








# Fuel and refuelling

## SAFETY PRECAUTIONS

-  **Do not smoke, use a naked flame, or cause sparks while refuelling. The resulting fire and explosion may cause serious injury or death.**
-  **Avoid exposing the fuel gases to any potential sources of ignition as the resulting fire and explosion may cause serious injuries and/or death.**
-  **Switch off the engine when refuelling.**
-  **Switch off any personal electronic devices, such as mobile phones or music players, when refuelling.**

## PETROL ENGINED VEHICLES

-  Use high quality fuel that meets the specification defined by EN228 (or the national equivalent).
-  Do not use leaded fuels, fuels with lead substitutes (e.g. manganese-based), or fuel additives, as these may adversely affect the emissions control systems, and may affect warranty coverage.
-  Fuel system cleaning agents should not be used, unless approved by the vehicle manufacturer.

## OCTANE RATING



### V6 and V8 petrol vehicles

It is recommended to use a premium unleaded fuel, with a minimum octane rating of 95 RON to contribute to optimum performance, fuel economy and driveability.

### I4 petrol engines

This vehicle requires the use of premium unleaded fuel with a minimum octane rating of 95 RON to contribute to optimum performance, fuel economy and driveability.

If premium unleaded fuel is not available, you may use unleaded fuel with a lower octane rating, down to a minimum of 91 RON, but this may reduce engine performance, increase fuel consumption, cause an audible engine knock and other driveability problems.



-  Do not use fuels with an octane rating lower than 91 RON as severe engine damage may occur.
-  Use high quality fuel that meets the specification defined by EN228 (or the national equivalent).

If a heavy persistent engine knock is detected, even when using fuel to the recommended octane rating, or if engine knock is detected while holding a steady speed on level roads, consult a Retailer/Authorised Repairer to have the problem corrected. Failure to do so is misuse of the vehicle, for which the vehicle manufacturer is not responsible.

**Note:** *An occasional light engine knock when accelerating or climbing hills is acceptable.*

## ETHANOL

Fuels containing up to 10% ethanol (E5 and E10) may be used.

-  This vehicle is not suitable for use with fuels containing more than 10% ethanol.
-  Do not use E85 fuels (85% ethanol content), as serious engine and fuel system damage will occur.

Make sure that the fuel has octane ratings no lower than those recommended for unleaded fuel. Most drivers will not notice any operating difference with fuel containing ethanol. If a difference is detected, the use of conventional unleaded fuel should be resumed.

## METHANOL

- ⚠ Wherever possible, avoid using fuels containing methanol.

Use of fuels containing methanol may cause serious engine and fuel system damage, which may not be covered under warranty.

## METHYL TERTIARY BUTYL ETHER (MTBE)

Unleaded fuel containing an oxygenate known as MTBE can be used provided that the ratio of MTBE to conventional fuel does not exceed 15%. MTBE is an Ether based compound derived from Petroleum, which has been specified by several refiners as the substance to enhance the Octane rating of fuel.

## DIESEL ENGINED VEHICLES

Use only high quality diesel fuel in accordance with European Standard EN590 or equivalent.

- ⚠ These vehicles are capable of running with up to a 7% blend of bio-diesel, in accordance with European Standard EN590. It is not recommended to use a higher blend of bio-diesel.

The quality and specification of diesel fuel varies significantly, dependent on the geographical location. It is recommended to use a premium fuel, or the highest quality available fuel.

High quality fuel promotes a longer life for the engine components. Lower grade fuel contains higher levels of sulphur, which is detrimental to engine components. If low quality fuel is used, light coloured smoke may be evident at the exhaust.

Prolonged use of additives is not recommended. Do not add paraffin or petrol to diesel fuels.

- ⚠ If you inadvertently fill your vehicle with petrol instead of diesel, do not attempt to start the engine. Contact a Retailer/ Authorised Repairer immediately.

- ⚠ The vehicle manufacturer can accept no responsibility for any damage caused by running the vehicle with fuel other than those stipulated.

