BODY CLOSURES

SPECIFICATIONS

Item	Nm	ib-ft	lb-in
Front door hinge pivot bolt	13	10	-
Front door hinge to body bolts	35	26	-
Front door hinge to door bolts	35	26	-
Front door check arm nuts	10	7	-
Front door check arm to body bolt	24	18	-
Front door waist seal trim retaining screws	1.2	1	12
Front door trim panel handle retaining screw	1.5	1.5	18
Front door trim panel retaining bolts	3.5	3	36
Front door trim panel upper retaining screw	1.5	1.5	18
Front door trim panel lower retaining screw	1	1	12
Front door lower exterior trim retaining screw	1.2	1	12
Front door exterior handle retaining screw	3.5	3	36
Front door latch bolts	7	5	60
Rear door hinge pivot bolt	13	10	-
Rear door hinge to body bolts	35	26	-
Rear door hinge to door bolts	35	26	-
Rear door check arm nuts	10	7	-
Rear door check arm to body bolt	24	18	-
Rear door waist seal trim retaining screws	1.2	1	12

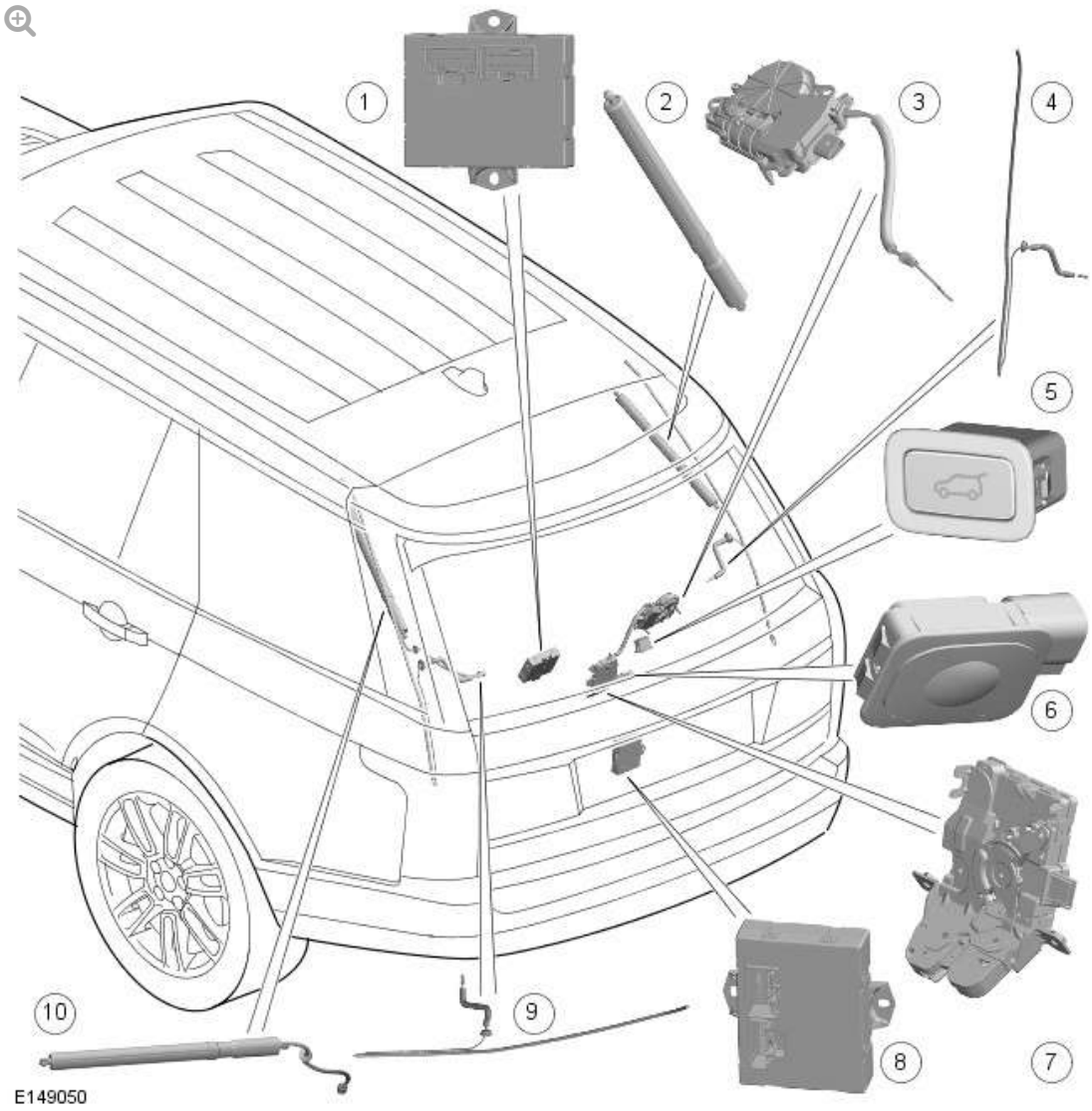
Rear door trim panel handle retaining screw	1.5	1.5	18
Rear door trim panel retaining bolts	3.5	3	36
Rear door trim panel upper retaining screw	1.5	1	12
Rear door trim panel lower retaining screw	1	1	12
Rear door lower exterior trim retaining screw	1.2	2	24
Rear door exterior handle retaining screw	3.5	3	36
Rear door latch bolts	7	5	-
Lift gate hinge to body bolts	25	18	-
Lift gate hinge to lift gate bolts	24	18	-
Lift gate latch bolts	10	7	-

2016.0 RANGE ROVER (LG), 501-03

BODY CLOSURES

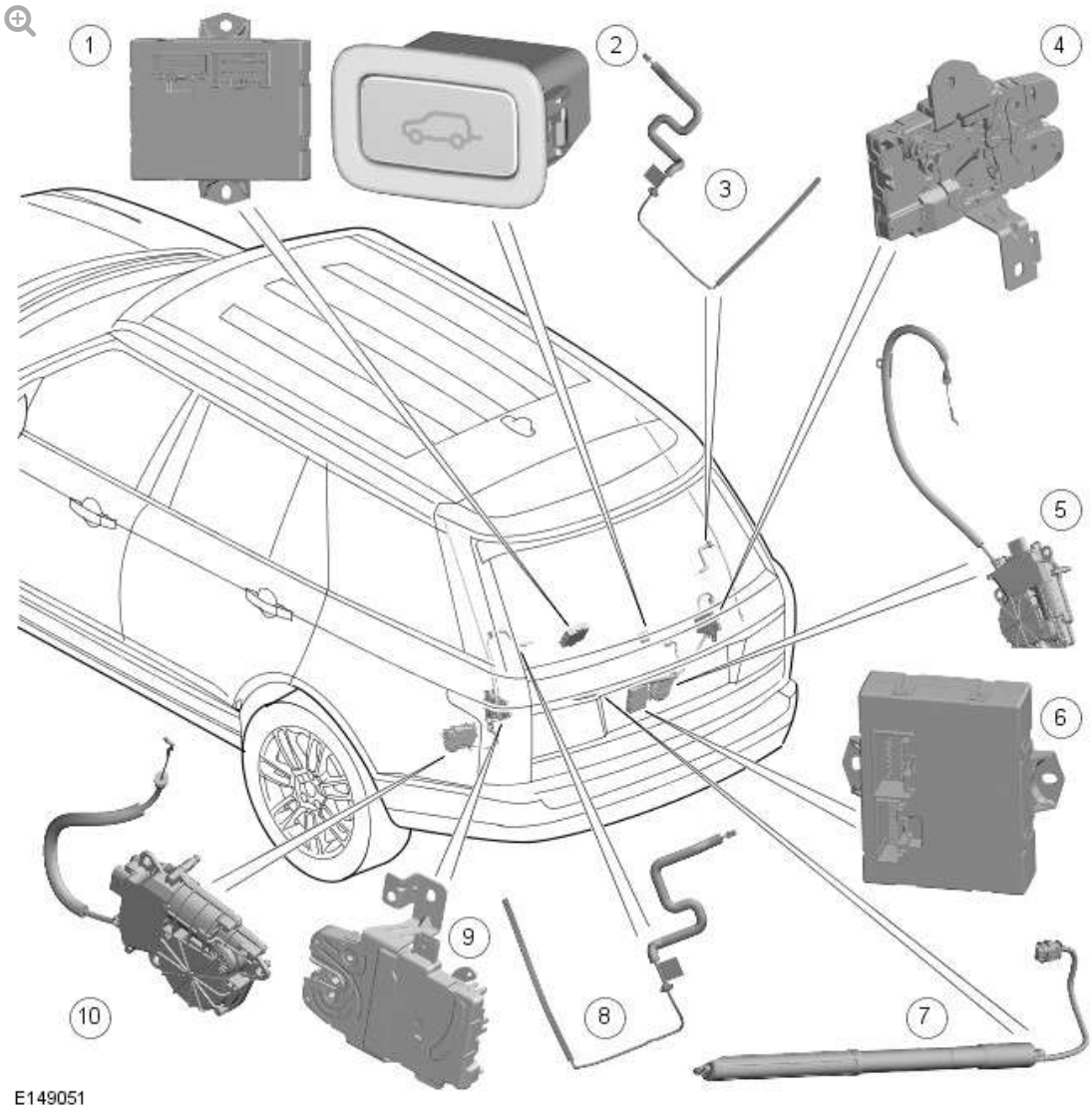
DESCRIPTION AND OPERATION

COMPONENT LOCATION – UPPER POWERED TAILGATE



ITEM	DESCRIPTION
1	Upper Tailgate Control Module (UTCM)
2	Right upper tailgate actuator
3	Upper tailgate soft close motor
4	Upper tailgate right anti-pinch strip
5	Tailgate global close switch
6	Upper tailgate open/close switch
7	Upper tailgate latch
8	Lower Tailgate Control Module (LTCM)
9	Upper tailgate left anti-pinch strip
10	Left upper tailgate actuator

COMPONENT LOCATION – LOWER POWERED TAILGATE



ITEM	DESCRIPTION
1	UTCM
2	Lower tailgate open/close switch
3	Lower tailgate right anti-pinch strip
4	Right lower tailgate latch
5	Right lower soft close actuator
6	LTCM
7	Lower tailgate actuator
8	Lower tailgate left anti-pinch strip
9	Left lower tailgate latch
10	Left lower soft close actuator

OVERVIEW

UPPER AND LOWER TAILGATES

The upper tailgate is constructed from lightweight plastic composites. The upper tailgate consists of three parts, which are bonded together to make the finished single piece tailgate. The outer body colored part is constructed from polypropylene, similar to a bumper construction to provide increased bump resistance.

The lower tailgate assembly is constructed from aluminum panels.

Depending on vehicle specification the tailgates are offered with either:

- manual opening and closing, or with a
- powered opening and closing function.

The upper powered tailgate is opened and closed by two electrically driven tailgate actuators mounted in place of the gas struts as used on the manual tailgate. The lower powered tailgate is opened and closed by one tailgate actuator also mounted in place of the gas strut.

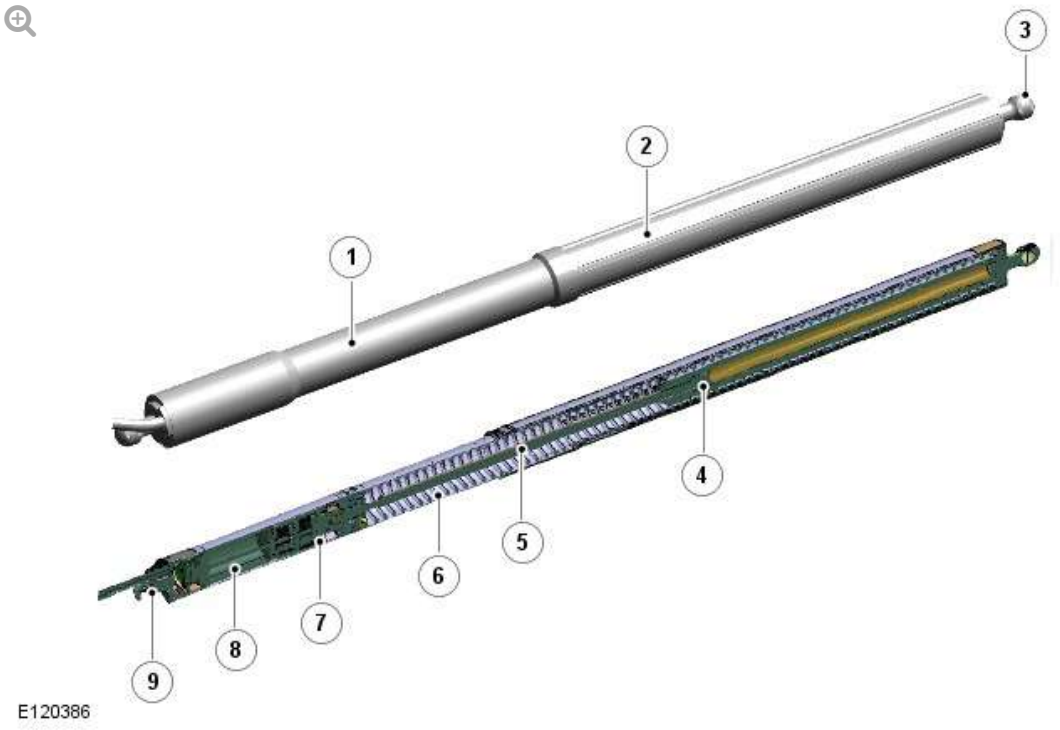
The tailgate actuator assembly has ball joints at either end allowing it to articulate between the fixed mounts on the vehicle. The nominal opening and closing time of the system is 5 seconds (+/2.0 seconds).

The tailgates operate using electronic latches with the addition of a soft-close closing motors to pull the latch closed for the last 6 mm of travel (soft close). The upper latches and soft closing motor are located in the upper tailgate. The lower latch and soft closing motors are located in the lower luggage compartment. The closing motors pull the latches closed at the end of the tailgates' travel, once the latches' secondary switch is reached.

DESCRIPTION

TAILGATE ACTUATORS

Tailgate actuator components (reference only)



ITEM	DESCRIPTION
1	Inner tube
2	Outer tube
3	Ball joint
4	Outer tube spindle nut
5	Spindle
6	Springs
7	Gear
8	Motor
9	Ball joint

The upper and lower tailgate actuators open and close the upper and lower tailgates using an electrically driven spindle located in the actuators' internal electric motor. Ball-joints positioned at each end of the actuator allow it to

articulate between a fixed mount on the vehicle and the moveable tailgate. The tailgate opening operation is also aided by spring assistance.

The spindle drive comprises an inner and outer tube where the motor and gears in the inner tube drive a threaded spindle which runs on a threaded nut fixed to the inside of the outer tube.

The spindle drive incorporates an object detection function controlled by the tailgate modules. The function is similar to the anti-trap function of a closing electric window but operates in both directions. If the object detection feature is activated while the tailgate is closing, the spindle motor(s) stop and then reverse for a preset period. If the object detection feature is activated while a tailgate is opening, the spindle motor is stopped and held at that position.

NOTE:

> The spindle motor(s) on the tailgate experiencing an object/pinch condition whilst closing, will reverse to the fully open state.

A hall sensor, located in the spindle motor, monitors the speed of the motor. If the speed decreases below a set threshold, indicating an obstruction and increasing the motor current draw, the power feed to the motor is reversed causing the tailgate to move in the opposite direction of travel.

The amount of travel in the opposite direction, before stopping, is determined by the hall sensor count. An exception to the object detection reverse travel function occurs when the tailgate is opening through its first few degrees of travel from the latched position. In these circumstances, if an obstacle is detected, the tailgate stops in the position of the obstruction and no travel in the opposite direction occurs, other than a recoil action of the strut vs. hinge. The tailgate may recoil back onto the secondary latch but NO soft close shall occur.

POWERED TAILGATE

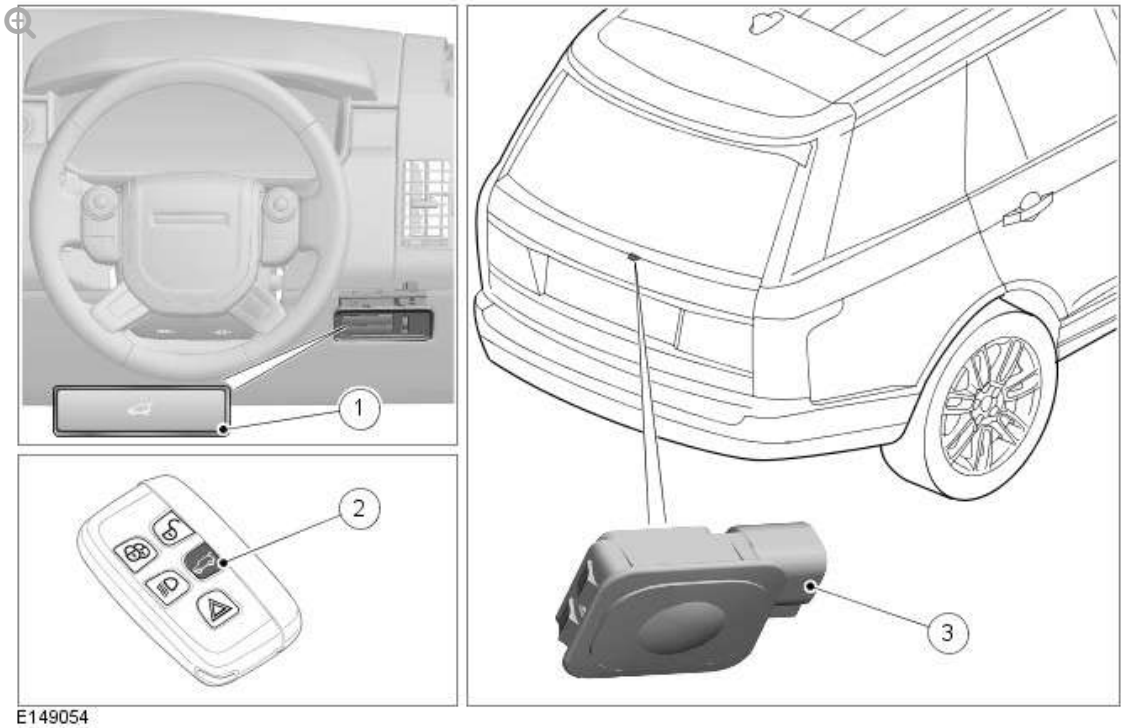
UPPER TAILGATE – RELEASE SWITCHES

The upper tailgate can be opened or closed using the following:

- The open/close switch on the smart key
- Rear license-plate-plinth, external tailgate open/close switch provided that the doors are unlocked and Park (P) is selected on the TCS.
- IC, internal tailgate open/close switch, providing:
  - the vehicle is not locked and alarmed
  - the vehicle speed is not at 5 kilometer/hour (3 mile/hour) or above.

These switches will also de-latch the manual upper tailgate:

- upper tailgate open/close switch
- upper tailgate open/close switch - Smart key
- upper tailgate open/close switch
- lower tailgate release switch.



E149054

ITEM	DESCRIPTION

1	Upper tailgate open/close switch
2	Upper tailgate open/close switch - Smart key
3	Upper tailgate open/close switch

The lower tailgate can be opened or closed using the following:

- lower tailgate open/close switch (located on the lower tailgate closing edge).

The powered tailgates can also be manually closed, to either the latches' secondary or primary position, without causing any damage to the power mechanism.

The upper tailgate (Global Close) close switch is located on the upper tailgate closing edge.

ITEM	DESCRIPTION
1	Tailgate global close switch

The lower tailgate open/close switch is located on the lower tailgate closing

edge.

E149056

ITEM	DESCRIPTION
1	Tailgate lower switch

The tailgate can be stopped at any time during the open or close cycle by a single press on any of the tailgate control switches. Thereafter:

- Pressing any ‘release’ control switch will authorize the upper tailgate to change the direction of movement (Toggle).
- Pressing the ‘close’ control switch will authorize the tailgate to continue or start closing.

For further information, see chart below.

The upper tailgate has a 'Garage Position' setting, where it is possible to set the maximum height to which the tailgate will open.

To set the required height:

- Open the tailgate to the position of the required height and ensure the tailgate is stationary for at least three seconds.
- Press and hold, the tailgate close switch.
- Successful height programming will be indicated by a long beep heard from the upper tailgate.
- Close the tailgate manually, or via the close switch, then open again to check that it opens to the programmed height.

The maximum opening height is now set. To reset the maximum opening height to full, repeat the process, but fully open the tailgate before pressing and holding the close switch.

The opening and closing control strategies of upper and lower tailgates are listed in the following chart:

STRATEGY	OPENING	CLOSING	STOP	START FROM STOPPED POSITION AFTER OPENING	START FROM STOPPED POSITION AFTER CLOSING	GARAGE POSITION - SET/RESET
Smart key (upper tailgate)	One push	One push	One push	One push for toggle closing	One push for toggle opening	X
Interior tailgate release (upper tailgate)	One push	One push	One push	One push for toggle closing	One push for toggle opening	X
Exterior tailgate release (upper	One push	One push	One push	One push for toggle closing	One push for toggle opening	X

tailgate)						
Global open/close switch (Upper and lower tailgates)	X	One push	One push	One push for closing	One push for closing	One push until long beep
Lower tailgate open/close switch	One push	One push	One push	One push for toggle closing	One push for toggle opening	X

If any object is detected that would interfere with the closing of either tailgate, the tailgate will stop and reverse to the fully open position. An audible mislock warning, that is 2 beeps from the security sounder, will indicate either a failed closing action or object or pinch detection. Any obstructions must be removed before pressing the close switch again.

The powered tailgate may lose its position memory if:

- there are multiple object detections
- there are inadvertent loads on the tailgate while it is moving; for example a person leaning against the tailgate
- the battery voltage is low
- any latch is manually closed.

The above may also inhibit the powered operation of the tailgate.

To reset the tailgate:

- Manually close the tailgate.
- Press a tailgate release switch.
- Allow the tailgate to power fully open or to the previously set position.
- Press and release the close switch.
- Allow the tailgate to power close fully.

The tailgate programmed position memory will now be restored.

NOTE:

If the vehicle is locked and the alarm is armed, if the tailgate is opened, and subsequently closed (via an authorized user/key) with the valid smart key, that was used to open the tailgate, left inside, the upper tailgate will re-open and an audible mislock warning, that is 2 beeps from the security sounder, will indicate a failed closing action. Please remove key and reclose tailgate. The smart key will not be detected if it is any way covered/obstructed by metal objects/laptops etc.

OPERATION

UPPER AND LOWER POWERED TAILGATES

CAUTION:

DO NOT CLOSE THE TAILGATE IF THE VEHICLE BATTERY IS DISCONNECTED. It is advisable to close the upper and lower latch claws when working on a vehicle with the battery disconnected to prevent accidental closure.

NOTE:

If required, the tailgate can be opened and closed manually.

The powered opening and closing actions are controlled by the tailgate modules. The modules receive permanent battery power supply from the RJB (rear junction box) and they are connected with each other via medium speed CAN and hardwired connection (anti-trap detection).

UPPER TAILGATE OPEN/CLOSE SEQUENCE

To initiate the upper tailgate opening sequence a 'tailgate release-request' is received by the CJB (central junction box) from one of the following:

- KVM - signal originates from the smart key tailgate open/close switch
- IC, internal tailgate open/close switch
- Rear license-plate-plinth, external tailgate open/close switch.

The CJB responds with the following simultaneous actions:

- A hardwire power release to the upper latch actuator mechanism
- A powered opening request-signal and latch status transmitted to the upper tailgate module via the medium speed CAN (controller area network) bus.

The processing of the opening signal by the CJB is influenced by a number of factors:

- Source of 'opening signal'
- Vehicle status: locked or unlocked
- Vehicle equipped with or without passive entry
- Vehicle speed and Transmission Control Switch (TCS) position.

Once the latch is released, the upper tailgate module actuates the motors located in tailgate actuator to raise the tailgate to its fully open or pre-set position. When the tailgate is in its opening cycle the automatic stop-position of the tailgate is functioned by a hall-sensor located in the motor. The hall-sensor signal transmitted to the tailgate module is synchronized with the pre-set memory indicating the stop position of the tailgate.

To close the tailgate (upper/lower) a hardwired signal is transmitted directly to the tailgate module (upper/lower) when the switch located on upper tailgates' closing edge is pressed and then released. The module operates the tailgate actuators in the opposite direction to close the tailgate to the

secondary latched position. (The upper tailgate can be closed via the smart key/interior/exterior tailgate release buttons also.)

When the latch engages with the striker plate a signal transmitted from the latches' secondary switch, located in the latch mechanism, to the tailgate module confirms the latch is engaged. The module de-activates the tailgate actuators and activates the tailgate soft closing motor to pull the latch closed through the last 6mm of travel. This is the latches' primary fully-closed position. The tailgate soft closing motor then reverses to allow the latch to be opened upon the next release request. Mechanical Bowden cables connection between the motors and latch assemblies are used to complete the closing process of claw contraction and then reverse.

If the battery is disconnected when the tailgate is closed, the stored and calibrated tailgate opening heights will remain stored when the battery is reconnected. However, if power supply to the tailgate module is disconnected when the tailgate is open, the system will not recognize the tailgate's position, and subsequently will not function to any switch commands when power is reinstated. To reset the system the tailgate must be moved manually to the closed position where it will perform a soft-close and reset the hall-sensor counters to zero.

LOWER TAILGATE OPEN/CLOSE SEQUENCE

To initiate the lower tailgate opening sequence, the upper tailgate must first be fully opened. A 'lower tailgate release-request' is received by the CJB from the lower tailgate open/close switch.

The CJB responds with the following simultaneous actions:

- a hardwire power release to the lower latches actuator mechanisms
- a powered opening request-signal and latch status transmitted to the lower tailgate module via the medium speed CAN bus.

The processing of the lower opening signal by the CJB is influenced by a number of factors:

- source of 'opening signal'
- vehicle status: locked or unlocked
- vehicle equipped with or without passive entry
- vehicle speed and Transmission Control Switch (TCS) position.

Once the latches are released, the LTCM actuates the motors located in the lower tailgate actuator to lower the tailgate to its fully open position. When the lower tailgate is in its opening cycle the automatic stop-position of the tailgate is functioned by a hall-sensor located in the motor. The hall-sensor signal transmitted to the tailgate module is synchronized with the pre-set memory indicating the stop position of the tailgate.

To close the lower tailgate only, via the tailgate lower open/close switch, a hardwired signal is transmitted directly to the CJB when the switch located on lower tailgates' closing edge is pressed. The CJB responds with the following simultaneous actions:

- a hardwire power release to the lower latches actuator mechanisms
- a powered close request-signal and latch status transmitted to the lower tailgate module via the medium speed CAN (controller area network) bus.

To close the tailgate (upper/lower) via the global close switch a hardwired signal is transmitted directly to the UTCM/LTCM when the switch located on upper tailgates' closing edge is pressed and then released.

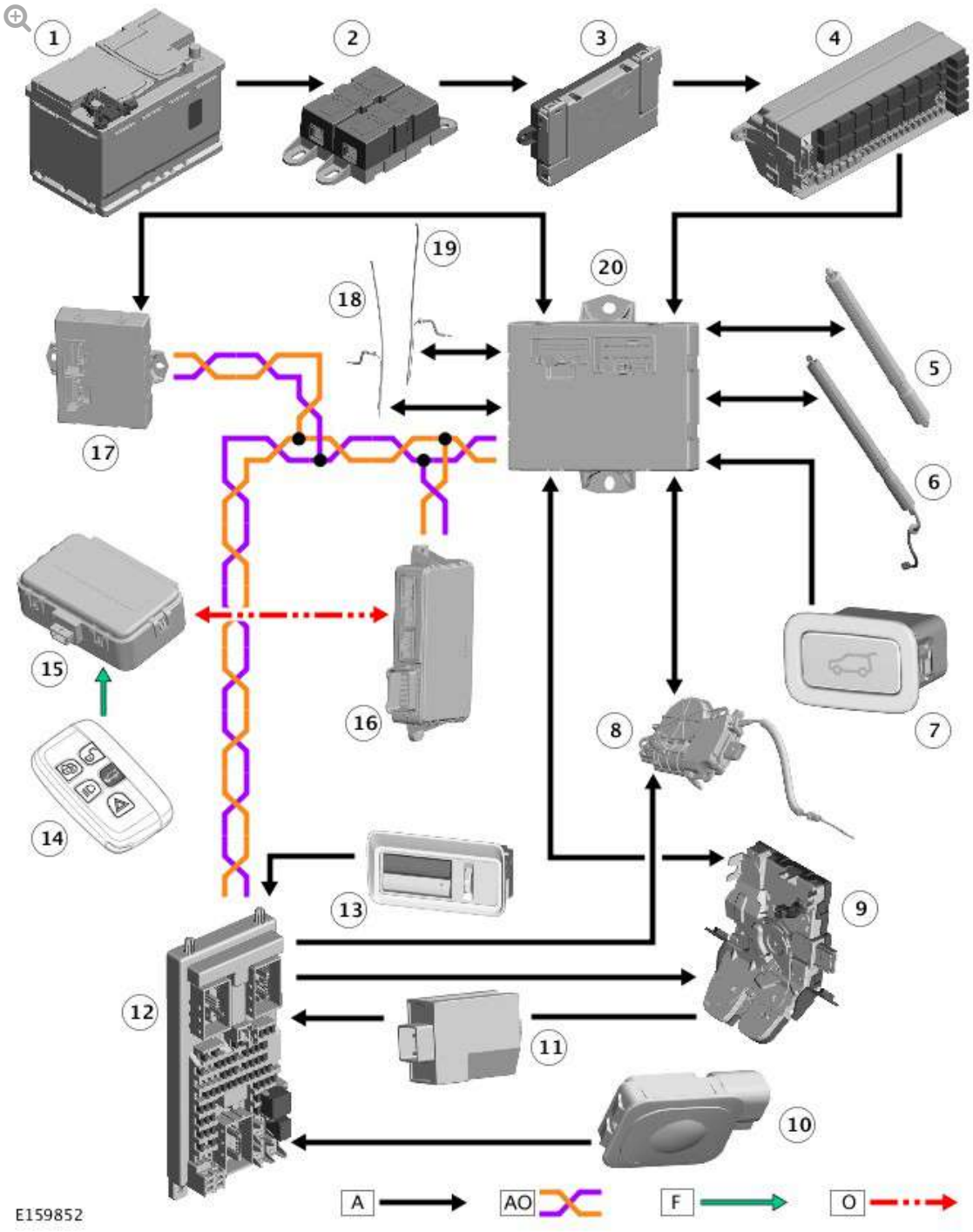
The LTCM operates the lower tailgate actuator in the opposite direction to close the lower tailgate to the secondary latched position.

When the latches engage with the striker(s) plate(s) a signal transmitted from the latches’ secondary switch, located in the latch mechanism, to the LTCM confirms the latches are engaged. The LTCM de-activates the lower tailgate actuator and activates the lower tailgate soft closing motors to pull the latches closed through the last 6mm of travel. This is the latches' primary fully-closed position. The tailgate soft closing motors then reverse to allow the latches to be opened upon the next release request.

Mechanical Bowden cables connection between the motors and latch assemblies are used to complete the closing process of claw contraction and then reverse.

If the battery is disconnected when the tailgate is closed, the calibrated tailgate opening height will remain stored when the battery is reconnected. However, if power supply to the tailgate module is disconnected when the tailgate is open, the system will not recognize the tailgate's position, and subsequently will not function to any switch commands when power is reinstated. To reset the system the tailgate must be moved manually to the closed position where it will perform a soft-close and reset the hall-sensor counters to zero.

CONTROL DIAGRAM – UPPER POWERED TAILGATE

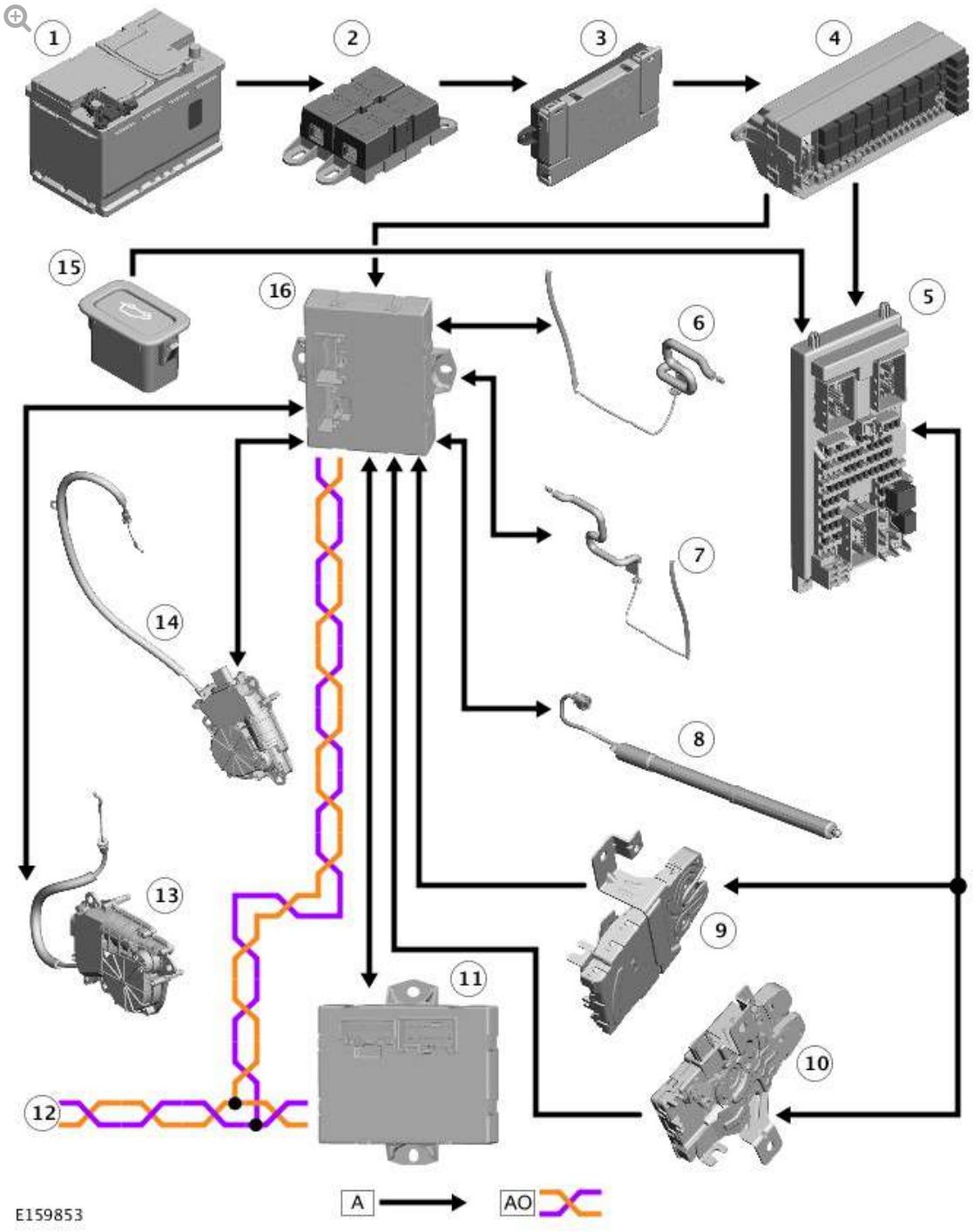


A = HARDWIRED; AO = MEDIUM SPEED CAN BODY SYSTEMS; F = RF (RADIO FREQUENCY) TRANSMISSION.

