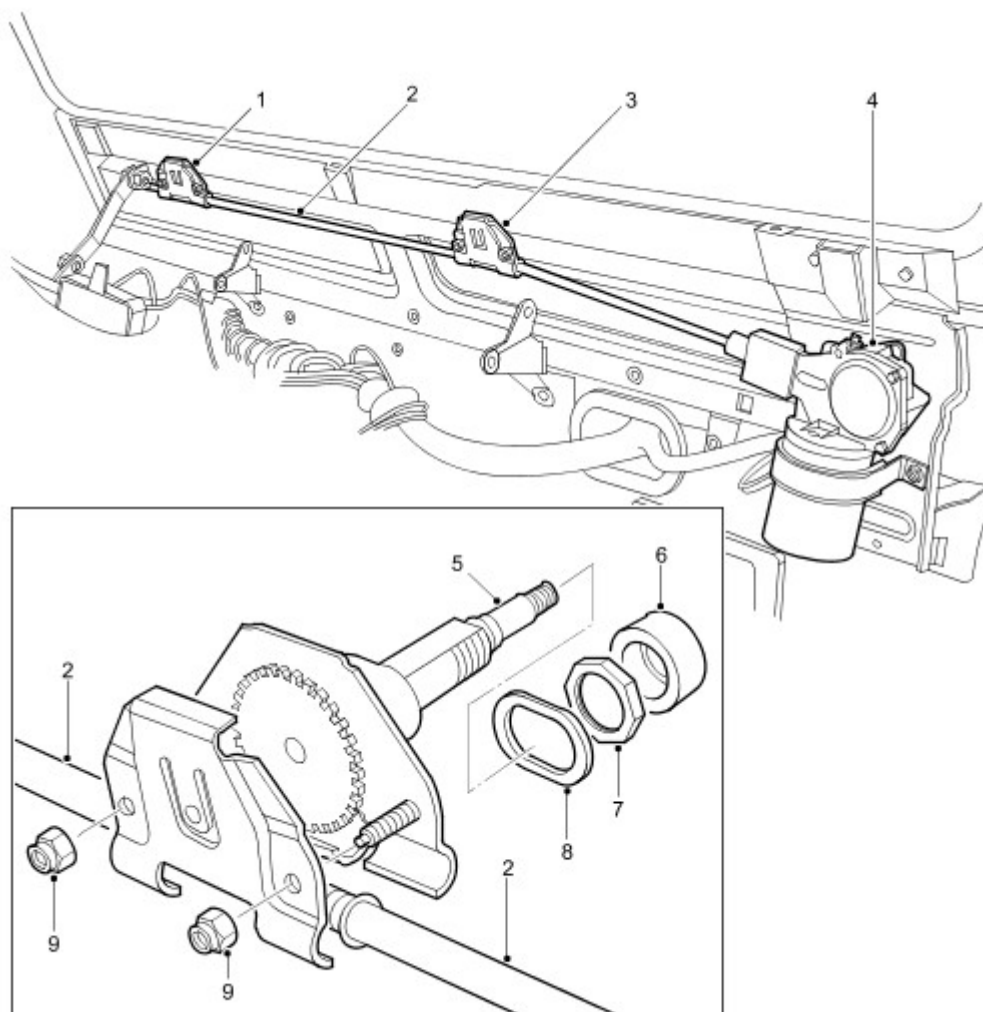


Wipers and Washers



M840391A

| Item | Part Number | Description |
|------|-------------|---------------------------------------|
| 1. | | LH wheelbox |
| 2. | | Cable |
| 3. | | RH wheelbox |
| 4. | | Wiper motor |
| 5. | | Spindle with DIN taper arm attachment |
| 6. | | Spacer |
| 7. | | Locknut |
| 8. | | Seal |
| 9. | | Locknuts |

WINDSCREEN WIPERS

Although windscreen wiper functionality remains the same, the mechanical architecture has undergone significant changes, for 2002 Model year. The body structure has undergone some minor changes to house the revised wiper linkage.

A modified wiper motor is introduced which is balanced to reduce operation noise. The brush plate is fitted with capacitors to reduce radio interference and a thermal cut-out is introduced to prevent motor burnout. The motor also contains a new park switch which also reduces operation noise. A common motor is now used on both LHD and RHD

variants.