## SULPHUR CONTENT

- ⚠ If this vehicle is fitted with a Diesel Particulate Filter (DPF) exhaust after treatment system, the maximum sulphur content of the fuel must not exceed 0.005% (50 parts per million), in accordance with EN590-EU4, or World Wide Fuel Charter (WWFC) Cat 3.
- ⚠ The sulphur content of diesel fuel used in vehicles not fitted with a DPF, should not exceed 0.3% (3 000 parts per million).

In some countries, diesel fuel will contain higher levels of sulphur, which will require reduced service intervals to reduce the effects on the engine and the exhaust after treatment components. If in doubt contact a Retailer/ Authorised Repairer for advice.

- ⚠ Using an incorrect specification of fuel will cause serious damage to the engine and/or the exhaust after treatment system, which may not be covered by the vehicle's warranty. If in doubt, contact a Retailer/Authorised Repairer for advice.

## DIESEL EXHAUST FLUID (DEF)

In order to comply with exhaust emissions requirements, some vehicles with diesel engines are fitted with a reservoir containing Diesel Exhaust Fluid (DEF). DEF is also known as AdBlue, AUS 32 and ARLA 32.

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**Note:** It is a legal requirement that the DEF system is used correctly, as detailed in this handbook. It may be a criminal offence to run the vehicle when it is not consuming the correct specification of DEF.

The distance until the next DEF refill, can be viewed via the service menu in the Instrument panel. See **41, INSTRUMENT PANEL MENU**.

DEF consumption can vary greatly dependent on driving style and conditions, but the average rate of consumption is approximately 1 litre for every 1 600 kilometres.

**Note:** When the DEF level becomes low, an appropriate message will be displayed in the Message centre. It is recommended to contact a Retailer/Authorised Repairer to arrange a DEF refill, at the earliest opportunity.

The Message centre will display a distance countdown, when the DEF level becomes too low. The DEF should be topped up before the distance range falls to zero. Failure to do so, will result in the vehicle failing to start.

DEF can be added to the reservoir by using the top-up procedure; however, a full system refill is still recommended at the earliest opportunity.

Two standard sized non-drip refill bottles, each containing 1.89 litres of fluid, is the minimum amount required to restart the engine. Refill bottles are available from a Retailer/Authorised Repairer.

**!** When refilling, make sure that the correct specification of DEF is used. See **245, LUBRICANTS AND FLUIDS**. Use of the incorrect fluid could result in serious damage to the vehicle. Do not start the engine. Contact a Retailer/Authorised Repairer immediately.



DEF can smell unpleasant and stain clothing or upholstery. Take care not to spill the fluid when performing a top-up procedure. In the event of spillage, rinse immediately with clean water.



**Read the label for safety precautions when using DEF.**



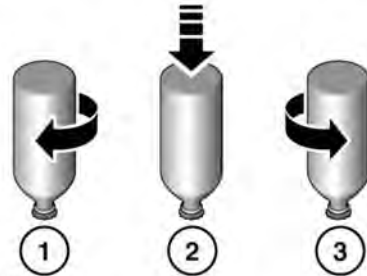
**DEF must be kept out of the reach of children.**



DEF must be stored in the original container, in a cool, dry, and well-ventilated area. Observe the manufacturer's storage and handling recommendations.

To perform a DEF top-up procedure:

Locate the DEF reservoir. See **203, FLUID FILLER LOCATIONS**. Remove the reservoir filler cap by turning counter-clockwise.



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1. Place the refill bottle over the reservoir filler cap aperture and turn clockwise, until it is locked into position.
2. Press the base of the refill bottle, until all of the fluid has completely drained into the reservoir.
3. Turn the refill bottle counter-clockwise and remove.
4. Repeat the procedure with the second refill bottle.

5. Replace the reservoir filler cap and continually turn clockwise until hand tight.

**Note:** In extremely low temperatures, below  $-10^{\circ}\text{C}$ , DEF may freeze in the reservoir; making refilling difficult. It is recommended to take the vehicle into a warmer environment, e.g., a garage, to raise the ambient temperature, in order to thaw the DEF, before attempting to top-up. In these conditions, it may take up to 1 hour of driving before the low DEF message will extinguish.