ITEM	DESCRIPTION
1	Battery
2	Battery Junction Box (BJB) 2
3	BJB
4	Rear Junction Box (RJB)

5	Right upper tailgate actuator
6	Left upper tailgate actuator
7	Tailgate global close switch
8	Upper soft close actuator
9	Upper tailgate latch
10	Tailgate exterior open/close switch
11	RF filter
12	Central Junction Box (CJB)
13	Tailgate interior open/close switch
14	Tailgate open/close switch - smart key
15	RF receiver
16	Keyless Vehicle Module (KVM)
17	LTCM
18	Upper tailgate left anti-pinch strip
19	Upper tailgate right anti-pinch strip
20	UTCM

CONTROL DIAGRAM – LOWER POWERED TAILGATE



A = HARDWIRED; AO = MEDIUM SPEED CAN BODY SYSTEMS.

ITEM	DESCRIPTION
1	Battery
2	BJB 2
3	BJB
4	RJB

5	CJB
6	Lower tailgate right anti-pinch strip
7	Lower tailgate right anti-pinch strip
8	Lower tailgate actuator
9	Right lower tailgate latch
10	Left lower tailgate latch
11	UTCM
12	CAN connection to other systems
13	Left lower soft close actuator
14	Right lower soft close actuator
15	Tailgate lower open/close switch
16	LTCM

BODY CLOSURES

DIAGNOSIS AND TESTING

PRINCIPLES OF OPERATION

For a detailed description of the body closures, refer to the relevant Description and Operation section of the workshop manual. REFER to: Body Closures (501-03 Body Closures, Description and Operation).

INSPECTION AND VERIFICATION

CAUTION:

Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault and may also cause additional faults in the vehicle being checked and/or the donor vehicle

NOTES:

- If the control module or a component is suspect and the vehicle remains under manufacturer warranty, refer to the warranty policy and procedures manual, or determine if any prior approval programme is in operation, prior to the installation of a new module/component
- When performing voltage or resistance tests, always use a digital multimeter accurate to three decimal places, and with an up-to-date calibration certificate. When testing resistance always take the resistance of the digital multimeter leads into account.
- Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests

1. Verify the customer concern

2. Visually inspect for obvious signs of mechanical or electrical damage

Visual Inspection

MECHANICAL	ELECTRICAL
▪ Incorrectly aligned power tailgate ▪ Damaged power tailgate or body aperture ▪ Obstruction within power tailgate aperture or power tailgate latch ▪ Power tailgate hinges ▪ Power tailgate actuator(s) (upper) ▪ Power tailgate latch assembly ▪ Remote transmitter (key-fob or smart key) ▪ Power tailgate soft close actuator(s) ▪ Power tailgate soft close actuator cable(s) ▪ Power tailgate open/close switch assembly ▪ Transmission control switch ▪ Power tailgate actuator (upper) ball joints	▪ Battery ▪ Fuses ▪ Wiring harness ▪ Wiring connector(s) ▪ Power tailgate actuator(s) (upper) ▪ Power tailgate soft close actuator(s) ▪ Micro switch(s) ▪ Remote transmitter (key-fob or smart key) ▪ Power tailgate open/close switch assembly ▪ CAN circuits

	▪ Radio frequency receiver ▪ Body control module ▪ Loose or corroded connections ▪ Keyless vehicle module ▪ Transmission control switch ▪ Anti-trap sensor(s)

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

4. If the cause is not visually evident, verify the symptom and refer to the symptom chart, alternatively check for diagnostic trouble codes (DTCs) and refer to the DTC Index

5. Check DDW for open campaigns. Refer to the corresponding bulletins and SSMs which may be valid for the specific customer complaint and carry out the recommendations as required

SYMPTOM CHART

SYMPTOM	POSSIBLE CAUSES	ACTION
Power tailgate does not open	▪ Low battery voltage ▪ Mechanical obstruction ▪ Switch failure ▪ Power tailgate latch does not release ▪ Soft close actuator malfunction ▪ Power tailgate actuator(s) (upper) fail to drive	▪ Check the battery and charging system ▪ Clear any mechanical obstruction ▪ Check the power tailgate switch for damage/internal failure ▪ Check power tailgate latch assembly for adjustment/damage ▪ Using the manufacturer approved diagnostic system, check the body control module and tailgate control module for relevant DTCs and refer to the relevant DTC index ▪ Check the condition and installation of the power tailgate ▪ GO to Pinpoint Test **B.**

	▪ Software issue ▪ No electrical connection / CAN bus communication	
Power tailgate does not close	▪ Low battery voltage ▪ Mechanical obstruction ▪ Switch failure ▪ No electrical connection / CAN bus communication ▪ Anti-trap sensor failure ▪ Power tailgate actuator(s) (upper) fail to drive ▪ Software issue ▪ Power tailgate "unknown position" in tailgate control module ▪ Power tailgate soft close malfunction	▪ Check battery and charging system ▪ Clear any mechanical obstruction ▪ Check the power tailgate switch for damage/internal failure ▪ Check the condition and installation of the power tailgate ▪ Check the anti-trap sensor for any evidence of abrasion or damage ▪ Using the manufacturer approved diagnostic system, check the body control module and tailgate control module for relevant DTCs and refer to the relevant DTC index ▪ GO to Pinpoint Test **G.**
Power tailgate does not close fully	▪ Mechanical obstruction ▪ Anti-trap sensor activation ▪ Pre-programmed garage height reached ▪ Latch to Striker alignment ▪ Power tailgate set	▪ Clear any mechanical obstruction ▪ Check the anti-trap sensor for any evidence of abrasion or damage ▪ Check/adjust the pre-programmed garage height setting ▪ Refer to the workshop manual and adjust the power tailgate striker adjustment ▪ Using the manufacturer approved diagnostic system, check the body control module and tailgate control module for relevant DTCs and refer to the relevant DTC index ▪ GO to Pinpoint Test **K.**

Power tailgate does not open fully	▪ Mechanical obstruction ▪ Pre-programmed garage height reached ▪ Anti-trap sensor activation ▪ Latch to Striker alignment ▪ Power tailgate set	▪ Clear any mechanical obstruction ▪ Check/adjust the pre-programmed garage height setting ▪ Check the anti-trap sensor for any evidence of abrasion or damage ▪ Refer to the workshop manual and adjust the power tailgate striker adjustment ▪ Using the manufacturer approved diagnostic system, check the body control module and tailgate control module for relevant DTCs and refer to the relevant DTC index ▪ GO to Pinpoint Test **P.**

MODULE DTC VERIFICATION AND TESTING

PINPOINT TEST A : DTC TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	A1: DTC TEST
	1 Using the manufacturer approved diagnostic system, check for any DTCs present in the tailgate control module (upper) (module ID 0x775). Take a session file to share with Land Rover Engineering. Check the software level of the tailgate control module (upper) and ensure it is the latest released version - if it is not, update the module
	Are there DTCs present in the tailgate control module (upper)? **Yes** GO to A2. **No** Go to the relevant Pinpoint Test according to the reported failure mode on the vehicle
	A2: DTC TEST
	1 Clear down all DTC's from tailgate control module (upper) (module ID 0x775). Perform the following sequence of operations;
	2 Try to cycle (open then close) the tailgate 6 times. Listen for soft close actuator initialising. In all cases wait for 5 seconds before attempting to re-open the tailgate

	3 If a powered operation is not possible, open the tailgate and then close the latch to secondary latched position (safety catch, not fully closed, but latched) and listen for soft close actuator initialisation
	4 Close all doors and tailgate on the vehicle, then press the smart lock button twice
	5 Wait for 30 seconds
	6 Unlock the vehicle, then using the manufacturer approved diagnostic tool read out all DTCs present in the tailgate control module (upper). If DTCs are present take another session file to share with Land Rover Engineering
	Were any DTCs present in the module following this sequence? **Yes** GO to A3. **No** Go to the relevant Pinpoint Test according to the reported failure mode on the vehicle

A3: DTC TEST	
	1 Evaluate the DTCs present
	Is B11C4-23 present? **Yes** GO to Pinpoint Test **B.** SWITCH TEST part 2 **No** GO to A4.

A4: DTC TEST	
	1 Evaluate the DTCs present
	Is B1161-15 or B1162-15 present? **Yes** GO to Pinpoint Test **F.** : POWER TAILGATE ANTI TRAP SENSOR TESTING part 1 **No** GO to A5.

A5: DTC TEST	
	1 Evaluate the DTCs present
	Is B1463-02, B1463-11 or B1464-02 present? **Yes** GO to Pinpoint Test **D.** SOFT CLOSE ACTUATOR TEST part 2 **No** GO to A6.

A6: DTC TEST	
	1 Evaluate the DTCs present

	Is B1316-93 present? **Yes** GO to Pinpoint Test **D.** SOFT CLOSE ACTUATOR TEST part 3 **No** **GO to A7**.
A7: DTC TEST	
	1 Evaluate the DTCs present
	Is B1316-02 present? **Yes** GO to Pinpoint Test **D.** SOFT CLOSE ACTUATOR TEST part 5 **No** **GO to A8**.
A8: DTC TEST	
	1 Evaluate the DTCs present
	Is C2005-19 or C2006-19 present? **Yes** GO to Pinpoint Test **K.** MECHANICAL OBSTRUCTION INSPECTION part 1 **No** **GO to A9**.
A9: DTC TEST	
	1 Evaluate the DTCs present
	Is C2005-11 / 12 / 13, C2006-11 / 12 / 13 present? **Yes** GO to Pinpoint Test **E.** POWER TAILGATE ACTUATOR TEST part 4 **No** **GO to A10**.
A10: DTC TEST	
	1 Evaluate DTCs present. Compare them against the following; C2005-15 C2006-15
	Were any of the above DTCs present in the tailgate control module (upper)? **Yes** GO to Pinpoint Test **I.** POWER TAILGATE POSITIONAL DATA TEST part 3 **No** **GO to A11**.
A11: DTC TEST	
	1 Evaluate DTCs present. Compare them against the following; C2005-31 C2006-31
	Were any of the above DTCs present in the tailgate control module

	(upper)? **Yes** GO to Pinpoint Test **I.** POWER TAILGATE POSITIONAL DATA TEST part 2 **No** **GO to A12**.
A12: DTC TEST	
	1 Evaluate the DTCs present
	Is C2005-31 or C2006-31 present? **Yes** GO to Pinpoint Test **I.** POWER TAILGATE POSITIONAL DATA TEST part 1 **No** **GO to A13**.
A13: DTC TEST	
	1 Evaluate the DTCs present
	Is U0140-00, U0401-68 or U0415-68 present? **Yes** GO to Pinpoint Test **E.** POWER TAILGATE ACTUATOR TEST part 6 **No** **GO to A14**.
A14: DTC TEST	
	1 Evaluate the DTCs present. Compare them against the following; U201A-51 U201A-52 U0300-00 U2100-00 U2101-00 U3000-44 U3000-45 U3000-46 U3000-49
	Were any of these DTCs present? **Yes** Refer to the workshop manual and replace the tailgate control module (upper) as necessary - on the warranty claim please quote feedback "FID 1.1" **No** **GO to A15**.
A15: DTC TEST	
	1 Evaluate the DTCs present. Compare them against the following; C2005-11 / 12 / 13 C2006-11 / 12 / 13 U0140-00 U0401-68 U0415-68 U201A-51 U201A-52 U0300-00 U2100-00 U2101-00 U3000-44 U3000-45 U3000-46 U3000-49
	Were any of the above DTCs present in the tailgate control module (upper)? **Yes** GO to Pinpoint Test **B.** POWER TAILGATE DOES NOT OPEN **No** **GO to A16**.

A16: DTC TEST	
	1 Evaluate DTCs present. Compare them against the following; B1463-02 B1463-11 B1464-02
	Were any of the above DTCs present in the tailgate control module (upper)? **Yes** GO to Pinpoint Test **D.** SOFT CLOSE ACTUATOR TEST **No** Go to the relevant Pinpoint Test according to the reported failure mode on the vehicle

PINPOINT TEST B : POWER TAILGATE DOES NOT OPEN	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
B1: SWITCH TEST	
	1 Using the manufacturer approved diagnostic system, check all associated DTCs with body control module & tailgate control module (upper)
	2 DO NOT REPAIR DTCS - NO PARTS TO BE CHANGED WITHOUT FIRST ISOLATING THE FAILURE MODE
	Are there any DTCs present in the tailgate control module (upper)? **Yes** GO to Pinpoint Test **A.** **No** **GO to B2.**
B2: SWITCH TEST	
	1 Press the exterior tailgate close switch
	Can you hear the latch actuate? **Yes** follow steps 3 and 4 then Go to 5 **No** **GO to B3.**
B3: SWITCH TEST	
	1 Press the smart key tailgate close switch
	Can you hear the latch actuate? **Yes** follow steps 2 and 4 if not already performed, then Go to 5 **No** **GO to B4.**
B4: SWITCH TEST	

	1 Press the interior tailgate close switch
	Can you hear the latch actuate? **Yes** follow steps 2 and 3 if not already performed, then Go to 5 **No** GO to B5.
	B5: SWITCH TEST
	1 After testing all three tailgate close switch operations
	Did the latch actuate from all three switch inputs? **Yes** GO to B6. **No** Refer to the electrical circuit diagrams and check the tailgate close switch for open circuit, high resistance. Refer to the workshop manual and change the part as required. If this fails to remedy the failure Go to 7 Check the release switch concerned for any obvious damage or corrosion On the warranty claim please quote feedback ID "FID 2.1"
	B6: STRIKER RELEASE
	1 After testing all three tailgate close switch operations
	During actuation did the latch release from the striker? **Yes** GO to Pinpoint Test E. **No** GO to Pinpoint Test C.
	B7: CAN BUS
	1 using the manufacturer approved diagnostic system, check if the body control module is live on the medium speed CAN bus
	Is the body control module live on the CAN bus? **Yes** GO to Pinpoint Test C. **No** Refer to the electrical circuit diagrams and check the body control module power and ground circuits for open circuit, high resistance Using the manufacturer approved diagnostic system, perform a CAN network integrity test. Refer to the electrical circuit diagrams and check the high speed CAN bus circuit for short circuit to ground, short circuit to power, open circuit, high resistance Using the manufacturer approved diagnostic system, check the body control module for related DTCs and refer to the relevant DTC index

PINPOINT TEST C : TAILGATE LATCH TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS

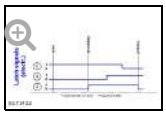
C1: LATCH TEST	
	1 Refer to the workshop manual and remove the upper power tailgate trim for access to the tailgate latch
	2 Try to release the upper power tailgate latch with the emergency release lever
	Does the upper power tailgate latch release? **Yes** GO to C2. **No** Refer to the workshop manual and replace the upper power tailgate latch assembly as necessary On the warranty claim please quote feedback ID "FID 2.2"

C2: LATCH TEST	
	1 Measure the resistance of the upper power tailgate soft close actuator across pins C4PR61-1 and C4PR61-3
	Is the resistance between 2 ohms and 20 ohms? **Yes** GO to C3. **No** Refer to the workshop manual and replace the upper power tailgate latch assembly as necessary On the warranty claim please quote feedback ID "FID 2.3"

C3: LATCH TEST	
	1 Refer to the electrical circuit diagrams and check the upper power tailgate soft close actuator circuit for open circuit, high resistance
	Is the upper power tailgate soft close actuator circuit open circuit, high resistance? **Yes** Refer to the workshop manual and wiring diagrams and repair or replace the upper power tailgate soft close actuator wiring harness as necessary On the warranty claim please quote feedback ID "FID 2.4" **No** GO to C4.

C4: LATCH TEST	
	1 Measure the voltage at the tailgate latch during actuation at C4PR61-1
	Is the actuation signal greater than 9V? **Yes** GO to Pinpoint Test D. **No**

	Refer to the electrical circuit diagrams and check the body control module power and ground circuits for open circuit, high resistance Using the manufacturer approved diagnostic system, perform a CAN network integrity test. Refer to the electrical circuit diagrams and check the high speed CAN bus circuit for short circuit to ground, short circuit to power, open circuit, high resistance Using the manufacturer approved diagnostic system, check the body control module for related DTCs and refer to the relevant DTC index

PINPOINT TEST D : SOFT CLOSE ACTUATOR TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	D1: SOFT CLOSE ACTUATOR TEST
	**1** Refer to the workshop manual and remove the trim for access to the soft close actuator
	2 Check the position of the actuator lever on the latch
	Is the latch lever actuated? **Yes** GO to D2. **No** GO to Pinpoint Test E.
	D2: SOFT CLOSE ACTUATOR TEST
	**1** Refer to the electrical circuit diagrams and measure the voltage at pin C4PR61-6 on the latch
	Does the latch A-signal go from 0V to greater than 6V when the latch claw is moved from open to secondary latched position (first click on closure)? **Yes** GO to D3. **No** Refer to the workshop manual and replace the upper power tailgate latch assembly as necessary. DTC B1463-02/11 or B1464-02 should also be logged in the tailgate control module (upper) On the warranty claim please quote feedback ID "FID 2.5"
	D3: SOFT CLOSE ACTUATOR TEST
	1 Refer to the circuit diagrams and check the soft close actuator by measuring resistance across pins C4PR71-3 and C4PR71-4

	Is the resistance between 2 ohms and 20 ohms? **Yes** GO to D4. **No** Replace the tailgate soft close actuator as necessary. DTC B1316-93 should also be logged in the tailgate control module (upper) On the warranty claim please quote feedback ID "FID 2.6"
	D4: SOFT CLOSE ACTUATOR TEST
	1 Refer to the electrical circuit diagrams and check the soft close actuator circuit for open circuit, high resistance
	Is the power tailgate actuator (upper) circuit open circuit, high resistance? **Yes** Refer to the workshop manual and circuit diagrams and repair or replace the soft close actuator harness as necessary On the warranty claim please quote feedback ID "FID 2.7" **No** GO to D5.
	D5: SOFT CLOSE ACTUATOR TEST
	1 Refer to the electrical circuit diagrams and measure pin C4PR71-2 on the soft close actuator during actuation of the unit
	Does the signal state change during the actuation process? **Yes** GO to D6. **No** Replace the upper power tailgate soft close actuator as necessary. DTC B1316-02 should also be logged in the tailgate control module (upper) On the warranty claim please quote feedback ID "FID 2.8"
	D6: SOFT CLOSE ACTUATOR TEST
	1 Examine the upper power tailgate set with respect to mechanical function
	Is there a significant preload on the latch? **Yes** Refer to the workshop manual and adjust the upper power tailgate through either hinges or latch and striker alignment. On the warranty claim please quote feedback ID "FID 2.9" REFER to: **Tailgate Alignment** (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, General Procedures) / **Liftgate Striker Adjustment** (501-14 Handles, Locks, Latches and Entry Systems, General Procedures). **No** Using the manufacturer approved diagnostic system, clear the DTCs and retest. If the fault persists, install a new tailgate control module (upper) On the warranty claim please quote feedback ID "FID 2.9"

PINPOINT TEST E : POWER TAILGATE ACTUATOR TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	E1: POWER TAILGATE ACTUATOR TEST
	1 Operate a power tailgate release switch and check the tailgate opens fully
	Did the upper power tailgate begin to power open from the actuator(s) without opening fully? **Yes** GO to Pinpoint Test **G.** **No** **GO to E2**.
	E2: POWER TAILGATE ACTUATOR TEST
	1 Open the upper power tailgate through its throw of operation manually
	Does the system resist movement significantly more than other vehicles? **Yes** Ensure that there is no mechanical obstruction preventing movement of the upper power tailgate. If none present, refer to the workshop manual and replace the power tailgate actuator (upper) as necessary On the warranty claim please quote feedback ID "FID 2.10" **No** **GO to E3**.
	E3: POWER TAILGATE ACTUATOR TEST
	1 Inspect the anti trap sensors on either side of the upper power tailgate. Pay particular attention to the radius at the top of the upper power tailgate
	Is there evidence of abrasion / wear and tear? **Yes** Using the manufacturer approved diagnostic system, check datalogger signal - Anti Pinch Seals Voltage (0xD902) when the upper power tailgate is closed. If the signal indicates that the sensor is activated, refer to the workshop manual and replace the sensor as necessary. Also check the drain trough finishers in the affected area for correct fitment. Ensure clearance is achieved after refitting the anti-trap sensor On the warranty claim please quote feedback ID "FID 2.11" **No** **GO to E4**.
	E4: POWER TAILGATE ACTUATOR TEST
	1 Refer to the electrical circuit diagrams and check the power tailgate actuator (upper) by measuring resistance across pins C4PR57-2 and C4PR57-9 for the right hand actuator and pins C4PR58-2 and C4PR58-9 for the left hand actuator

	Is the resistance between 2 ohms and 20 ohms? **Yes** GO to E5. **No** Refer to the workshop manual and replace the power tailgate actuator (upper) as necessary. DTC C2005-11/13/31 or C2006-11/13/31 should be present in the tailgate control module (upper) as a hard fault On the warranty claim please quote feedback ID "FID 2.12"
	E5: POWER TAILGATE ACTUATOR TEST
	1 Refer to the electrical circuit diagrams and check the power tailgate actuator (upper) circuit for open circuit, high resistance
	Is the power tailgate actuator (upper) circuit open circuit, high resistance? **Yes** Refer to the workshop manual and circuit diagrams and repair or replace the power tailgate actuator (upper) wiring harness as necessary On the warranty claim please quote feedback ID "FID 2.13" **No** GO to E6.
	E6: POWER TAILGATE ACTUATOR TEST
	1 Using the manufacturer approved diagnostic system, check if the body control module is live on the medium speed CAN bus
	Is the body control module live on the CAN bus? **Yes** GO to E7. **No** Refer to the electrical circuit diagrams and check the body control module power and ground circuits for open circuit, high resistance. DTCs U0140-00, U0401-68 and U0415-68 may also be present on the tailgate control module (upper) as hard faults Using the manufacturer approved diagnostic system, perform a CAN network integrity test. Refer to the electrical circuit diagrams and check the high speed CAN bus circuit for short circuit to ground, short circuit to power, open circuit, high resistance Using the manufacturer approved diagnostic system, check the body control module for related DTCs and refer to the relevant DTC index On the warranty claim please quote feedback ID "FID 2.14"
	E7: POWER TAILGATE ACTUATOR TEST
	1 using the manufacturer approved diagnostic system, check if the tailgate control module (upper) is live on the medium speed CAN bus
	Is tailgate control module (upper) live on the CAN bus? **Yes** GO to Pinpoint Test H. **No** Using the manufacturer approved diagnostic system, clear the DTCs and retest. If the fault persists, install a new tailgate control module (upper)

	as necessary On the warranty claim please quote feedback ID "FID 2.15"

PINPOINT TEST F : POWER TAILGATE ANTI-TRAP SENSOR TESTING	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	F1: POWER TAILGATE ANTI-TRAP SENSOR TESTING
	1 Inspect the anti trap sensors on either side of the upper power tailgate. Pay particular attention to the radius at the top of the upper power tailgate
	Is there evidence of abrasion / wear and tear? **Yes** Using the manufacturer approved diagnostic system, check datalogger signal - Anti Pinch Seals Voltage (0xD902) when the upper power tailgate is closed. If the signal indicates that the sensor is activated, refer to the workshop manual and replace the sensor as necessary. Also check the drain trough finishers in the affected area for correct fitment. Ensure clearance is achieved after refitting the anti-trap sensor On the warranty claim please quote feedback ID "FID 2.16" **No** GO to F2.
	F2: POWER TAILGATE ANTI-TRAP SENSOR TESTING
	1 Inspect the end of the anti-trap sensors on either side of the upper power tailgate, where the wire exits the sensor
	Is there evidence of wear and tear or insulation break through? **Yes** Refer to the workshop manual and replace the upper power tailgate anti-trap sensor as necessary On the warranty claim please quote feedback ID "FID 2.17" **No** GO to F3.
	F3: POWER TAILGATE ANTI-TRAP SENSOR TESTING
	1 Inspect the fitment of the anti-trap sensor to the upper power tailgate
	Are all clips fully engaged and the sensor securely located? **Yes** GO to Pinpoint Test **B.** If failure is still present raise an electronic product quality report (EPQR) for Land Rover Engineering to assist in resolution of the issue **No** If possible re-seat the anti-trap sensor correctly and check for correct operation. If not possible refer to the workshop manual and replace the anti-trap sensor as necessary On the warranty claim please quote feedback ID "FID 2.18"

PINPOINT TEST G : POWER TAILGATE DOES NOT CLOSE	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	G1: SWITCH TEST
	1 Using the manufacturer approved diagnostic system, check all associated DTCs with body control module & tailgate control module (upper)
	2 DO NOT REPAIR DTCS - NO PARTS TO BE CHANGED WITHOUT FIRST ISOLATING THE FAILURE MODE
	Are there any DTCs present in the tailgate control module (upper)? **Yes** GO to Pinpoint Test **A.** **No** GO to G2.
	G2: SWITCH TEST
	1 Press the tailgate close switch
	Does the upper power tailgate begin to power close? **Yes** Follow steps 3 and 4 then Go to 5 Ensure the upper power tailgate is returned to the fully open position **No** GO to G3.
	G3: SWITCH TEST
	1 Press the smart key close switch
	Does the upper power tailgate begin to power close? **Yes** Follow steps 2 and 4 if not already performed, then Go to 5 Ensure the upper power tailgate is returned to the fully open position **No** GO to G4.
	G4: SWITCH TEST
	1 Press the tailgate interior close switch
	Does the upper power tailgate begin to power close? **Yes** Follow steps 2 and 3 if not already performed, then Go to 5 **No** GO to G6.
	G5: SWITCH TEST
	1 After testing all three release switch operations

	Did the upper power tailgate begin powered operation from all three switch inputs? **Yes** GO to Pinpoint Test **K.** **No** Refer to the electrical circuit diagrams and check the tailgate release switch for open circuit, high resistance. Refer to the workshop manual and change the part as required Check switch concerned for any obvious damage or corrosion On the warranty claim please quote feedback ID "FID 3.1"
	G6: CAN BUS CHECK
	1 using the manufacturer approved diagnostic system, check if the tailgate control module (upper) is live on the medium speed CAN bus
	Is the tailgate control module (upper) live on the CAN bus? **Yes** GO to Pinpoint Test **H.** **No** Using the manufacturer approved diagnostic system, clear the DTCs and retest. If the fault persists, install a new tailgate control module (upper) as necessary On the warranty claim please quote feedback ID "FID 3.2"

PINPOINT TEST H : ANTI-TRAP SENSOR TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	H1: ANTI-TRAP SENSOR TEST
	1 Inspect the anti trap sensors on either side of the upper power tailgate. Pay particular attention to the radius at the top of the upper power tailgate
	Is there evidence of abrasion / wear and tear? **Yes** Using the manufacturer approved diagnostic system, check datalogger signal - Anti Pinch Seals Voltage (0xD902) when the upper power tailgate is closed. If the signal indicates that the sensor is activated, refer to the workshop manual and replace the sensor as necessary. Also check the drain trough finishers in the affected area for correct fitment. Ensure clearance is achieved after refitting the anti-trap sensor On the warranty claim please quote feedback ID "FID 3.3" **No** GO to H2.
	H2: ANTI-TRAP SENSOR TEST
	1 Inspect the end of the anti trap sensors on either side of the upper power tailgate, where the wire exits the sensor
	Is there evidence of wear and tear or insulation break through?

	Yes Refer to the workshop manual and replace the anti trap sensor as necessary On the warranty claim please quote feedback ID "FID 3.4" **No** GO to H3.
H3: ANTI-TRAP SENSOR TEST	
	1 Inspect the fitment of the anti trap sensor to the tailgate
	Are all clips fully engaged and the sensor securely located? **Yes** Go to C3: TAILGATE POSITIONAL DATA TEST **No** If possible re-seat the anti trap sensor correctly and check for correct operation. If not possible refer to the workshop manual and replace the anti trap sensor as necessary On the warranty claim please quote feedback ID "FID 3.5"

PINPOINT TEST I : POWER TAILGATE POSITIONAL DATA TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
I1: POWER TAILGATE POSITIONAL DATA TEST	
	1 Using the manufacturer approved diagnostic system check if the upper power tailgate position is known by the system or not. Check if DTC C2005-31 or C2006-31 is currently active, if yes, the tailgate position is unknown
	Is the upper power tailgate position unknown? **Yes** GO to I2. **No** GO to I3.
I2: POWER TAILGATE BODY FITMENT CHECK	
	1 Check the position of the upper power tailgate relative to the aperture. Check for flushness across the back of the vehicle, both vertically and horizontally
	Is the upper power tailgate centralised both horizontally and vertically in the aperture? **Yes** GO to I3. **No** Refer to the workshop manual and re-set the upper power tailgate to achieve a good gap and flush condition across the rear of the vehicle. After re-setting the upper power tailgate according to the workshop manual instructions, using the manufacturer approved diagnostic tool, recalibrate the tailgate and test operation

	On the warranty claim please quote feedback ID "FID 3.7"
	I3: POWER TAILGATE POSITION SENSOR CHECK
	1 Refer to the electrical circuit diagrams and manually moving the upper power tailgate slowly, measure the position sensor voltage between C4PR59B-8 and C4PR59B-21 and then between C4PR59B-9 and C4PR59B-21. Repeat for second spindle, if fitted: Measure voltage between C4PR59B-6 and C4PR59B-18 and then between C4PR59B-7 and C4PR59B-18. Important: Move spindles slowly to be able to capture the transitions
	Does the voltage on the position sensor alternate between ~0V and ~9V? **Yes** GO to Pinpoint Test **J.** **No** **GO to I4**. On the warranty claim please quote feedback ID "FID 3.8"
	I4: POWER TAILGATE POSITION SENSOR CHECK
	1 Refer to the electrical circuit diagrams
	Is there continuity between the hall sensor output on the power tailgate actuator (upper) and the tailgate control module (upper) end of the harness? **Yes** **GO to I5**. **No** Refer to the workshop manual and replace / repair the electrical harness as required On the warranty claim please quote feedback ID "FID 3.9"
	I5: POWER TAILGATE POSITION SENSOR CHECK
	1 Using powered operation, ensure that the upper power tailgate has moved in the three seconds prior to this test. Using a multimeter, check the voltage on pin 1 of the actuator connector (Right hand actuator C4PR57-1, Left hand actuator C4PR58-1)
	Is there ~9V present? **Yes** Refer to the workshop manual and replace the spindle drive as necessary On the warranty claim please quote feedback ID "FID 3.10" **No** Using the manufacturer approved diagnostic tool, check the software level on tailgate control module (upper). Reflash the software if required. Recalibrate the upper power tailgate as per the workshop manual. If this does not remedy the failure mode, refer to the workshop manual and replace the tailgate control module (upper) as necessary On the warranty claim please quote feedback ID "FID 3.10"

	PINPOINT TEST J : LATCH TEST

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	J1: LATCH TEST
	1 Using a multimeter, measuring on the tailgate control module (upper) input while the tailgate control module (upper) is powered and the latch is connected and in an open state (ie; not latched at all), check if the signal outputs from the latch for signals A (C4PR59B-5) and B (C4PR59B-16) are ~0V
	Are the signal outputs ~0V? **Yes** Using the manufacturer approved diagnostic tool, check the software level on tailgate control module (upper). Reflash the software if required. Recalibrate the upper power tailgate as per the workshop manual. If this does not remedy the failure mode, refer to the workshop manual and replace the tailgate control module (upper) as necessary On the warranty claim please quote feedback ID "FID 3.11" **No** GO to J2.
	J2: LATCH TEST
	1 Refer to the electrical circuit diagrams and check the upper power tailgate latch 1st & 2nd signal circuit for open circuit, high resistance
	Is the upper power tailgate latch 1st & 2nd signal circuit open circuit, high resistance? **Yes** Refer to the workshop manual and replace / repair the harness as necessary **No** Refer to the workshop manual and replace the latch as necessary

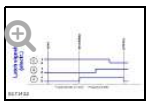
PINPOINT TEST K : POWER TAILGATE DOES NOT CLOSE FULLY	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	K1: MECHANICAL OBSTRUCTION INSPECTION
	1 Inspect the upper power tailgate closure aperture for any mechanical obstruction
	Is there any mechanical obstruction? **Yes** Clear the mechanical obstruction and retest for upper power tailgate operation On the warranty claim please quote feedback ID "FID 4.1" **No** GO to K2.
	K2: TAILGATE ACTUATOR DRIVE TEST

	1 Close the upper power tailgate by powered operation
	Did the upper power tailgate stop halfway through powered operation? **Yes** GO to K3. **No** GO to K5.
	K3: TAILGATE ACTUATOR DRIVE TEST
	1 Open the upper power tailgate through its throw of operation manually
	Does the system resist movement significantly more than other vehicles? **Yes** Ensure that there is no mechanical obstruction preventing movement of the upper power tailgate. If none present, refer to the workshop manual and replace the power tailgate actuator (upper) as necessary On the warranty claim please quote feedback ID "FID 4.2" **No** GO to K4.
	K4: TAILGATE ACTUATOR DRIVE TEST
	1 Check the power tailgate actuator (upper) by measuring resistance across pins C4PR57-2 and C4PR57-9 for the right hand spindle and then C4PR58-2 C4PR58-9 for the left hand spindle
	Is the resistance between 2 ohms and 20 ohms? **Yes** GO to K5. **No** Refer to the workshop manual and replace the power tailgate actuator (upper) as necessary. DTC C2005-11/13/31 or C2006-11-13-31 should be present in the tailgate control module (upper) as a hard fault On the warranty claim please quote feedback ID "FID 4.3"
	K5: TAILGATE ACTUATOR DRIVE TEST
	1 Refer to the electrical circuit diagrams, and check the upper power tailgate left and right actuator power and ground circuits for open circuit, high resistance
	Is the upper power tailgate left or right actuator power or ground circuit open circuit, high resistance? **Yes** Refer to the workshop manual and repair or replace the wiring harness as necessary **No** GO to K6. On the warranty claim please quote feedback ID "FID 4.4"
	K6: CAN BUS CHECK
	1 using the manufacturer approved diagnostic system, check if the body

	control module is live on the medium speed CAN bus
	Is the body control module live on the medium speed CAN bus? **Yes** GO to K7. **No** Refer to the electrical circuit diagrams and check the body control module power and ground circuits for open circuit, high resistance. DTCs U0140-00, U0401-68 and U0415-68 may also be present on the tailgate control module (upper) as hard faults Using the manufacturer approved diagnostic system, perform a CAN network integrity test. Refer to the electrical circuit diagrams and check the high speed CAN bus circuit for short circuit to ground, short circuit to power, open circuit, high resistance Using the manufacturer approved diagnostic system, check the body control module for related DTCs and refer to the relevant DTC index On the warranty claim please quote feedback ID "FID 4.5"
K7: CAN BUS CHECK	
	1 using the manufacturer approved diagnostic system, check if the tailgate control module (upper) is live on the medium speed CAN bus
	Is tailgate control module (upper) live on the medium speed CAN bus? **Yes** GO to Pinpoint Test L. **No** Using the manufacturer approved diagnostic system, clear the DTCs and retest. If the fault persists, install a new tailgate control module (upper) as necessary On the warranty claim please quote feedback ID "FID 4.6"

PINPOINT TEST L : ANTI TRAP SENSOR TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
L1: ANTI TRAP SENSOR TEST	
	1 Inspect the anti trap sensors on either side of the upper power tailgate. Pay particular attention to the radius at the top of the upper power tailgate
	Is there evidence of abrasion / wear and tear? **Yes** Using the manufacturer approved diagnostic system, check datalogger signal - Anti Pinch Seals Voltage (0xD902) when the upper power tailgate is closed. If the signal indicates that the sensor is activated, refer to the workshop manual and replace the sensor as necessary On the warranty claim please quote feedback ID "FID 4.7" **No** GO to L2.
L2: ANTI TRAP SENSOR TEST	

	1 Inspect the end of the anti trap sensors on either side of the upper power tailgate, where the wire exits the sensor
	Is there evidence of wear and tear or insulation break through? **Yes** Refer to the workshop manual and replace the anti trap sensor as necessary On the warranty claim please quote feedback ID "FID 4.8" **No** GO to L3.
L3: ANTI TRAP SENSOR TEST	
	1 Inspect the anti trap sensors on either side of the upper power tailgate. Pay particular attention to the radius at the top of the upper power tailgate
	Is there evidence of abrasion / wear and tear? **Yes** Using the manufacturer approved diagnostic system, check datalogger signal - Anti Pinch Seals Voltage (0xD902) when the upper power tailgate is closed. If the signal indicates that the sensor is activated, refer to the workshop manual and replace the sensor as necessary On the warranty claim please quote feedback ID "FID 4.9" **No** GO to Pinpoint Test M.

