

Starting System - TD4 2.2L Diesel -

General Specification

Item	Specification
Starter motor:	
Make	Bosch
Type	2.0 kW
Voltage	12

Torque Specifications

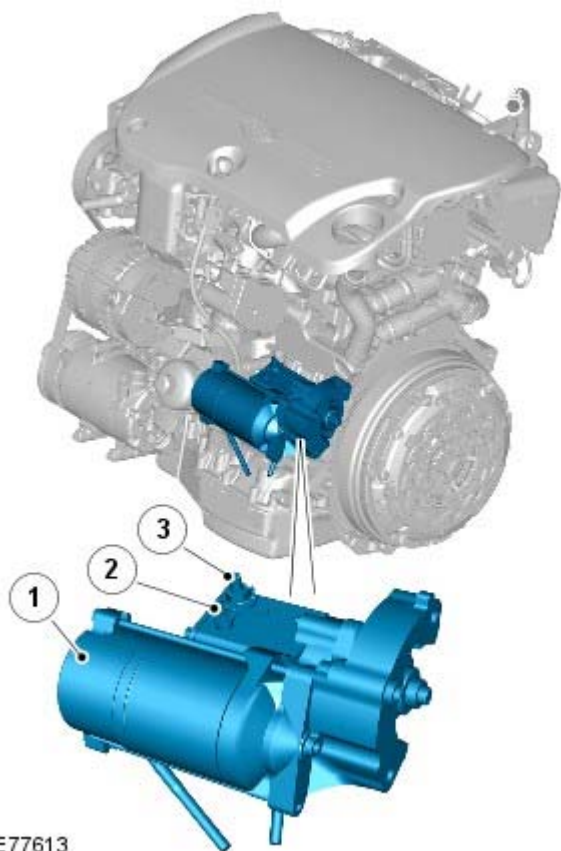
Description	Nm	lb-ft
Solenoid terminal integral connector retaining nut	6	4
Starter motor positive terminal nut*	12	9
Starter motor bolts	40	30

* Damage to the internal connections will occur if this torque is exceeded

Starting System - TD4 2.2L Diesel - Starting System

Description and Operation

COMPONENT LOCATION



Item	Part Number	Description
1	-	Starter motor
2	-	Battery to solenoid connection
3	-	Battery positive connection

OVERVIEW

The starter motor is rated at 2.0 kW and is manufactured by Denso as a sealed pinion only unit. The starter motor is an RA type that is offset in design; the solenoid is located directly behind the pinion to provide a more positive engagement with the flywheel ring gear. The motor is geared directly to the pinion and is a pre-engaged type comprising a series wound motor and an over-running clutch.

The motor is mounted on the Left-Hand (LH) side of the clutch housing and secured with 3 fixings. The pinion protrudes through an aperture to drive the flywheel via a ring gear.

A small diameter cable is connected between the Engine Control Module (ECM) and the solenoid. The solenoid is energized by a signal voltage from the ECM when the starter switch is pressed. When engine cranking is requested, the ECM checks for a received valid mobilization code before granting the crank request.

For additional information, refer to: Anti-Theft - Passive (419-01 Anti-Theft - Passive, Description and Operation).

Power for starter motor operation is supplied through a large diameter single cable, connected directly to the battery positive terminal. The cable is protected with a sealed 'CAL3' type fuse, located at the battery end of the cable.

For additional information, refer to: [Battery and Cables](#) (414-01 Battery, Mounting and Cables, Description and Operation).

The cable is secured to the solenoid with an anti-rotational device and nut.