**Note:** When starting and stopping the engine, you may hear the DEF pumps initiating and shutting down. This is normal operation, and no cause for concern.


## RUNNING OUT OF FUEL

 Avoid running out of fuel!

If the vehicle does run out of fuel, a minimum of 4 litres will be required to restart the engine. The vehicle should be left with the ignition on for 5 minutes after refuelling before attempting to restart the engine.

**Note:** If the vehicle does run out of fuel, seeking qualified assistance is advisable.

## WATER IN FUEL

 If the warning **WATER IN FUEL** is displayed in the Message centre, an excessive amount of water has collected in the fuel filter bowl. Seek assistance from a Retailer/Authorised Repairer to have the filter drained as soon as possible

## DIESEL ENGINES


Vehicles with diesel engines are equipped with a system to prevent the fuel tank from emptying completely, which would then draw air into the fuel system. When the fuel reaches a minimum level, the system will activate a reduced power mode (i.e. the engine will not run properly). This will be followed by the engine stopping in approximately 1.6 km.

This feature prevents the fuel system from running dry, which could cause damage to the vehicle. If the fuel gauge indicates a low fuel level, or the low fuel warning lamp illuminates (see **46, LOW FUEL WARNING (AMBER)**), the fuel tank should be refuelled as soon as possible at the next filling station with at least 4 litres of fuel.

If the system protection function has activated, the vehicle must be refuelled and then restarted using the following procedure:


1. With the brake pedal pressed, press and hold the engine stop/start button (see **280, DRIVER CONTROLS**) and crank the engine for 5 seconds.
2. Release the stop/start button.
3. With the brake pedal pressed, press and release the stop/start button to crank the engine. The engine should start within approximately 5 seconds.

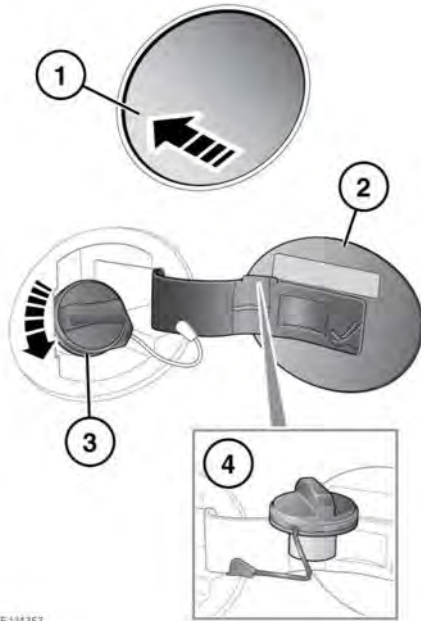
**Note:** If the engine does not start, pause for 10 seconds with the ignition in convenience mode before repeating the procedure from the beginning.

 Do not crank the engine for longer than 30 seconds continuously.

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## FUEL FILLER FLAP

-  Take note of all warnings and instruction given on the label affixed to the inside of the fuel filler flap.



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The vehicle must be unlocked using the Smart key before the fuel filler flap can be opened.





1. Press and release the rear of the flap to unlatch.
2. Pull the flap open. The label on the inside of the flap indicates the correct fuel for the vehicle.
3. Turn the cap counter-clockwise to undo.
4. Stow the cap on the lip provided on the top of the hinge arm, as shown.

When replacing the cap, turn it clockwise until the ratchet clicks.

To close the filler flap, push the flap until it is securely latched.

**Note:** The filler flap will only be locked closed when the vehicle is centrally locked.


## FUEL FILLER

-  When refuelling ensure that all windows, doors, and sunroof are fully closed, particularly if young children or animals are in the vehicle.
-  Do not attempt to fill the tank to its maximum capacity. If the vehicle is to be parked on a slope, in direct sunlight or high ambient temperature, expansion of the fuel could cause spillage.
-  Check the fuel pump information carefully to make sure that you are putting the correct fuel into the vehicle.
-  If the vehicle is filled with incorrect fuel, it is essential that you seek qualified assistance before you start the engine.

