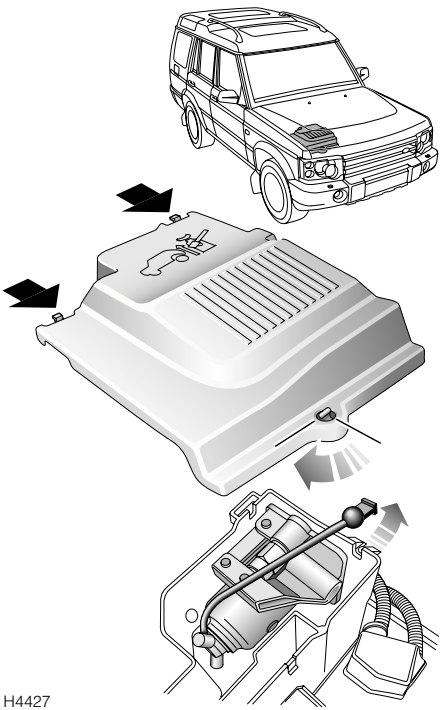
TOOL KIT

Jack



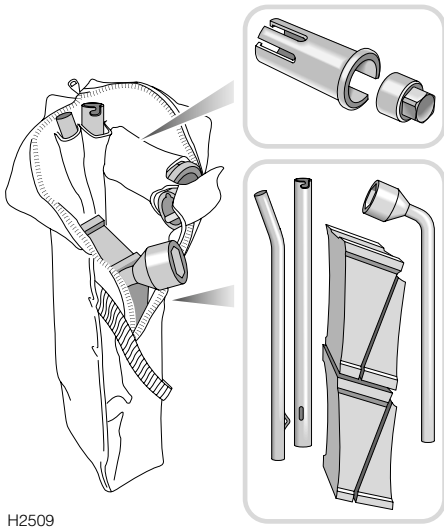
H4427

The jack is stowed in the front of the engine compartment next to the battery. To access the jack, remove the battery cover.

WARNING

Due to its stowage position in the engine compartment the jack may be hot if the engine has been running - be careful to avoid burns.

Tools



H2509

The jack handle and other tools are stowed in a tool bag in the taildoor storage pocket.

Care of the jack

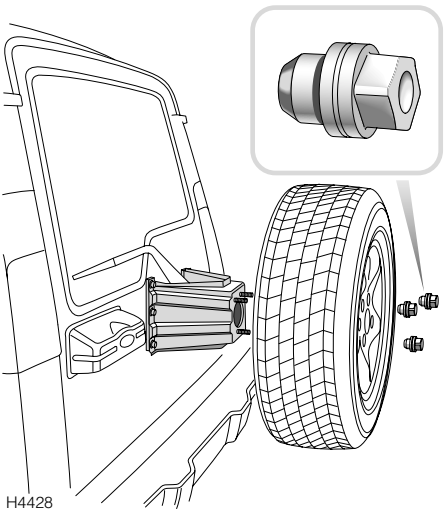
Examine the jack occasionally, clean and grease the moving parts, particularly the ram.

To avoid contamination, the jack should always be returned to its fully closed position.

WARNING

After wheel changing, always secure tools, chocks, jack and spare wheel in their correct storage positions. Such objects if not properly stowed can become flying missiles in a crash or rollover, potentially causing injury or death.

SPARE WHEEL



Use the wheel nut wrench to remove the nuts securing the spare wheel to the carrier and then lift off the wheel.

NOTE: *DO NOT use the spare wheel securing nuts in place of the road wheel nuts, or use the road wheel nuts to secure the spare wheel - the nuts are not inter-changeable.*

WARNING

The wheels are extremely heavy. Take care when lifting and particularly when removing the spare wheel from its mounting position on the tail door.

CHANGING THE WHEEL

If possible, choose a safe place to stop away from the main thoroughfare. Always ask your passengers to get out of the vehicle and wait in a safe area away from other traffic.

NOTE: *Switch on the hazard warning lights to alert other road users.*

Before changing a wheel, ensure the front wheels are in the straight ahead position, apply the parking brake and engage Park 'P' in the main gearbox and select 'L' in the transfer box.

Turn off the starter switch and remove the key. Observe the following precautions:

- Ensure the jack is positioned on firm, level ground; NEVER on soft ground, or over metal gratings or manhole covers. DO NOT place additional material between the jack and the ground, this may jeopardise the safety of the jacking operation.
- Place chocks at the front and rear of the wheel diagonally opposite the one to be removed.
- If jacking the vehicle on a slope is unavoidable, place the chocks on the downhill side of the two opposite wheels.
- NEVER raise the vehicle with passengers inside, or with a caravan or trailer connected!