Starting System - TD4 2.2L Diesel - Starter Motor

Removal and Installation

Removal

1. Disconnect the battery ground cable.

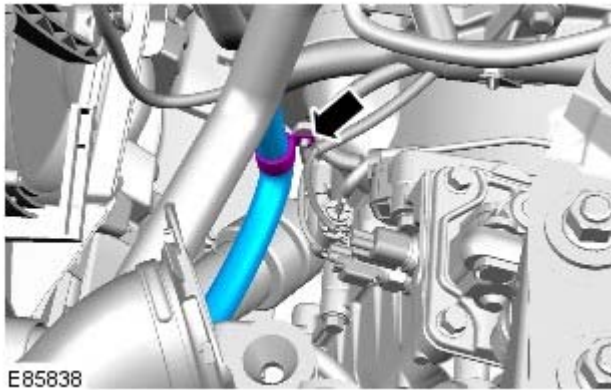
Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

2. Remove the engine cover.

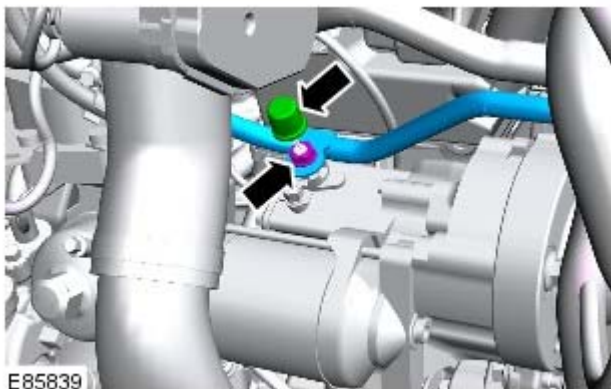
Refer to: [Engine Cover - TD4 2.2L Diesel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

3. Remove the air cleaner assembly.

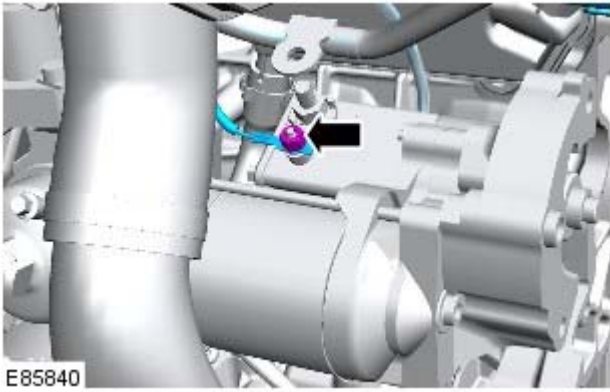
Refer to: [Air Cleaner](#) (303-12A Intake Air Distribution and Filtering - I6 3.2L Petrol, Removal and Installation).



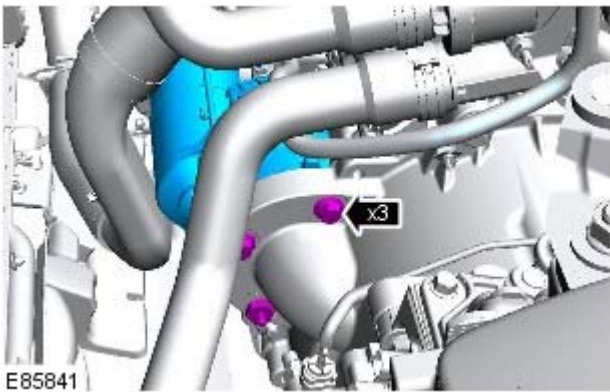
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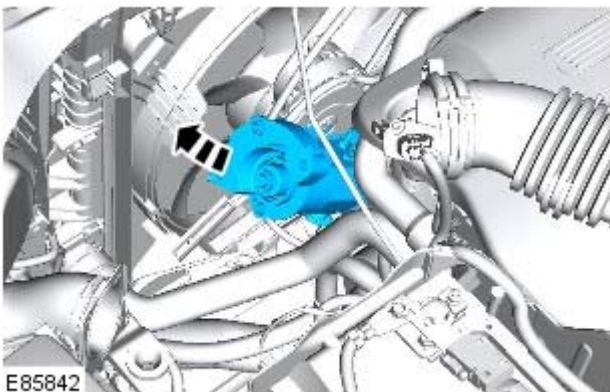
5. *Torque:* 12 Nm



6. Torque: 6 Nm



7. Torque: 40 Nm



8.