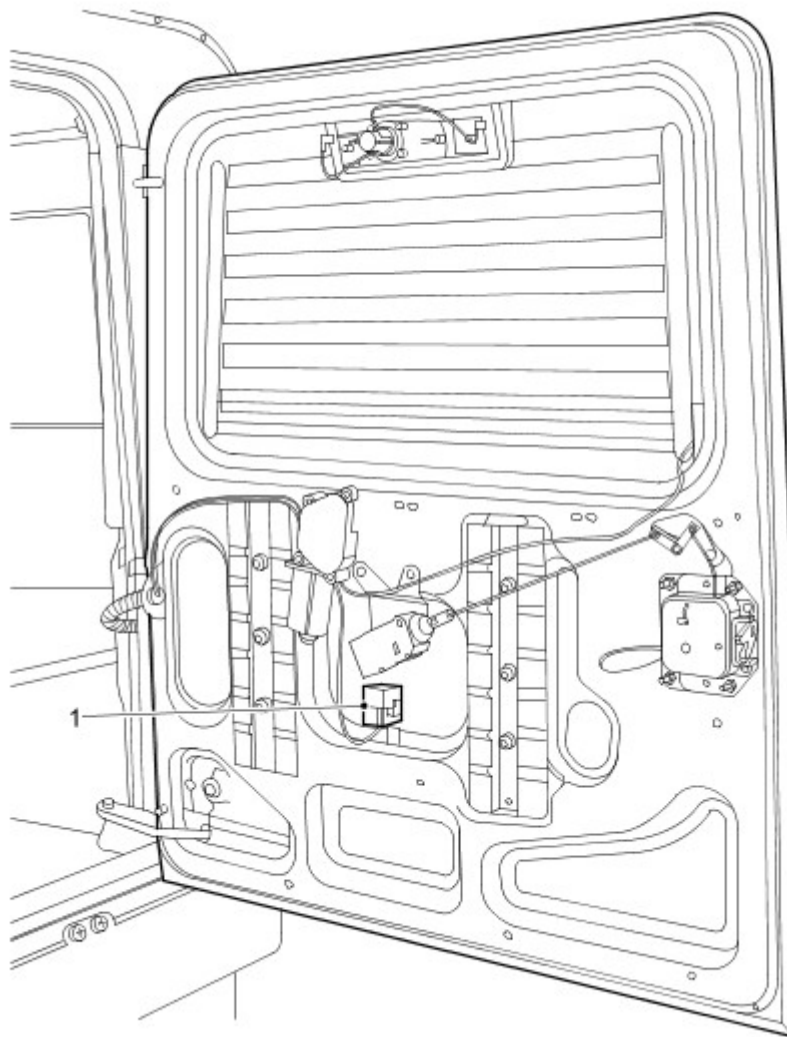
The motor is repositioned on the bulkhead which allows a straighter drive cable run. The straighter run reduces load on the cable allowing a stiffer cable to be used. The stiffer cable and the incorporation of a reduced friction material reduces torsion wind-up of the cable and results in smoother wiper operation and a reduction of blade over travel.

New, larger wheel boxes are fitted in an inverted position from the previous installation. The bulkhead mounting holes are larger with flats for positive location of the wheel box spindle. The wheel boxes now feature a 40 tooth gear ratio in lieu of a 32 tooth gear. This reduces backlash and load and further reduces blade over travel. The wheel box casings are secured with locknuts.

The wheel box spindles now have a splined DIN taper fitting for the new wiper arms which are secured on the spindle with an M8 nut. The taper improves arm retention.

A new grease is introduced which improves wiper operation at very low temperatures.

REAR WIPER



M865569

| Item | Part Number | Description |
|------|-------------|------------------|
| 1. | | Rear wiper relay |

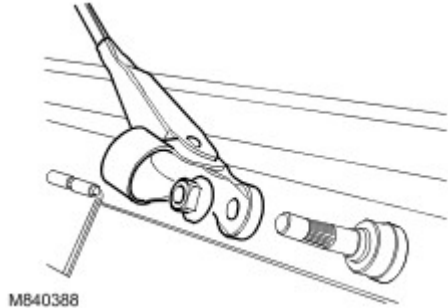
The rear wiper system is unchanged except for the addition of a wiper motor relay into the electrical circuit, at 2002 model year.

