

My Smooth Ride. My Service



Useful Tips on Tyre Care.

Mercedes-Benz



Tyre Pressure

How would incorrect tyre pressure affect your vehicle?

Effects of under-inflation

An under-inflated tyre cannot maintain its shape and becomes flatter while in contact with the road. If a vehicle's tyres are under-inflated by only 6 psi, it could weaken the tyre's internal structure and eventually lead to tyre failure. Lower inflation pressures allow more deflection as the tyre rolls. This in turn builds up more internal heat, increases rolling resistance (causing a reduction in fuel economy of up to 5%) and reduces the tyre's tread life by as much as 25% while increasing the probability of irregular treadwear. Drivers would also find a noteworthy loss of steering precision and cornering stability. While 6 psi does not seem excessively low, it typically represents about 20% of a passenger car tyre's recommended pressure.

Effects of over-inflation

An over-inflated tyre is stiff and unyielding, causing the size of its footprint in contact with the road to be reduced. If a vehicle's tyres are over-inflated by 6 psi, they could be damaged easily when encountering potholes or debris on the road. These tyres will also experience irregular treadwear. In addition, over-inflated tyres cannot isolate road irregularities as well, thus causing the vehicle to ride harsher and transmit more noise into its interior. A slight increase in inflation pressure reduces rolling resistance and often provides better steering response.

Tyre Pressure Monitoring System

The tyre pressure monitoring system (TPM) is an active safety feature that assists drivers by constantly monitoring the car's tyre pressure.

How it works

The pressure inside each tyre is constantly measured using long lasting Mercedes-Benz genuine tyre pressure sensors that can last up to ten years. The information is then sent to the vehicle to warn the driver of under or over inflation of a tyre via the instrument cluster.

Benefits of correct tyre pressure

Comfort

- The process of checking your car's tyre pressure is simplified. (Driver is still obligated to check the tyre pressure manually on a regular basis)

Fuel Savings

- Fuel consumption is reduced by having the correct tyre pressure

Extended Tyre Life

- Having the right tyre pressure prevents tyre failure, tyre disintegration, heat buildup, ply separation and sidewall/casing breakdowns.

Safety

- Cars with the correct tyre pressure ensure greater stability, handling and braking. Hence, providing greater safety for the driver, the vehicle and other drivers on the road.
- Driver will be warned in the event of a loss of pressure in a tyre.

Dangerous effects of improper treatment of vehicles equipped with Tyre Pressure Monitoring System

No proper diagnostic equipment

- Unable to ascertain the root of the problem.
- Unable to reset or sync Tyre Pressure Monitoring System sensors with vehicle.

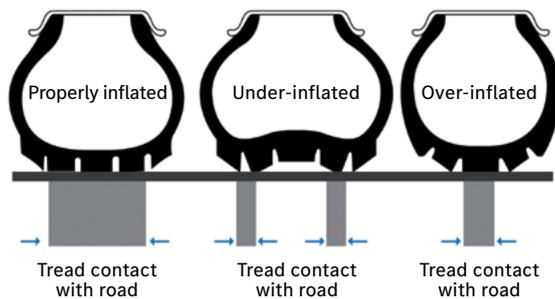
Risk of damage to Tyre Pressure Monitoring System sensors

- Contaminants such as oil or water may be present in compressed air.
- Incorrect procedure for rim or tyre replacement or repair.

Risk of loss of Tyre Pressure Monitoring System sensors

- Aftermarket workshop may dispose Tyre Pressure Monitoring System sensors because they are unaware of its function.

Benefits of correct tyre inflation



Tyre wear



Nitrogen Tyre Inflation

What are the benefits of using nitrogen to inflate your tyres?

For many years, nitrogen has been used to inflate the tyres of performance vehicles like Formula One cars, commercial and military aircraft, space shuttles and mining vehicles. It is safe and more economical. And now, it is available for private cars like yours. So switch to nitrogen today and enjoy its greater benefits.