Fuel station pumps are equipped with automatic cut-off sensing to avoid fuel spillage. Make sure that the correct fuel type nozzle is fully inserted into the filler neck and fill the tank slowly until the filler nozzle automatically cuts off the supply. Do not attempt to fill the tank beyond this point.

**Note:** Filling station pumps used for diesel commercial vehicles deliver fuel at a higher rate than normal. The higher fill rate can cause premature cut-off and may cause fuel spillage. Therefore, it is recommended that only standard light vehicle pumps are used.

## DIESEL MISFUELLING PROTECTION DEVICE

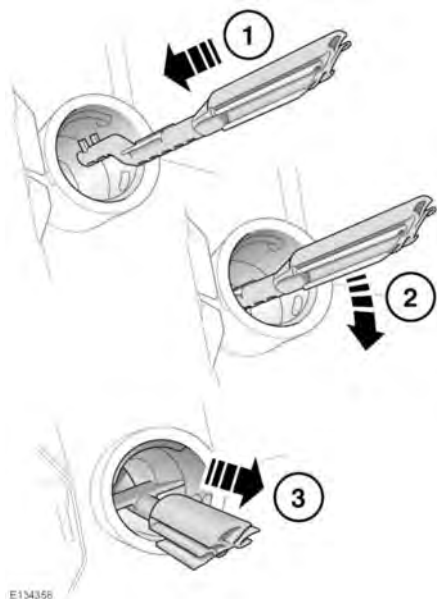
-  When the misfuelling device is activated it may cause fuel to be discharged from the filler neck.

**Note:** It is the driver's responsibility to fill the vehicle with the correct fuel. The diesel misfuel protection device only reduces the risk of filling the vehicle with incorrect fuel.

If the narrow filler nozzle fitted to pumps delivering unleaded petrol is fully inserted into the filler neck, the misfuel protection device will activate.

**Note:** The filler spout on some fuel cans and older fuel pumps may trigger the misfuelling device.

When activated the yellow protection device will be visible inside the filler neck. It will prevent fuel flow into the tank. Before fuelling can continue with the correct fuel the device will need to be reset.



The reset tool is stored in the luggage compartment clipped onto the battery retaining bar.

To reset the misfuelling device:

1. Insert the reset tool with the teeth uppermost, as far as it will go into the filler neck.
2. Locate the teeth by pushing down the top of the reset tool.
3. With the top of the tool pressed down and the teeth engaged, slowly pull the tool out of the filler neck to reset the device.

**!** Do not twist the device, once the teeth have engaged.

**Note:** When reset, the yellow part of the protection device should no longer be visible in the filler neck.

Replace the reset tool in position on the battery restraining bar.

## FUEL TANK CAPACITY

Avoid the risk of running out of fuel and never intentionally drive the vehicle when the fuel gauge indicates that the tank is empty. When refuelling your vehicle after the fuel gauge reads empty, you may not be able to add the fuel quantity shown below, as there will be a small reserve remaining in the tank.

<b>Total tank capacity (usable):</b>	
Petrol engines	80 litres (18 gallons)
Diesel engines	77 litres (17 gallons)
<b>Fill capacity (when fuel gauge reads empty):</b>	
Petrol engines	74 litres (16.3 gallons)
Diesel engines	68 litres (15 gallons)

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## FUEL CONSUMPTION

The fuel consumption figures shown in the following table, have been calculated using a standard testing procedure (the new EC test procedure from Directive 99/100/EC), and produced in accordance with The Passenger Car Fuel Consumption (Amendment) Order 1996.

Under normal use, a vehicle's actual fuel consumption figures may differ from those achieved through the test procedure, depending on driving technique, road and traffic conditions, environmental factors, vehicle load and condition.