The new rear wiper relay is located in the tail door, below the wiper motor. The relay coil is energised by a feed supplied from the rear wiper switch. When the relay contacts close, a feed is supplied via the ignition switch (position II) and a fuse in the passenger compartment fuse box, through the relay contacts to the wiper motor.

Front Wiper Pivot Arm (84.15.02)

Removal

- 1 . Raise nut cover on wiper arm and remove nut.



- 2 . **NOTE:**

Do not carry out further dismantling if component is removed for access only.

Remove wiper arm from spindle.

- 3 . Remove wiper blade.

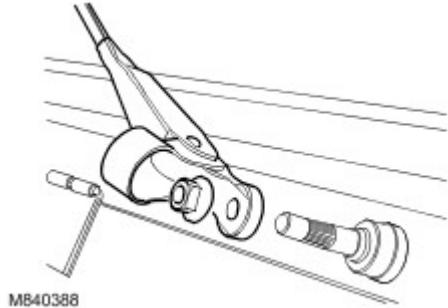
Installation

- 1 . Fit wiper blade.
- 2 . Fit wiper arm to spindle and align blade to windscreen.
- 3 . Tighten nut securing wiper arm to 17 Nm (13 lbf.ft), and fit cover.

Front Wiper Pivot Arm (84.15.02)

Removal

- 1 . Raise nut cover on wiper arm and remove nut.



- 2 . **NOTE:**

Do not carry out further dismantling if component is removed for access only.

Remove wiper arm from spindle.

- 3 . Remove wiper blade.

Installation

- 1 . Fit wiper blade.
- 2 . Fit wiper arm to spindle and align blade to windscreen.
- 3 . Tighten nut securing wiper arm to 17 Nm (13 lbf.ft), and fit cover.

Rear Window Wiper Motor (84.35.12)

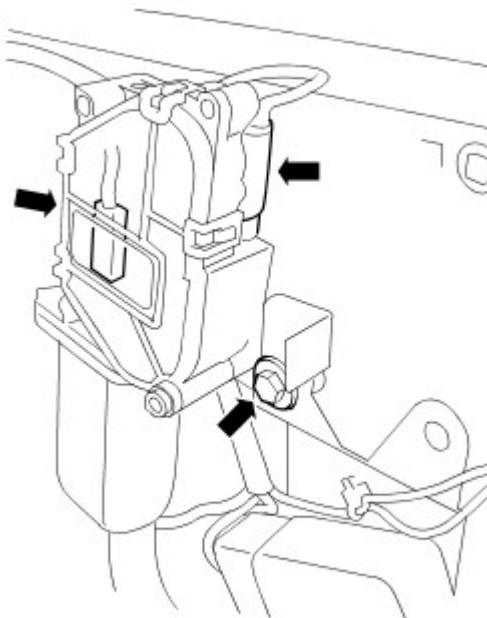
Removal

- 1 . Remove spare wheel from taildoor.
- 2 . Raise nut cover, remove nut and release wiper arm.



M840392

- 3 . Remove nut and collect washer securing wiper motor to taildoor.
- 4 . Open taildoor.
- 5 . Remove taildoor trim casing.
For additional information, refer to [Taildoor Trim Panel \(76.34.09\)](#)
- 6 . Remove bolt securing door locking solenoid to taildoor.



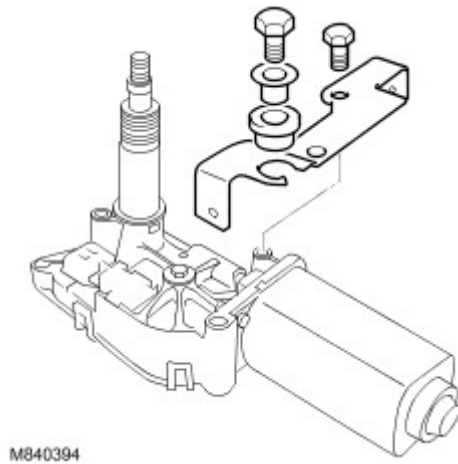
M840393

- 7 . Pivot both assemblies and withdraw wiper motor from taildoor.
- 8 . Disconnect multiplugs from wiper motor.
- 9 . **NOTE:**

Do not carry out further dismantling if component is removed for access only.