WARNING

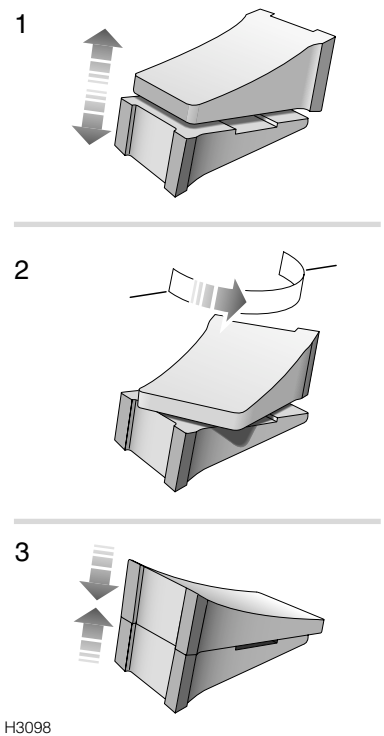
Before raising the vehicle, it is ESSENTIAL to chock the road wheels in two places; the handbrake acts on the transmission, not on the rear wheels, and therefore may not hold the vehicle when raised.

Using the wheel chocks

If possible, position the vehicle on level ground, chocking both sides of the wheel diagonally opposite the one to be removed.

If jacking the vehicle on a slope is unavoidable, place the chocks on the downhill side of the two opposite wheels.

The wheel chocks are stowed with the jack handle and wheel nut spanner in the tool bag.

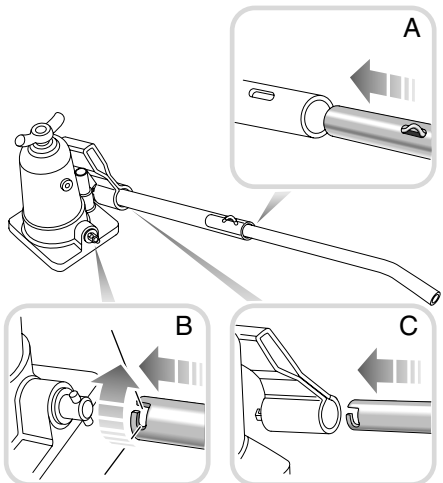


H3098

Assemble the wheel chocks as follows:

1. Pull the two halves of the chock apart.
2. Twist one half of the chock 180°.
3. Push the two halves back together.

Operating the jack



H2510

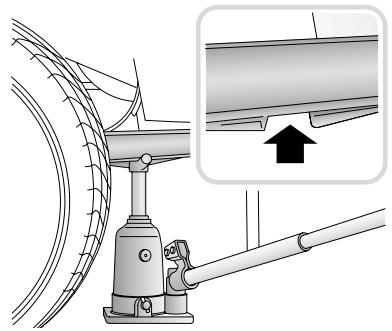
Slot the two parts of the jack lever together, ensuring that the spring clip protrudes from the engagement slot where the two parts join (see inset ‘A’). Close the jack release valve by using the notched end of the jack lever to turn the valve fully clockwise (see inset ‘B’). Insert the lever into the socket as shown (inset ‘C’) and twist the lever to lock it into the socket.

Pump the lever up and down to raise the jack.

To lower the jack, detach the lever (twist and pull) and then slot the notched end over the pegs on the release valve. Slowly turn the release valve anti-clockwise allowing the weight of the vehicle to lower the jack.

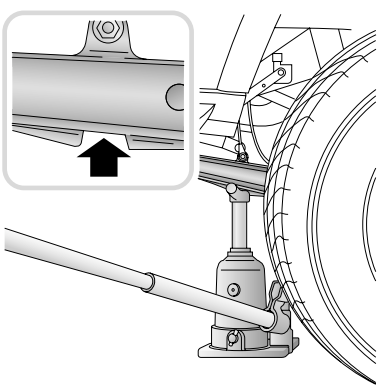
DO NOT fully unscrew the release valve.

Positioning the jack



H2516

Front jacking point



H2515

Rear jacking point

Always position the jack from the side of the vehicle, approximately in line with the appropriate jacking point. Ensure the jack is positioned on firm, level ground.

Position the jack so that, when raised the cradle head of the jack engages with the shaped notch on the underside of the front or rear suspension links - either just forward of the rear wheels or just to the rear of the front wheels.

WARNING

NEVER work beneath the vehicle with the jack as the only means of support. The jack is designed for wheel changing only!

To prevent the vehicle from tipping off the jack, ensure that it is first positioned on firm, level ground.

ALWAYS use the complete, two-piece, jack lever throughout to minimise any chance of accidental damage or injury.

ONLY jack the vehicle using the jack location points described, or damage to the vehicle could occur.