PINPOINT TEST M : SOFT CLOSE ACTUATOR TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
M1: SOFT CLOSE ACTUATOR TEST	
	1 With the upper power tailgate open, using a blunt object move the latch claw from open to secondary latched (first click) position. (Circuit ref: C4PR61-6)
	Does the latch A-signal go from 0V to greater than 6V when the latch claw is moved from open to secondary latched (first click) position? **Yes** GO to M2. **No** Refer to the workshop manual and replace the upper power tailgate latch assembly as necessary. DTC B1463-02/11 or B1464-02 should also be logged in the tailgate control module (upper) On the warranty claim please quote feedback ID "FID 4.10"
M2: SOFT CLOSE ACTUATOR TEST	
	1 Using the manufacturer approved diagnostic system check for the most current software for tailgate control module (upper). If there is

	software update available for the tailgate control module (upper) flash the latest level software onto it. Using the manufacturer approved diagnostic system recalibrate the upper power tailgate. Repeat the closure cycle on the upper power tailgate 10 times more
	Did the software update remedy the failure mode? **Yes** No further action required On the warranty claim please quote feedback ID "FID 4.11" **No** GO to M3.
	M3: SOFT CLOSE ACTUATOR TEST
	1 Refer to the electrical circuit diagrams and check the soft close actuator motor by measuring resistance across pins C4PR71-3 and C4PR71-4
	Is the resistance between 2 ohms and 20 ohms? **Yes** GO to M4. **No** Replace the upper power tailgate soft close actuator as necessary. DTC B1316-93 should also be logged in the tailgate control module (upper) On the warranty claim please quote feedback ID "FID 4.12"
	M4: SOFT CLOSE ACTUATOR TEST
	1 Refer to the electrical wiring diagrams and check the connection between the soft close actuator and the tailgate control module (upper)
	2 Refer to the electrical circuit diagrams, and check the upper power tailgate soft close actuator power and ground circuits for open circuit, high resistance
	Is the upper power tailgate soft close actuator power or ground circuit open circuit, high resistance? **Yes** Refer to the wiring diagrams and repair or replace the harness as necessary **No** GO to M5. On the warranty claim please quote feedback ID "FID 4.13"
	M5: SOFT CLOSE ACTUATOR TEST
	1 Operate the upper power tailgate soft close actuator and measure the voltage on pin C4PR71-1
	Does the voltage change during the actuation process? **Yes** GO to M6. **No** Check and install a new upper power tailgate soft close actuator as

	required. DTC B1316-02 should also be logged in the tailgate control module (upper) On the warranty claim please quote feedback ID "FID 4.14"
	M6: SOFT CLOSE ACTUATOR TEST
	1 Examine the upper power tailgate set with respect to mechanical function
	Is there a significant preload on the latch - ie; does the upper power tailgate "pop" loudly on release? **Yes** Refer to the workshop manual and adjust the upper power tailgate through either hinges or latch and striker alignment On the warranty claim please quote feedback ID "FID 4.15" **No** GO to M7.
	M7: SOFT CLOSE ACTUATOR TEST
	1 With the latch in an open state, rotate the claw to secondary latched position (first click). The soft close actuator will now initialise and pull the claw to a primary latched (second click) position
	Watch the cable connected to the latch. Does the cable move? **Yes** GO to Pinpoint Test N. **No** Refer to the workshop manual and replace the soft close actuator as necessary On the warranty claim please quote feedback ID "FID 4.16"

PINPOINT TEST N : LATCH TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	N1: LATCH TEST
	1 Open the upper power tailgate to a fully open position. Press the complete close switch (CCS) to close the upper power tailgate under powered operation. When the latch engages onto secondary latched (first click) position listen carefully for the soft close actuator. The soft close actuator should initiate and pull the upper power tailgate to a primary latched (fully closed) state
	Is the upper power tailgate in primary latched (fully closed) state? **Yes** No further action required On the warranty claim please quote feedback ID "FID 4.17" **No** GO to N2.
	N2: LATCH TEST

	1 Open the upper power tailgate
	2 Refer to the workshop manual and remove the latch cover
	3 Using a rubber mallet, gently tap the latch and listen for any mechanical resetting noise
	4 Press the tailgate global open/close switch to power close the upper power tailgate
	Does the upper power tailgate close to primary latch position after soft close actuation? **Yes** GO to Pinpoint Test **K.** And repeat once more - if failure mode persists raise an electronic product quality report (EPQR) to seek technical support from DTS or JLR Engineering **No** Refer to the workshop manual and replace the latch as necessary On the warranty claim please quote feedback ID "FID 4.18"

PINPOINT TEST O : POWER TAILGATE DOES NOT OPEN FULLY	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	O1: PROGRAMMED GARAGE HEIGHT TEST
	1 Open the upper power tailgate manually to a fully open position. Press and hold the global open/close switch until beep is heard. Fully close the system manually and press the exterior release switch
	Does the upper power tailgate open to its full extent? **Yes** Close the upper power tailgate and repeat the opening operation 10 more times to ensure failure mode is eliminated On the warranty claim please quote feedback ID "FID 5.1" **No** GO to Pinpoint Test **P.**

PINPOINT TEST P : MECHANICAL OBSTRUCTION INSPECTION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	P1: MECHANICAL OBSTRUCTION INSPECTION
	1 Inspect all areas of the upper power tailgate for mechanical obstruction. Pay particular attention to the latch cover to striker plate interface. If any mechanical obstructions are identified remedy them before retesting. If this requires a move of the upper power tailgate on the hinges or a striker adjustment then using the manufacturer approved diagnostic tool recalibrate the upper power tailgate . Retest

	by pressing the exterior release switch
	Does the upper power tailgate open fully? **Yes** Close the upper power tailgate and repeat the opening operation 10 more times to ensure failure mode is eliminated On the warranty claim please quote feedback ID "FID 5.2" **No** GO to Pinpoint Test **Q.**

PINPOINT TEST Q : ANTI TRAP SENSOR TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	Q1: ANTI TRAP SENSOR TEST
	1 Inspect the anti trap sensors on either side of the upper power tailgate . Pay particular attention to the radius at the top of the upper power tailgate
	Is there evidence of abrasion / wear and tear? **Yes** Using the manufacturer approved diagnostic system, check datalogger signal - Anti Pinch Seals Voltage (0xD902) when the upper power tailgate is closed. If the signal indicates that the sensor is activated, refer to the workshop manual and replace the sensor as necessary On the warranty claim please quote feedback ID "FID 5.3" **No** GO to Q2.
	Q2: ANTI TRAP SENSOR TEST
	1 Inspect the end of the anti trap sensors on either side of the upper power tailgate , where the wire exits the sensor
	Is there evidence of wear and tear or insulation break through? **Yes** Refer to the workshop manual and replace the anti trap sensor as necessary On the warranty claim please quote feedback ID "FID 5.4" **No** GO to Q3.
	Q3: ANTI TRAP SENSOR TEST
	1 Inspect the anti trap sensors on either side of the upper power tailgate. Pay particular attention to the radius at the top of the upper power tailgate
	Is there evidence of abrasion / wear and tear? **Yes** Using the manufacturer approved diagnostic system, check datalogger signal - Anti Pinch Seals Voltage (0xD902) when the upper power tailgate

	is closed. If the signal indicates that the sensor is activated, refer to the workshop manual and replace the sensor as necessary On the warranty claim please quote feedback ID "FID 5.5" **No** GO to Pinpoint Test **R.**

PINPOINT TEST R : TAILGATE ACTUATOR DRIVE TEST	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	R1: TAILGATE ACTUATOR DRIVE TEST
	1 Open the upper power tailgate through its throw of operation manually
	Does the system resist movement significantly more than other vehicles? **Yes** Ensure that there is no mechanical obstruction preventing movement of the upper power tailgate. If none present, refer to the workshop manual and replace the power tailgate actuator (upper) as necessary On the warranty claim please quote feedback ID "FID 5.6" **No** GO to R2.
	R2: TAILGATE ACTUATOR DRIVE TEST
	1 Check the tailgate actuator (upper) by measuring resistance across pins C4PR57-2 and C4PR57-9 for the right hand spindle and then C4PR58-2 C4PR58-9 for the left hand spindle
	Is the resistance between 2 ohms and 20 ohms? **Yes** GO to R4. **No** Refer to the workshop manual and replace the tailgate actuator (upper) as necessary. DTC C2005-11/13/31 or C2006-11-13-31 should be present in the tailgate control module (upper) as a hard fault. On the warranty claim please quote feedback ID "FID 5.7"
	R3: TAILGATE ACTUATOR DRIVE TEST
	1 Refer to the electrical circuit diagrams, and check the upper power tailgate left and right actuator power and ground circuits for open circuit, high resistance
	Is the upper power tailgate left or right actuator power or ground circuit open circuit, high resistance? **Yes** Refer to the wiring diagrams and repair or replace the wiring harness as necessary. On the warranty claim please quote feedback ID "FID 5.8" **No** GO to R4.

R4: TAILGATE ACTUATOR DRIVE TEST	
	1 using the manufacturer approved diagnostic system, check if the body control module is live on the medium speed CAN bus
	Is the body control module live on the medium speed CAN bus? **Yes** GO to R5. **No** Refer to the electrical circuit diagrams and check the body control module power and ground circuits for open circuit, high resistance. DTCs U0140-00, U0401-68 and U0415-68 may also be present on the tailgate control module (upper) as hard faults Using the manufacturer approved diagnostic system, perform a CAN network integrity test. Refer to the electrical circuit diagrams and check the high speed CAN bus circuit for short circuit to ground, short circuit to power, open circuit, high resistance Using the manufacturer approved diagnostic system, check the body control module for related DTCs and refer to the relevant DTC index On the warranty claim please quote feedback ID "FID 5.9"

R5: TAILGATE ACTUATOR DRIVE TEST	
	1 Using the manufacturer approved diagnostic system, check if the tailgate control module (upper) is live on the medium speed CAN bus
	Is the tailgate control module (upper) live on the medium speed CAN bus? **Yes** GO to Pinpoint Test **A.** Go to A1: DTCs and repeat once more. If failure is still present raise an electronic product quality report (EPQR) for Land Rover Engineering to assist in resolution of the issue **No** Refer to the workshop manual and replace the tailgate control module (upper) as necessary On the warranty claim please quote feedback ID "FID 5.10"

DTC INDEX

For a list of Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00. REFER to: (100-00 General Information)

Diagnostic Trouble Code Index - DTC: Body Control Module (BCM) (Description and Operation),
Diagnostic Trouble Code Index - DTC: Keyless Vehicle Module (KVM) (Description and Operation),

Diagnostic Trouble Code Index - DTC: Tailgate Control Module (TGCM) - Upper/Lower (Description and Operation).

BODY CLOSURES

FRONT DOOR (G1509216)

REMOVAL AND INSTALLATION

REMOVAL

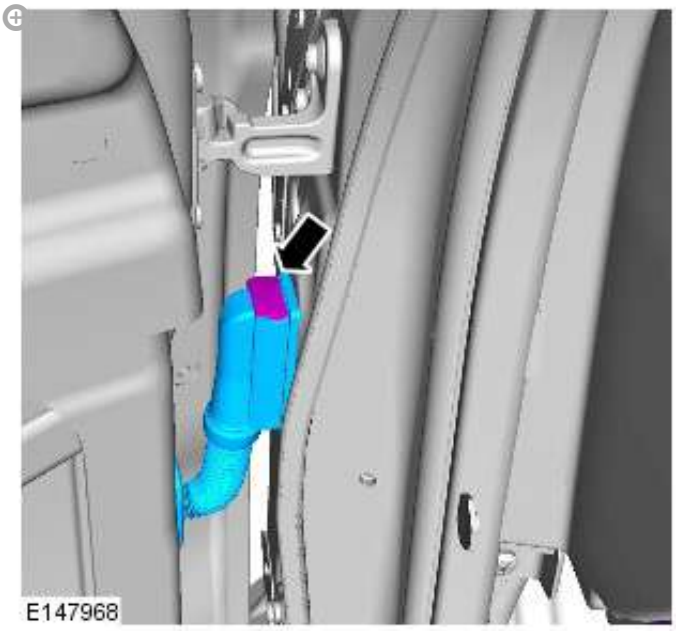
NOTE:

Some variation in the illustrations may occur, but the essential information is always correct.

1. Disconnect the battery ground cable.
   Refer to: Specifications (414-01 Battery, Mounting and Cables, Specifications).

2. **NOTE:**

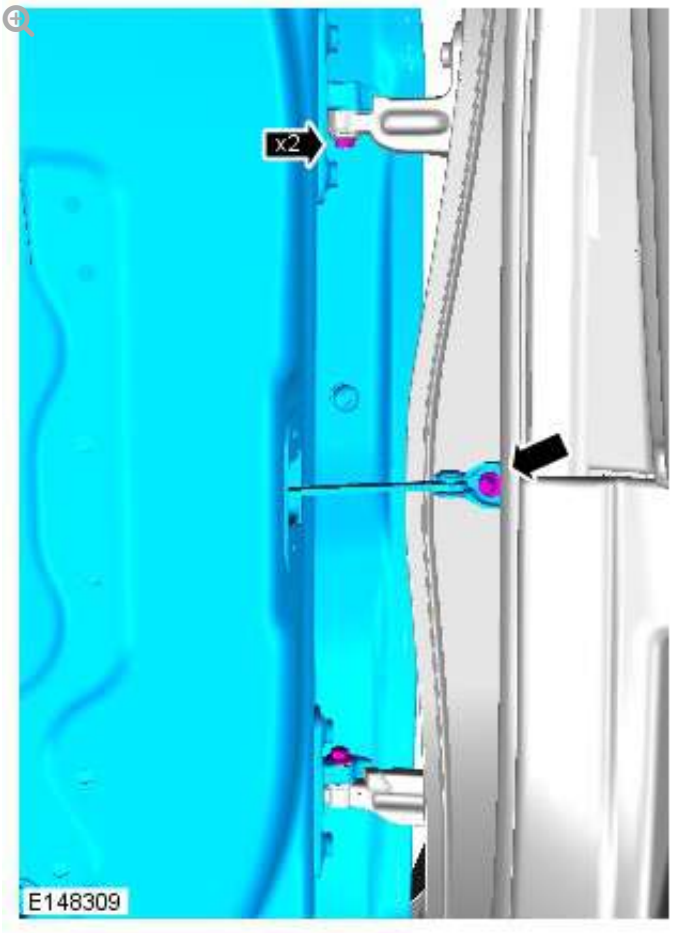
   Left hand shown, Right hand similar.



3.

NOTES:

- Left hand shown, Right hand similar.
- This step requires the aid of another technician



Torque:

Check arm bolt **24 Nm**

Hinge bolt **13 Nm**

NOTE:

Do not disassemble further if the component is remove for access only.

4. Refer to: Front Door Window Regulator Motor (501-11 Glass, Frames and Mechanisms, Removal and Installation).

5. Refer to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).

6. Refer to: Exterior Front Door Handle (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

7. Refer to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

8. Refer to: Front Door Check Arm (501-03 Body Closures, Removal and Installation).

9. **NOTE:**

Left hand shown, Right hand similar.

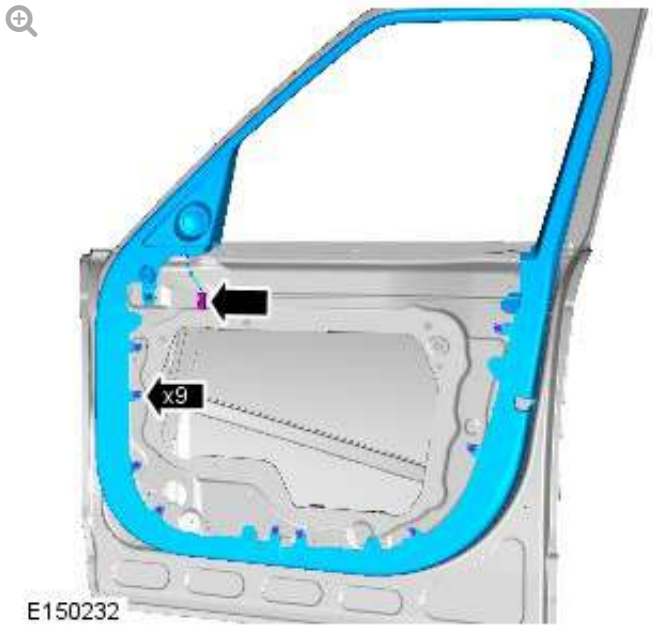
Torque: **35 Nm**

10. **CAUTION:**

Protect the surrounding paintwork to avoid damage.

NOTE:

Right hand shown, Left hand similar.



11.

CAUTION:

Protect the surrounding paintwork to avoid damage.

NOTE:

Right hand shown, Left hand similar.

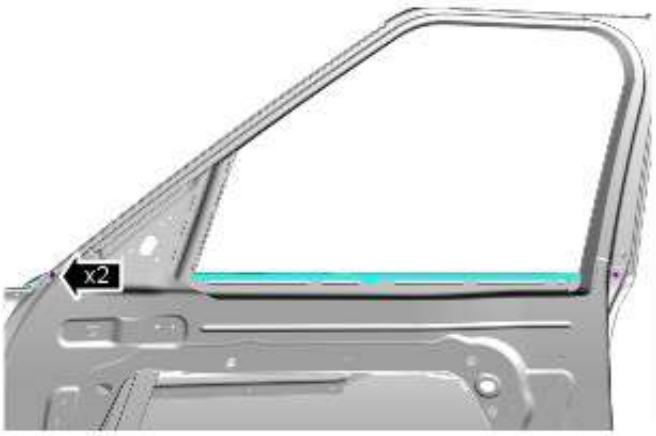
12.

CAUTION:

Protect the surrounding paintwork to avoid damage.

NOTE:

Right hand shown, Left hand similar.



E147946

Torque: **1.2 Nm**

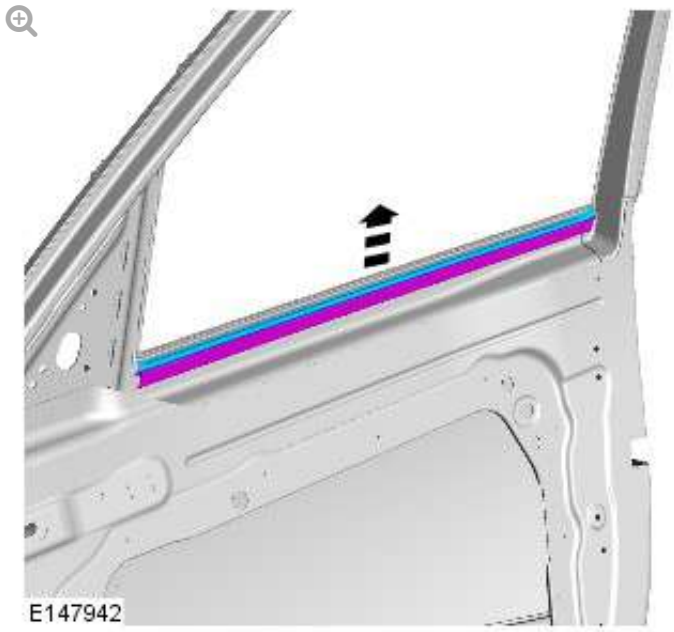
13.

CAUTION:

Protect the surrounding paintwork to avoid damage.

NOTE:

Right hand shown, Left hand similar.



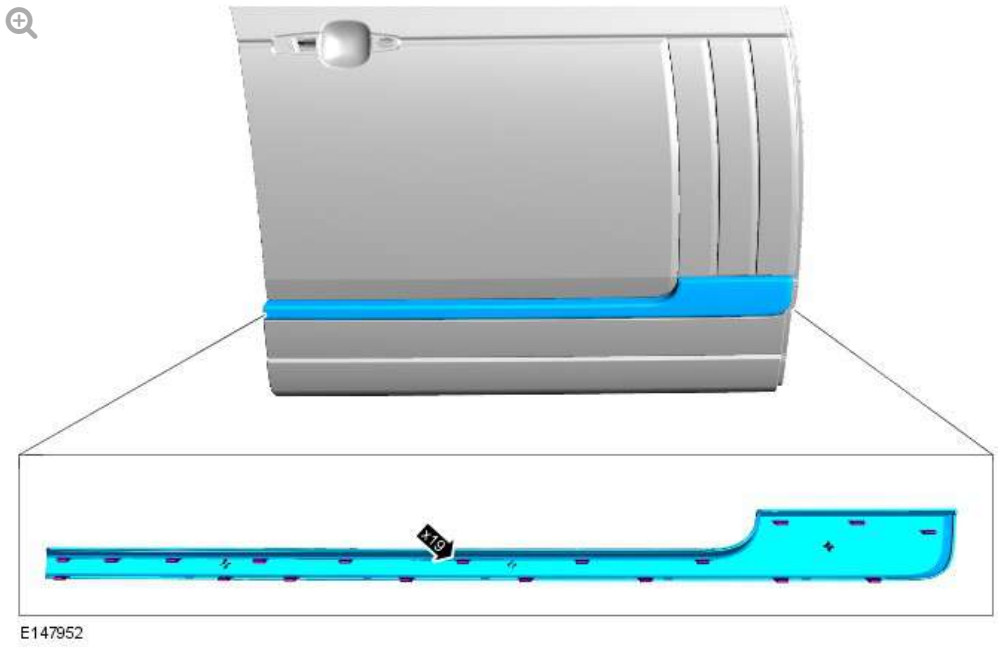
14.

CAUTION:

Protect the surrounding paintwork to avoid damage.

NOTE:

Right hand shown, Left hand similar.



E147952

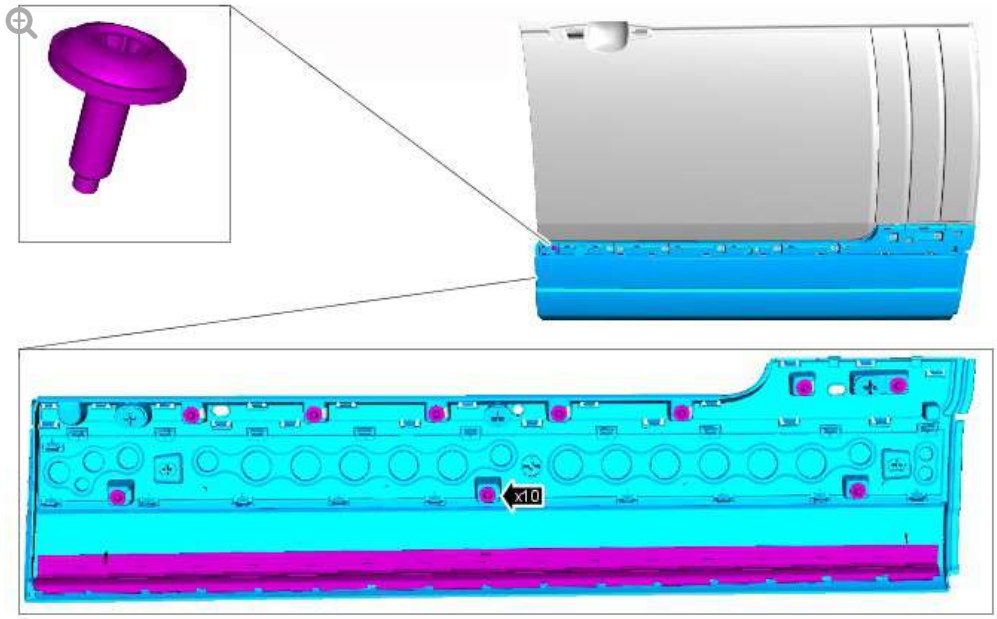
15.

CAUTION:

Protect the surrounding paintwork to avoid damage.

NOTE:

Right hand shown, Left hand similar.



E147948

Torque: **1.2 Nm**

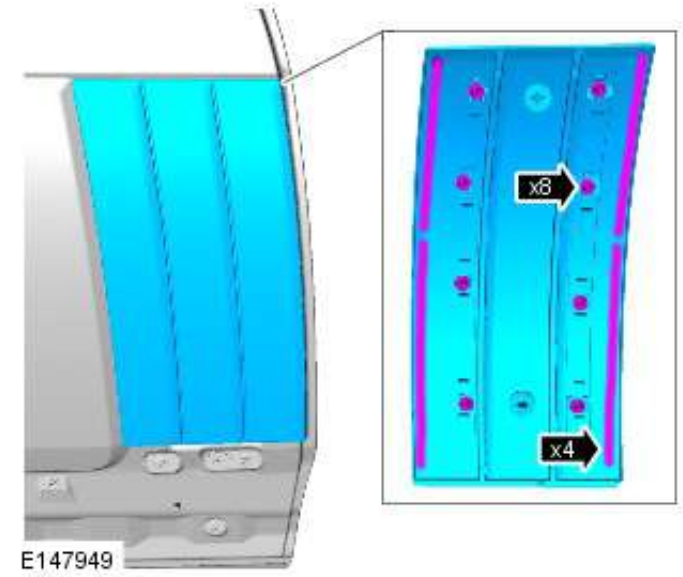
16.

CAUTION:

Protect the surrounding paintwork to avoid damage.

NOTE:

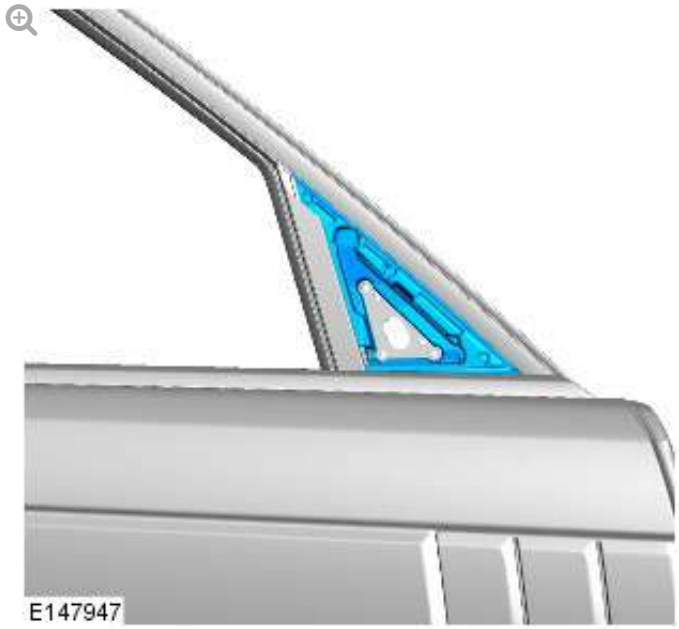
Right hand shown, Left hand similar.



17.

NOTE:

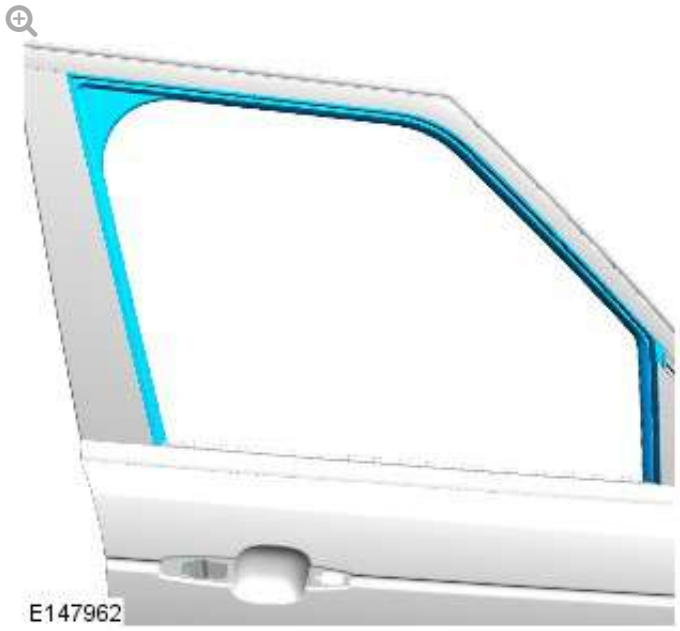
Right hand shown, Left hand similar.



18.

NOTE:

Right hand shown, Left hand similar.



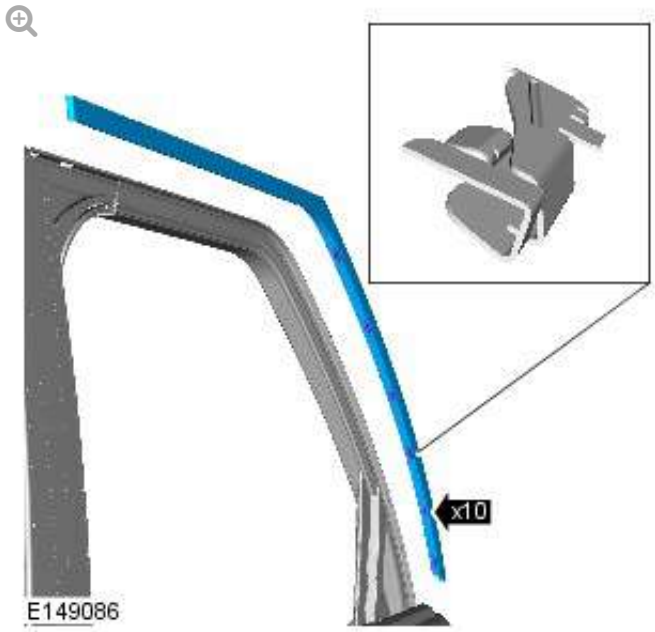
19.