Remove wiper motor assembly.

10 . Remove 2 bolts securing wiper motor to mounting bracket, remove bracket.



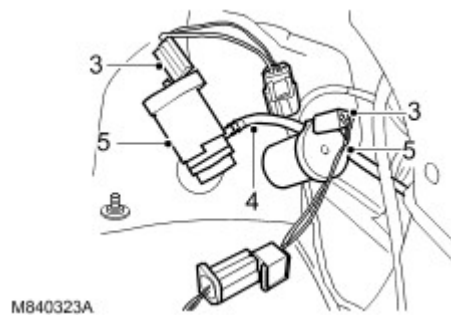
Installation

- 1 . Fit mounting bracket to motor and tighten bolts to 10 Nm (7 lbf.ft).
- 2 . Fit motor spindle to rear door, connect multiplugs and push motor fully home. Align motor mounting bracket with solenoid mounting bracket, fit bolt and tighten to 10 Nm (7 lbf.ft).
- 3 . Fit taildoor trim casing.
For additional information, refer to [Taildoor Trim Panel \(76.34.09\)](#)
- 4 . Fit washer and nut to rear wiper assembly, tighten nut to 3 Nm (2.2 lbf.ft).
- 5 . Fit wiper arm to spindle, align blade to glass and tighten nut to 17 Nm (13 lbf.ft).
- 6 . Close nut cover.
- 7 . Fit spare wheel and tighten nuts to 45 Nm (33 lbf.ft).

Windshield Washer Pump (84.10.21)

Removal

- 1 . Remove headlamp.
For additional information, refer to [Headlamp Assembly \(86.40.49\)](#)
- 2 . Position drain tin to collect any fluid spillage.
- 3 . Disconnect multiplug from washer pump.
- 4 . Disconnect hose from washer pump.
- 5 . Release washer pump from reservoir and discard sealing washer.



Installation

- 1 . Fit new sealing washer and secure pump to reservoir.
- 2 . Connect hose and multiplug to washer pump.
- 3 . Fit headlamp.
For additional information, refer to [Headlamp Assembly \(86.40.49\)](#)
- 4 . Fill reservoir with screen cleaning fluid.

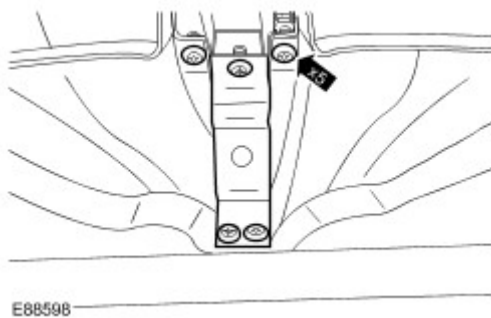
Windshield Wiper Motor (84.15.12)

Removal

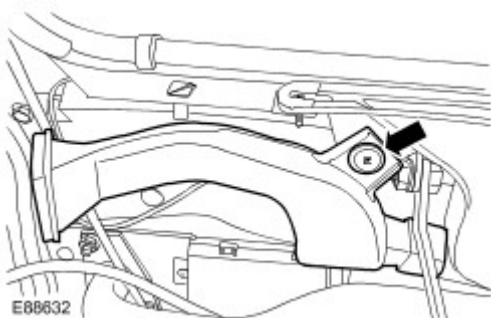
- 1 . Disconnect the battery ground cable.
For additional information, refer to [Battery Disconnect and Connect](#)
- 2 . Remove the instrument panel.
For additional information, refer to [Instrument Panel \(76.46.23/99\)](#)
- 3 . **NOTE:**
Make sure the clips are discarded.

Remove the audio unit support bracket.

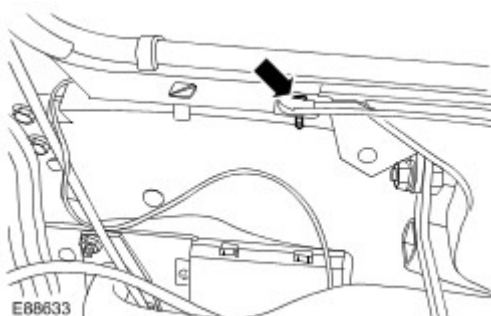
➤ Remove and discard the 5 clips.



