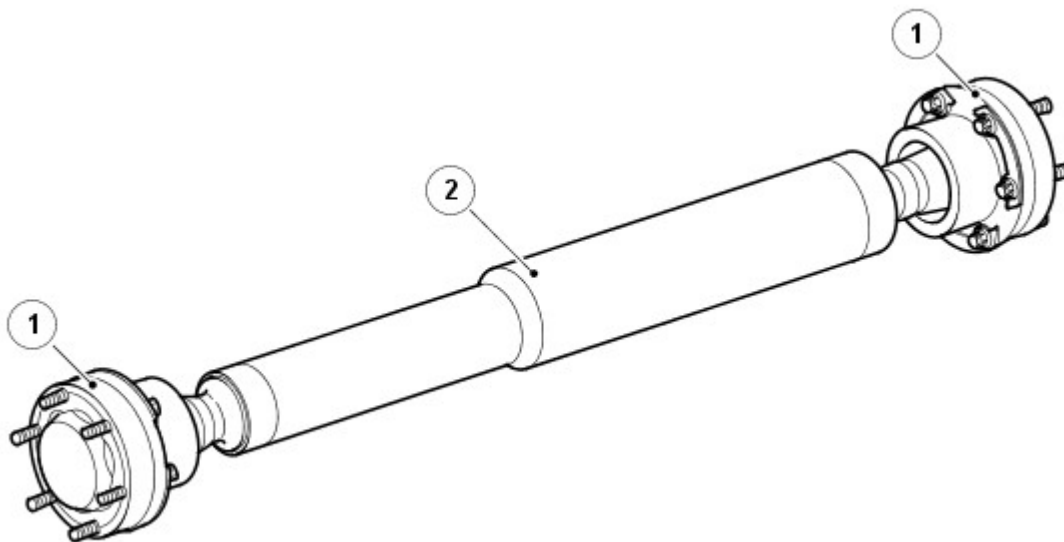
Drive shafts are used to transmit drive from the transfer box to the front and rear differentials.

The front drive shaft is a one-piece unit, connected to the transfer box and front differential unit via Constant Velocity (CV) joints.

The rear drive shaft is a two-piece unit, supported on a central bearing due to its increased length. The rear drive shaft is connected to the transfer box via a CV joint and the rear differential with a universal joint. These joints allow for angular deviations of the drive shaft due to acceleration and braking.

The front and rear drive shafts are not serviceable items and a failure will require the replacement of the complete drive shaft assembly.

FRONT DRIVE SHAFT



E46305

Item	Part Number	Description
1	-	CV joint
2	-	Front drive shaft

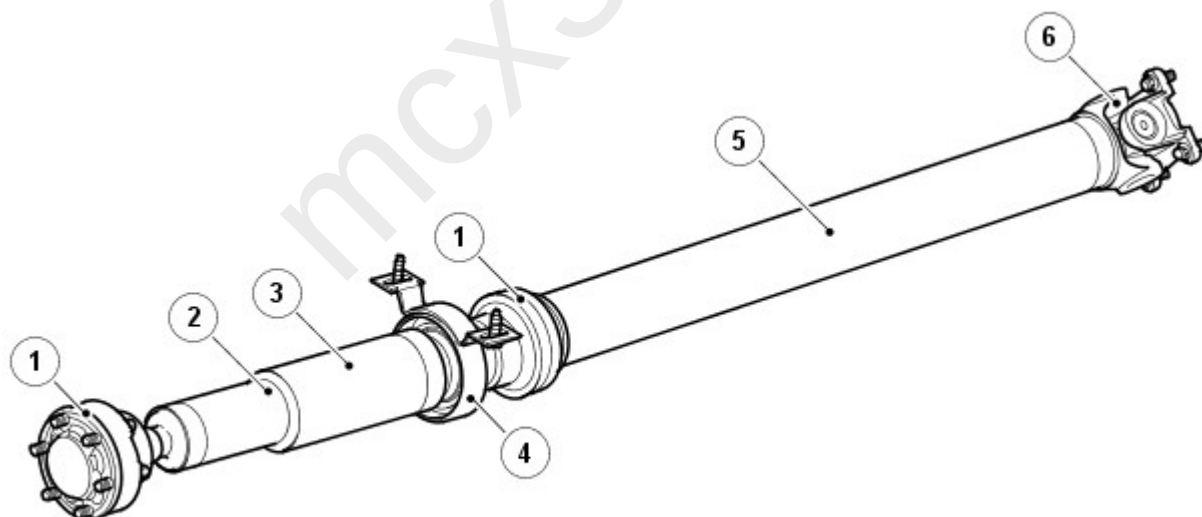
The front drive shaft is constructed from 1.7 mm wall tubular steel. A CV joint is attached to each end of the drive shaft (see 'Halfshaft Joint' section for more information on CV joints). The shaft has an overall nominal length of 713 mm.