Lesser maintenance

Since nitrogen molecules are bigger than air molecules, nitrogen-inflated tyres maintain pressure three to four times longer than those inflated with air. Hence, you will not have to re-inflate your tyres as often as you normally would.

Longer tyre life

Using nitrogen to pressurise tyres has benefits over regular air for tyre longevity. The greatest threats to tyre life are heat and uneven treadwear. Both of these result from improper tyre pressure. Using nitrogen maintains a more even tyre pressure over the life of a tyre. Also, the rubber inner lining of a tyre degrades over time in an air environment. As this rubber lining degrades, air pressure will be lost faster, accelerating the effects of under-pressurisation. Nitrogen does not cause the inner lining of a tyre to degrade, hence extending its useful life.

Increased fuel economy

Nitrogen is moisture-free and being molecularly larger than oxygen will permeate through the tyre at a slower rate. That is why nitrogen can keep tyre pressure consistent and the recommended 'contact patch' on the road longer, reducing rolling resistance for better fuel economy.

Better comfort

Nitrogen-inflated tyres run at a more consistent temperature than air-inflated tyres, which help to maintain a more even tyre pressure, and hence, optimal contact between the tyres and the road is maintained. Also, you will enjoy better stability, improved car handling and enhanced ride comfort, especially on longer journeys.

Rust-free rims and steel belts

Oxygen and water vapour can cause oxidation of tyre rubber and corrosion of metal and alloy wheels. The water vapour in air can accelerate these processes, especially under pressure like the compressed air in a tyre. The corrosive effects of both oxygen and water vapour are multiplied when a tyre overheats due to under-inflation. Nitrogen, being an inert gas and being moisture-free, will not cause corrosion or rust. Nitrogen will also not degrade the seals in air valves, further preventing pressure loss.

Tyre Rotation

Why do you need to rotate and balance your tyres regularly?

A tyre is out of balance when one section of the tyre is heavier than the others. Out-of-balance tyres cause a car to vibrate at certain speeds, usually between 50 and 70 km/h.

To balance a wheel, our specialists mount it on a balancing machine, which spins the wheel to locate the heavier part. We then compensate for the heavier part by attaching a lead weight on the opposite side. Many people are pleasantly surprised at how smooth their car drives after balancing all four wheels.

Benefits of maintaining well-balanced tyres

When considering the importance of vehicle maintenance, tyre rotation frequency deserves as much attention as oil changes. Adhering to appropriate tyre rotation frequency and understanding the appropriate tyre rotation pattern for your vehicle will help ensure you get the most from your tyres. Proper maintenance leads to:

- longer tyre life
- minimisation of road noise issues from tyre tread wear
- providing technicians with opportunities for frequent inspection of tyres to address any developing safety concerns.

Benefits of maintaining your tyres at Cycle & Carriage

Every time you rotate your tyres, our tyre specialist will check and adjust tyre pressure according to factory recommendations, as well as inspecting the tread closely for any abnormal wear.

The tread should be wearing out uniformly and evenly. Any “feathered” edges or wear that is uneven in appearance indicate the need for other vehicle repairs, which may include shocks and struts, wheel alignment, or even something more serious, such as a ball joint or tie rod end.

Additionally, we will check the depth of the tread to ensure there is sufficient tyre tread remaining. Tyres should always be replaced when there is less than 3 mm of tread or when the tyre wear has reached its wear indicator.

User information

- **Recommendation:** Rotate your tyres every 5,000 km. Extended rotation intervals may lead to uneven tread wear, resulting in excessive road noise or safety concerns.
- It is strongly advised that your tyres are checked and maintained by qualified specialist workshops such as Cycle & Carriage, as we understand your vehicle's characteristics the best. Some tyre characteristics of your Mercedes-Benz that you should know:
 - Some tyres are unidirectional, which are designed to rotate in one direction only. These tyres can only be rotated front to back and vice versa on the same side of the vehicle.
 - Some vehicles have different-sized wheels and tyres between the front and back but the tyres can rotate in either direction. These tyres can only be rotated side to side on the same end of the vehicle (e.g. left-front to right-front).
 - Some vehicles have different-sized wheels and tyres between the front and back that are also unidirectional. These tyres cannot be rotated.