Changing a wheel

1. Before raising the vehicle, use the wheel nut wrench to slacken the wheel nuts half a turn anti-clockwise.
2. Raise the vehicle until the tire is clear of the ground.
3. Remove the wheel nuts and place to one side to prevent them from being lost.
4. Remove the road wheel.

   NOTE: *DO NOT damage the surface of the wheel by placing it face down on the road.*
5. Use an approved anti-seize compound to treat the wheel mounting spigot. This will minimise any tendency for adhesion between the wheel and the spigot.

   Ensure that no compound comes into contact with the brake components or the flat mounting surfaces of the wheel.

   If, due to an emergency situation, this treatment is not practicable; refit the spare wheel for the time being, but remove and treat the wheel at the earliest opportunity.

6. Fit the spare wheel and lightly tighten the wheel nuts, ensuring they are firmly seated. DO NOT fully tighten whilst the tire is clear of the ground.

WARNING

When fitting a wheel, ensure that the mating faces of the hub and wheel are clean and free from rust or anti-seize compound - any accumulation of dirt or rust could cause the wheel nuts to become loose and result in an accident.

7. Ensure that the space under and around the vehicle is free from obstructions then lower the vehicle and remove the jack and wheel chocks.
8. Fully tighten the wheel nuts in an alternating pattern until all are tightened. DO NOT OVERTIGHTEN by using foot pressure or extension bars on the wheel nut wrench, as this could overstress the wheel studs. Check the wheel nut torque at the earliest opportunity (see *'WHEELS & TIRES', page 247*).
9. Return tools, chocks, jack and spare wheel in their correct storage positions.
10. REMEMBER to change to 'H' (high range) before driving.
11. Finally, check the tire pressure at the earliest opportunity (see *'WHEELS & TIRES', page 247*).

STARTING AN ENGINE WITH A DISCHARGED BATTERY

Using booster cables (jump leads) from a donor battery, or a battery fitted to a donor vehicle, is the only approved method of starting a Discovery with a discharged battery.

Vehicles with automatic transmission cannot be restarted by push or towing.

WARNING

Always wear appropriate eye protection when working with batteries.

During normal use, batteries emit explosive hydrogen gas sufficient to cause severe explosions capable of causing serious injury - keep sparks and naked lights away from the engine compartment.

DO NOT attempt to start the vehicle if the electrolyte in the battery is suspected of being frozen.

Make sure BOTH batteries are of the same voltage (12 volts), and that the booster cables have insulated clamps and are approved for use with 12 volt batteries.

DO NOT disconnect the discharged battery.

DO NOT connect positive (+) terminals to negative (-) terminals, and ensure booster cables are kept away from any moving parts in the engine compartment.

Take care when working near rotating parts of the engine.

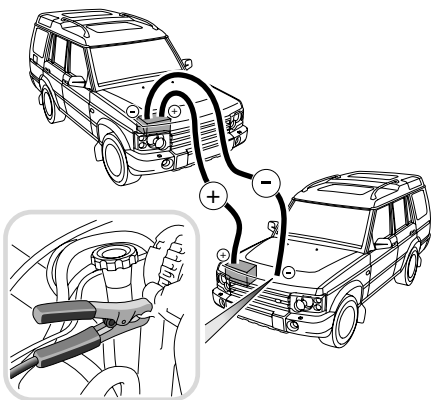
USING BOOSTER CABLES

If a donor vehicle is to be used, both vehicles should be parked with their battery locations adjacent to each other. Ensure that the two vehicles do not touch.

Apply the handbrakes and ensure that the transmission of both vehicles is set in neutral ('P' or Park for vehicles with automatic transmission).

Turn off the starter switch and ALL electrical equipment of BOTH vehicles, then follow the connection instructions on the following page.

CONNECTING THE BOOSTER CABLES



H4430

Always adopt the following procedure:

Connect the RED booster cable between the positive (+) terminal of the donor battery and the positive (+) terminal of the discharged battery.

Connect the BLACK booster cable from the negative (-) terminal of the donor battery to a good earth point (e.g. an engine mounting or other unpainted surface) away from the battery and away from fuel and brake lines on the disabled vehicle (lug on alternator casting shown in illustration).