Each CV joint has six holes, which allow for attachment to the input flange of the front differential and the front output flange of the transfer box. The CV joints are secured to the front differential and transfer box with six Torx head adhesive retained bolts.

Three compression link washers are fitted under each pair of bolts. The washers are required to prevent compression of the CV joints attachment flange.

A shroud is pressed over the CV joint. The shroud seals to the joint body using an internal gasket and to the front output flange of the transfer box using an end cap and internal gasket. This prevents the ingress of dirt and moisture. The CV joints allow for movement of the drive shaft caused by small movements in the transmission and transfer box mountings.

REAR DRIVE SHAFT ASSEMBLY



E46306

Item	Part Number	Description
1	-	CV joints
2	-	Collapsible crash section
3	-	Front shaft assembly
4	-	Support bearing
5	-	Rear shaft assembly
6	-	Universal joint

The rear drive shaft assembly comprises front and rear shaft assemblies and a centrally mounted shaft bearing. The rear drive shaft assembly has an overall nominal length of 1309 mm.

Front Shaft Assembly

The front shaft assembly incorporates a crash feature within the tube, which controls the collapse of the drive shaft during a crash.

The front shaft assembly comprises a CV joint at each end (see 'Halfshaft Joint' section for more information on CV joints).

The front CV joint (transfer box end) has six radial holes, which provide for the attachment to the transfer box rear output flange. The joint is secured to the output flange with six torx bolts, which screw into threaded holes in the flange. Three compression link washers are fitted under each pair of bolts. The rear splined shaft mates with splines in the rear shaft CV joint hub and is pressed in and fixed with Locktite. A machined surface on the shaft accepts the shaft bearing, which is a press fit.

Rear Shaft Assembly

The rear shaft assembly comprises a Hookes type universal joint at the rear (rear differential end).

The universal joint is welded to the rear shaft tube and is secured to the input shaft of the rear differential with four flanged nuts. The opposite end of the rear shaft tube is welded directly to the CV joint body.