- 4 . Remove the LH demister duct.
➤ Remove the clip.

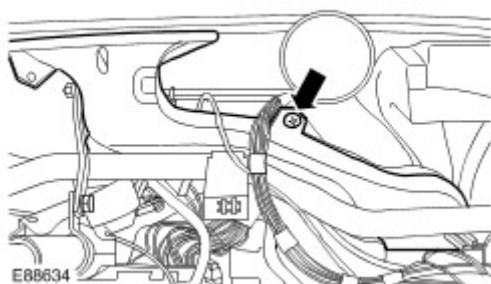


- 5 . Release the LH defrost vent duct.
➤ Remove the screw.



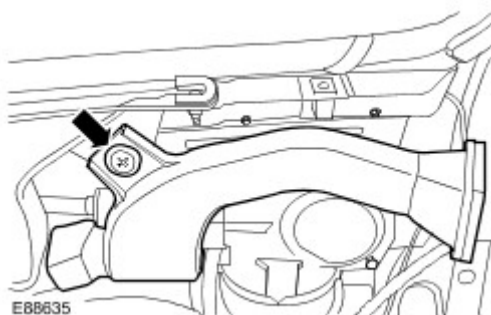
6 . Remove the LH defrost vent duct.

➤ Remove the clip.



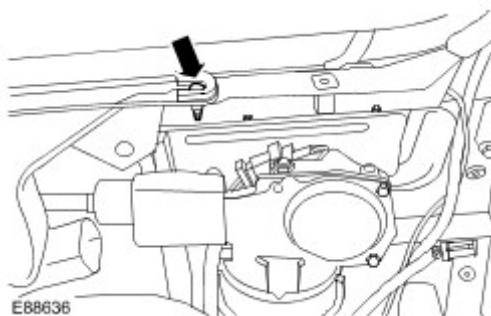
7 . Remove the RH demister duct.

➤ Remove the clip.



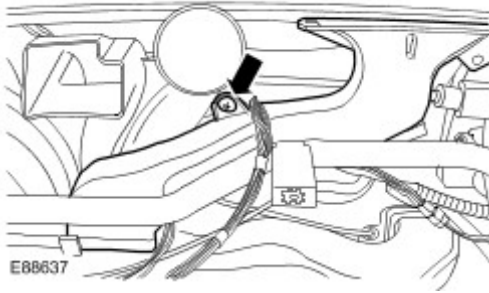
8 . Release the RH defrost vent duct.

➤ Remove the screw.

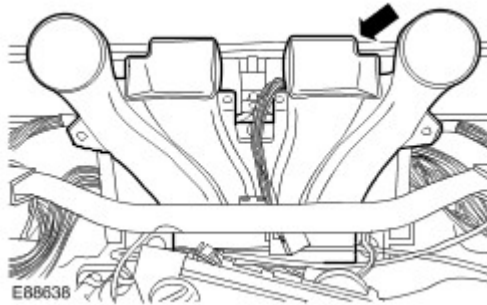


9 . Remove the RH vent duct.

➤ Remove the clip.



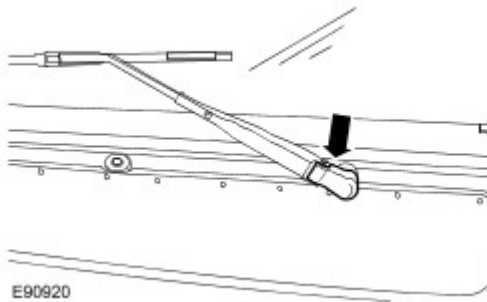
10 . Remove the center register duct.



11 . **NOTE:**

RH shown, LH similar.

Remove the windshield wiper arm nut cover.