Variant	Urban l/100 km (mpg)	Extra-urban l/100 km (mpg)	Combined l/100 km (mpg)	CO <sub>2</sub> emissions g/km
<b>3.0L Diesel with Stop/Start</b>				
Pirelli 19 inch Tyre - Standard/Long wheelbase	7.0 (40.4)	5.2 (54.3)	5.7 (49.6)	149
Continental 20 inch Tyre - Standard/ Long wheelbase	7.1 (39.8)	5.2 (54.3)	5.9 (48.0)	155
Dunlop 20 inch Tyre - Standard/Long wheelbase	7.5 (37.7)	5.3 (53.3)	6.1 (46.3)	159
<b>2.0L Petrol</b>				
Standard wheelbase	13.0 (21.7)	6.7 (42.2)	9.0 (31.4)	213
Long wheelbase	13.0 (21.7)	6.7 (42.2)	9.0 (31.4)	213
<b>2.0L Petrol with Stop/Start</b>				
Standard wheelbase	11.4 (24.8)	6.7 (42.2)	8.4 (33.6)	199
Long wheelbase	11.4 (24.8)	6.7 (42.2)	8.4 (33.6)	199
<b>3.0L Petrol - Supercharged</b>				
Standard wheelbase	13.8 (20.5)	7.3 (38.7)	9.7 (29.1)	226
Long wheelbase	13.8 (20.5)	7.3 (38.7)	9.7 (29.1)	226
<b>3.0L Petrol - Supercharged with Stop/Start</b>				

Variant	Urban l/100 km (mpg)	Extra-urban l/100 km (mpg)	Combined l/100 km (mpg)	CO <sub>2</sub> emissions g/km
Standard wheelbase	12.5 (22.6)	7.1 (39.8)	9.1 (31.0)	211
Long wheelbase	12.5 (22.6)	7.1 (39.8)	9.1 (31.0)	211
<b>3.0L Petrol - Supercharged - All wheel drive</b>				
Standard wheelbase	15.2 (18.6)	7.8 (36.2)	10.5 (26.9)	250
Long wheelbase	15.2 (18.6)	7.8 (36.2)	10.5 (26.9)	250
<b>3.0L Petrol - Supercharged - with All wheel drive and Stop/Start</b>				
Standard wheelbase	13.6 (20.8)	7.6 (37.2)	9.8 (28.8)	234
Long wheelbase	13.6 (20.8)	7.6 (37.2)	9.8 (28.8)	234
<b>5.0L Petrol - Supercharged with Stop/Start</b>				
Standard wheelbase	16.2 (17.4)	8.2 (34.5)	11.1 (25.5)	264
Long wheelbase	16.2 (17.4)	8.2 (34.5)	11.1 (25.5)	264
<b>5.0L Petrol - Supercharged Super Sport / XJ-R</b>				
Standard wheelbase	17.9 (15.8)	8.5 (33.2)	11.9 (23.7)	283
Long wheelbase	17.9 (15.8)	8.5 (33.2)	11.9 (23.7)	283
<b>5.0L Petrol - Supercharged Super Sport / XJ-R with Stop/Start</b>				
Standard wheelbase	16.2 (17.4)	8.2 (34.5)	11.1 (25.5)	264
Long wheelbase	16.2 (17.4)	8.2 (34.5)	11.1 (25.5)	264

## URBAN CYCLE

The urban test cycle is carried out from a cold start and consists of a series of accelerations, decelerations and periods of steady speed driving and engine idling. The maximum speed attained during the test is 50 km/h (30 mph) with an average speed of 19 km/h (12 mph).

## EXTRA-URBAN CYCLE

The extra-urban test cycle is carried out immediately after the urban test. Approximately half of the test comprises steady-speed driving, while the remainder consists of a series of accelerations, decelerations and engine idling. The maximum test speed is 120 km/h (75 mph) and the average speed 63 km/h (39 mph). The test is carried out over a distance of 7 km (4.3 miles).

## COMBINED

The combined figure is an average of the urban and extra-urban test cycle results, which has been weighted to take account of the different distances covered during the two tests.



For additional information on fuel consumption figures and exhaust emissions, visit the Vehicle Certification Agency (VCA) website at:

**<http://www.vcacarfueldata.org.uk/>**