WARNING

For safety reasons:

- ***DO NOT connect the BLACK cable to the negative terminal of the discharged battery - if in doubt, seek qualified assistance.***
- ***ENSURE that each connection is securely made and that there is no risk of the clips accidentally slipping or being pulled from the battery terminals - this could cause sparking, which could lead to fire or explosion.***

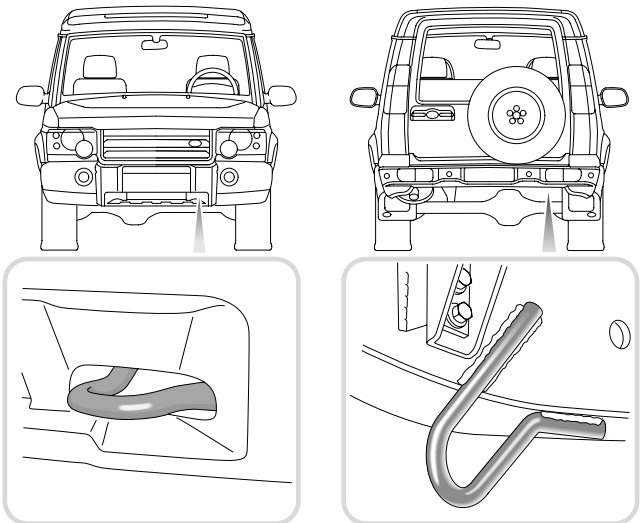
Check that the cables are clear of any moving parts of both engines, then start the engine of the donor vehicle and allow it to idle for a few minutes.

Now start the vehicle with the discharged battery. Once both engines are running normally, allow them to idle for two minutes before switching off the engine of the donor vehicle.

DO NOT switch on any electrical circuits on the previously disabled vehicle until AFTER the booster cables have been removed.

Disconnecting the booster cables must be an EXACT reversal of the procedure used to connect them, i.e: disconnect the BLACK cable from the earth point on the disabled vehicle FIRST.

TOWING EYES



H4431

CAUTION: The towing eyes at the front and rear of the vehicle are designed for on-road vehicle recovery purposes only and must NOT be used to tow a trailer or caravan.

Front

A single towing eye in the front spoiler is provided at the front of the vehicle for on-road recovery. DO NOT use the front lashing rings for towing purposes.

Rear

A pair of towing eyes are provided at the rear of the vehicle. These can be used as lashing rings and for towing your vehicle.

RECREATIONAL/MOTORHOME TOWING

If you intend to tow your vehicle behind a motorhome or recreational vehicle, follow the procedure specified for 'FOUR WHEEL TOWING'. Failure to follow this procedure may result in damage to the transmission.

FOUR-WHEEL TOWING

Most vehicle recovery specialists will load Discovery onto a trailer. However, if it is necessary to recover the vehicle by towing with all four wheels on the ground, or to similarly tow the vehicle for recreational purposes, observe the following procedure:

WARNING

ALWAYS adhere to the following procedure when towing the vehicle with all four wheels on the ground. Failure to do so could result in unintended vehicle movement or unanticipated vehicle conditions.

1. Apply the parking brake.
2. Secure the towing attachment from the recovery vehicle to the front towing eye of the vehicle to be recovered.
3. Turn the starter switch to position 'II', so that the brake lights and direction indicators can be operated.
4. With the foot brake applied, set the main gearbox in 'N' (neutral) and then put the transfer box into neutral.
5. Set the main gearbox in 'P' (park).
6. Release the parking brake before towing the vehicle.

NOTE: *If, due to an accident or electrical fault, it is not considered safe to turn the starter switch, the vehicle cannot be towed with wheels on the ground.*

WARNING

DO NOT attempt to tow the vehicle unless the starter switch is turned to position 'II'. If the vehicle is towed with the starter switch in position 'I', an inconsistency in the recorded vehicle mileage will occur. This must then be rectified by a Land Rover retailer.

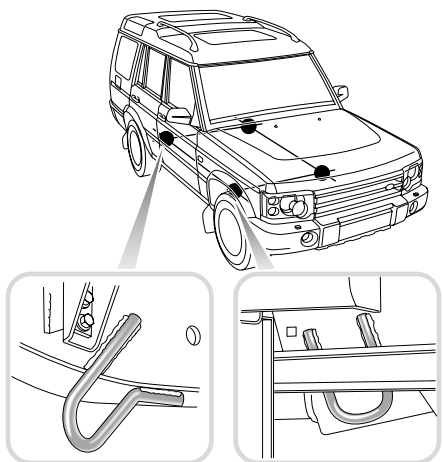
DO NOT remove the key or turn the starter switch to position '0' while the vehicle is in motion; the starter switch must be at position 'II'.

WARNING

Without the engine running, the brake servo and power steering pump cannot provide assistance; greater effort will therefore be required to operate the brake pedal and turn the steering wheel. Longer stopping distances will also be experienced.

CAUTION: Leaving the starter switch in position 'II' for extended periods will put a draw on the battery, which can lead to voltage drop and ultimately to a discharged battery.

TRANSPORTER OR TRAILER LASHING



H4432

Pairs of lashing rings are fixed to the underside of the vehicle - at the front (to the rear of the front wheels) and at the rear (backward of the rear wheels). DO NOT secure lashing hooks or trailer fixings to any other part of the vehicle.

NOTE: *The front rings are for lashing only and must NOT be used for towing. The rear lashing rings are designed for both towing and lashing.*