Installation

1. To install, reverse the removal procedure.

Starting System - TD4 2.2L Diesel - Starter Solenoid

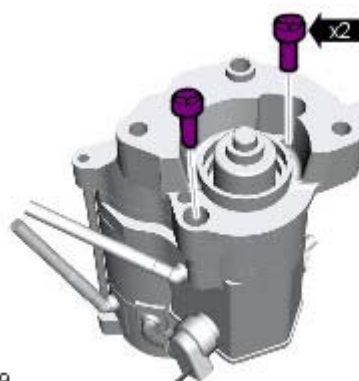
Removal and Installation

Removal

1. Remove the starter motor.

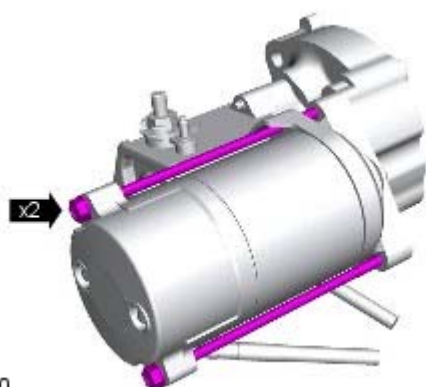
Refer to: [Starter Motor](#) (303-06B Starting System - TD4 2.2L Diesel, Removal and Installation).

2. Torque: 10 Nm



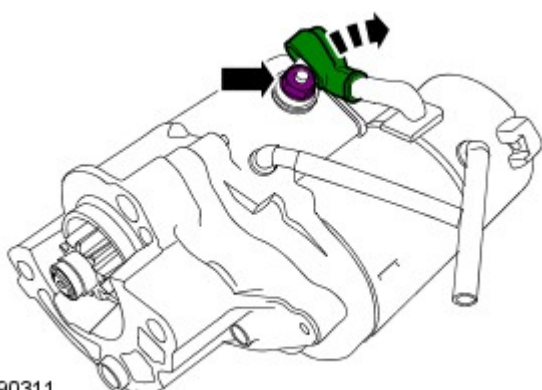
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3. Torque: 10 Nm



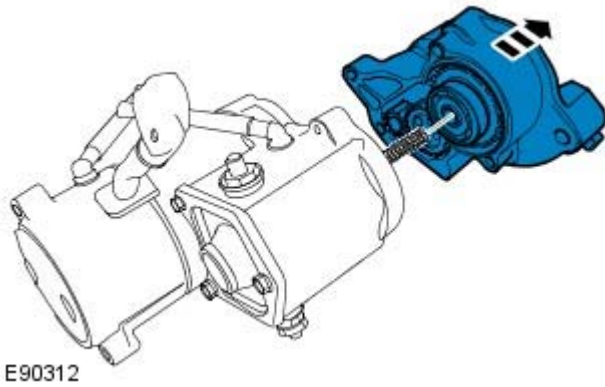
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4. Torque: 6 Nm

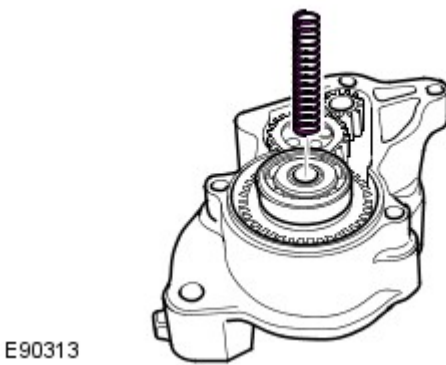


E90311

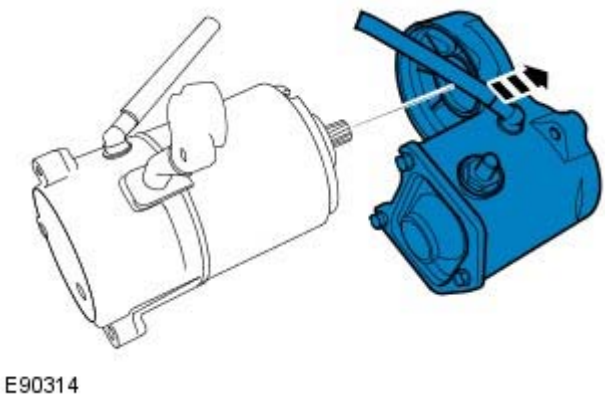
5.