CAUTION:

Protect the surrounding paintwork to avoid damage.

NOTE:

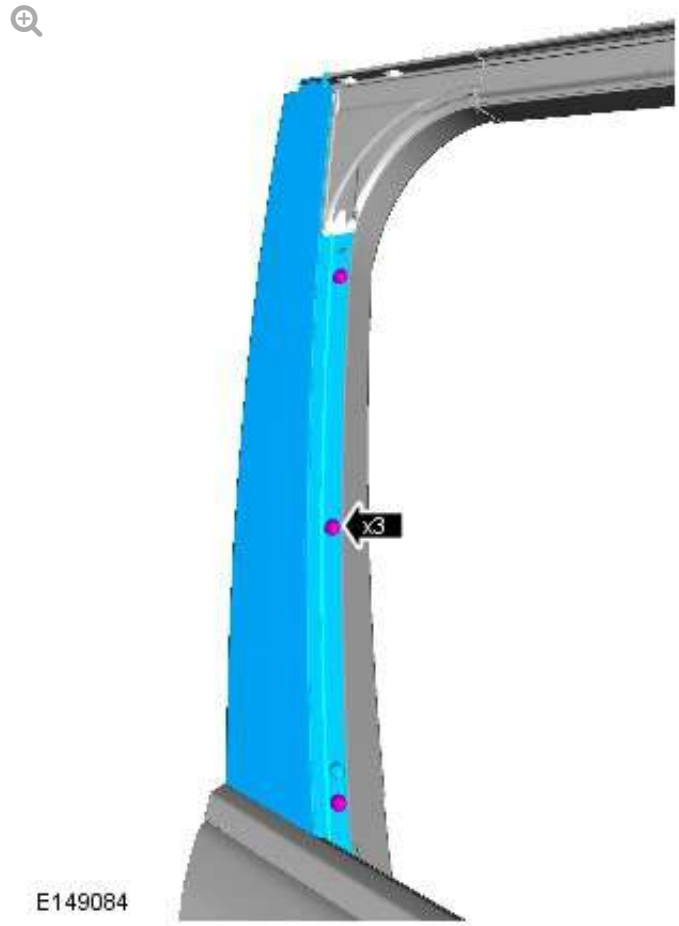
Right hand shown, Left hand similar.



20.

NOTE:

Right hand shown, Left hand similar.

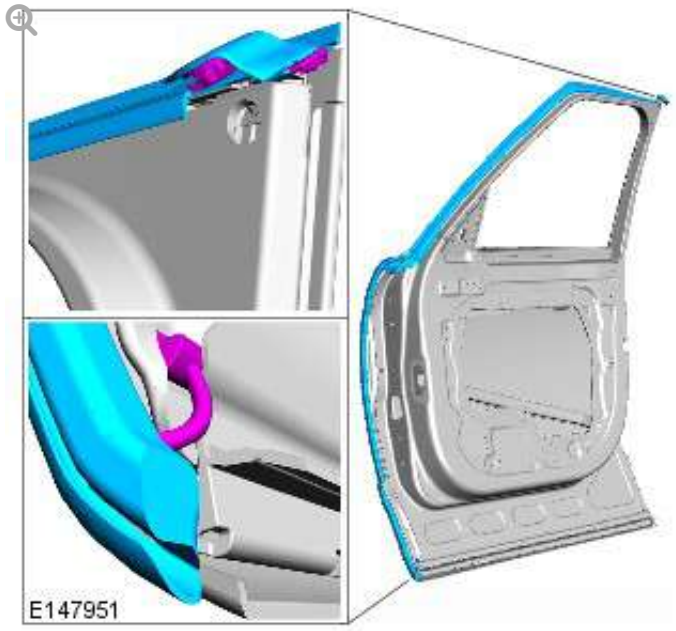


Torque: **1.2 Nm**

21.

NOTE:

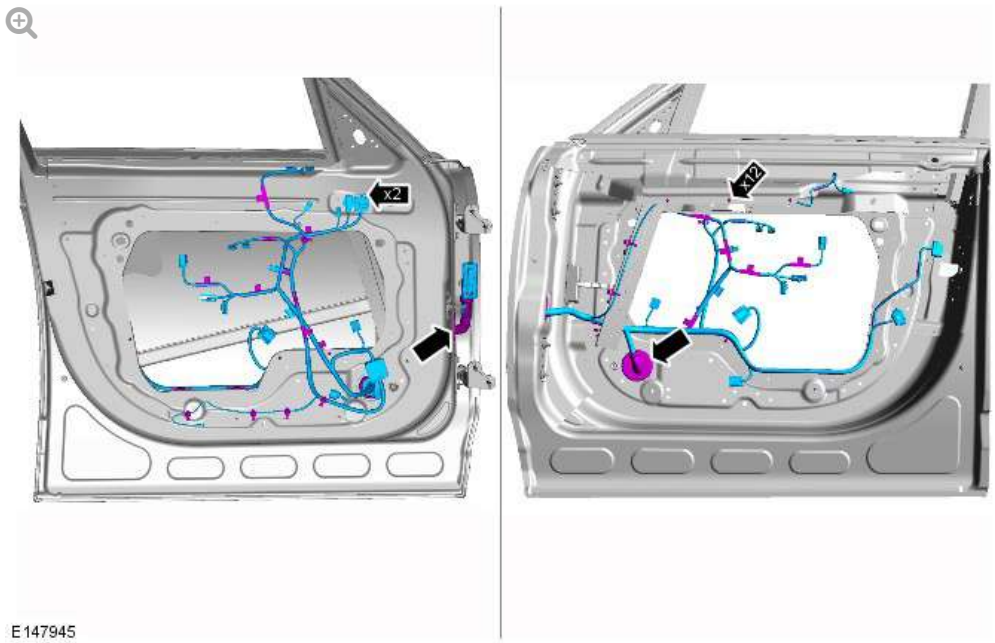
Right hand shown, Left hand similar.



22.

NOTE:

Left hand shown, Right hand similar.



NOTE:

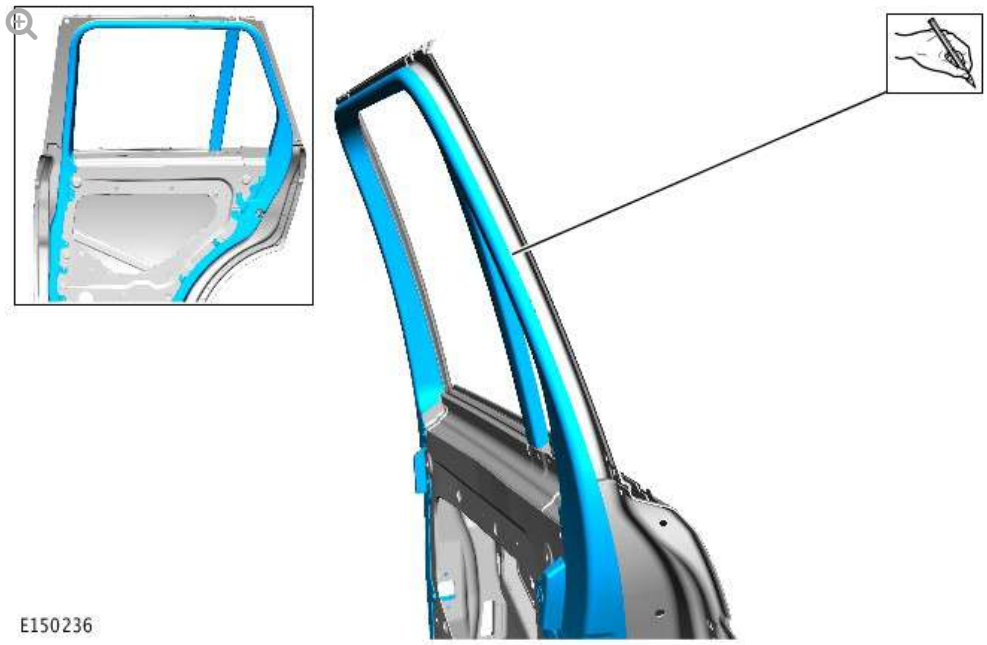
Do not disassemble further if the component is remove for access only.

INSTALLATION

1.

NOTE:

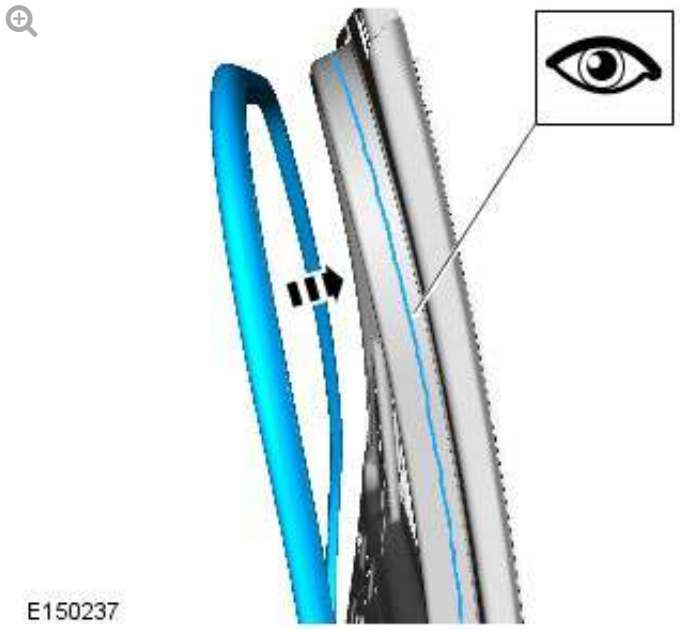
Right hand shown, Left hand similar.



2.

NOTES:

- Right hand shown, Left hand similar.
- Using a suitable clean agent, Clean the door panel in the area of the seal prior to installation.
- Install a new seal.



3. **NOTE:**

> Make sure all components are clean and free from foreign material.

To install, reverse the removal procedure.

4. **NOTE:**

> Left hand shown, Right hand similar.

If a new door is installed the bolts shown should be replaced with plain shank bolts to allow for correct door alignment.
Torque: **35 Nm**

5.

NOTE:

Check the gap and profiles of the door are correct.

Refer to: Body and Frame (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation).

BODY CLOSURES

FRONT DOOR CHECK ARM

(G1551484)

REMOVAL AND INSTALLATION

REMOVAL

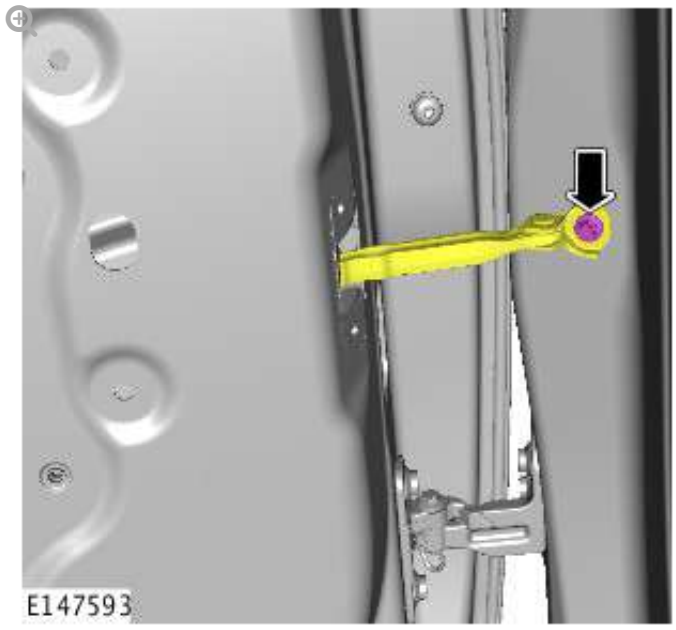
NOTE:

Left hand shown, right hand similar.

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

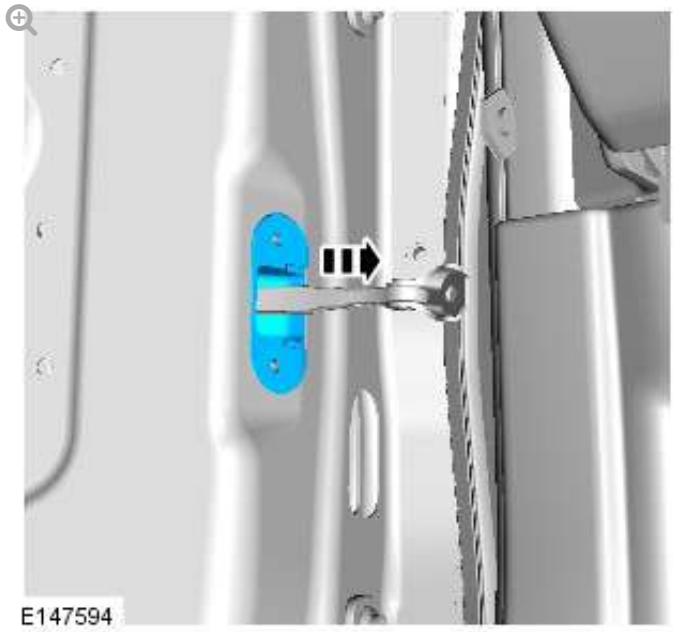
2. Refer to: Front Door Speaker (415-01 Information and Entertainment System, Removal and Installation).

3.

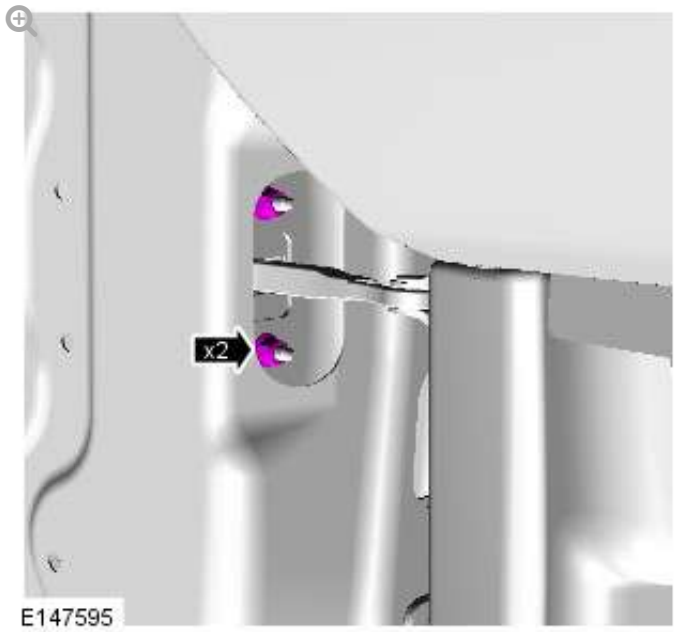


Torque: **25 Nm**

4.

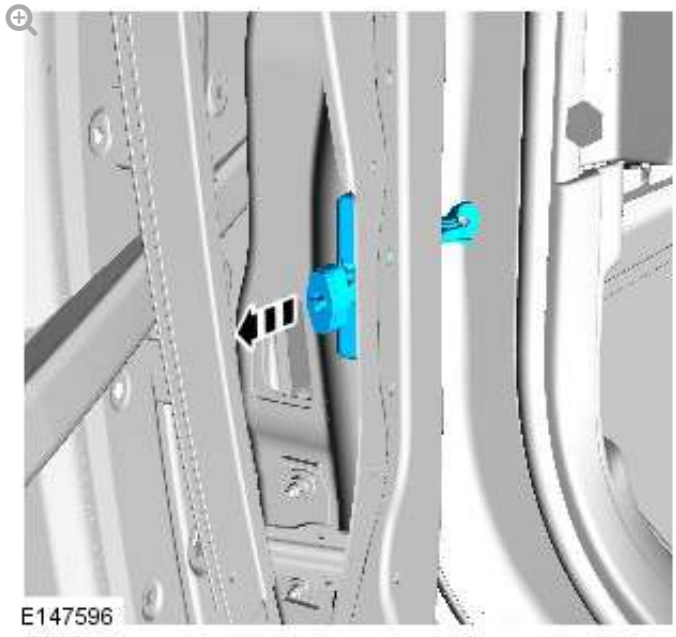


5.



Torque: **10.5 Nm**

6.



INSTALLATION

1. To install, reverse the removal procedure.

BODY CLOSURES

FUEL FILLER DOOR ASSEMBLY (G1509217)

REMOVAL AND INSTALLATION

REMOVAL

NOTE:

Removal steps in this procedure may contain installation details.

All vehicles

1. **WARNING:**

   Make sure to support the vehicle with axle stands.

   Raise and support the vehicle.

2. Refer to: Petrol and Petrol-Ethanol Fuel Systems Health and Safety Precautions (100-00 General Information, Description and Operation).
   Refer to: Diesel Fuel System Health and Safety Precautions (100-00

General Information, Description and Operation).

	Vehicles with petrol engine

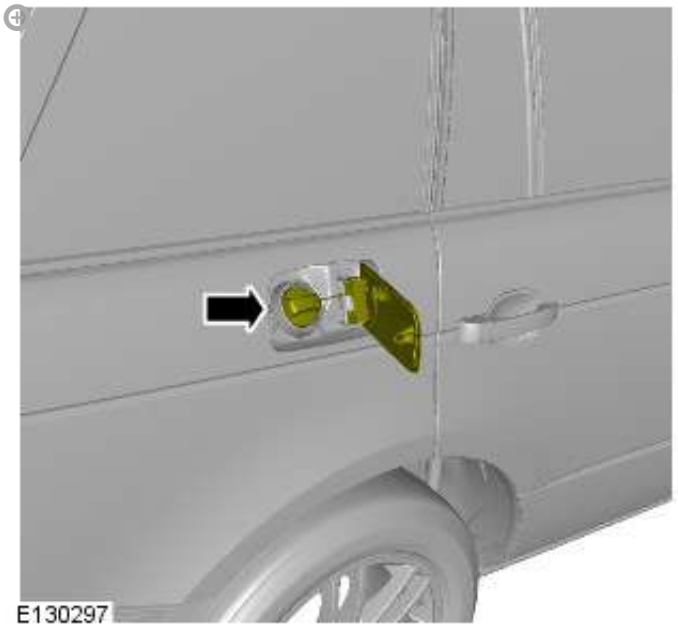
3. Refer to: Fuel System Pressure Release - GTDi 2.0L Petrol/V6 S/C 3.0L Petrol /V8 N/A 5.0L Petrol/V8 S/C 5.0L Petrol (310-00 Fuel System - General Information, General Procedures).

	All vehicles

4. Remove the RH rear wheel arch liner.
   Refer to: Rear Wheel Arch Liner (501-08 Exterior Trim and Ornamentation, Removal and Installation).

5. **NOTE:**

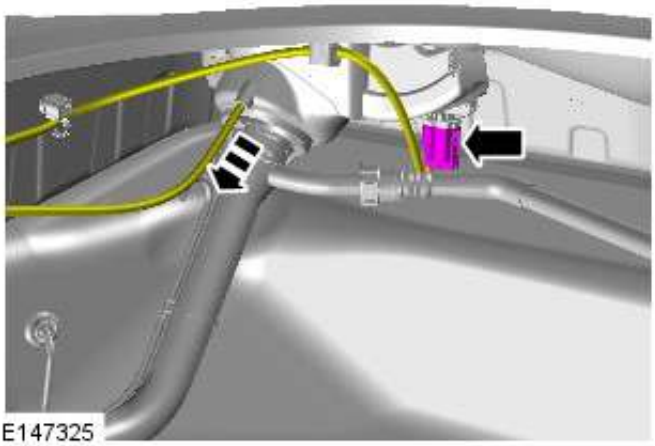
   Some variation in the illustrations may occur, but the essential information is always correct.



6.

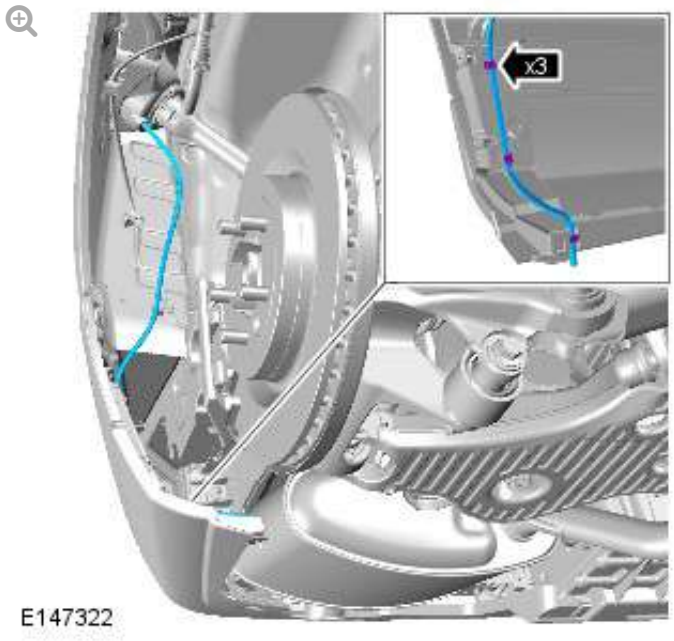
E142609

7.



E147325

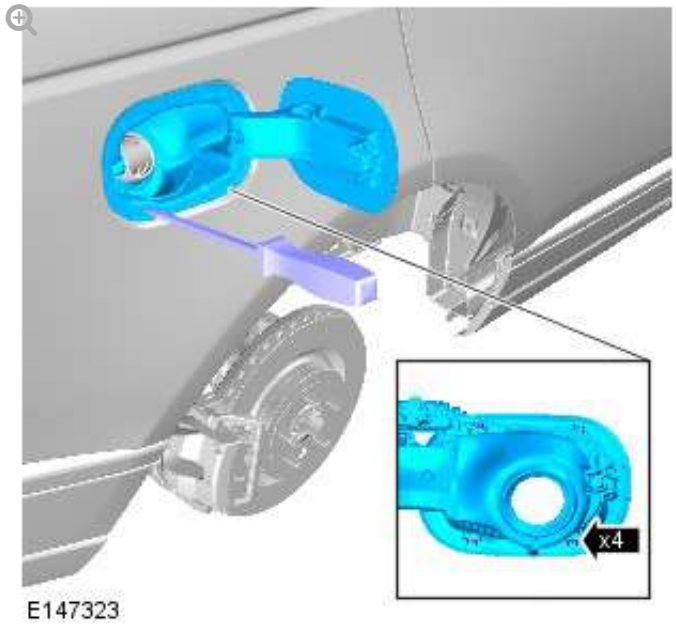
8.



9.

CAUTION:

Make sure to protect the paintwork.

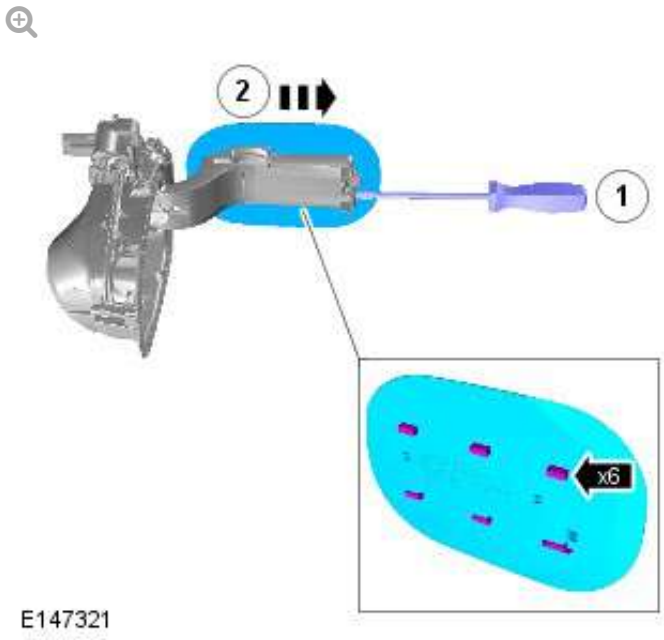


10. **CAUTION:**

> Make sure to protect the paintwork.

NOTE:

> Do not disassemble further if the component is removed for access only.



INSTALLATION

1. To install, reverse the removal procedure.

BODY CLOSURES

FUEL FILLER DOOR (G1509218)

REMOVAL AND INSTALLATION

REMOVAL

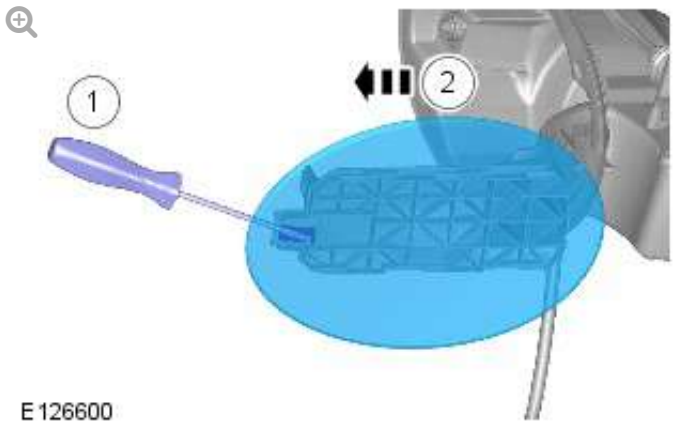
CAUTION:

Make sure to protect the paintwork.

NOTE:

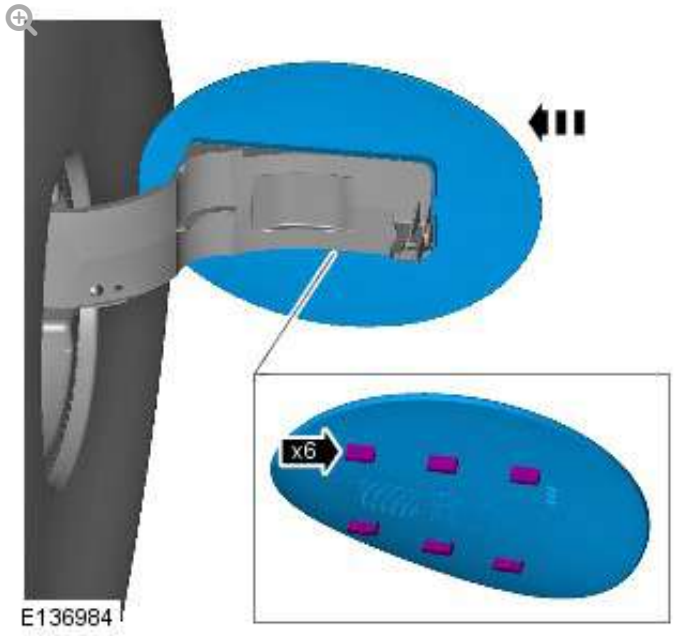
Some variation in the illustrations may occur, but the essential information is always correct.

1.



INSTALLATION

1.



BODY CLOSURES

LIFTGATE (G1509219)

REMOVAL AND INSTALLATION

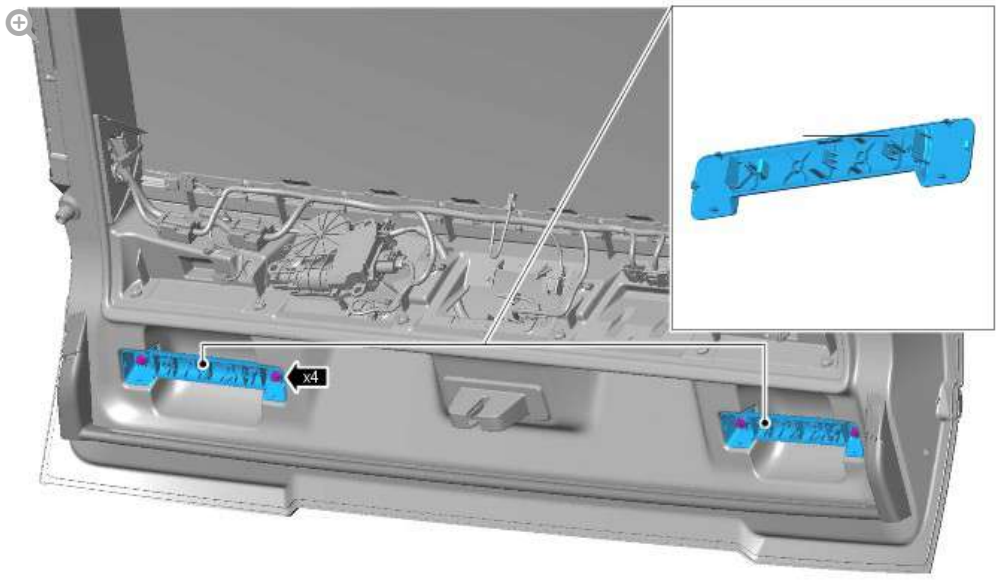
REMOVAL

CAUTION:

Make sure to protect the paintwork.

1. Disconnect the battery ground cable.
   Refer to: Specifications (414-00 Battery and Charging System - General Information, Specifications).
2. Refer to: Liftgate Window Glass (501-11 Glass, Frames and Mechanisms, Removal and Installation).
3. Refer to: Power Liftgate Switch (501-03 Body Closures, Removal and Installation).
4. Refer to: Headliner (501-05 Interior Trim and Ornamentation, Removal and Installation).

5.



E146794

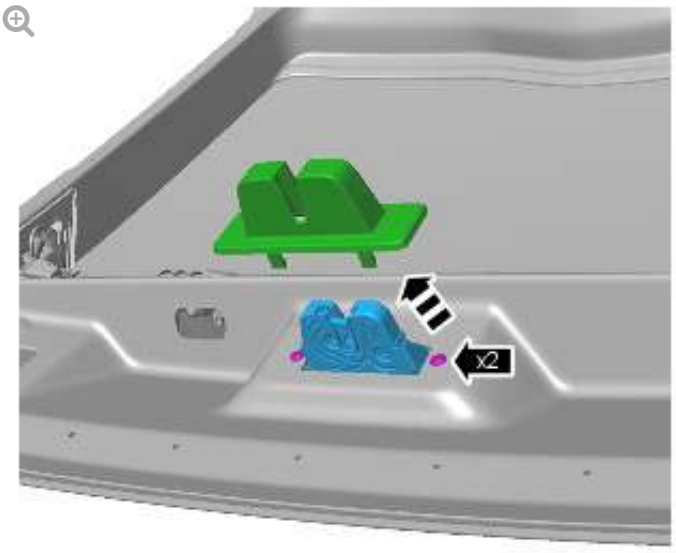
6.

E145984

7.

E146800

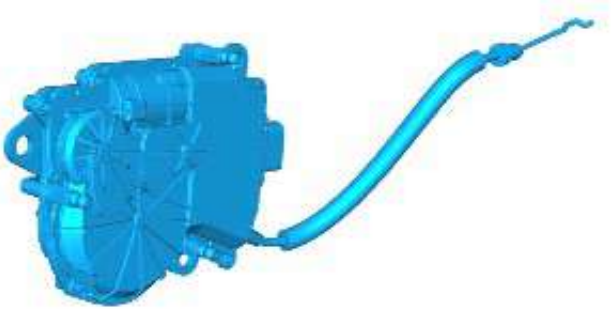
8.

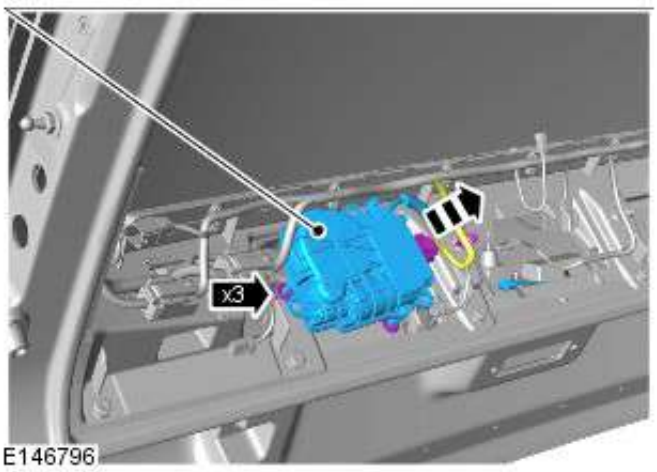


E146799

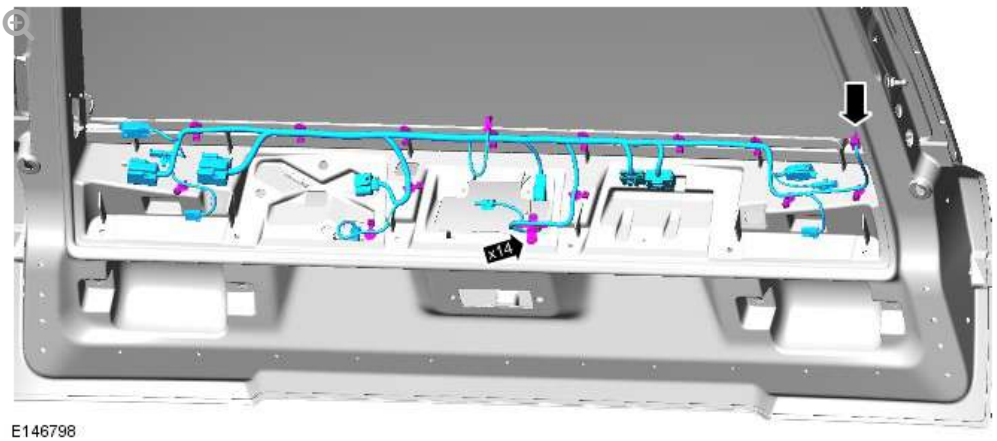
Torque: **2.5 Nm**

9.