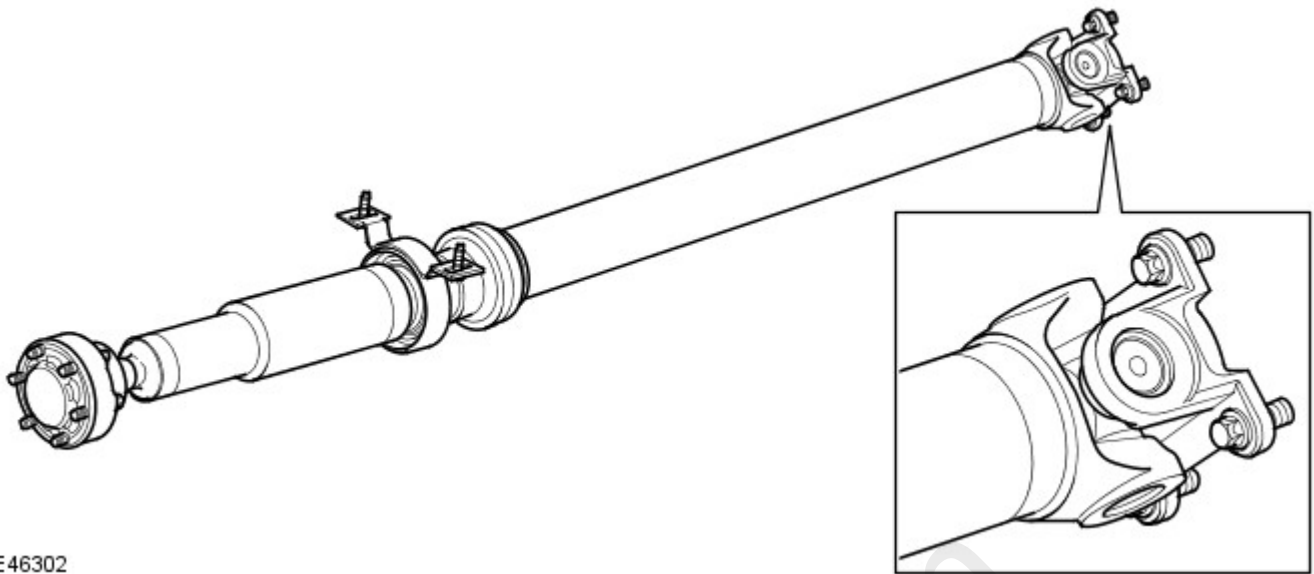
Shaft Bearing Assembly

The shaft bearing assembly comprises a pressed steel housing, a rubber diaphragm and a ball bearing. The diaphragm is bonded into the housing. An internal metal ring, bonded to the bush, allows for the bearing to be press fitted into it. The rubber bush allows for small deviations in alignment and also absorbs vibrational forces. The shaft bearing assembly is located by screws, which pass through plain holes in the bearing assembly and locate into nuts welded on the inside face of the chassis cross-member.

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Driveshaft - Universal Joints

Description and Operation



E46302

A Hookes type universal joint is used to connect the rear drive shaft assembly to the rear differential, allowing for angular deviations of the drive shafts due to acceleration and braking.

The joint is bolted to the input shaft of the rear differential with four flanged adhesive screws and is lubricated during manufacture and sealed for life.

Driveshaft - Front Driveshaft V8 5.0L Petrol

Removal and Installation

Removal



CAUTION: It is possible to fit the driveshaft incorrectly. Note the orientation before removal.

- **NOTE:** A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

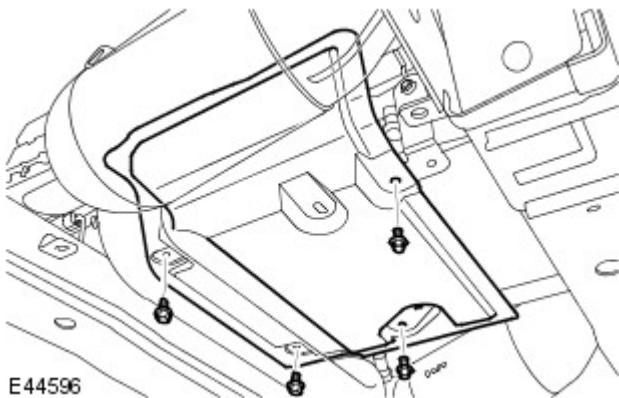
1. **WARNING:** Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

Raise and support the vehicle.

2. Remove the transmission crossmember.
For additional information, refer to: [Transmission Support Crossmember - V8 5.0L Petrol](#) (502-02 Full Frame and Body Mounting, Removal and Installation).

3. Remove the transmission heat shield.

- Remove the 4 bolts.



4. CAUTIONS:



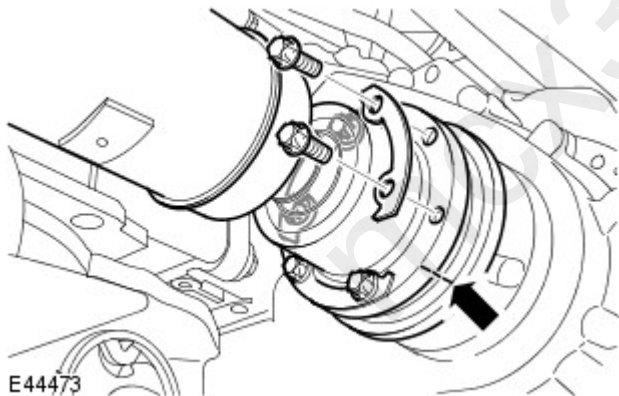
Mark the position of the driveshaft flange in relation to the drive pinion flange.