6.



7.



Installation

1. To install, reverse the removal procedure.

Starting System - TD4 2.2L Diesel - Start Control Unit

Removal and Installation

Removal

1. **NOTE:** This step must be performed if replacing the start control unit.

NOTE: Make sure that all keys (remote control handsets) are present when performing this procedure.

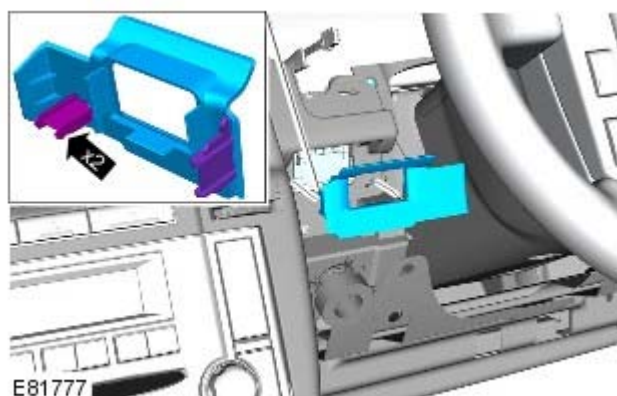
Using the Land Rover approved diagnostic equipment, interrogate the start control unit and upload the stored data.

2. Make the SRS system safe.

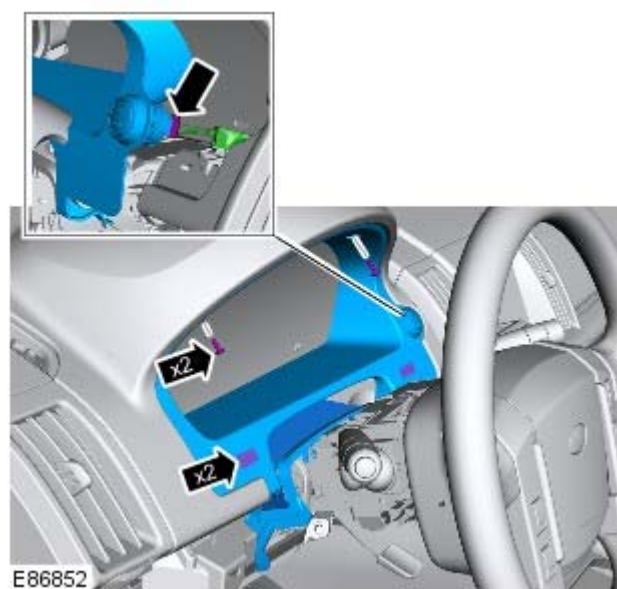
Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

3. Remove the driver lower air bag.

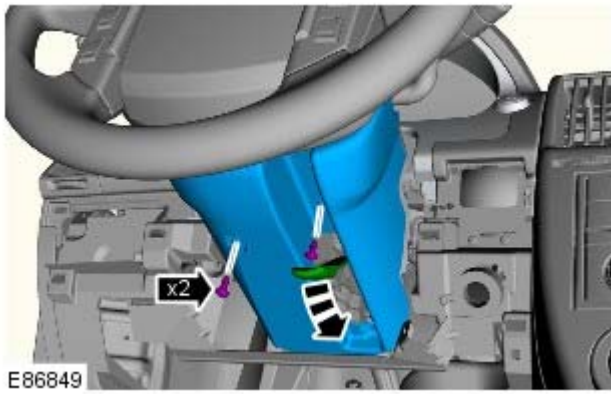
Refer to: [Driver Lower Air Bag Module](#) (501-20B Supplemental Restraint System, Removal and Installation).



