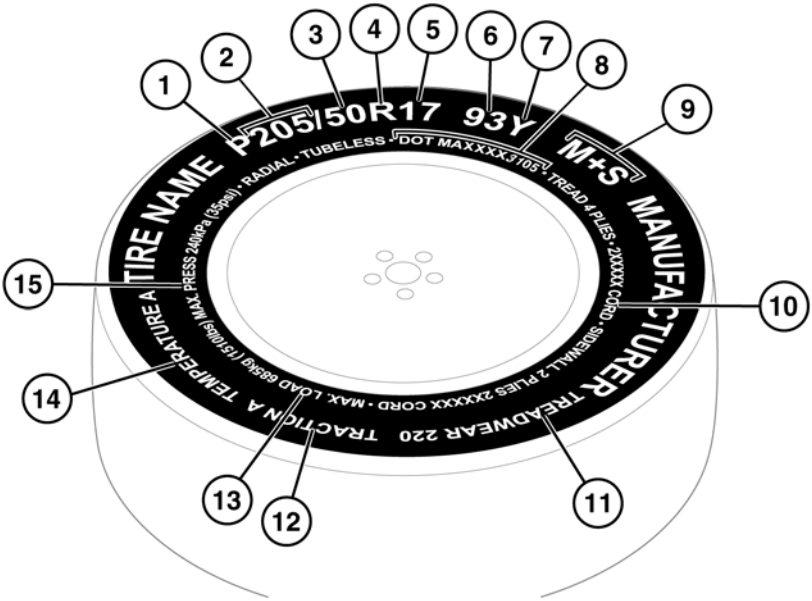
TIRE MARKINGS



SL1676

1. **P** indicates that the tire is for passenger vehicle use.
2. The width of the tire from sidewall edge to sidewall edge in millimetres.
3. The aspect ratio, also known as the profile, gives the sidewall height as a percentage of the tread width. So, if the tread width is 205 mm and the aspect ratio is 50, the sidewall height will be 102 mm.
4. **R** indicates that the tire is of Radial ply construction.
5. The diameter of the wheel rim given in inches.
6. The load index for the tire. This index is not always shown.
7. The speed rating denotes the maximum speed at which the tire should be used for extended periods. See **201, SPEED RATINGS**.
8. U.S. DOT Tire Identification Number (TIN). This begins with the letters DOT and indicates that the tire meets all federal standards. The next 2 numbers or letters are the plant code where the tire was manufactured, the last 4 numbers are the date of manufacture. For example, if the number was 3109, the tire was made in the 31st week of 2009. The other numbers are marketing codes used at the manufacturer's discretion. This information can be used to contact consumers if a tire defect requires a recall.

9. **M+S** or **M/S** indicates that the tire has been designed with some capability for mud and snow.
10. The number of plies in both the tread area, and the sidewall area, indicates how many layers of rubber coated material make up the structure of the tire. Information is also provided on the type of materials used.
11. Wear rate indicator. A tire rated at 400 for example, will last twice as long as a tire rated at 200.
12. The traction rating grades a tire's performance when stopping on a wet road surface. The higher the grade, the better the braking performance. The grades, from highest to lowest are; **AA**, **A**, **B** and **C**.
13. The maximum load which can be carried by the tire.
14. Heat resistance grading. The tire's resistance to heat is grade A, B or C, with A indicating the greatest resistance to heat. This grading is provided for a correctly inflated tire, which is being used within its speed and loading limits.
15. The maximum inflation pressure for the tire. This pressure should not be used for normal driving.

SPEED RATINGS

Rating	Speed mph (km/h)
Q	99 (160)
R	106 (170)
S	112 (180)
T	118 (190)
U	124 (200)
H	130 (210)
V	149 (240)
W	168 (270)
Y	190 (300)

TIRE CARE

WARNING: Do not drive the vehicle if a tire is damaged, excessively worn, or incorrectly inflated. A tire in such condition may catastrophically fail and cause an accident.

WARNING: Avoid contaminating the tires with vehicle fluids, as they may damage the tire and cause a tire failure, which may result in an accident.

WARNING: Avoid spinning the wheels. The forces released can damage the structure of the tire, and cause it to fail.