To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the transfer case drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.



5. CAUTIONS:



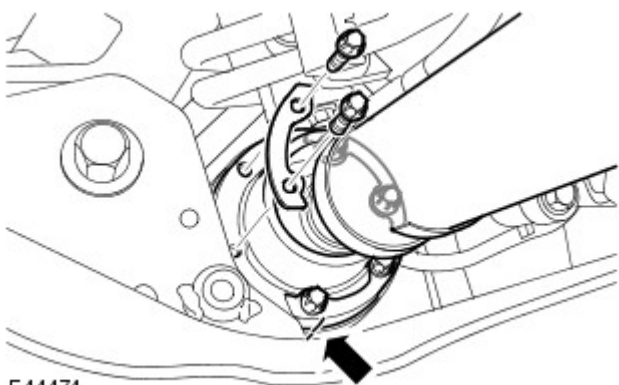
Mark the position of the driveshaft flange in relation to the drive pinion flange.

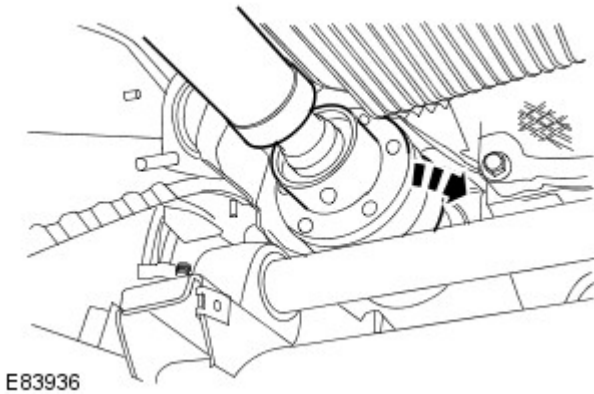


To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the front axle drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.





6. Remove the front driveshaft.

- Compress the joints to disengage the drive flanges.

Installation

1. NOTE: A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

Install the driveshaft.

- Clean the components.
- Compress the joints to engage the drive flanges.

2. CAUTION: Make sure that new bolts are installed.

Secure the driveshaft to the front axle drive flange.

- Stage 1: Tighten the bolts to 45 Nm (33 lb.ft).
- Stage 2: Tighten the bolts a further 90 degrees.

3. CAUTION: Make sure that new bolts are installed.

Secure the driveshaft to the transfer case drive flange.

- Stage 1: Tighten the bolts to 45 Nm (33 lb.ft).
- Stage 2: Tighten the bolts a further 90 degrees.

4. Install the transmission heat shield.

- Tighten the bolts to 10 Nm (7 lb.ft).

5. Install the transmission crossmember.

For additional information, refer to: [Transmission Support Crossmember - V8 5.0L Petrol](#) (502-02 Full Frame and Body Mounting, Removal and Installation).

Driveshaft - Front Driveshaft V6 4.0L Petrol

Removal and Installation

Removal



CAUTION: It is possible to fit the driveshaft incorrectly. Note the orientation before removal.

- **NOTE:** A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

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 exhaust system.
For additional information, refer to: [Exhaust System](#) (309-00C Exhaust System - V6 4.0L Petrol, Removal and Installation).

4. CAUTIONS:



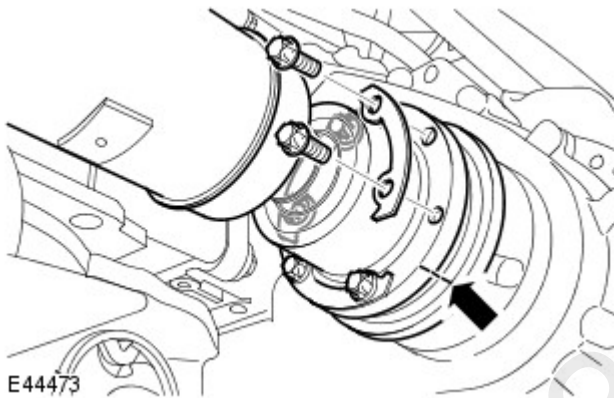
Mark the position of the driveshaft flange in relation to the drive pinion flange.