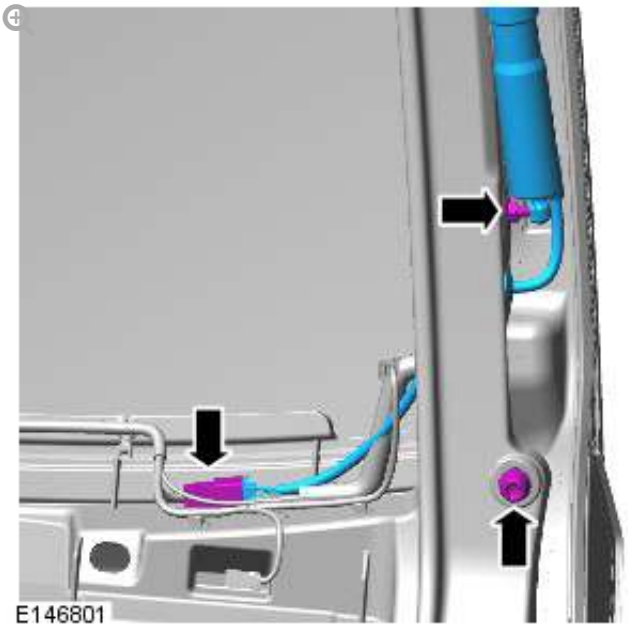
10.



11.

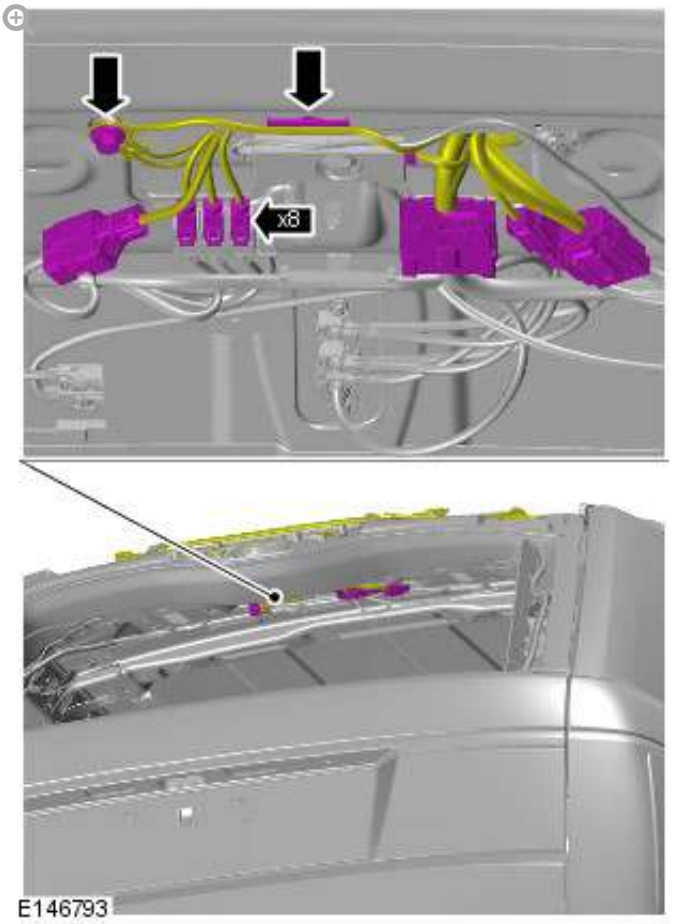
NOTE:

Repeat for both sides.

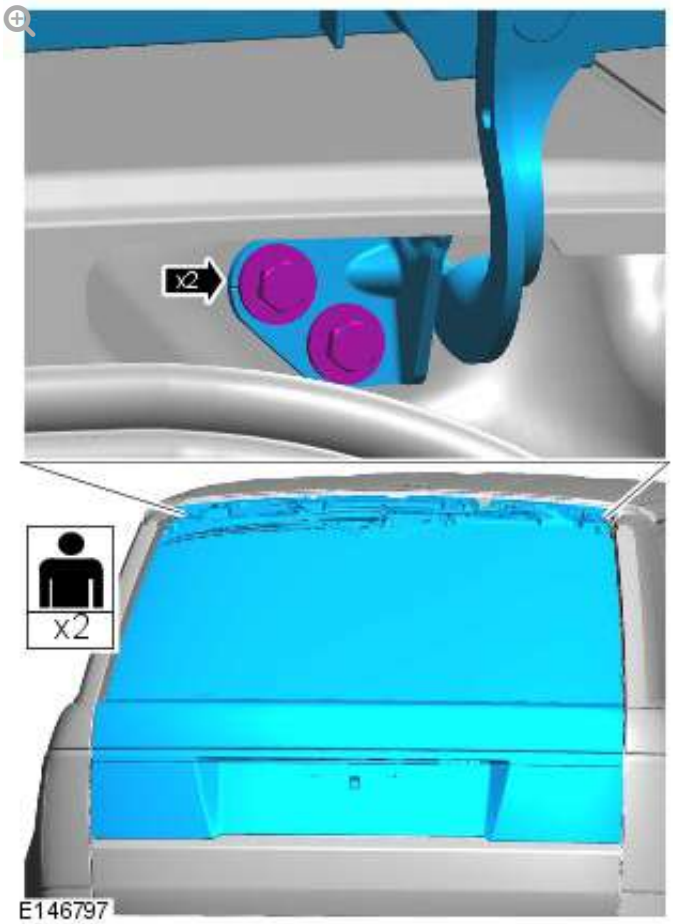


Torque: **24 Nm**

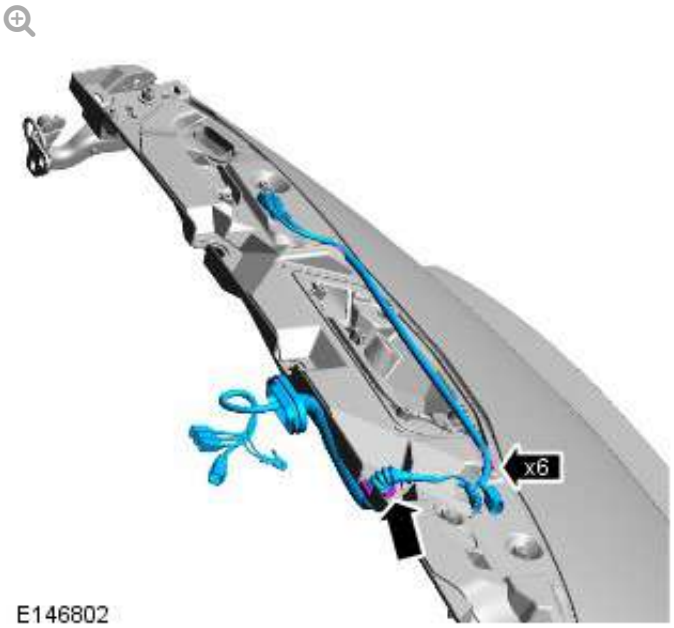
12.



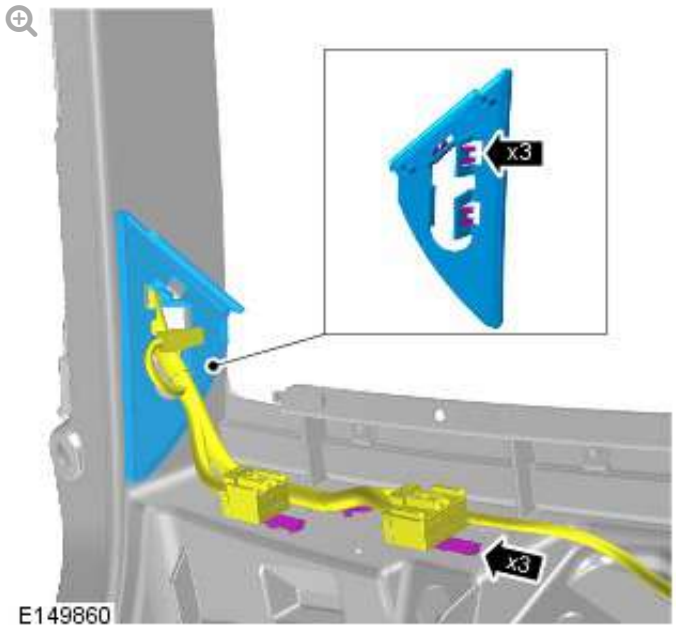
13.



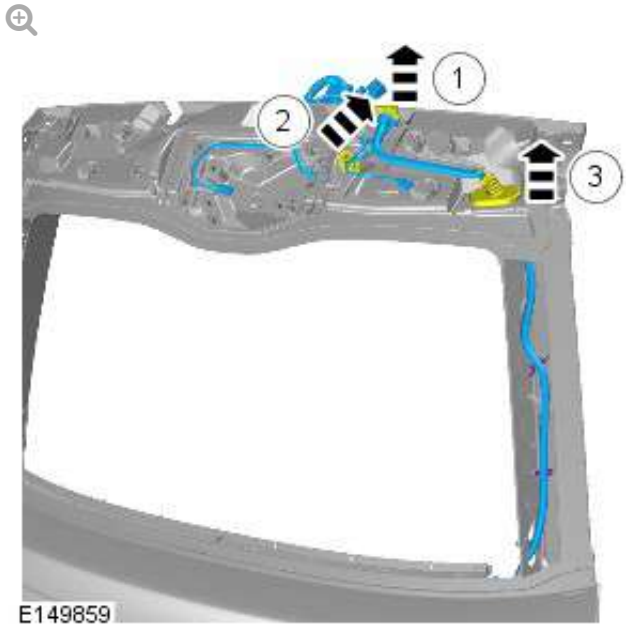
14.



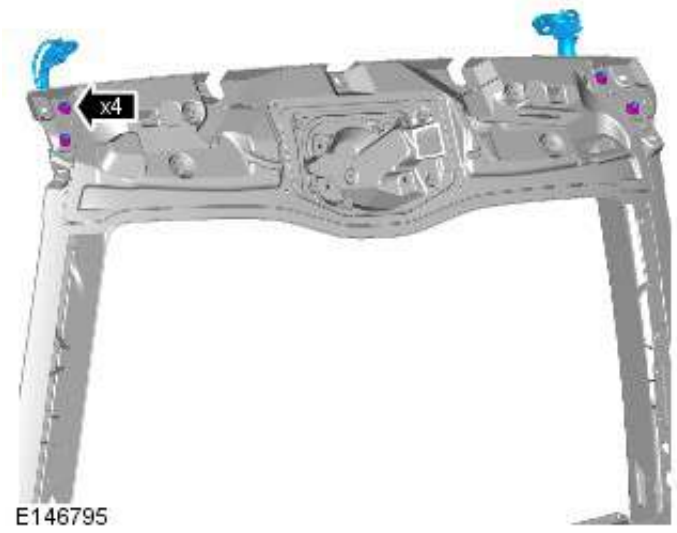
15.



16.



17.

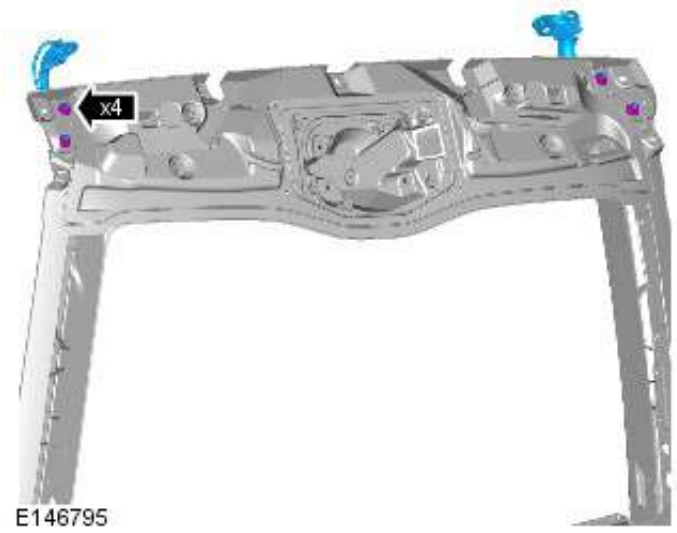


INSTALLATION

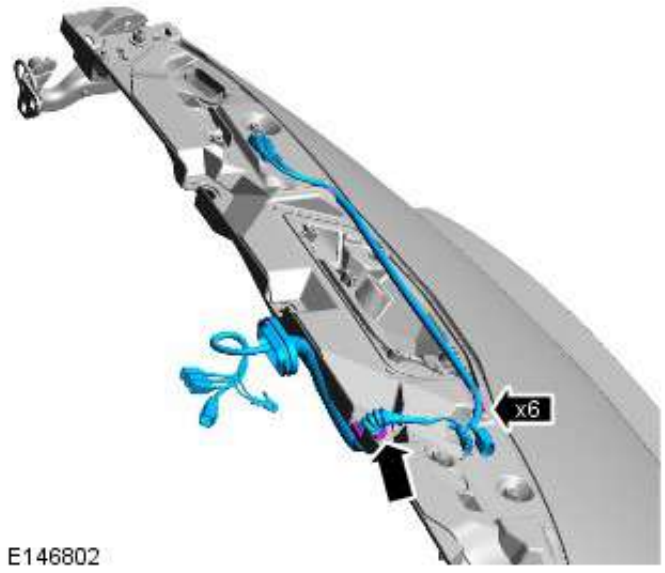
1.

CAUTION:

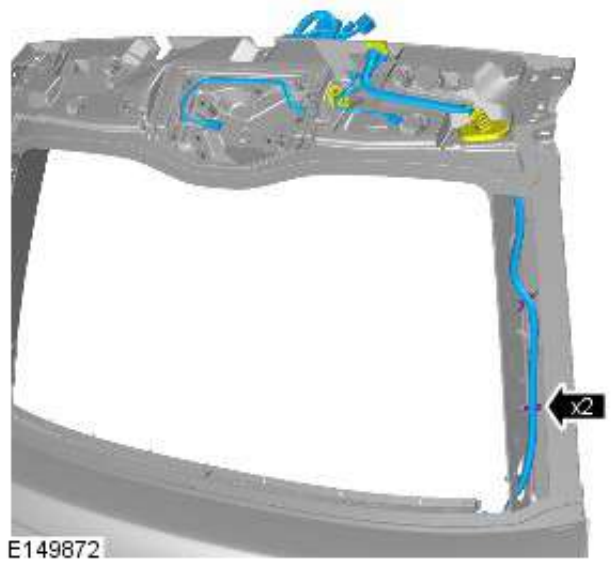
Do not tighten at this stage.



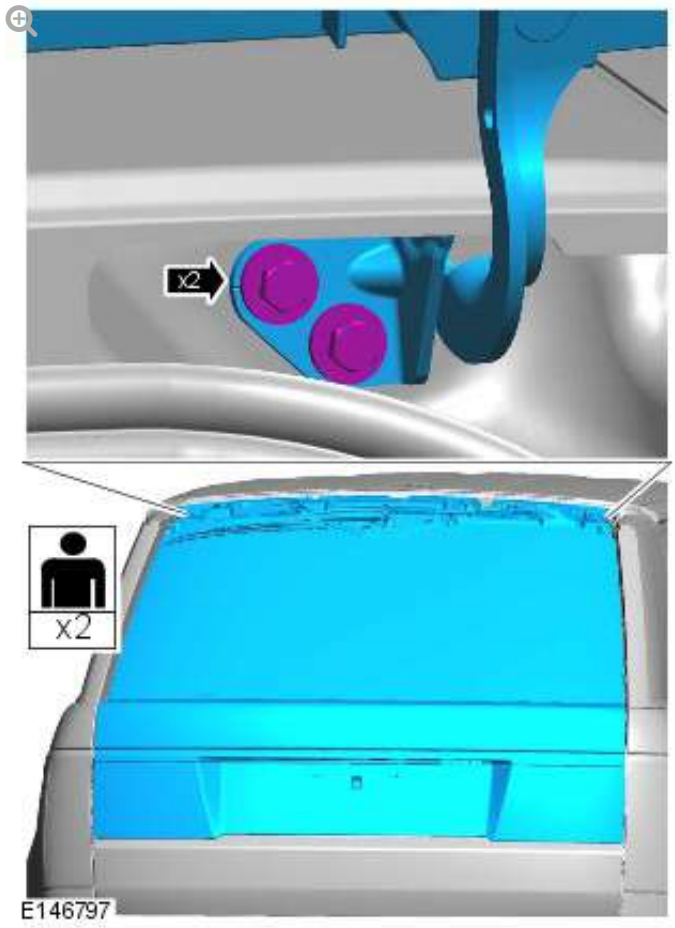
2.



3.



4.

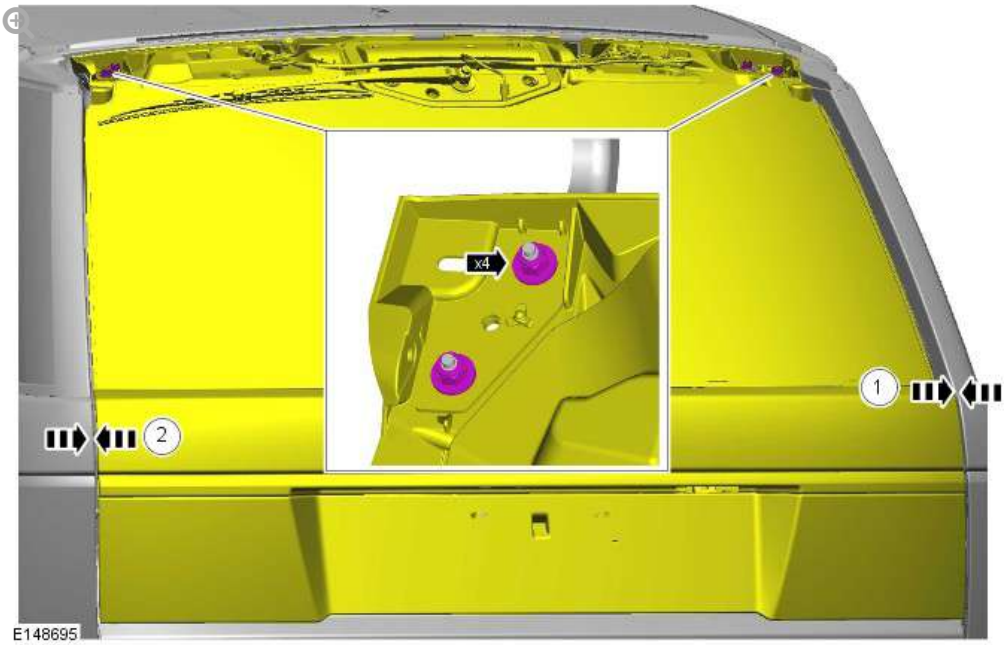


Torque: **25 Nm**

5.

NOTES:

- Make sure that the tailgate is flush with the fender at point 1.
- Make sure that the tailgate is recessed by 1.5 mm in relation to the fender, at point 2.



1. Tighten the liftgate hinge bolts.
   Torque: **24 Nm**

6.

NOTE:

The following steps should be completed if installing a new tailgate

Clean the area prior to installation of the new Tailgate Badge.

7.

NOTE:

The new Tailgate Badge is supplied on a cassette which is highlighted in blue on the illustration.

E188516

Install the Tailgate Badges to the dimensions shown in the illustration.

8.

NOTE:

The new Tailgate Badge is supplied on a cassette which is highlighted in blue on the illustration.

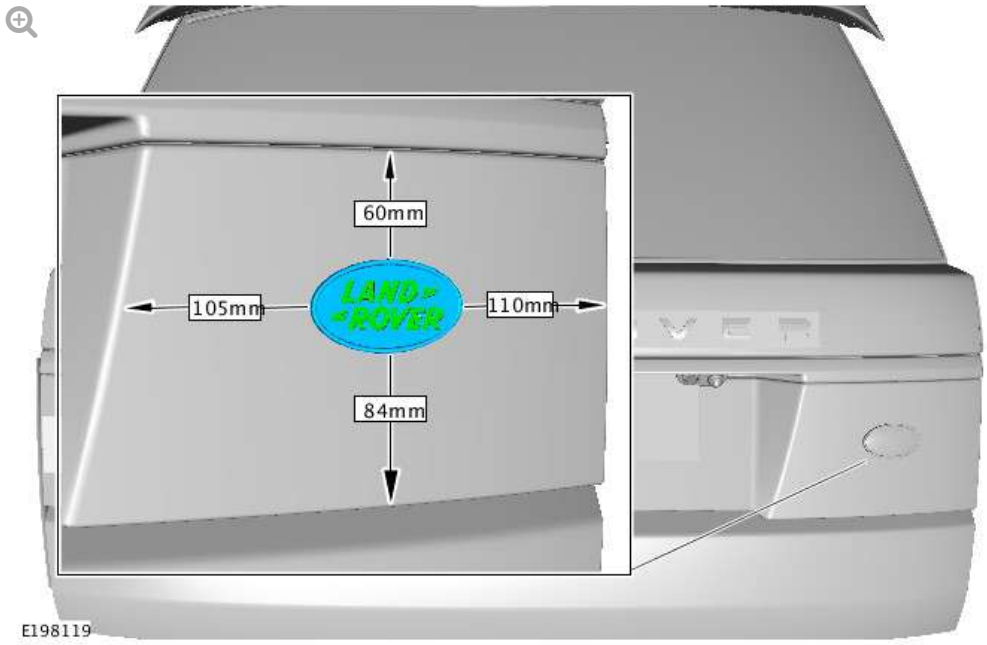
E198120

Install the Tailgate Badges to the dimensions shown in the

illustration.

9. **NOTE:**

> The new Tailgate Badge is supplied on a cassette which is highlighted in blue on the illustration.



Install the Tailgate Badges to the dimensions shown in the illustration.

10. To install, reverse the removal procedure.

BODY CLOSURES

LIFTGATE HINGE (G1557514)

REMOVAL AND INSTALLATION

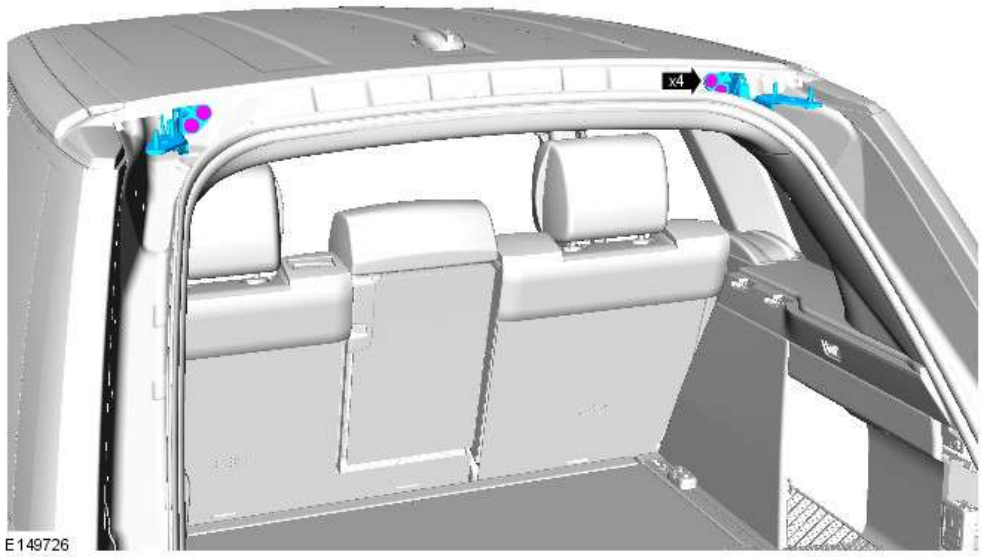
REMOVAL

NOTES:

- Removal steps in this procedure may contain installation details.
- Some variation in the illustrations may occur, but the essential information is always correct.

1. Disconnect the battery ground cable.
   Refer to: Specifications (414-00 Battery and Charging System - General Information, Specifications).
2. Refer to: Liftgate (501-03 Body Closures, Removal and Installation).

3.



Torque: **24 Nm**

INSTALLATION

1. To install, reverse the removal procedure.

2. Refer to: Tailgate Alignment (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, General Procedures).

BODY CLOSURES

POWER LIFTGATE SWITCH

(G1509220)

REMOVAL AND INSTALLATION

REMOVAL

NOTE:

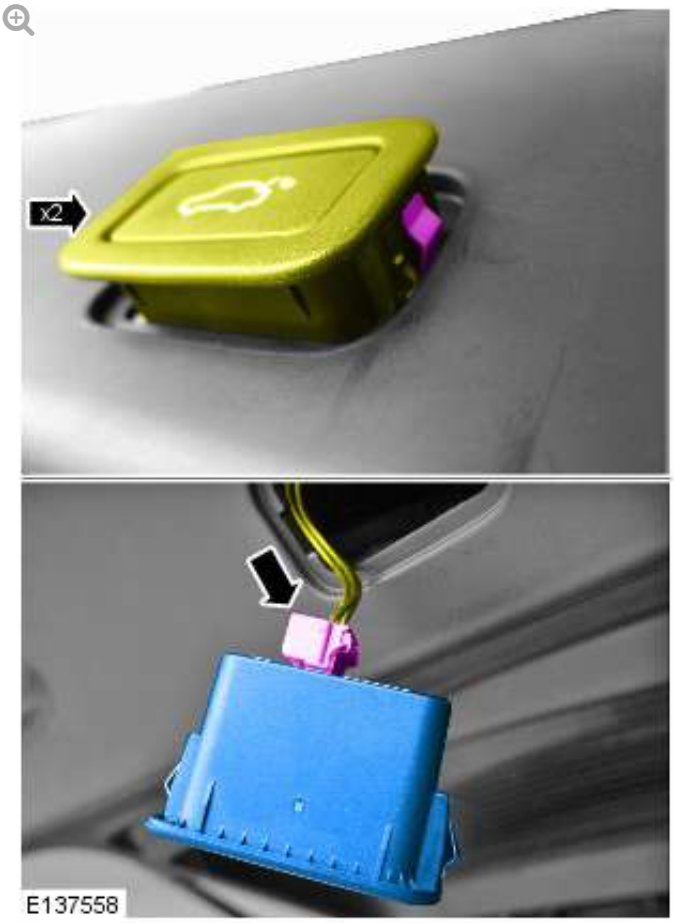
Removal steps in this procedure may contain installation details.

1.

2.

CAUTION:

Make sure to protect the paintwork.



INSTALLATION

1. To install, reverse the removal procedure.

BODY CLOSURES

REAR DOOR – STANDARD WHEEL BASE (G1509222)

REMOVAL AND INSTALLATION

REMOVAL

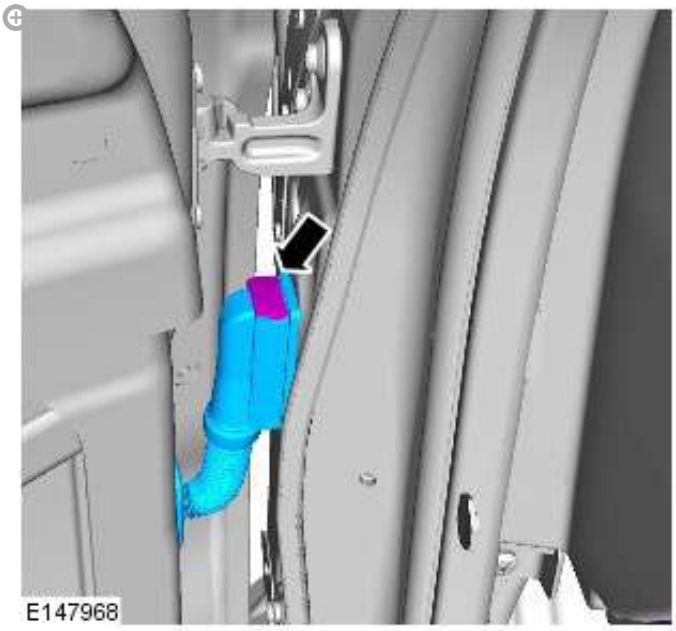
NOTES:

- Some variation in the illustrations may occur, but the essential information is always correct.
- Removal steps in this procedure may contain installation details.
- Right hand shown, left hand similar.

1. Disconnect the battery ground cable.
   Refer to: Specifications (414-01 Battery, Mounting and Cables, Specifications).

2. **NOTE:**

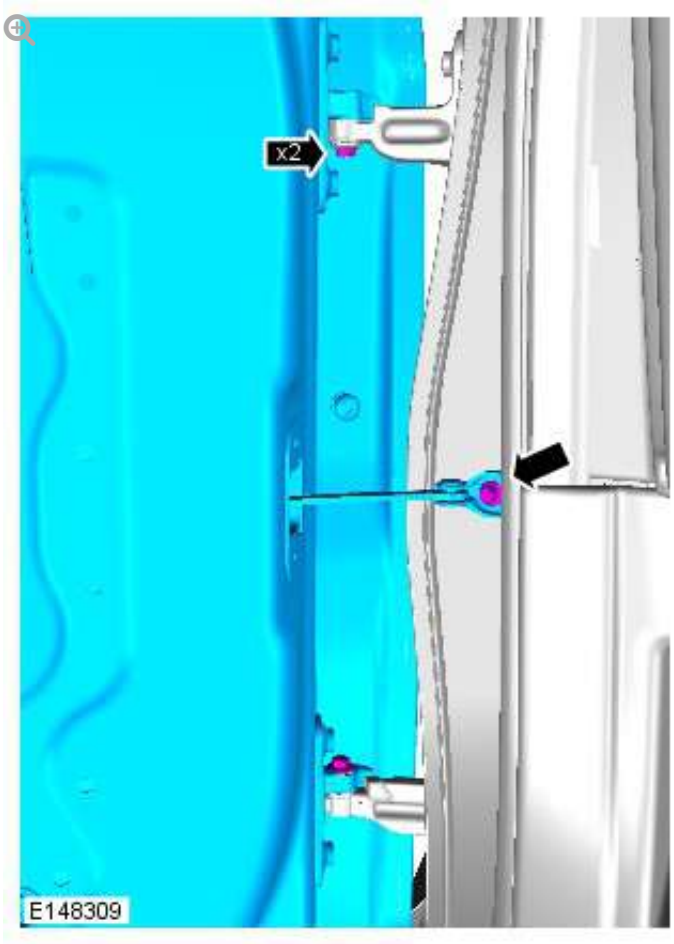
   Left hand shown, Right hand similar.



3.

NOTES:

- This step requires the aid of another technician
- Left hand shown, Right hand similar.



Torque:

Check arm bolt **24 Nm**

Hinge bolt **13 Nm**

NOTE:

Do not disassemble further if the component is remove for access only.

4. Refer to: Rear Door Fixed Window Glass - Long Wheel Base (501-11 Glass, Frames and Mechanisms, Removal and Installation).

5. Refer to: Rear Door Window Glass - Long Wheel Base (501-11 Glass, Frames and Mechanisms, Removal and Installation).

6. Refer to: Rear Door Window Regulator Motor - Long Wheel Base (501-11 Glass, Frames and Mechanisms, Removal and Installation).

7. Refer to: Rear Door Latch - Long Wheel Base (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

8. Refer to: Exterior Rear Door Handle - Long Wheel Base (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

9. Refer to: Rear Door Check Arm (501-03 Body Closures, Removal and Installation).

10. **NOTE:**

Left hand shown, Right hand similar.

11.

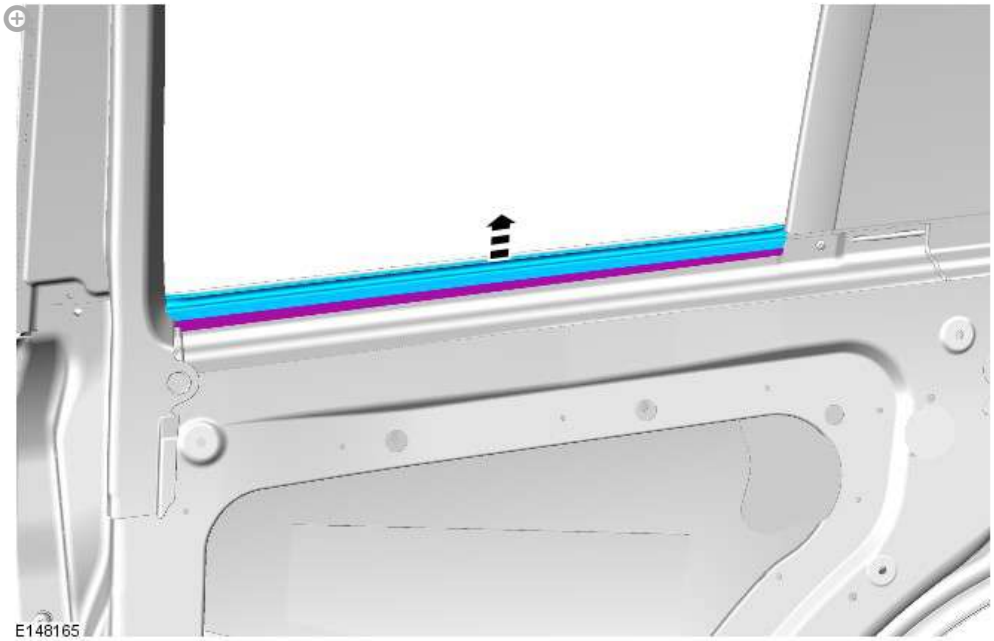
CAUTION:

Protect the surrounding paintwork to avoid damage.

12.