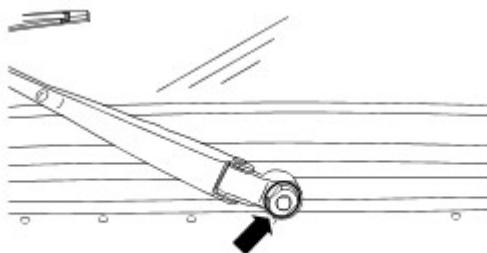


12 . **NOTE:**

RH shown, LH similar.

Remove the windshield wiper arm.

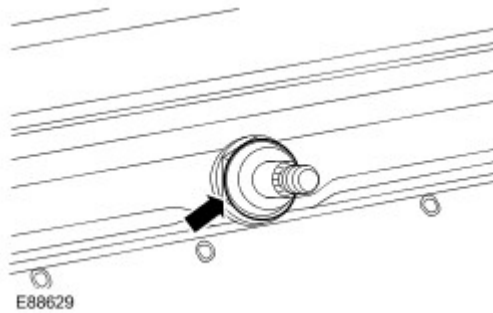
▶ Remove the nut.



13 . **NOTE:**

RH shown, LH similar.

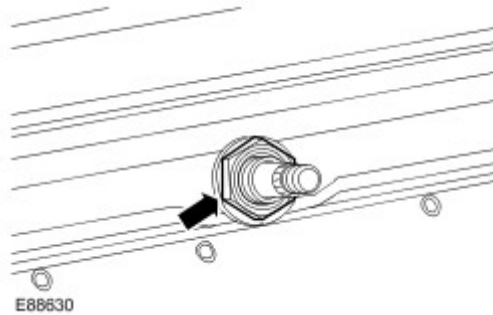
Remove the windshield wiper linkage spindle nut cover.



14 . **NOTE:**

RH shown, LH similar.

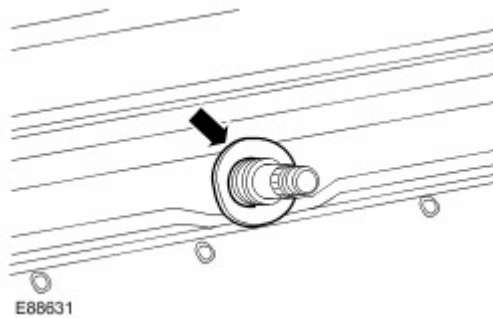
Remove the windshield wiper linkage spindle nut.



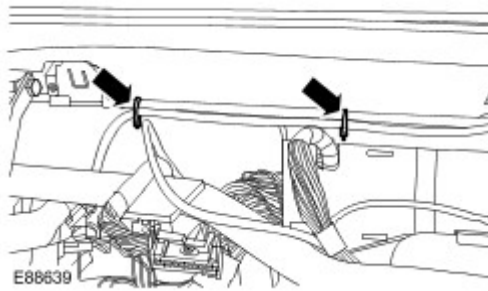
15 . **NOTE:**

RH shown, LH similar.

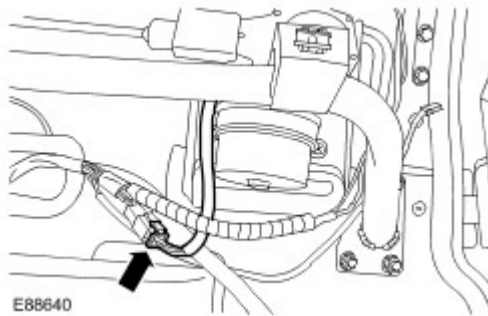
Remove and discard the windshield wiper linkage spindle foam seal.



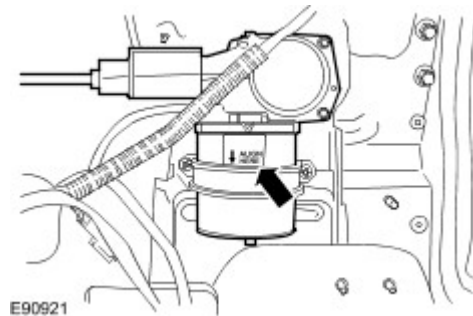
16 . Remove and discard the 2 tie straps.



17 . Disconnect the windshield wiper motor electrical connector.