To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the transfer case drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.



5. CAUTIONS:



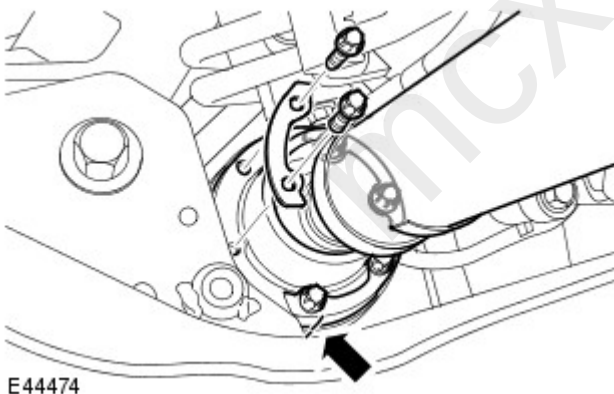
Mark the position of the driveshaft flange in relation to the drive pinion flange.



To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the front axle drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.



6. Remove the front driveshaft.

Installation

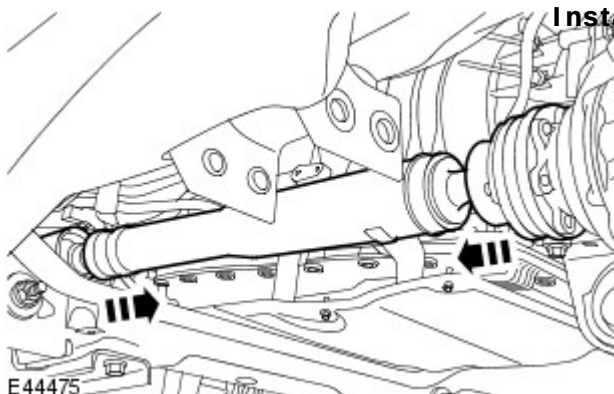
1. Compress the joints to disengage the drive flanges.
NOTE: A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

Install the driveshaft.

- Clean the components.
- Compress the joints to engage the drive flanges.

2. Attach the driveshaft to the front axle drive flange.

- Tighten the new Torx bolts to 45 Nm (33 lb.ft), then a further 90 degrees.



3. Attach the driveshaft to the transfer case drive flange.

- Tighten the new Torx bolts to 45 Nm (33 lb.ft), then a further 90 degrees.

4. Install the exhaust system.

For additional information, refer to: [Exhaust System](#) (309-00C Exhaust System - V6 4.0L Petrol, Removal and Installation).

5. Connect the battery ground cable.

For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

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Driveshaft - Front DriveshaftTDV6 2.7L Diesel

Removal and Installation

Removal



CAUTION: It is possible to fit the driveshaft incorrectly. Note the orientation before removal.

- **NOTE:** A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

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 engine undershield.
For additional information, refer to: [Engine Undershield](#) (501-02 Front End Body Panels, Removal and Installation).
4. Remove the crossmember.
For additional information, refer to: [Transmission Support Crossmember - V8 5.0L Petrol](#) (502-02 Full Frame and Body Mounting, Removal and Installation).

5. CAUTIONS:



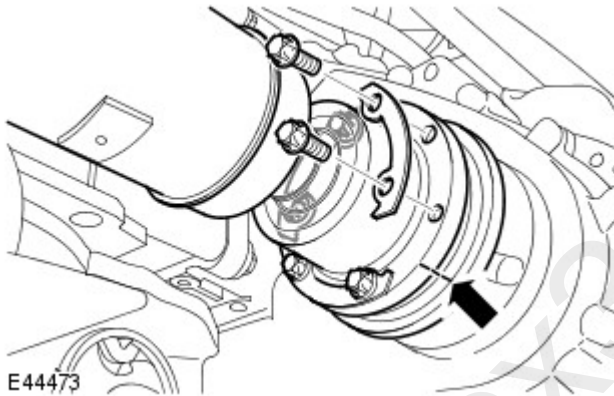
Mark the position of the driveshaft flange in relation to the drive pinion flange.