CAUTION:

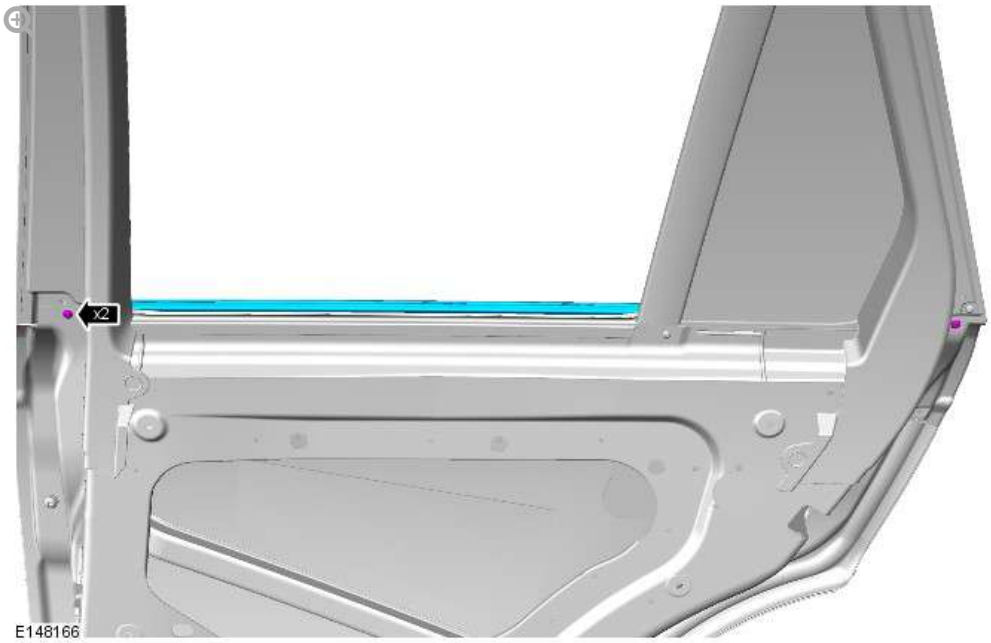
Protect the surrounding paintwork to avoid damage.



13.

CAUTION:

Protect the surrounding paintwork to avoid damage.

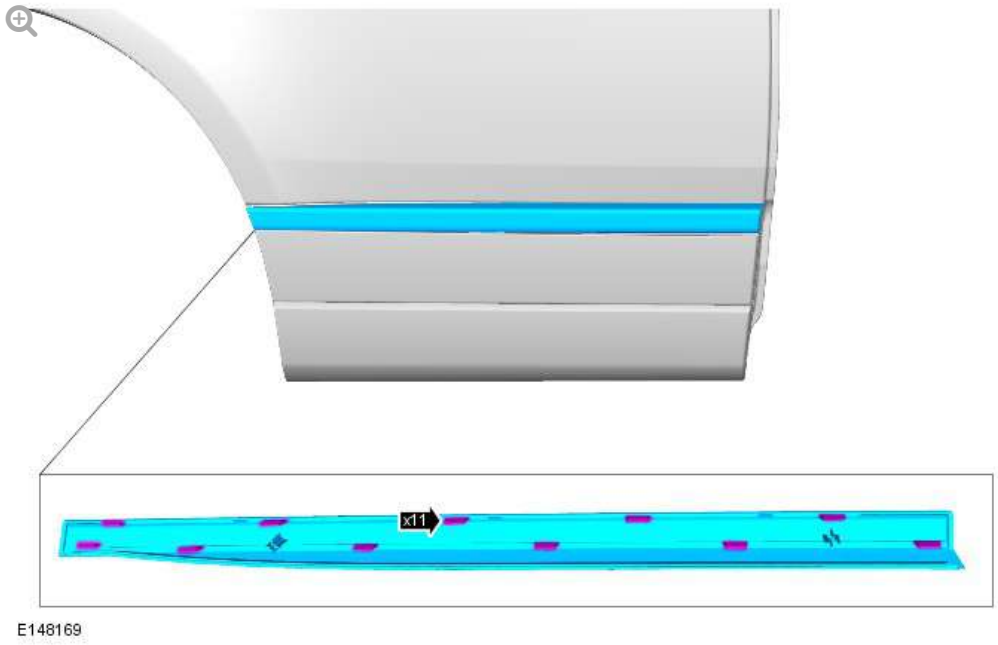


Torque: **1.2 Nm**

14.

CAUTION:

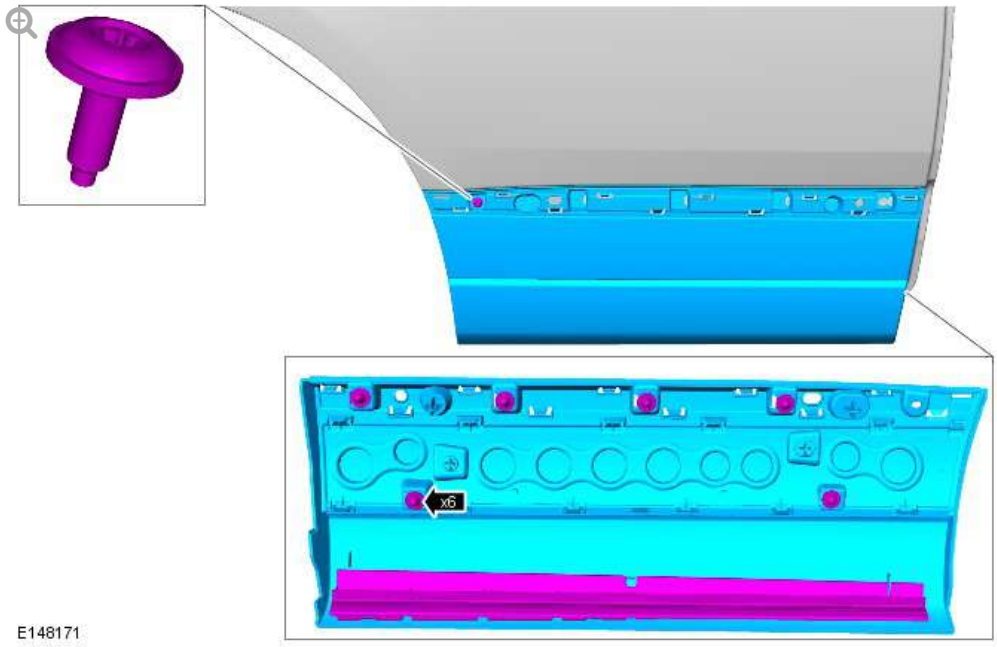
Protect the surrounding paintwork to avoid damage.



15.

CAUTION:

Protect the surrounding paintwork to avoid damage.



Torque: **1.2 Nm**

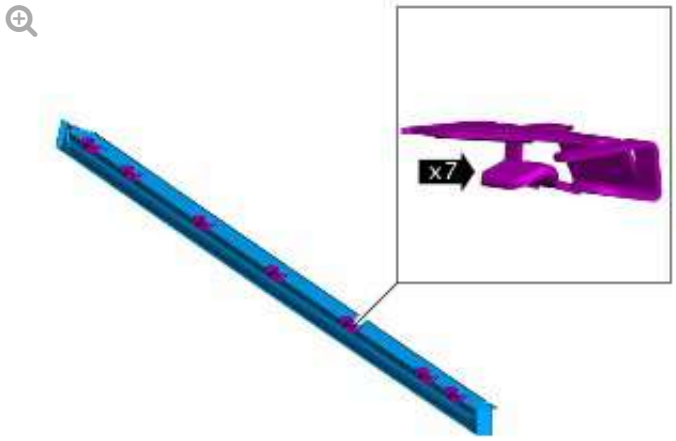
16.

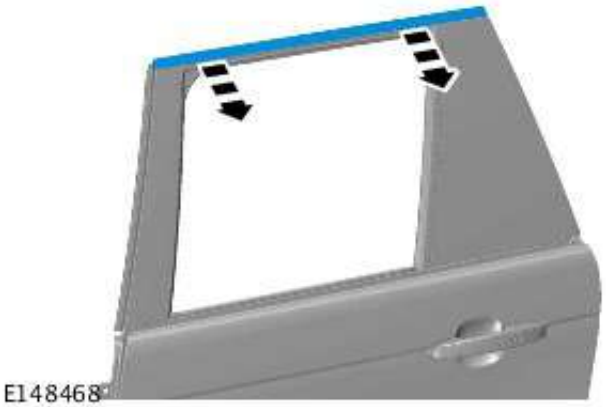
CAUTION:

Protect the surrounding paintwork to avoid damage.

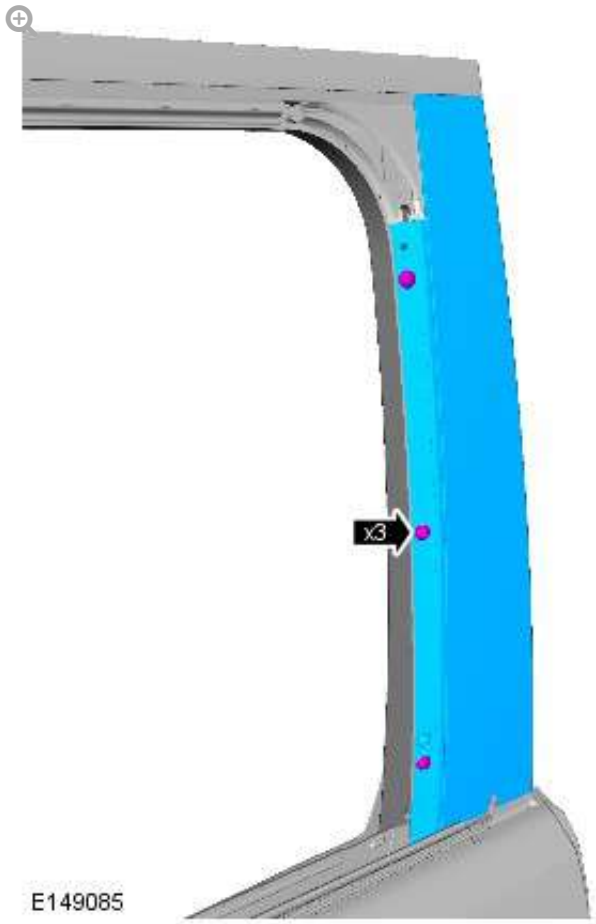
NOTE:

Left hand shown, Right hand similar.


x7

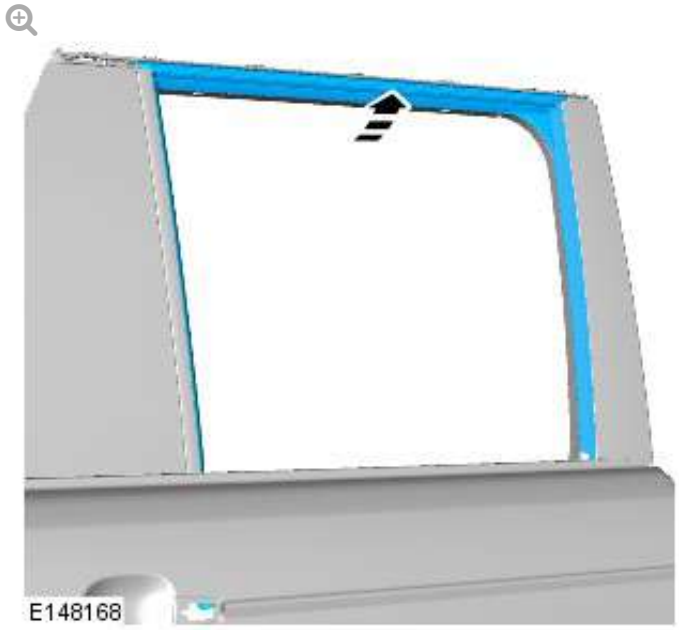

E148468

17.

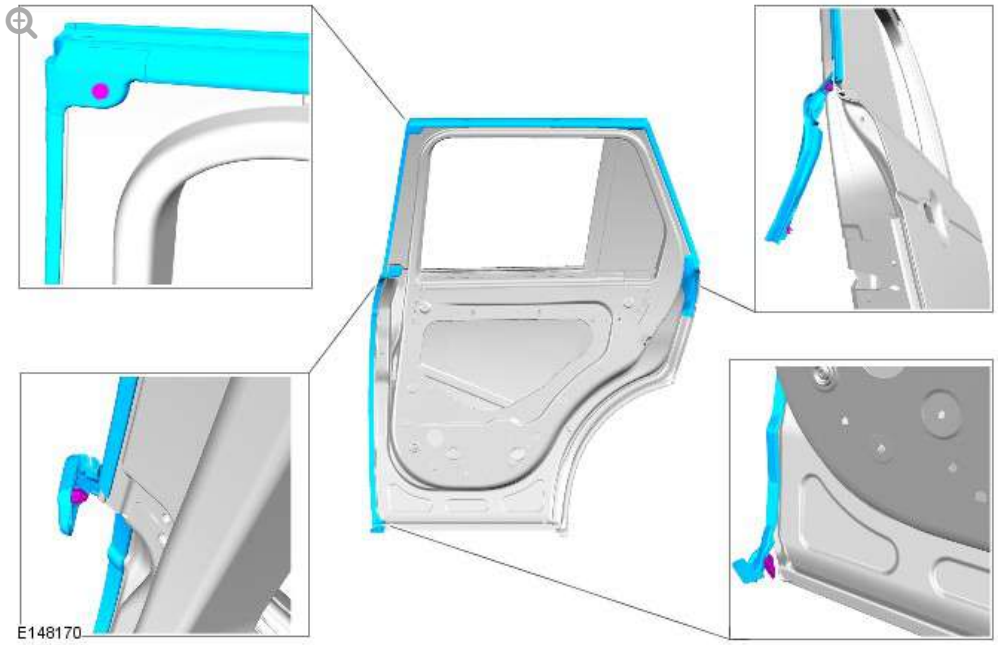


Torque: **1.2 Nm**

18.



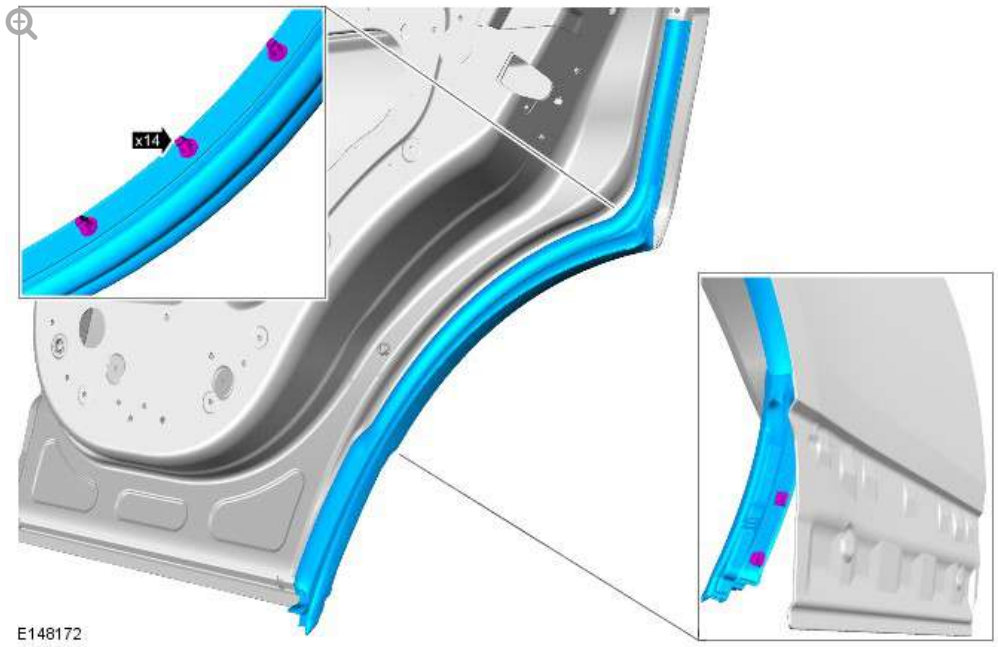
19.



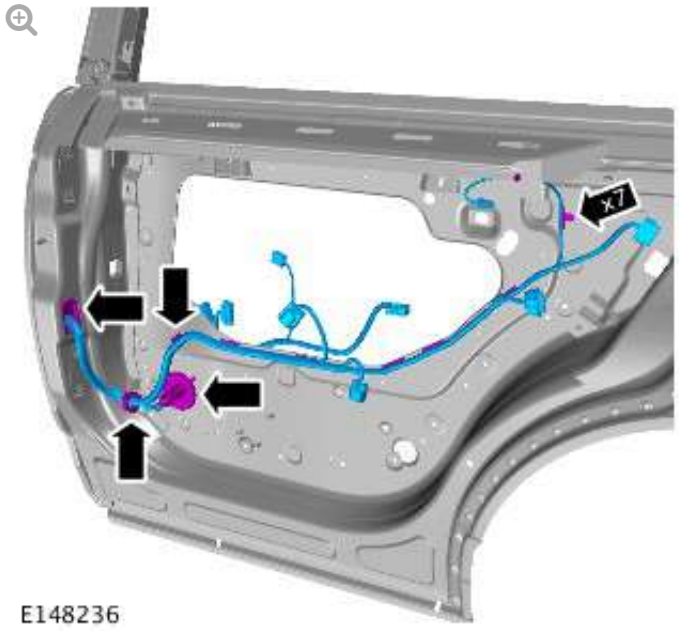
20.

CAUTION:

Protect the surrounding paintwork to avoid damage.



21.

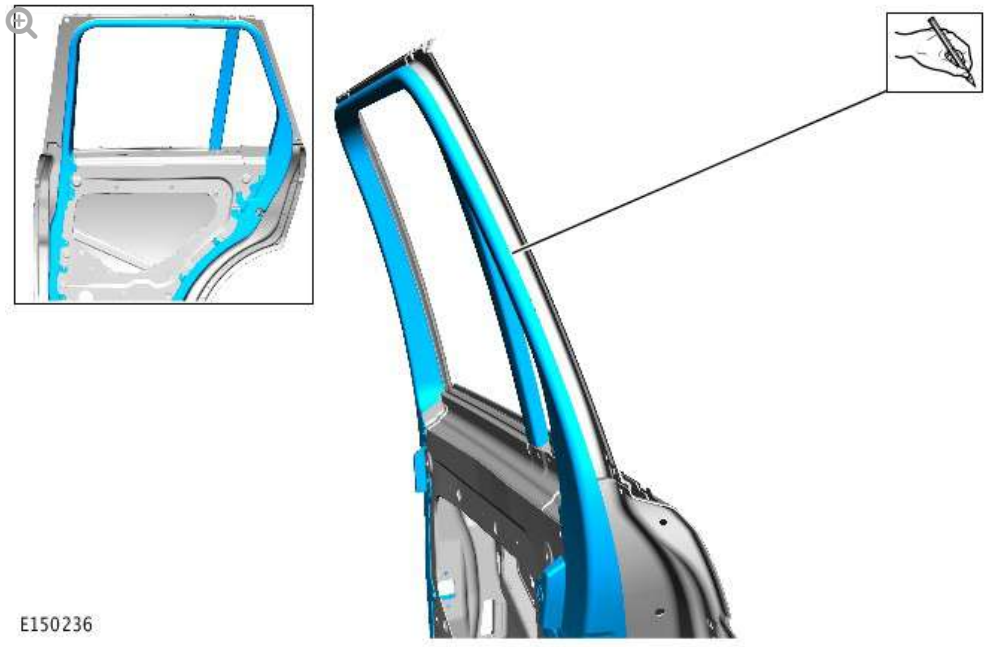


NOTE:

Do not disassemble further if the component is remove for access only.

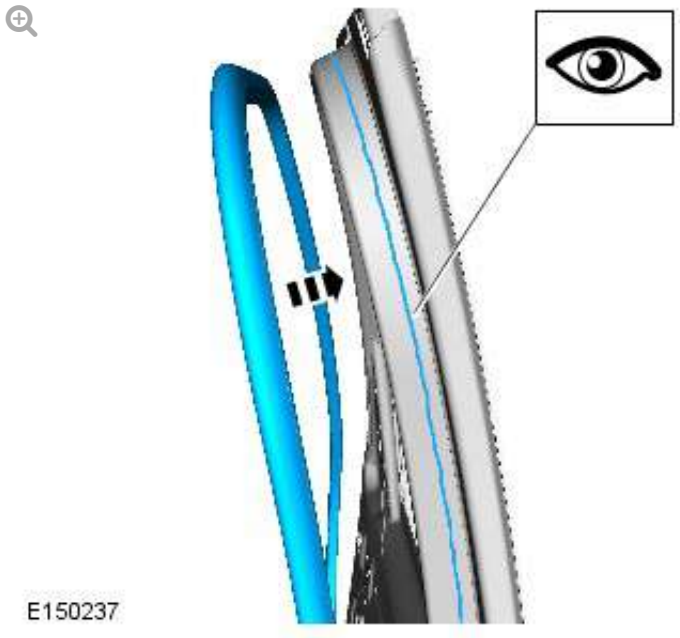
INSTALLATION

1.



2. **NOTES:**

- Using a suitable cleaning agent, Clean the door panel in the area of the seal prior to installation.
- Install a new seal.



3. **NOTE:**

Make sure all components are clean and free from foreign material.

To install, reverse the removal procedure.

4. **NOTE:**

Left hand shown, Right hand similar.

If a new door is installed the bolts shown should be replaced with plain shank bolts to allow for correct door alignment.
Torque: **35 Nm**

5.

NOTE:

Check the gap and profiles of the door are correct.

Refer to: Body and Frame (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation).

BODY CLOSURES

REAR DOOR – LONG WHEEL BASE (G1706875)

REMOVAL AND INSTALLATION

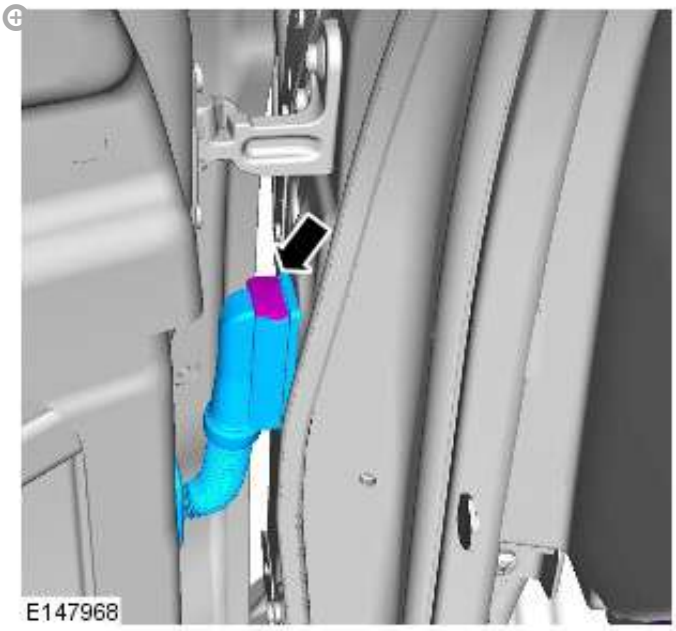
REMOVAL

NOTES:

- Some variation in the illustrations may occur, but the essential information is always correct.
- Removal steps in this procedure may contain installation details.

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

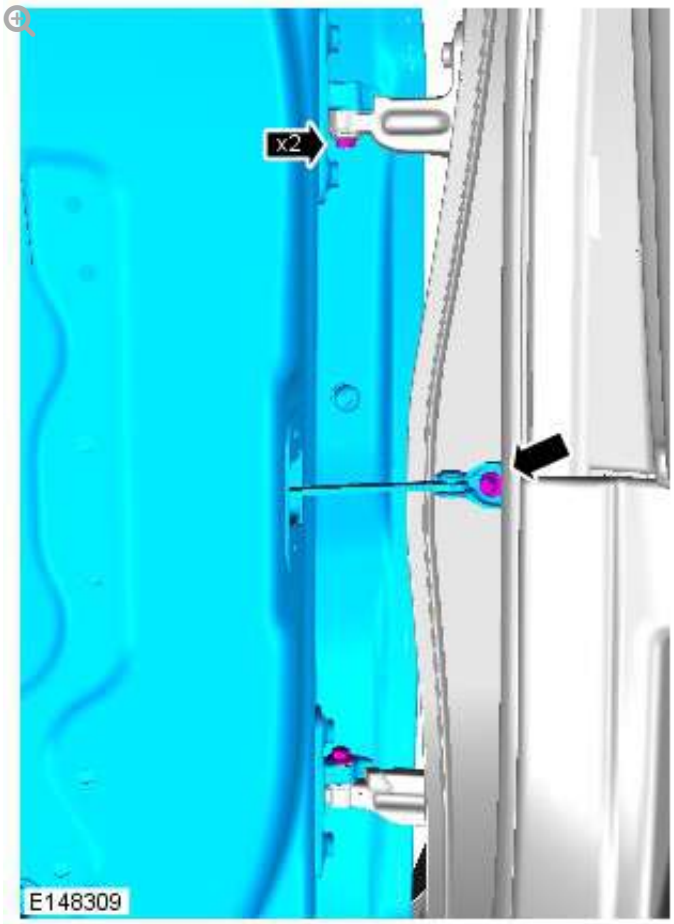
2.



3.

NOTE:

This step requires the aid of another technician.



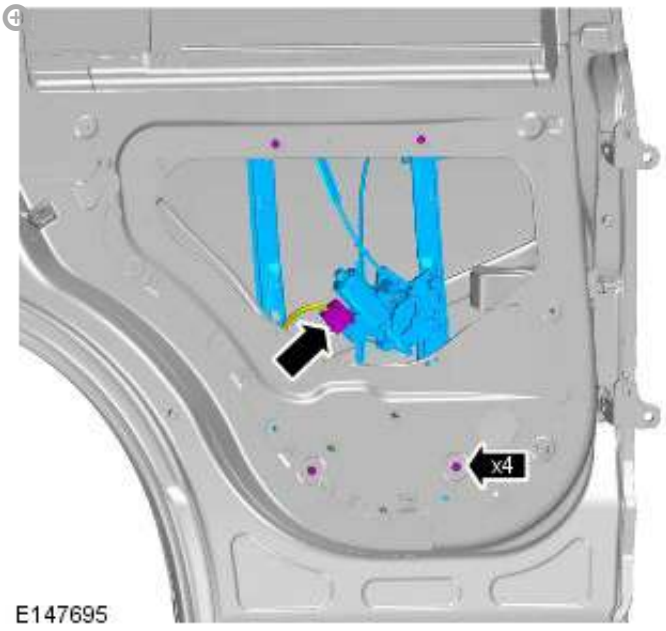
Torque:

M8 **24 Nm**

M7 **13 Nm**

4. Refer to: Rear Door Window Glass - Long Wheel Base (501-11 Glass, Frames and Mechanisms, Removal and Installation).

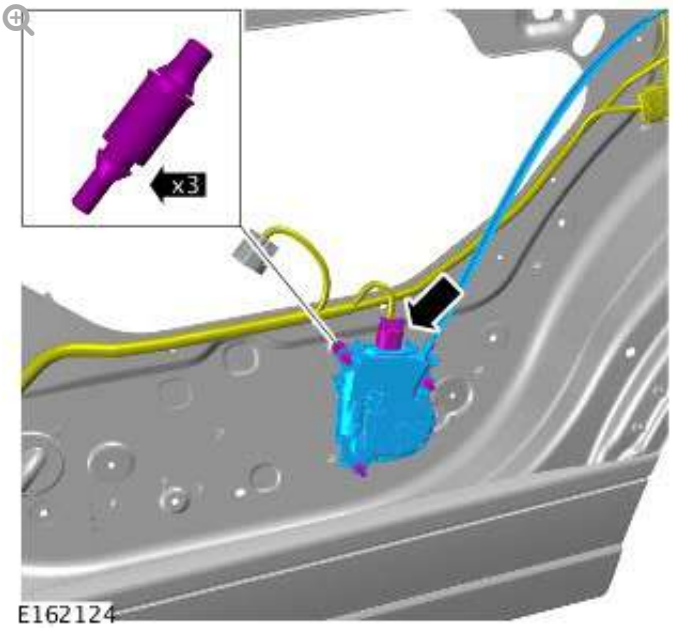
5.



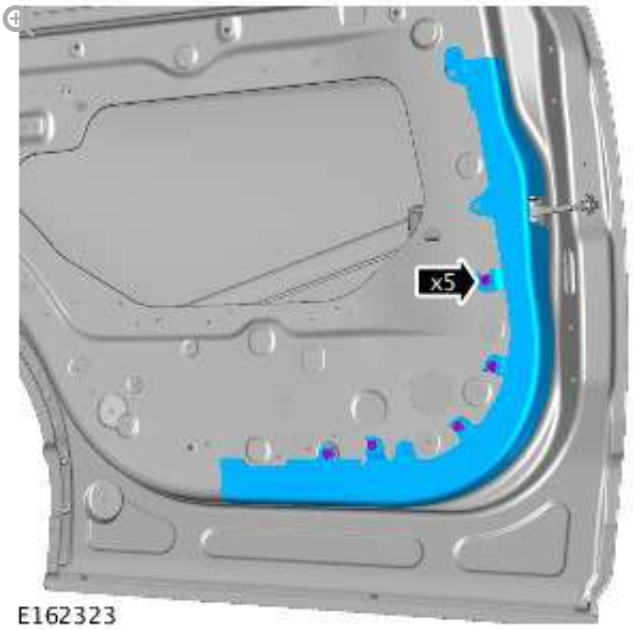
Torque: **8 Nm**

6. Refer to: Rear Door Latch - Long Wheel Base (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

7.

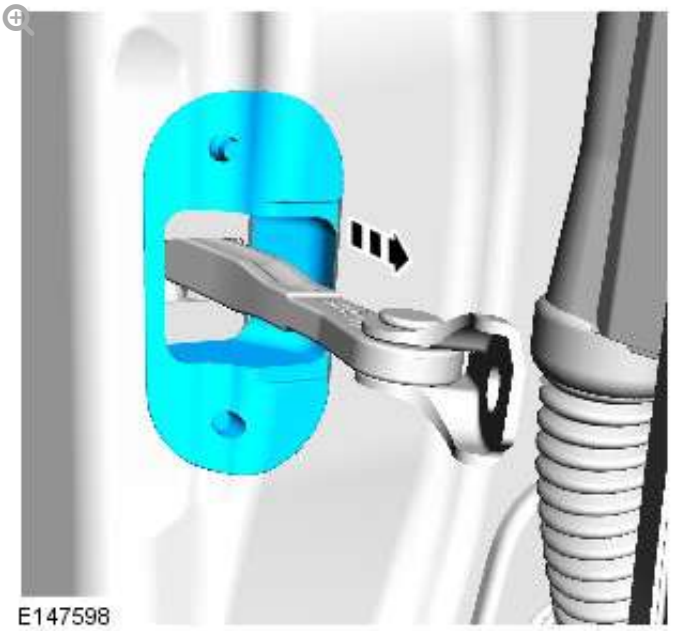


8.



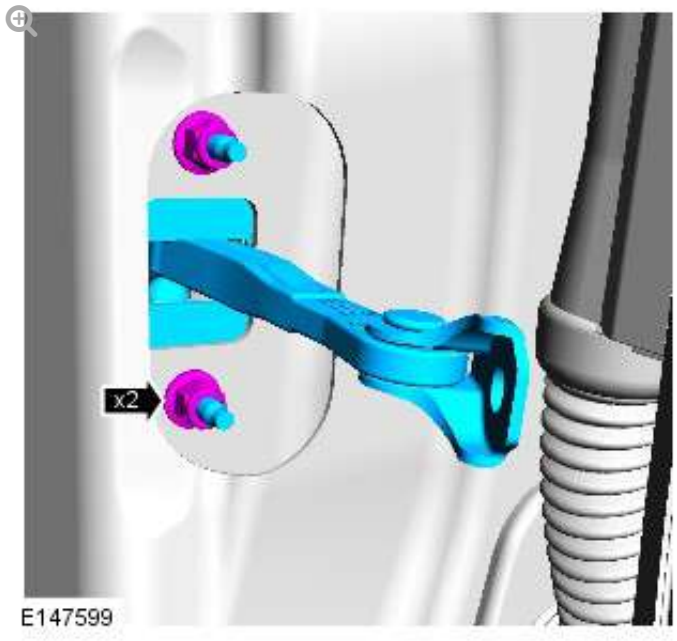
E162323

9.



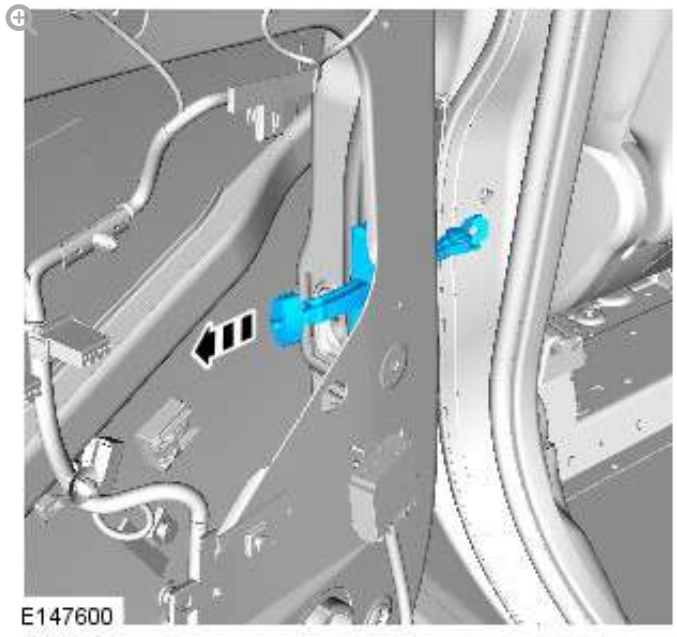
E147598

10.

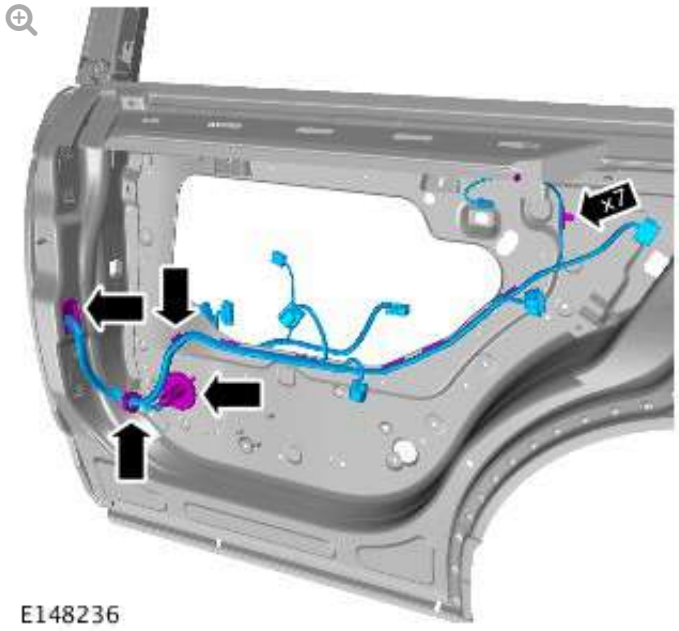


Torque: **11 Nm**

11.