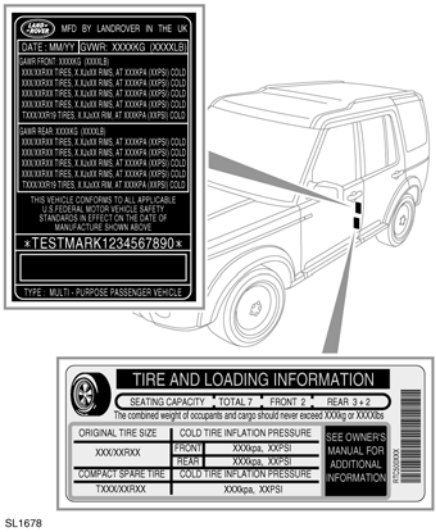
WARNING: If wheel spin is unavoidable due to a loss of traction (in deep snow for example), do not exceed the 30 mph (50 km/h) point on the speedometer. Do not allow anyone to stand near, or directly behind a tire that might spin.

WARNING: Do not exceed the maximum pressure stated on the sidewall of the tire.

Note: *Tire condition should be checked after the vehicle has been used off-road. As soon as the vehicle returns to a normal, hard, road surface, stop and check for tire damage.*

All of the vehicle's tires (including the spare) should be checked regularly for damage, wear and distortion. If you are in any doubt about the condition of a tire, have it checked immediately by a tire repair center or your Land Rover Retailer/Authorized Repairer.

TIRE PRESSURE LABEL (USA only)



SL1678

The recommended tire pressures are listed on a label located in the driver's door opening.

These pressures provide optimum ride and handling characteristics for all normal operating conditions.

The label contains the following information:

- The maximum number of occupants, divided between the front and rear of the vehicle.
- The vehicle capacity weight, which includes the weight of the driver, passengers and cargo.
- Cold inflation pressures for the front, rear and spare tires.
- The size of the tires with which the vehicle was originally equipped.

Note: *The label must not be changed, even if different wheels are fitted at a later stage.*

TIRE PRESSURES

WARNING: Never drive your vehicle if the tire pressures are incorrect. Under-inflation causes excessive flexing and uneven tire wear. This can lead to sudden tire failure. Over-inflation causes harsh ride, uneven tire wear and poor handling.

WARNING: Pressure checks should only be carried out when the tires are cold, and the vehicle has been stationary for more than three hours. A hot tire at or below recommended cold inflation pressure is dangerously under-inflated.

WARNING: Under-inflation also reduces fuel efficiency and tire tread life and may affect the vehicle's handling and stopping ability.

WARNING: If the vehicle has been parked in strong sunlight, or used in high ambient temperatures do not reduce the tire pressures. Move the vehicle into the shade and allow the tires to cool before rechecking the pressures.

CHECKING THE TIRE PRESSURES

WARNING: All tire pressures, including the spare, should be checked regularly using an accurate pressure gauge, when the tires are cold. Failure to properly maintain your tire pressures could increase the risk of tire failure, resulting in a loss of vehicle control and potential personal injury.

Check the tires, including the spare, for condition and pressure on a weekly basis and before long journeys.

If tire pressures are checked while the vehicle is inside a protected covered area (e.g. a garage) and subsequently driven in lower outdoor temperatures, tire under-inflation could occur.

A slight pressure loss occurs naturally with time. If this exceeds 2 psi (0.14 bar, 14 kPa) per week, have the cause investigated and rectified by qualified personnel.

If it is necessary to check tire pressures when the tires are warm, you should expect the pressures to have increased by up to 4 - 6 psi (0.3 - 0.4 bar, 30 - 40 kPa). Do not reduce the tire pressures to the cold inflation pressure under these circumstances. Allow the tires to cool fully before adjusting the pressures.

The following procedure should be used to check and adjust the tires pressures.

1. Remove the valve cap.
2. Firmly attach a tire pressure gauge/inflator to the valve.
3. Read the tire pressure from the gauge and add air if required.
4. If air is added to the tire, remove the gauge and re-attach it before reading the pressure. Failure to do so may result in an inaccurate reading.
5. If the tire pressure is too high, remove the gauge and allow air out of the tire by pressing the center of the valve. Refit the gauge to the valve and check the pressure.
6. Repeat the process, adding or removing air as required, until the correct tire pressure is reached.
7. Refit the valve cap.