To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the transfer case drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.



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6. CAUTIONS:



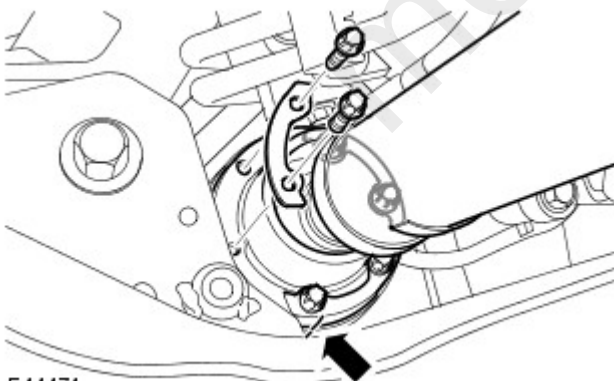
Mark the position of the driveshaft flange in relation to the drive pinion flange.



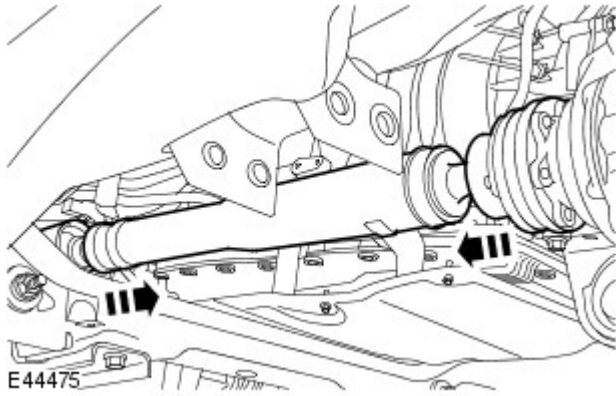
To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the front axle drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.



E44474



7. Remove the front driveshaft.

- Compress the joints to disengage the drive flanges.
- Remove the washer from the transfer case drive flange.

Installation

1. NOTE: A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

Install the driveshaft.

- Clean the components.
- Install the washer.
- Compress the joints to engage the drive flanges.

2. Attach the driveshaft to the front axle drive flange.

- Tighten the new Torx bolts to 45 Nm (33 lb.ft), then a further 90 degrees.

3. Attach the driveshaft to the transfer case drive flange.

- Tighten the new Torx bolts to 45 Nm (33 lb.ft), then a further 90 degrees.

4. Install the transmission crossmember.

For additional information, refer to: [Transmission Support Crossmember - V8 5.0L Petrol](#) (502-02 Full Frame and Body Mounting, Removal and Installation).

5. Install the engine undershield.

For additional information, refer to: [Engine Undershield](#) (501-02 Front End Body Panels, Removal and Installation).

6. Connect the battery ground cable.

For additional information, refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

Driveshaft - Front DriveshaftTDV6 3.0L Diesel

Removal and Installation

Removal



CAUTION: It is possible to fit the driveshaft incorrectly. Note the orientation before removal.

- **NOTE:** A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.



1. 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.

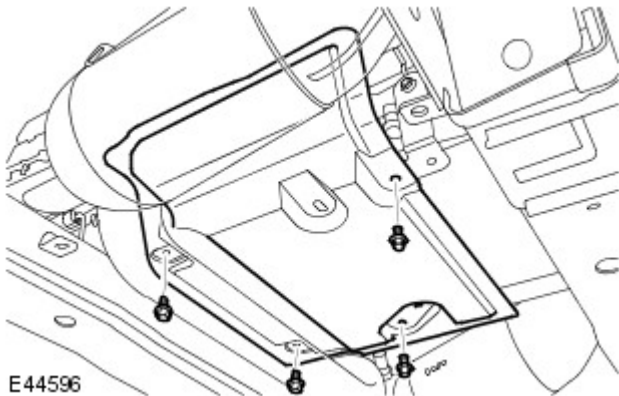
2. Remove the transmission crossmember.

For additional information, refer to: [Transmission Support Crossmember - TDV6 3.0L Diesel](#) (502-02 Full Frame and Body Mounting, Removal and Installation).