12.



13.

CAUTION:

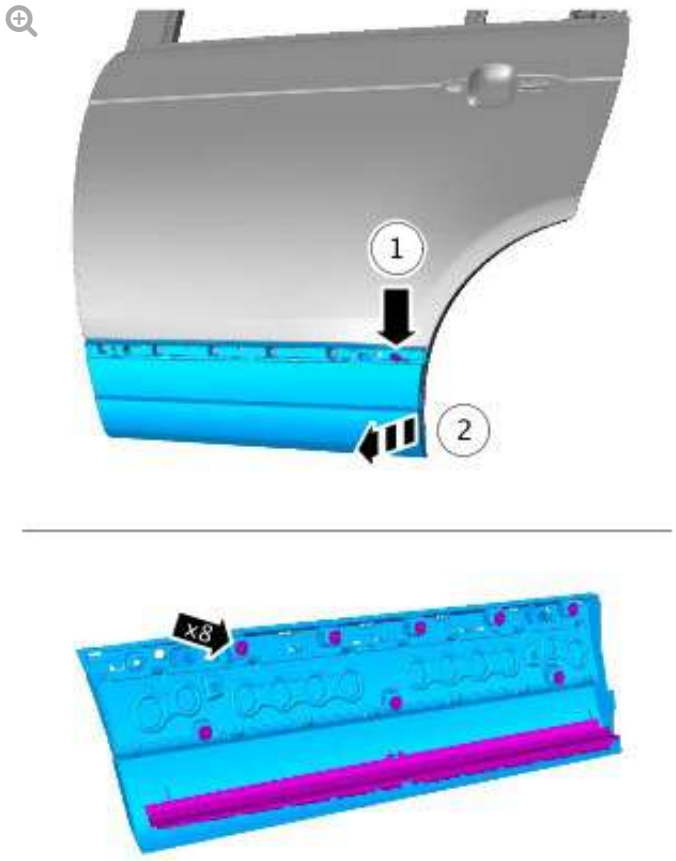
Protect the surrounding paintwork to avoid damage.

E162125

14.

CAUTION:

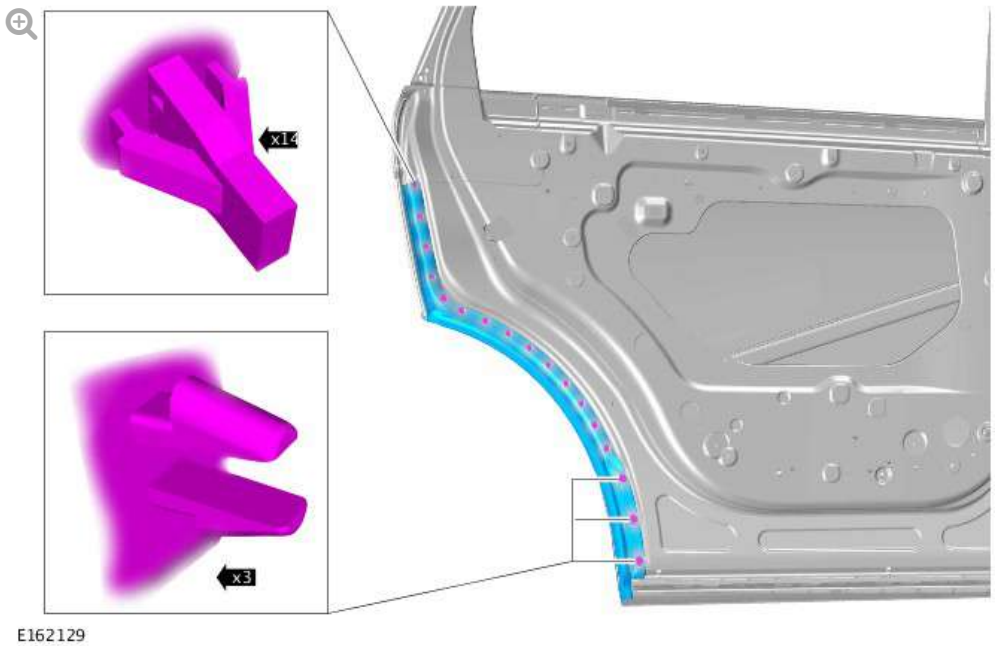
Protect the surrounding paintwork to avoid damage.



E162123

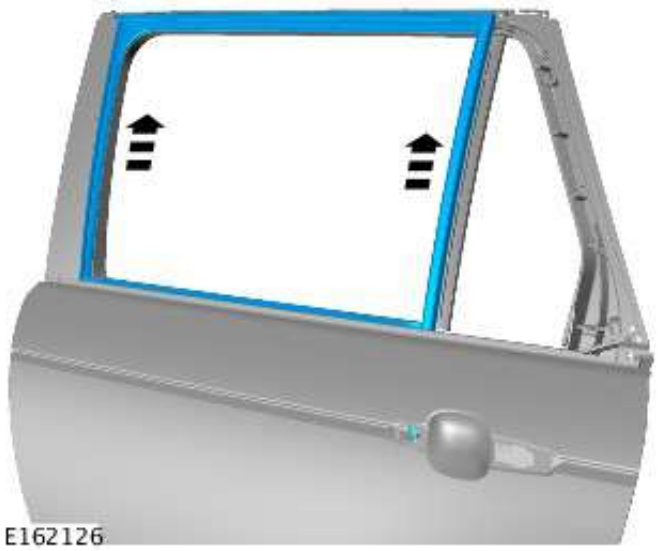
Torque: **1.2 Nm**

15.



E162129

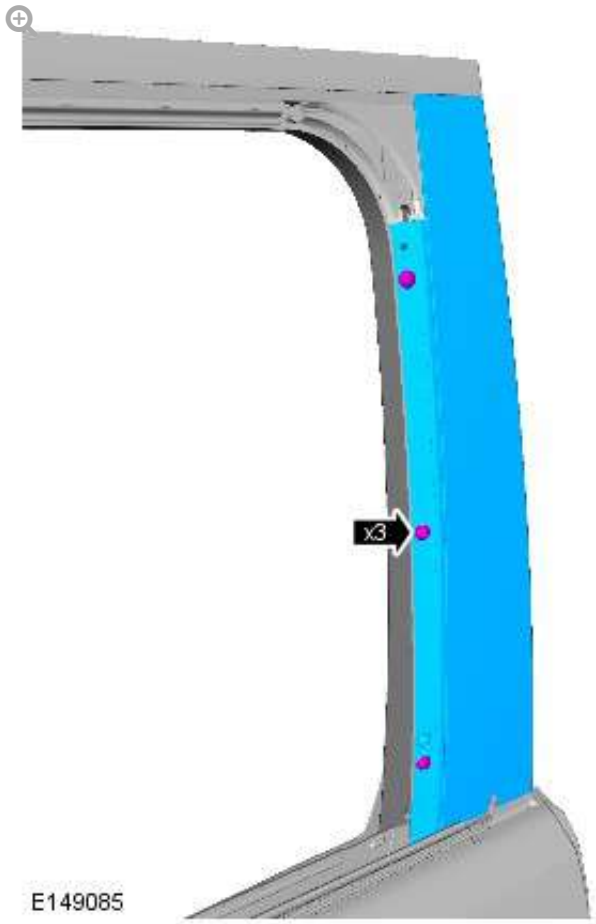
16.



17.

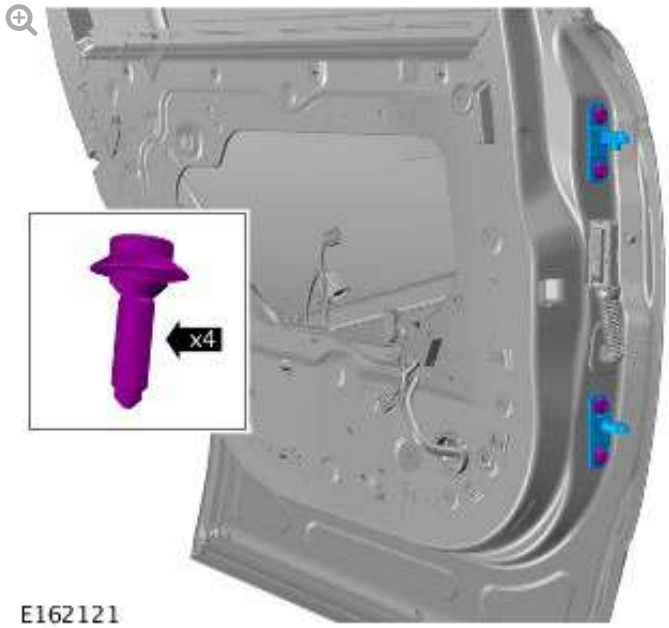
Torque: **3.2 Nm**

18.



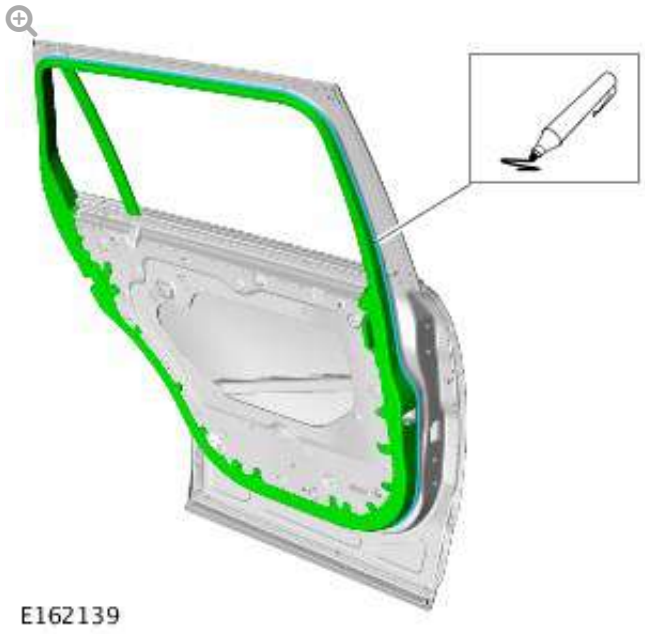
Torque: **1.2 Nm**

19.



INSTALLATION

1.



1. Position the door inner finisher for access.
2. Mark the position of the inner edge to aid the door seal installation.
3. Remove the door inner finisher.

2.

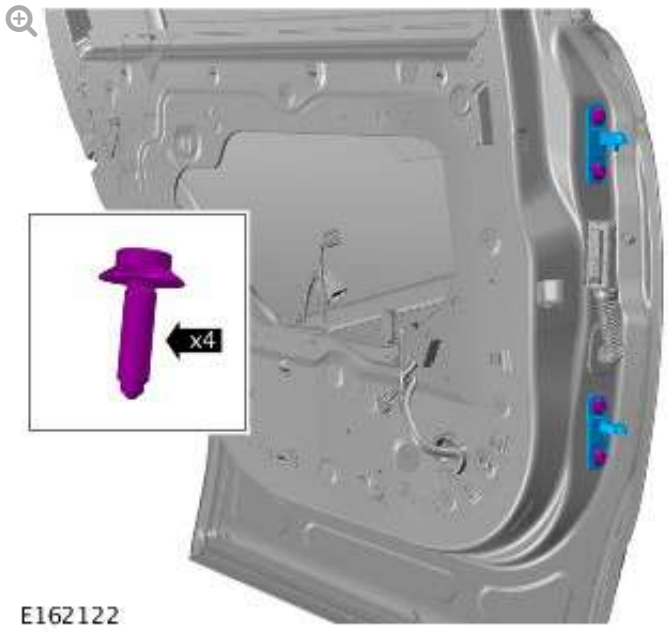
CAUTIONS:

- Make sure all mating faces are clean and dry before applying sealant.
- Make sure that the installation marks are aligned.
- Install new seal.

3.

NOTE:

If a new door is to be installed the hinge bolts should be replaced with plain shank bolts to allow the correct door alignment.



Torque: **35 Nm**

4. To install, reverse the removal procedure.

5. Check the gap and profiles of the door are correct.
   Refer to: Body and Frame (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation).

BODY CLOSURES

REAR DOOR CHECK ARM

(G1551485)

REMOVAL AND INSTALLATION

REMOVAL

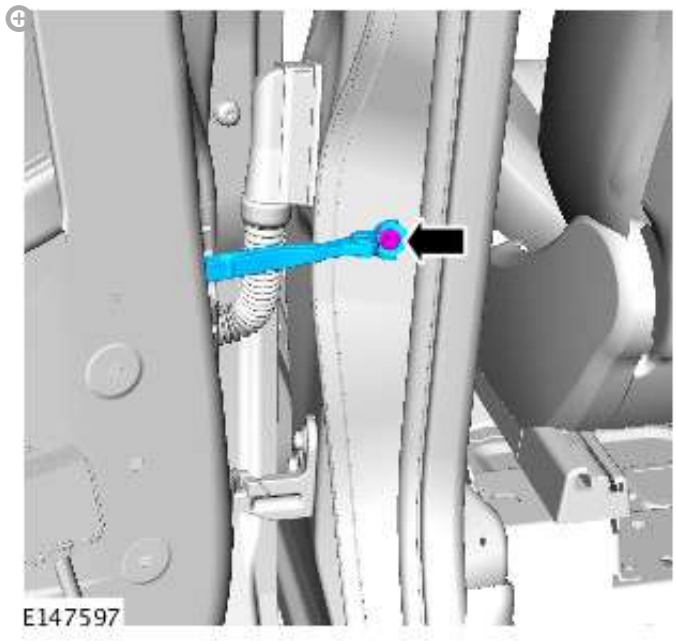
NOTE:

Left hand shown, right hand similar.

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

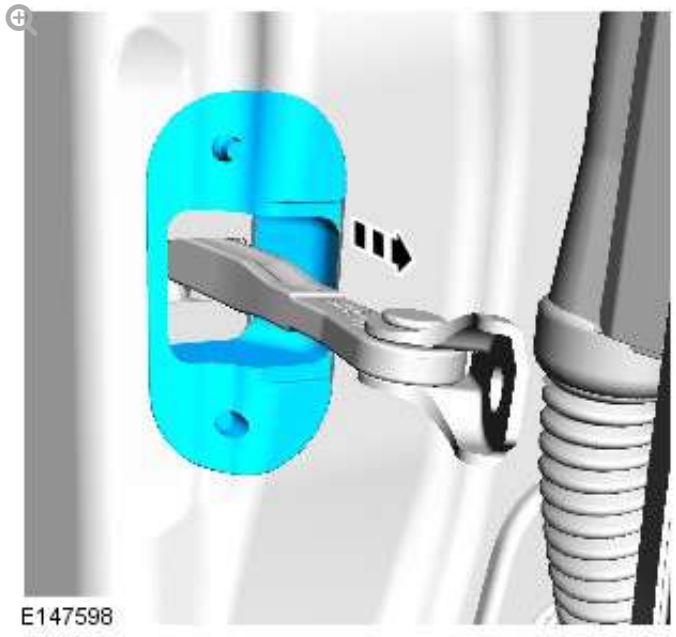
2. Refer to: Rear Door Speaker (415-01 Information and Entertainment System, Removal and Installation).

3.

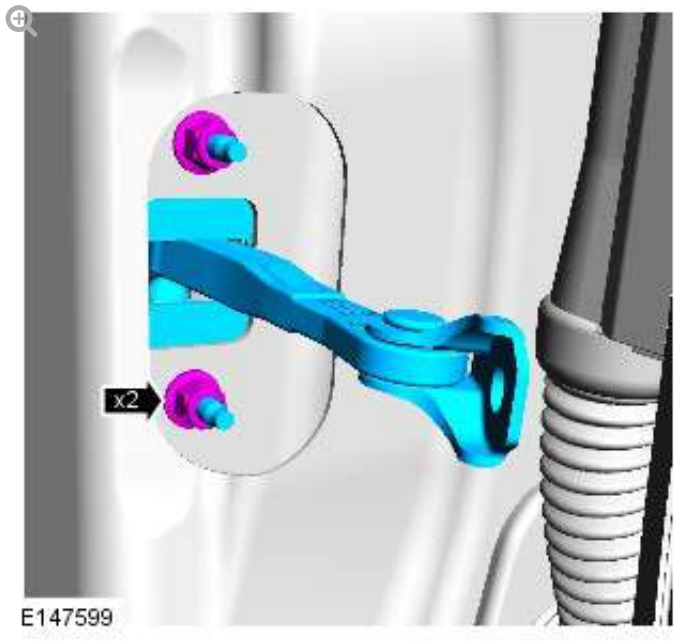


Torque: **25 Nm**

4.

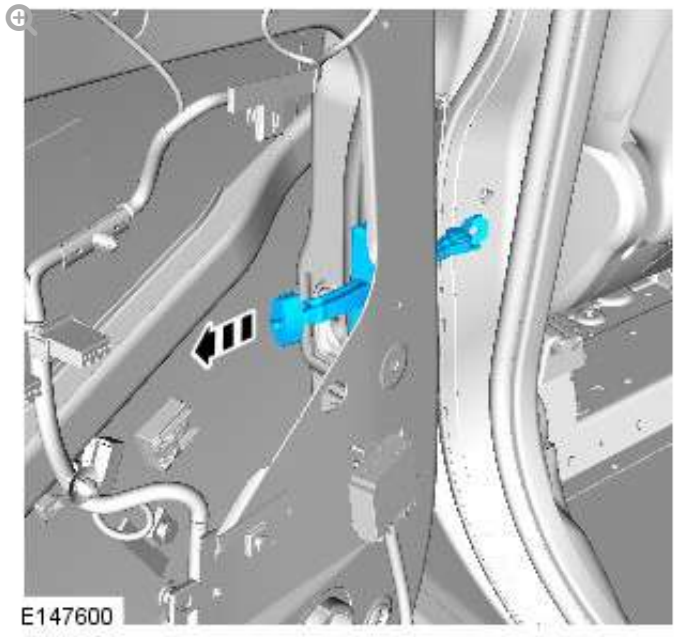


5.



Torque: **10.5 Nm**

6.



INSTALLATION

1. To install, reverse the removal procedure.

BODY CLOSURES

TAILGATE (G1549895)

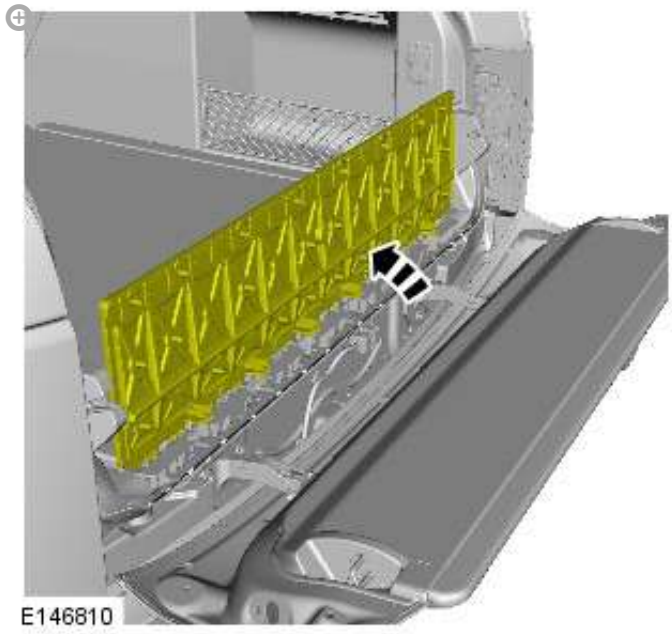
REMOVAL AND INSTALLATION

REMOVAL

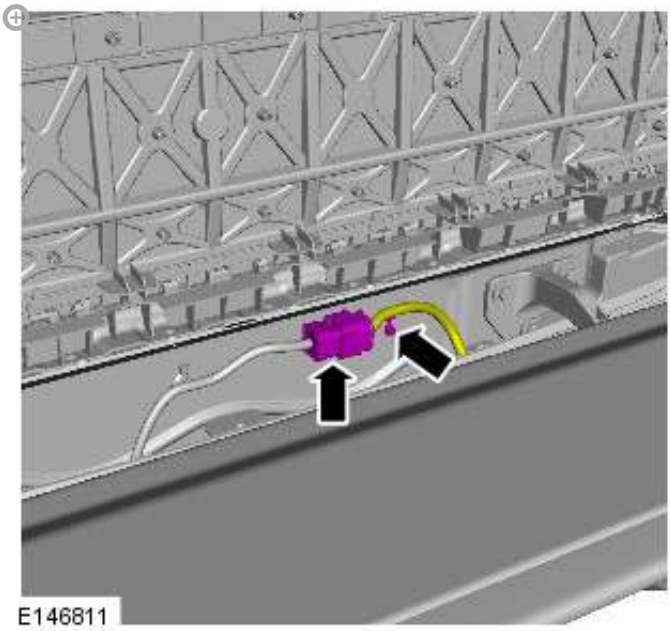
NOTE:

Removal steps in this procedure may contain installation details.

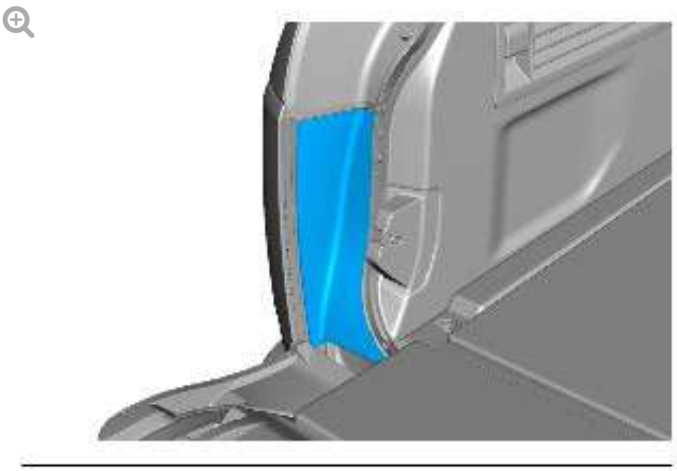
1.



2.



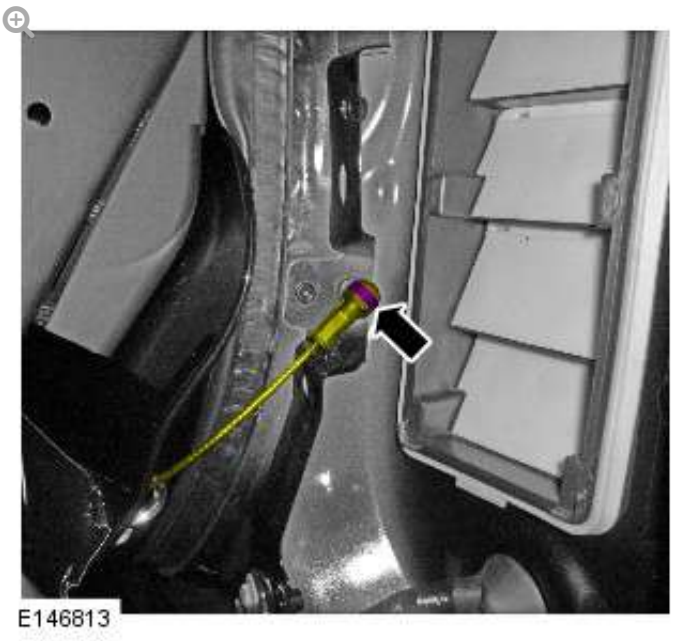
3.



4.

NOTES:

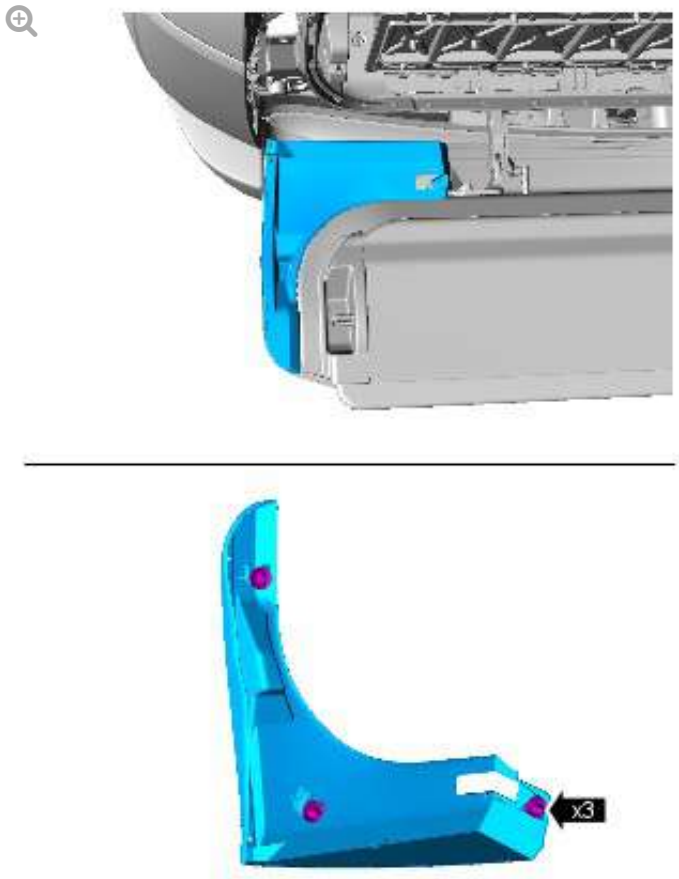
- LH illustration shown, RH is similar.
- Repeat the procedure for the other side.



5.

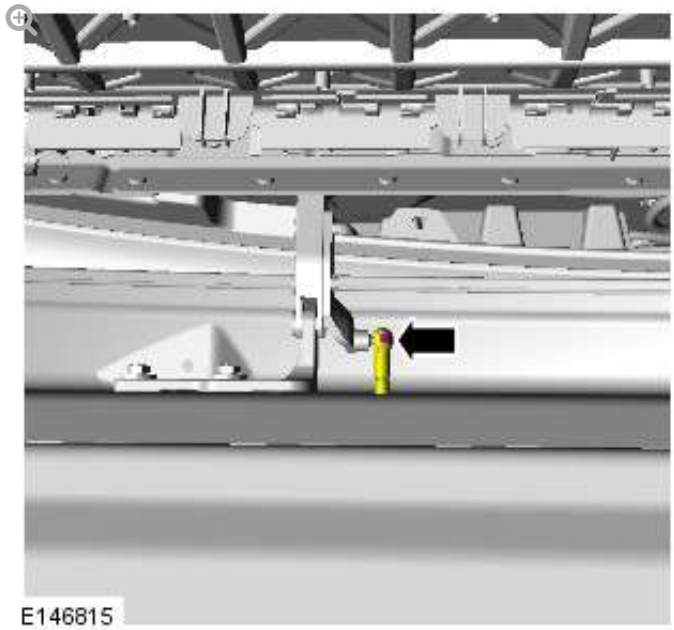
NOTES:

- LH illustration shown, RH is similar.
- Repeat the procedure for the other side.



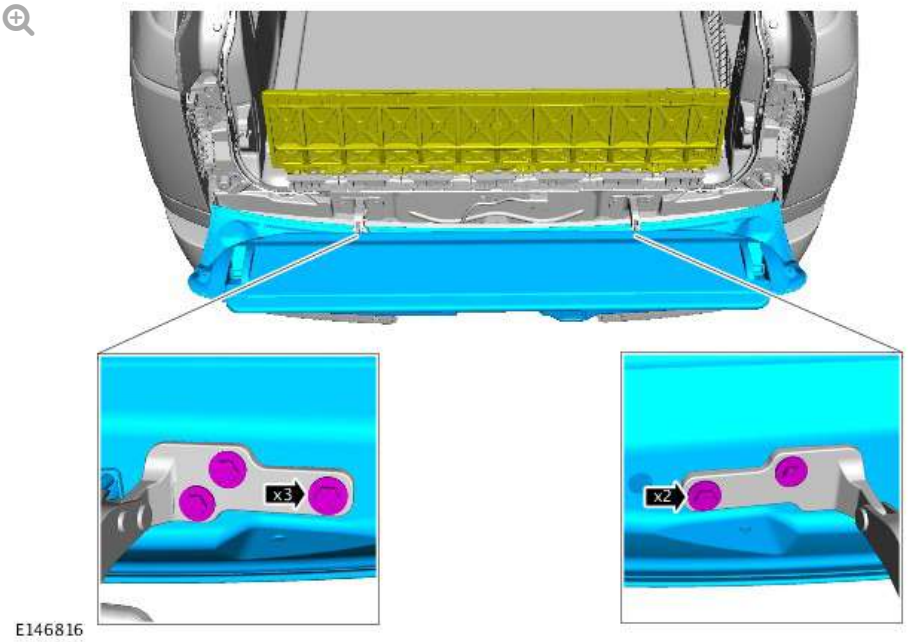
E146814

6.



E146815

7.



Torque: **25 Nm**

INSTALLATION

1. To install, reverse the removal procedure.

BODY CLOSURES

TAILGATE HINGE (G1557515)

REMOVAL AND INSTALLATION

REMOVAL

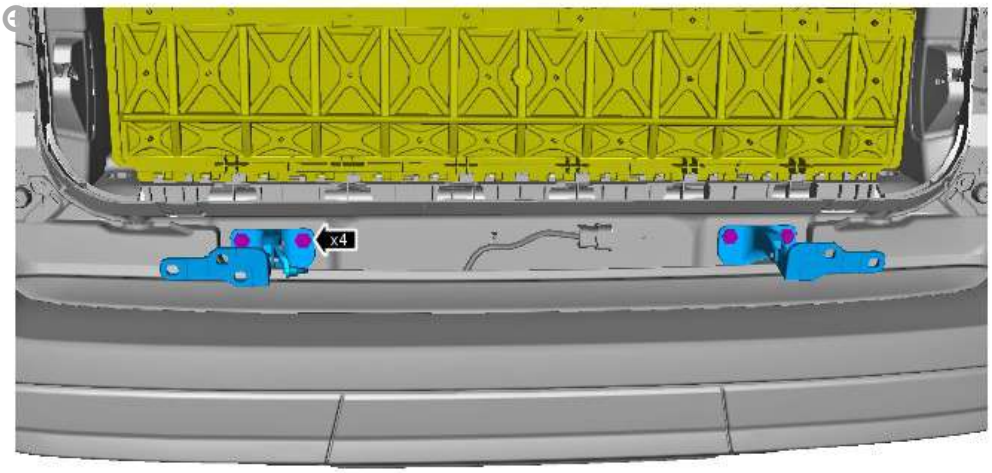
NOTES:

- Removal steps in this procedure may contain installation details.
- Some variation in the illustrations may occur, but the essential information is always correct.

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

2. Refer to: Tailgate (501-03 Body Closures, Removal and Installation).

3.



E149082

Torque: **24 Nm**

INSTALLATION

1. To install, reverse the removal procedure.

BODY CLOSURES

LOWER POWER TAILGATE CONTROL MODULE (G1561115)

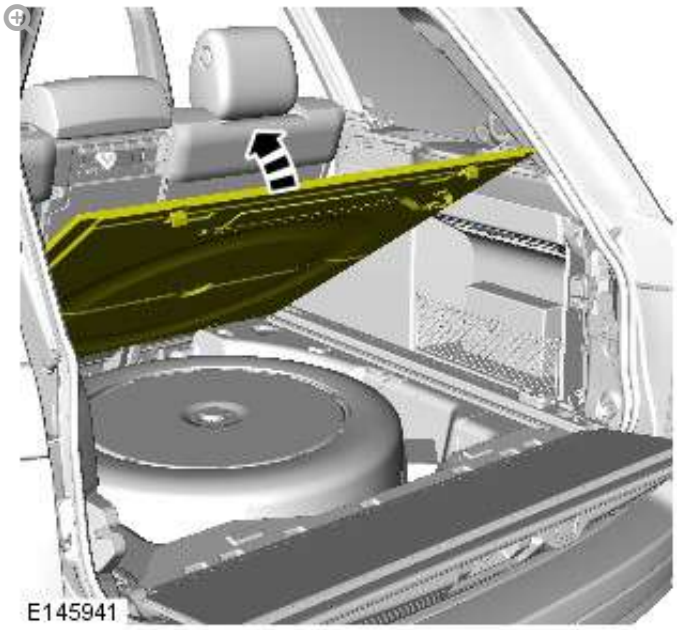
REMOVAL AND INSTALLATION

REMOVAL

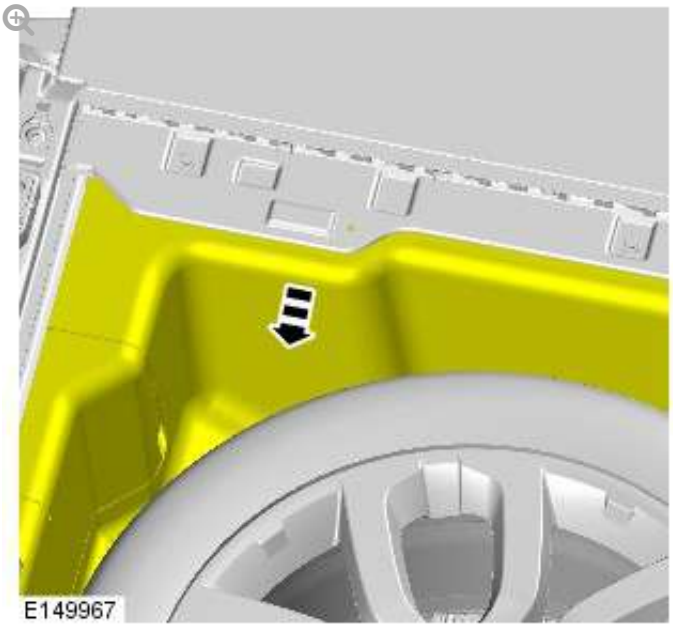
NOTE:

Removal steps in this procedure may contain installation details.