TIRE VALVES

Keep the valve caps screwed down firmly to prevent water or dirt entering the valve. Check the valves for leaks when checking the tire pressures.

PUNCTURED TIRES

WARNING: Do not drive the vehicle with a punctured tire. Even if the punctured tire has not deflated, it is unsafe to use, as the tire may deflate suddenly at any time.

REPLACEMENT TIRES

WARNING: Always fit replacement tires of the same type, and wherever possible, of the same make and tread pattern.

WARNING: If the use of tires not recommended by Land Rover is unavoidable, ensure that you read, and fully comply with, the tire manufacturer's instructions.

Ideally, tires should be replaced in sets of 4. If this is not possible, replace the tires in pairs (both front or both rear). When tires are replaced, the wheels should always be re-balanced and alignment checked.

The correct tire specification for your vehicle can be found on the tire information label. See **202, TIRE PRESSURE LABEL (USA only)**.

PRESSURE COMPENSATION FOR AMBIENT TEMPERATURE CHANGES

A colder ambient local temperature will reduce pressure within the tire. An effect is to decrease sidewall height and to increase tire shoulder wear with the potential for tire failure. Vehicle dynamics could also be adversely affected.

Tire pressures can be adjusted to compensate before the start of the journey. Alternatively, tire pressures can be adjusted when the area of lower ambient temperature is reached.

In this situation, the vehicle must be left in the ambient local temperature for at least one hour before tire pressure is adjusted.

To compensate for colder ambient temperatures, tire pressures should be increased by 2 psi (0.14 bar, 14 kPa) for each 20°F (10°C) decrease.

Note: *Ensure that correct tire pressures are maintained when moving to areas of differing ambient temperature.*

FLAT SPOTS DUE TO LONG TERM PARKING

In order to minimize flat spotting, the tire pressures can be increased to the maximum as stated on the tire sidewall, for the period when the vehicle is stationary. Tires must be returned to the specified running pressures before driving.

AGE DEGRADATION

Tires degrade over time due to the effects of ultraviolet light, extreme temperatures, high loads, and environmental conditions. It is recommended that all tires, including the spare, are replaced at least every six years, but they may require replacement more frequently.

USING WINTER TIRES

If winter tires are fitted to the vehicle, the tire manufacturer's instructions must be followed. Pay particular attention to the correct tire pressures an the maximum speed that the vehicle can be driven at.

Approved winter tires	
19 inch wheels	255/65 R19 111H Goodyear Ultra Grip
20 inch wheels	255/50 R20 109H Continental Cross Contact Winter

USING TRACTION DEVICES

WARNING: Only use traction devices in heavy snow conditions, on hard road surfaces.

WARNING: Dynamic Stability Control (DSC) must be switched off when using traction devices.

WARNING: Never exceed 30 mph (50 km/h) when traction devices are fitted.

WARNING: Never fit traction devices to a temporary use spare wheel.

Land Rover approved traction devices may be used to improve traction on a hard road surface in heavy snow conditions. They should not be used in off-road conditions.

If it becomes necessary to fit traction devices, the following points must be observed:

- No traction devices should be fitted to the rear wheels.
- Single sided Spike-spyder traction devices can only be fitted to the front wheels of vehicles fitted with 18 or 19 inch diameter wheels.

- The wheels and tires fitted must conform to the specifications of the original equipment.
- Only Land Rover approved traction devices should be used on the vehicle. Only Land Rover approved traction devices have been tested to ensure that they do not cause damage to the vehicle. Contact your Land Rover Retailer/Authorized Repairer for information.
- Always read, understand and follow the traction device manufacturer's instructions. Pay particular attention to the maximum speed and fitting instructions.
- Avoid tire/vehicle damage, by removing the traction devices as soon as the conditions allow.

UNITED STATES DEPARTMENT OF TRANSPORTATION - UNIFORM TIRE QUALITY GRADES

The following information relates to the tire grading system developed by the National Highway Safety Administration which will grade tires by tread wear, traction and temperature performance.

Note: *Tires that have deep tread and winter tires, are exempt from these markings requirements.*

Quality grades can be found, where applicable, on the tire sidewall between the tread shoulder and maximum section width.