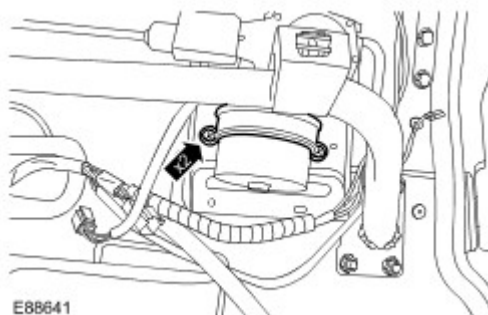


18 . Note the fitted position of the component prior to removal.

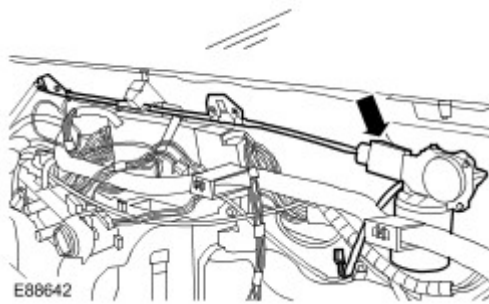


19 . Release the windshield wiper motor.

➤ Remove the 2 screws.

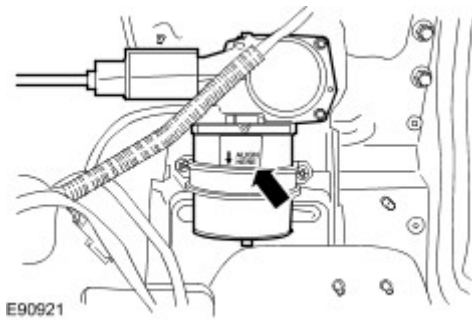


20 . Remove the windshield wiper motor.

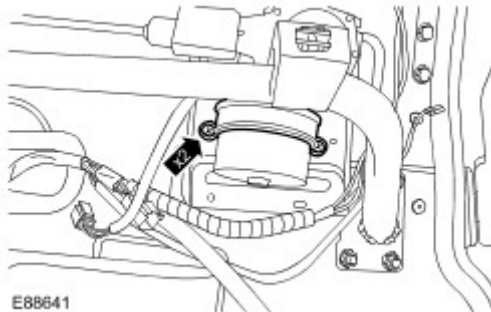


Installation

- 1 . To install, reverse the removal procedure.
- 2 . Install the windshield wiper motor to its original fitted position.



- 3 . Tighten to 5 Nm (4 lb.ft).

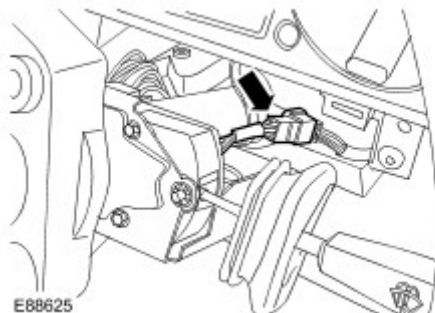


- 4 . Connect the battery ground cable.
For additional information, refer to [Battery Connect](#).

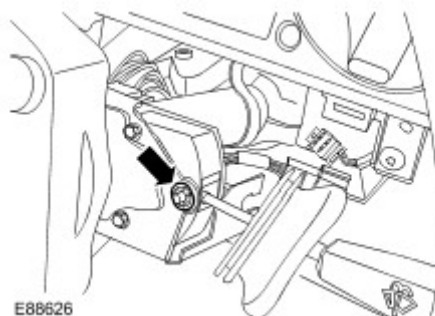
Windshield Wiper/Washer Switch (86.65.41)

Removal

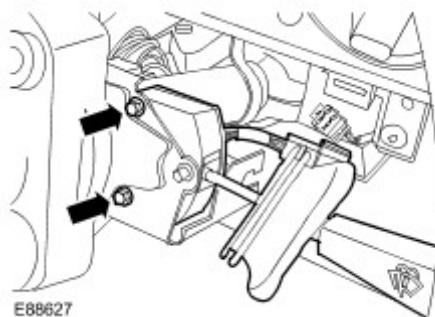
- 1 . Remove the steering column shrouds.
For additional information, refer to [Steering Column Shrouds \(57.40.29\)](#)
- 2 . Disconnect the electrical connector.



- 3 . Remove and discard the clip.



- 4 . Remove the windshield wiper switch.
▶ Remove the 2 screws.