Wheel Alignment

Why is wheel alignment important?

In its basic form, a wheel alignment consists of adjusting the angles of the wheels so that they are perpendicular to the ground and parallel to each other. The purpose of these adjustments is to maximise tyre life and to keep the vehicle tracking straight and true when driving along a straight and level road.

Wheel alignment is often confused with wheel balancing. They should not be associated except for the fact that they affect ride and handling. If a wheel is out of balance, it will cause a vibration at highway speeds that can be felt in the steering wheel and/or the seat. It may also cause excessive tyre wear and steering or tracking problems.

While driving in Singapore, our vehicles tend to drift according to the gradient of the roads. These gradients are catered for rainwater drainage. In this case you would experience the “drifting effect”, where the vehicle would be pulling slowly to the left or right depending on the road surface.

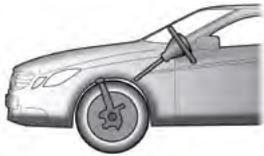
Driving over humps and potholes over time would also affect the wheel alignment settings.

Symptoms of an alignment problem

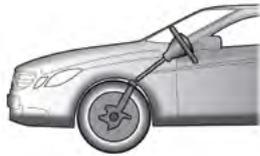
When driving with incorrect wheel alignment, the following symptoms are likely to show up:

- The vehicle pulls strongly to either the right or left.
- Constantly correct your steering wheel aggressively even when driving on a straight road, because your vehicle is wandering to the left or right.
- On straight road, you will find your steering wheel not in the centralised position.

Symptoms of an alignment problem



Negative caster



Positive caster



Toe in



Toe out



Negative camber



Positive camber

Incorrect wheel alignment causes the tyre to wear prematurely. With regular tyre rotation at 5,000 km, our technicians are able to detect the signs of any abnormalities in the tyre wear pattern and would be able to give better advice to prevent any further damages by performing a computerised wheel alignment test to rectify the fault.

Dangerous effects of unauthorised wheel alignment jobs

Wheel alignment equipment and accessories that are not approved by factory or are not being used correctly may impair the operating safety of your vehicle and result in a risk of accident.

Where adjustments to wheel alignment are based on general vehicle adjustments and non-original Mercedes-Benz parts like eccentric bolts and shims are used to make the vehicle track straight, these modifications may lead to dire consequences - turning radius may be affected, tyres may wear prematurely or the aftermarket parts may give way, causing accidents to happen and placing lives in danger.

Modifications not conforming to factory standards may affect other safety systems in the vehicle, i.e. ESP®, ABS, Tyre speed sensor and etc.

Benefits of visiting Cycle & Carriage for wheel alignment

Cycle & Carriage has the correct and most updated specifications from the factory. With a state-of-the-art computerised laser wheel alignment machine, we are able to correctly adjust the vehicle's wheel alignment to perfection. Vehicles with ABC (Active Body Control) and AirMatic systems (e.g. S-Class) require special tools and software in order to adjust the wheel alignment without damaging the steering systems of the vehicle. Also, only our service centre is able to correctly adjust not two but all four wheels on your vehicle.

Cycle & Carriage (Authorised Dealer)

Service Enquiries Hotline: 6298 1818

Authorised Service Centers - Passenger Cars

Mercedes-Benz Center: 301 Alexandra Road, (S)159968

Pandan Loop Service Center: 188 Pandan Loop, (S)128378

Eunos Service Center: 330 Ubi Road 3, (S)408650

Sin Ming Service Center: 600 Sin Ming Avenue, (S)575733

Mon - Fri: 8.30 am - 6 pm, Sat: 8.30 am - 12 pm, Sun & PH: Closed

www.mercedes-benz.com.sg

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