For example: **Treadwear 200 Traction AA Temperature A**.

In addition to the markings requirements, passenger care tires must conform to Federal Safety Requirements.

TREAD WEAR

The tread wear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded **150** would wear one and a half (1½) times as well on the government course as a tire graded **100**.

CAUTION: If tread wear is uneven across the tire, or a tire wears excessively, the vehicle should be checked by your Land Rover Retailer/ Authorized Repairer as soon as possible.

The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

When the tread has worn down to approximately 2 mm, wear indicators start to appear at the surface of the tread pattern. This produces a continuous band of rubber across the tread as a visual reminder.

WARNING: Wear indicators show the minimum tread depth recommended by the manufacturers. Tires which have worn to this point will have reduced grip and poor water displacement characteristics.

Note: *Local legislation may determine a greater tread depth to that shown by the tire wear indicators. It remains the driver's responsibility to ensure the tread depth meets the local legal requirement. Do not rely on the tread wear indicators alone.*

TRACTION

The traction grades, from the highest to the lowest are **AA**, **A**, **B** and **C**. The grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

WARNING: The traction grade assigned to this tire is based on straight-ahead braking traction tests and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

TEMPERATURE

The temperature grades are **A** (the highest), **B**, and **C** representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel.

Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure.

The grade **C** corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109.

Grades **B** and **A** represent higher levels of performance on the laboratory test wheel than the minimum required by law.

WARNING: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, ore excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

TIRE GLOSSARY

lbf/in^2 or psi

Pounds per square inch, an imperial unit of measure for pressure.

kPa

Kilo Pascal, a metric unit of measure for pressure.

Cold tire pressure

The air pressure in a tire which has been standing in excess of 3 hours, or driven for less than 1 mile.

Maximum inflation pressure

The maximum pressure to which the tire should be inflated. This pressure is given on the tire side wall in lbf/in^2 (psi) and kPa.

Note: *This pressure is the maximum allowed by the tire manufacturer. It is not the pressure recommended for use.*

Curb weight

The weight of a standard vehicle, including a full tank of fuel, any optional equipment fitted, and with the correct coolant and oil levels.

Gross Vehicle Weight (GVW)

The maximum permissible weight of a vehicle with driver, passengers, load, luggage and equipment.

Accessory weight

The combined weight (in excess of those items replaced) of items available as factory installed equipment.

Productions options weight

The combined weight of options installed which weigh in excess of 3 lb (1.4 kg) more than the standard items that they replaced, and are not already considered in curb or accessory weights. Items such as heavy duty brakes, high capacity battery, special trim etc..

Vehicle capacity weight

The number of seats multiplied by 150 lb (68 kg) plus the rated amount of load/luggage.

Maximum loaded vehicle weight

The sum of curb weight, accessory weight, vehicle capacity weight, plus any production option weights.

Rim

The metal support for a tire, or tire and tube, upon which the tire beads are seated.

Bead

The inner edge of a tire that is shaped to fit to the rim and form an air tight seal. The bead is constructed of steel wires which are wrapped, or reinforced, by the ply cords.

STEPS FOR DETERMINING CORRECT LOAD LIMIT

WARNING: Do not exceed the vehicle capacity weight (the total weight of driver, passengers and cargo) given on the tire information label.

1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX pounds" on your vehicle's placard.
2. Determine the weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs.

   (1400 - 750 (5 x 150) + 650 lbs).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

The number and weight of passengers will affect the cargo and luggage capacity. In the example above, the cargo and luggage load capacity is 650 lb. However, if fewer passengers ride in the vehicle, the luggage load capacity will increase. If this vehicle carries three 150 lb passengers, the cargo and luggage load capacity will increase to 960 lb:

(3 x 150 = 450 lb, and 1400 - 450 + 950 lb).

If the passengers weigh more, the cargo and luggage load capacity will decrease.

WARNING: The weight of accessories must also be subtracted from the cargo and luggage load capacity. If you are unsure of the weight of any accessories fitted to your vehicle, contact your Land Rover Retailer/ Authorized Repairer.

WARNING: Overloading the vehicle will have an adverse affect on braking and handling characteristics, which could compromise your safety. Overloading a vehicle may also cause tire damage or failure. Never overload your vehicle.