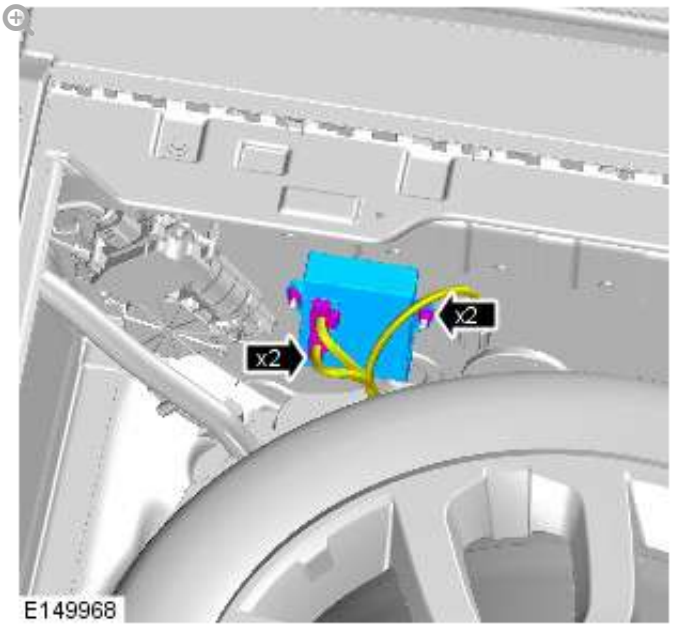
1.



2.



3.



Torque: **9 Nm**

INSTALLATION

1. To install, reverse the removal procedure.

2. If a new component has been installed, configure using Land Rover approved diagnostic equipment.

BODY CLOSURES

UPPER POWER TAILGATE CONTROL MODULE (G1561116)

REMOVAL AND INSTALLATION

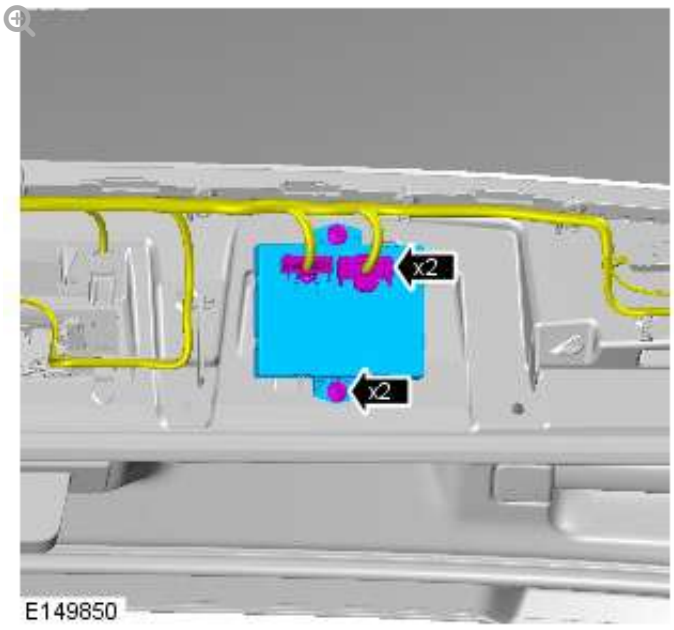
REMOVAL

NOTE:

Removal steps in this procedure may contain installation details.

1. Refer to: Liftgate Lower Trim Panel (501-05, Removal and Installation).

2.



INSTALLATION

1. To install, reverse the removal procedure.

2. If a new component has been installed, configure using Land Rover approved diagnostic equipment.

BODY CLOSURES

FRONT DOOR WEATHERSTRIP (G1707347)

REMOVAL AND INSTALLATION

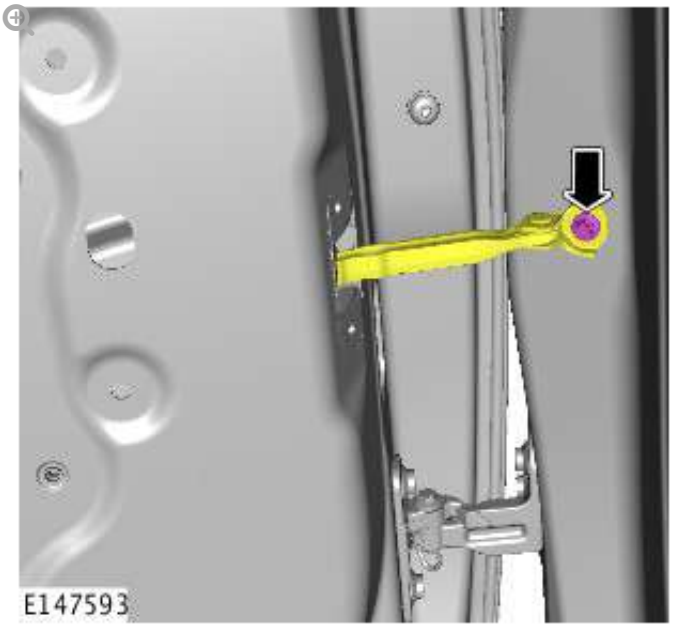
REMOVAL

NOTES:

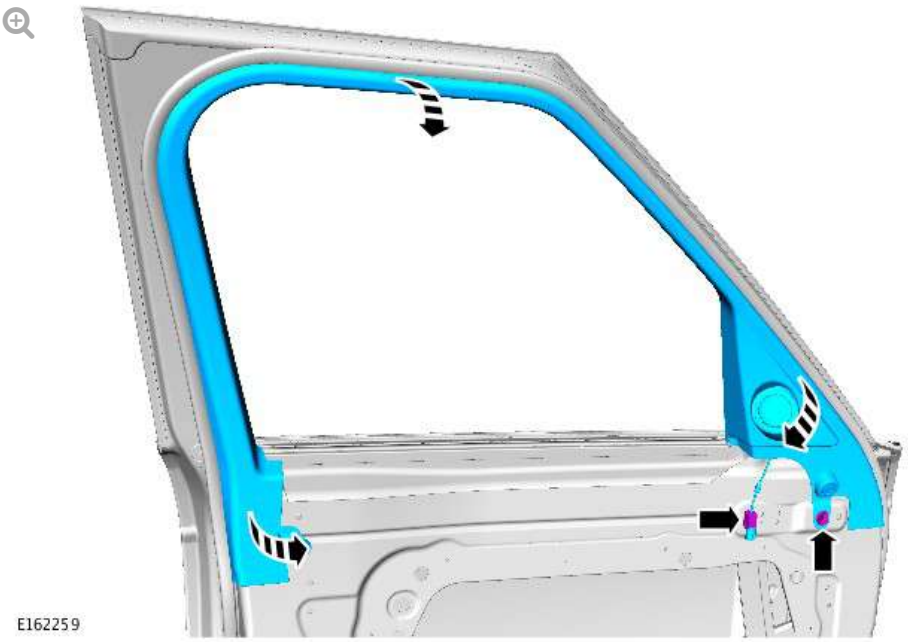
- Some variation in the illustrations may occur, but the essential information is always correct.
- Left Hand illustration shown, Right Hand is similar.

1. Refer to: Front Door Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

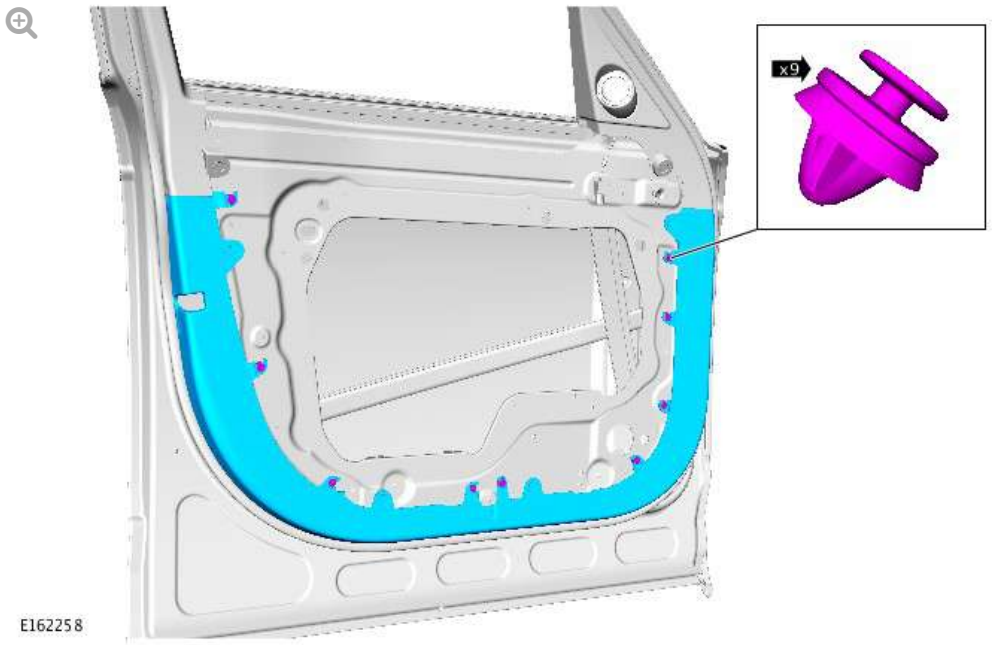
2.



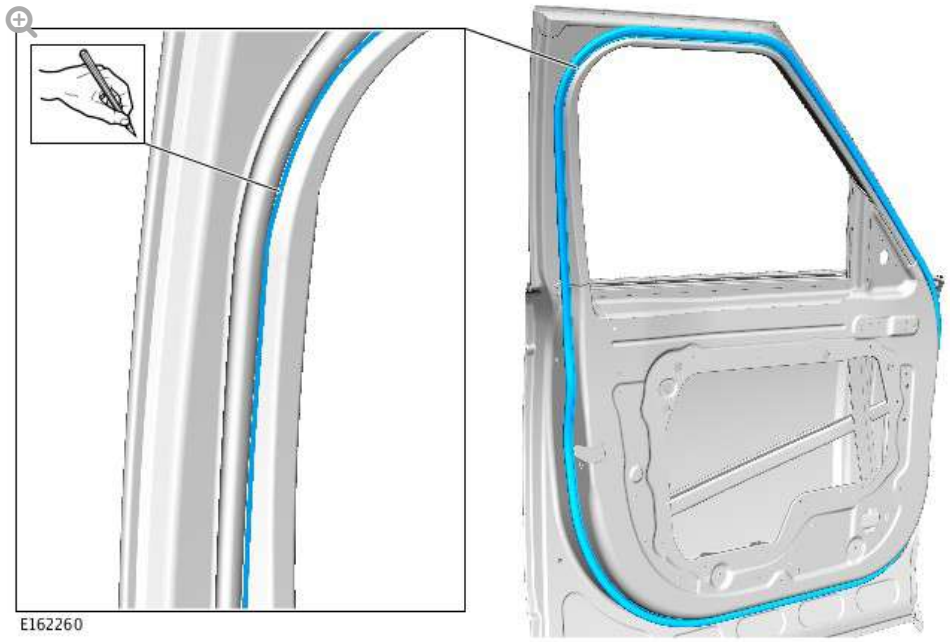
3.



4.



5.

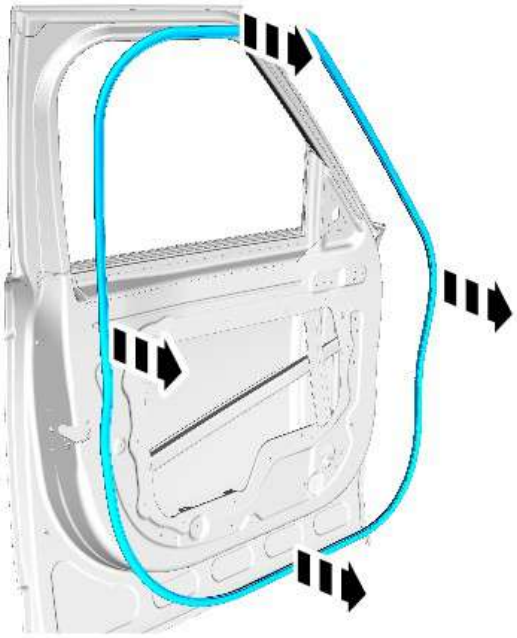


Using a suitable non-permanent marker, mark the installed position of existing seal.

6.

NOTE:

Discard the door seal.

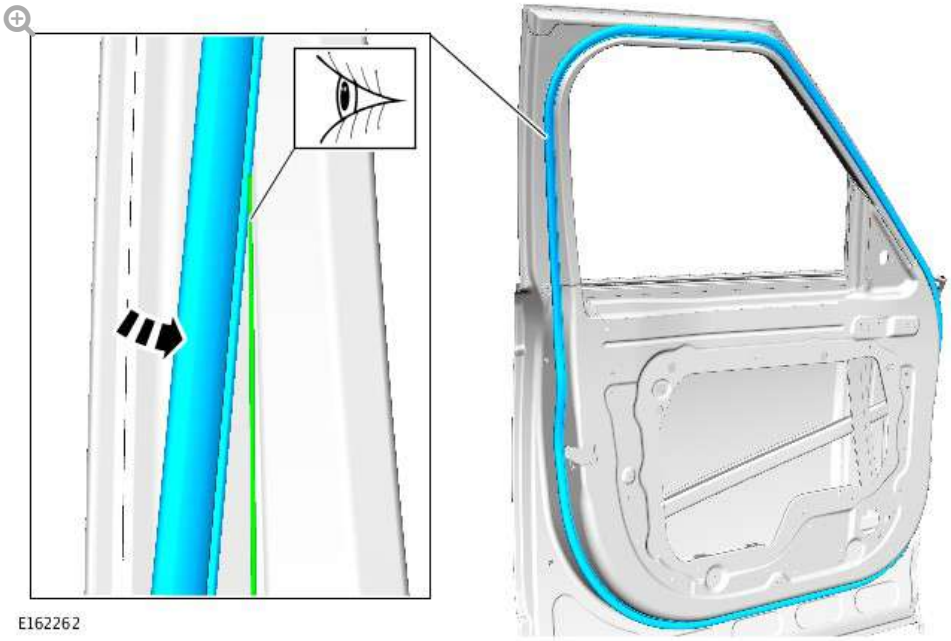


INSTALLATION

1.

CAUTIONS:

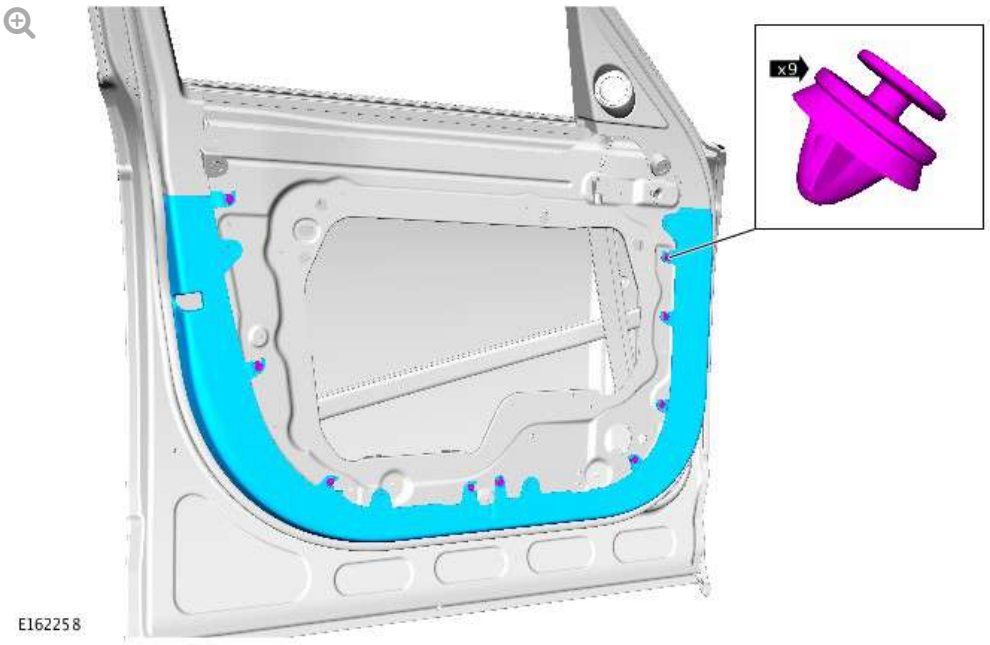
- To aid the bonding process the ambient air temperature must be above 20 degrees C.
- The door seal must not be installed outward of the marked outline.



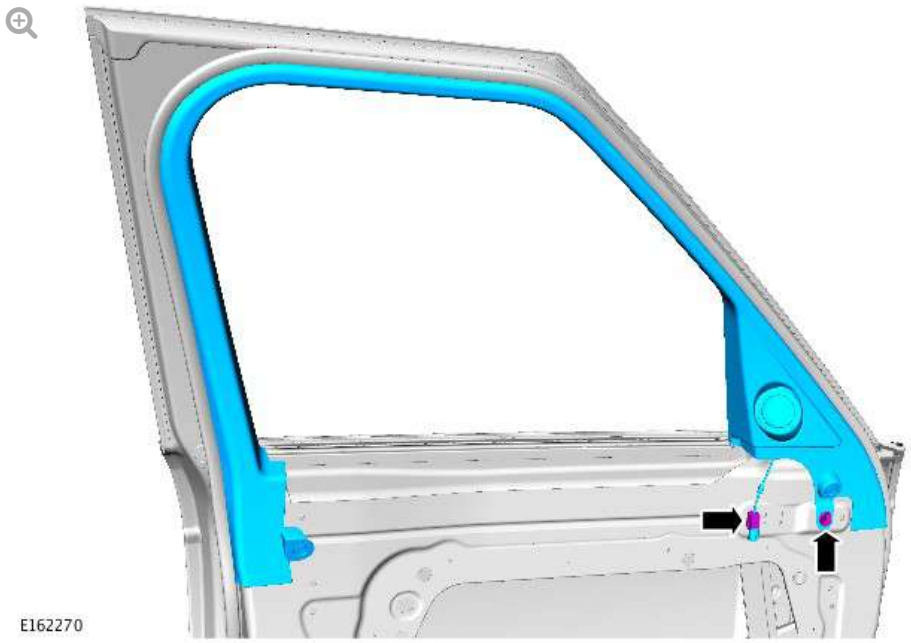
- Using a suitable clean agent, throughly clean the adhesive contact area.
- Install the door seal to the marked outline.

3. Press the door seal firmly into place.

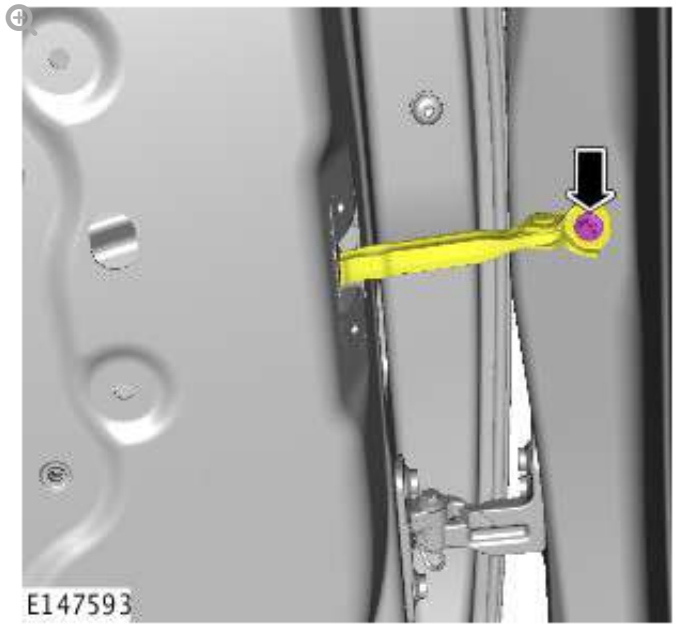
2.



3.



4.



Torque: **24 Nm**

5. Refer to: Front Door Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

BODY CLOSURES

REAR DOOR WEATHERSTRIP

(G1707348)

REMOVAL AND INSTALLATION

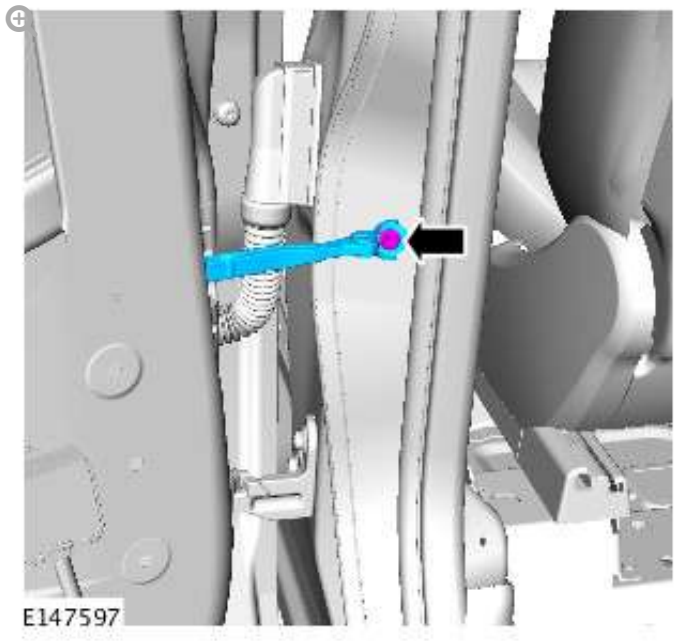
REMOVAL

NOTES:

- Some variation in the illustrations may occur, but the essential information is always correct.
- Left Hand illustration shown, Right Hand is similar.

1. Refer to: Rear Door Trim Panel - Standard Wheel Base (501-05 Interior Trim and Ornamentation, Removal and Installation).

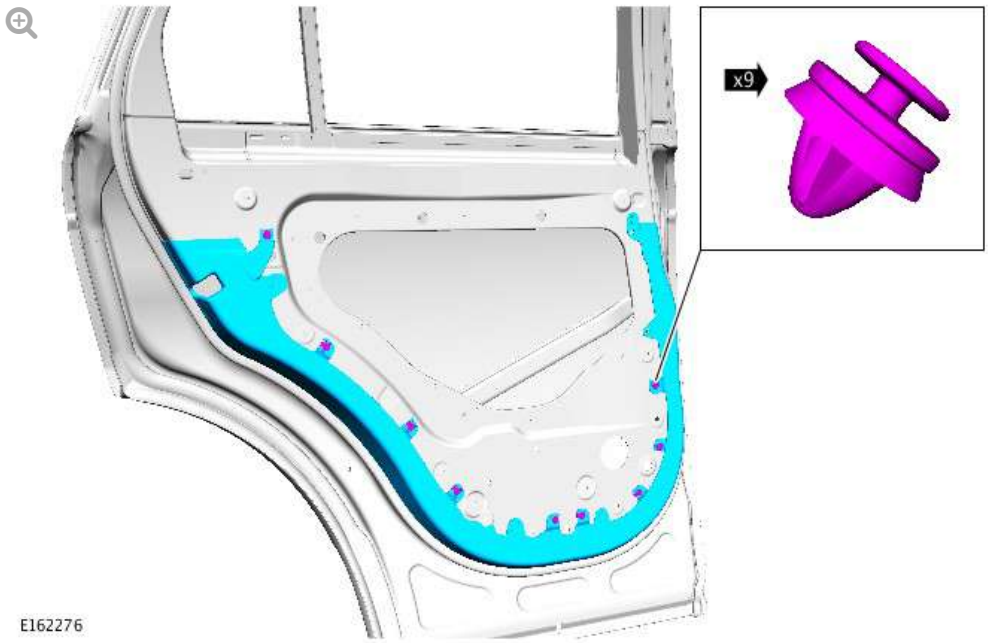
2.



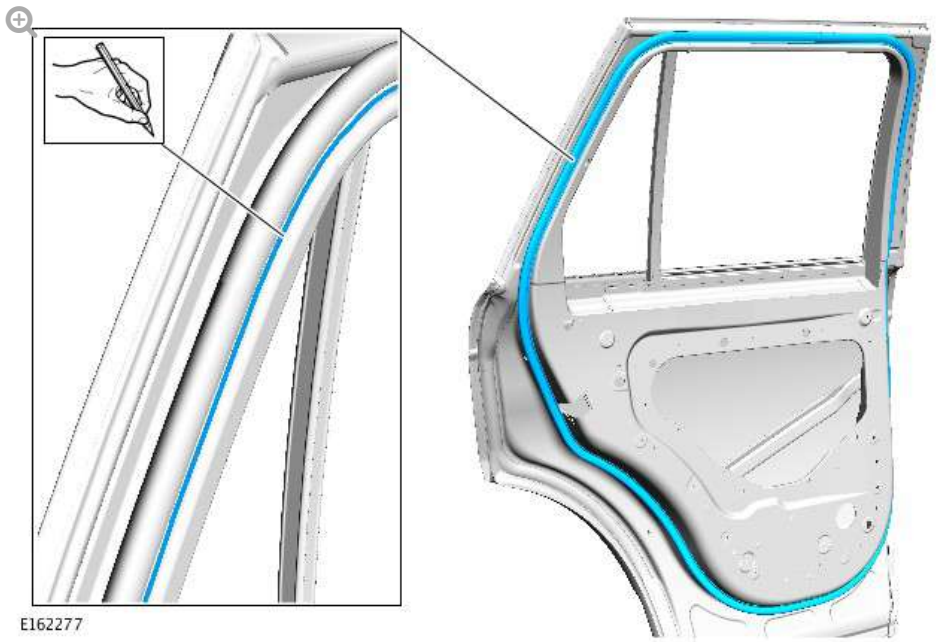
Torque: **24 Nm**

3.

4.



5.

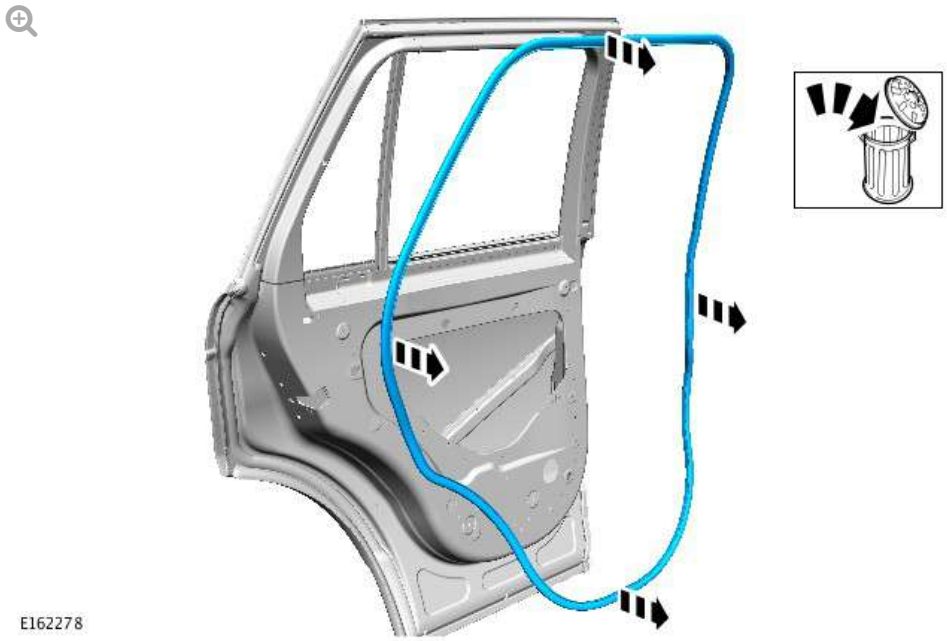


Using a suitable non-permanent marker, mark the installed position of existing seal.

6.

NOTE:

Discard the door seal.

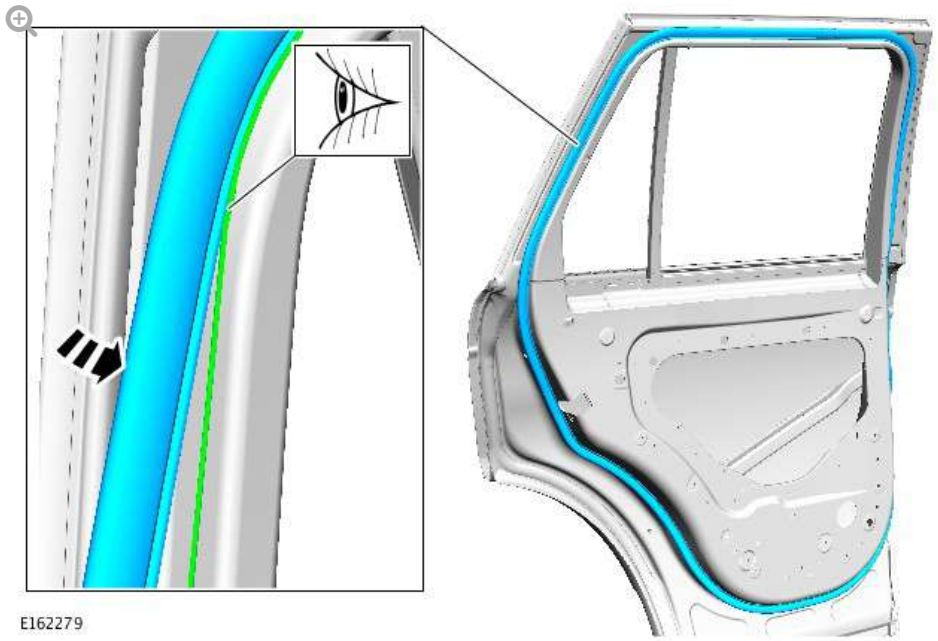


INSTALLATION

1.

CAUTIONS:

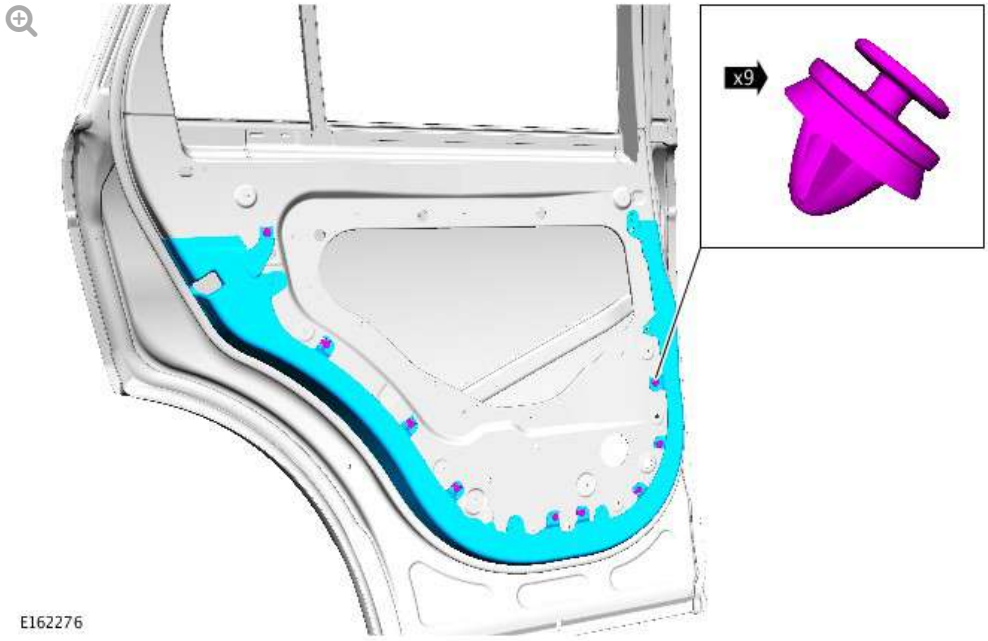
- To aid the bonding process the ambient air temperature must be above 20 degrees C.
- The door seal must not be installed outward of the marked outline.



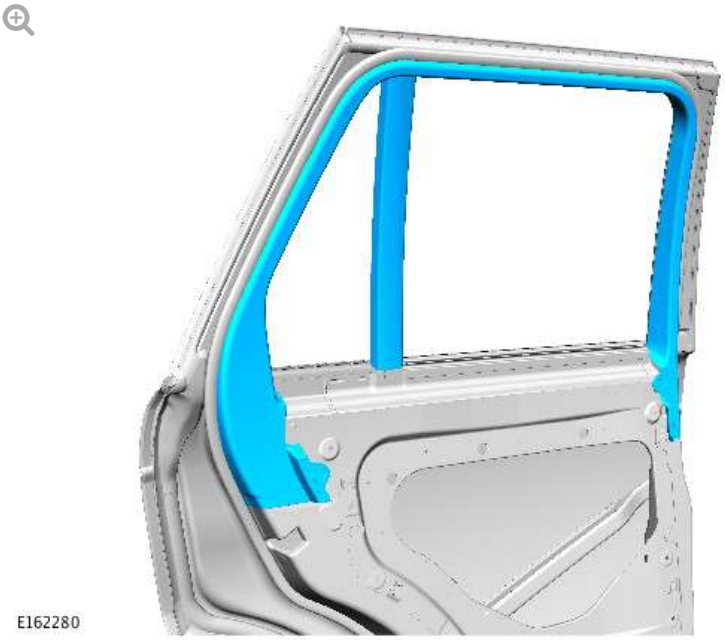
- Using a suitable clean agent, throughly clean the adhesive contact area.
- Install the door seal to the marked outline.

3. Press the door seal firmly into place.

2.



3.



4. Refer to: Rear Door Trim Panel - Standard Wheel Base (501-05 Interior Trim and Ornamentation, Removal and Installation).