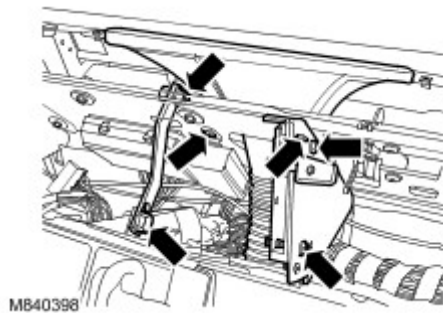
Installation

- 1 . To install, reverse the removal procedure.

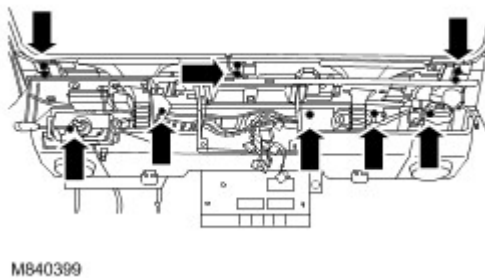
Wiper Mounting Arm and Pivot Shaft

Removal

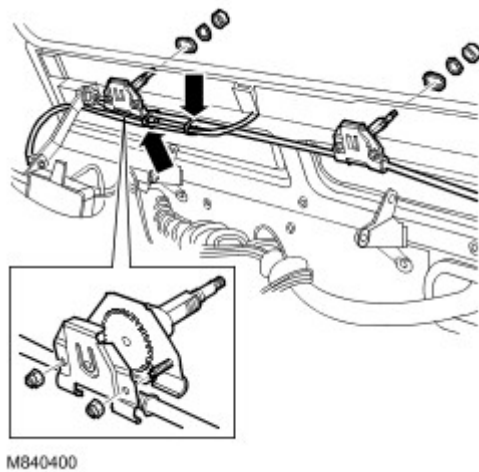
- 1 . Disconnect battery negative lead.
- 2 . Remove steering column shroud.
For additional information, refer to [Steering Column Shrouds \(57.40.29\)](#)
- 3 . Remove windshield wiper motor.
For additional information, refer to [Windshield Wiper Motor \(84.15.12\)](#)
- 4 . Remove 2 screws and move heater fan switch aside.



- 5 . Remove 2 screws securing drivers side demister duct.
- 6 . Disconnect demister tube and remove duct.
- 7 . Remove bolt and nut and bolt securing steering column support bracket and remove bracket.
- 8 . Remove 11 screws securing fascia support rail.



- 9 . Remove cable ties securing washer tube to windshield wiper rack tube.
- 10 . Loosen fully 4 nuts securing backplates to wiper mounting arm and pivot shaft and remove windshield wiper rack tubes.
- 11 . Remove seals from wheel box spindles.
- 12 . Remove 2 nuts securing wiper mounting arm and pivot shaft and remove sealing washers.



- 13 . Carefully pull fascia support rail from bulkhead sufficiently to remove wiper mounting arm and pivot shaft.

Installation

- 1 . Loosen fully but do not remove nuts securing wheel box back plates.
- 2 . Grease wiper mounting arm and pivot shaft.
- 3 . Fit wiper mounting arm and pivot shaft, fit sealing washers and tighten nuts to 5 Nm (3.7 lbf.ft).
- 4 . Fit spindle seals.
- 5 . Fit wiper rack tubes and tighten wiper mounting arm and pivot shaft nuts sufficiently to hold tubes. Tighten wheel box back plate nuts to 6 Nm (4 lbf.ft) after fitting windshield wiper motor.
- 6 . Align washer tube to rack tube and secure with cable ties.
- 7 . Align fascia support rail and secure with screws.
- 8 . Fit steering column support bracket and tighten bolt and nut and bolt to 45 Nm (33 lbf.ft).
- 9 . Fit demister duct to tube, align relay bracket and secure duct with screws.
- 10 . Position heater fan switch and secure with screws.
- 11 . Fit windshield wiper motor.
For additional information, refer to [Windshield Wiper Motor \(84.15.12\)](#)
- 12 . Fit steering column shroud.
For additional information, refer to [Steering Column Shrouds \(57.40.29\)](#)
- 13 . Connect battery negative lead.