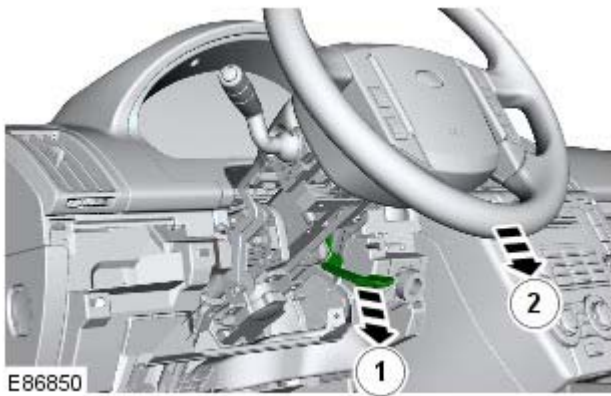
4. Remove the starter control unit trim cover.



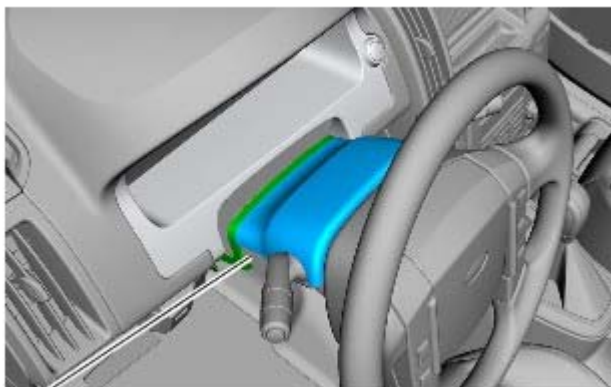
5. Remove the instrument cluster surround.



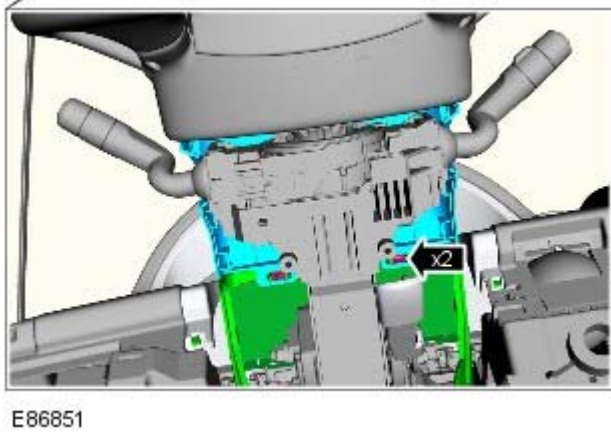
6. Remove the steering column lower cowl.



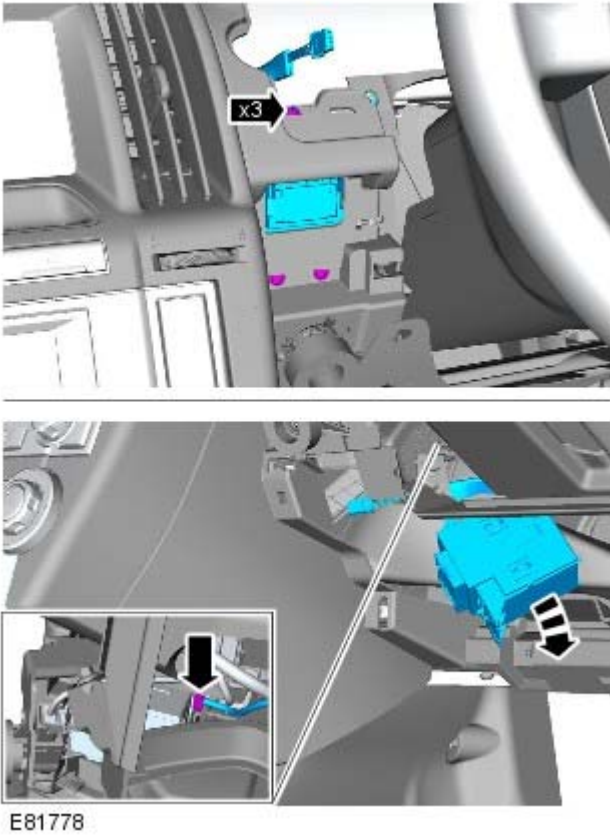
7. Adjust the steering column to its lowest position.



8.



9. Remove the start control unit.



Installation

1. To install, reverse the removal procedure.
2. Using the Land Rover approved diagnostic equipment, download the previously stored information to a new start control unit.