3. NOTE: If equipped.

Remove the transmission heat shield.

- Remove the 4 bolts.



4. CAUTIONS:



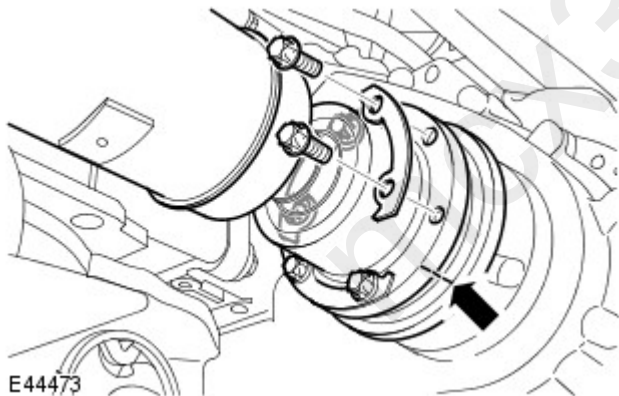
Mark the position of the driveshaft flange in relation to the drive pinion flange.



To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the transfer case drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.



5. CAUTIONS:



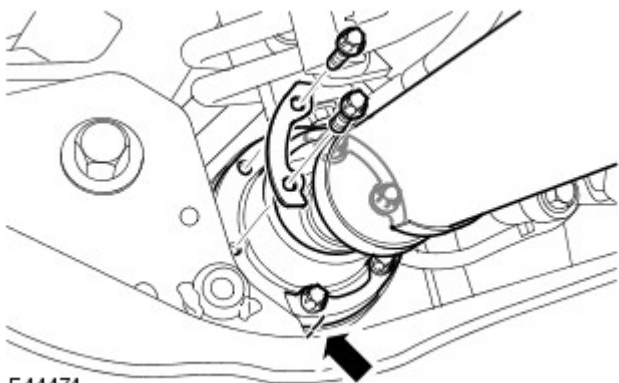
Mark the position of the driveshaft flange in relation to the drive pinion flange.

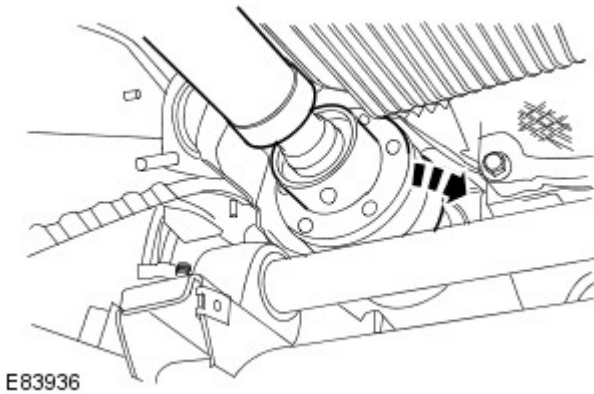


To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the front axle drive flange.

- Remove the 6 Torx bolts and washers, discard the bolts.





6. Remove the front driveshaft.

- Compress the joints to disengage the drive flanges.

Installation

1. NOTE: A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

Install the driveshaft.

- Clean the components.
- Compress the joints to engage the drive flanges.

2. CAUTION: Make sure that new bolts are installed.

Secure the driveshaft to the front axle drive flange.

- Stage 1: Tighten the bolts to 45 Nm (33 lb.ft).
- Stage 2: Tighten the bolts a further 90 degrees.

3. CAUTION: Make sure that new bolts are installed.

Secure the driveshaft to the transfer case drive flange.

- Stage 1: Tighten the bolts to 45 Nm (33 lb.ft).
- Stage 2: Tighten the bolts a further 90 degrees.

4. Install the transmission heat shield.

- Tighten the bolts to 10 Nm (7 lb.ft).

5. Install the transmission crossmember.

For additional information, refer to: [Transmission Support Crossmember - TDV6 3.0L Diesel](#) (502-02 Full Frame and Body Mounting, Removal and Installation).

Driveshaft - Rear Driveshaft

Removal and Installation

Removal

- NOTE: A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

1.  **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.

2. Remove the fuel tank heat shield.

- Remove the 3 bolts and 2 nuts.



E44306

3. CAUTIONS:



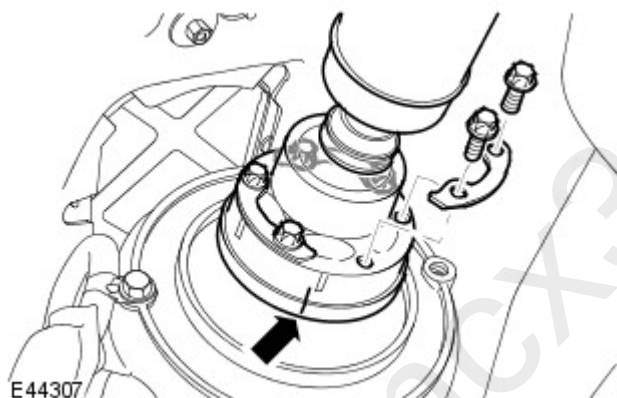
Mark the position of the driveshaft flange in relation to the drive pinion flange.



To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

Release the driveshaft from the transfer case drive flange.

- Remove the 6 Torx bolts and washers.



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4. CAUTIONS:



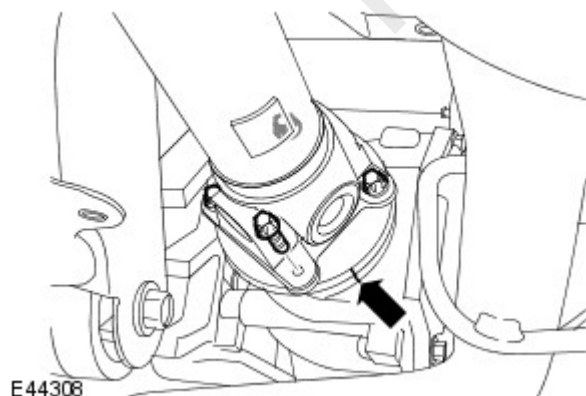
Mark the position of the driveshaft flange in relation to the drive pinion flange.



To avoid damage to the joint or gaiter, do not allow the driveshaft to hang.

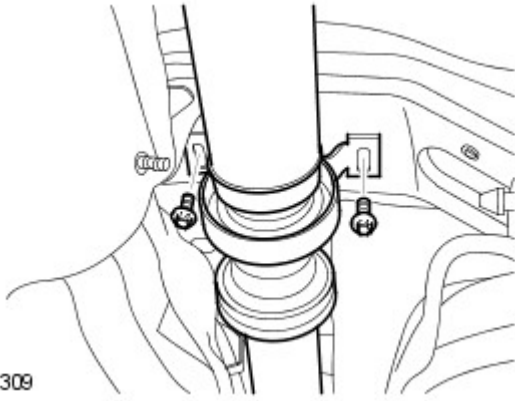
Release the driveshaft from the rear axle drive flange.

- Remove and discard the 4 Torx bolts.



E44308

E44309



5. With assistance, remove the driveshaft.

- Remove the 2 driveshaft center bearing mount bolts.

Installation

1. NOTE: A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

Attach the driveshaft to the rear axle drive flange.

- Clean the component mating faces.
- Attach the driveshaft to the rear axle drive flange.
- Tighten the new Torx bolts to 150 Nm (110 lb.ft).

2. NOTE: A small amount of oil may weep from the driveshaft joints during storage. The loss of this oil will not affect the operation or durability of the joint.

Attach the driveshaft to the transfer case drive flange.

- Clean the component mating faces.
- Tighten the Torx bolts to 73 Nm (54 lb.ft).

3. CAUTIONS:



Align the driveshaft center bearing mount by moving the floating front section of the shaft backward or forwards until the bolt holes in the mount align with the holes in the chassis.



Make sure the center bearing mount is not under tension.

Install the driveshaft center bearing mount bolts.

- Align the center bearing mount.
- Tighten the driveshaft center bearing retaining bolts to 30 Nm (22 lb.ft).

4. Install the fuel tank heat shield.

- Tighten the bolts to 6 Nm (4 lb.ft).
- Tighten the nuts to 3 Nm (2 lb.ft).