# MRF Tyre Guide: All you need to know



Tyres are not just round pieces of rubber fitted to your car's wheels. A good set of tyres can make all the difference in your car ownership experience. But which one should you go for? Are asymmetrically treaded ones the best? Is nitrogen better than air? What is the difference between a tubed and a tubeless tyre? What is wheel alignment? These questions will surely arise when selecting a new set of tyres. Let's look at each question one by one

# **1. Buying tyres**

Let's talk shoes. Does one size fit all? Can rexine sneakers be used for trekking? Or can suede leather be used for working out? No.

The same goes for tyres. While selecting the best tyre for your car, one must take into account what is expected of a new set of wheels While off-road tyres are good if you stay in an area where road quality is bad, symmetrically treaded tyres are preferable for urban areas with superior roads.

### Construction



Nylon is a strong, yet light textile. It is used in a variety of fields, from clothes to body armour. Tyres also contain nylon, along with steel and other materials, to help improve strength and stiffness. A single unit of rubber, the most basic building block of rubber, is called a cord. When the cords are arranged in a criss-cross pattern, like in a knit sweater, it is called a bias ply construction. When the cords are arranged in a tangential pattern, like in the strings of a guitar, it is a radial pattern. Radial tyres are the industry standard when it comes to automotive tyres in India.

# Tread

Ever heard your shoes squeak while walking on a wooden floor? That is the sound of your sole creating friction, helping you to walk. This happens because rubber, when in contact with a surface, offers resistance. This resistance is also loosely called "grip". Grip depends on many factors like composition of the surface, the area of contact, the weight applied, and so on. This concept can also be applied to tyres. The parallel or v-shaped grooves on the outer surface of a tyre are called treads. Tread design plays a crucial role in comfort, handling and braking.

- 👩 The tread design of a tyre plays an important role in handling and ride comfort.
- Tyres which do not have any tread (slick tyres) are used in racing because they offer maximum contact area, but are best-suited for race tracks, and not for ordinary use.
- Straight-cut tyres, or tyres with straight tread are best suited for heavy load and long haul applications.
- V-tread tyres offer the best grip in most everyday situations, along with good wet grip
- The best tyres feature a combination of different type of treads to improve grip on all sorts of surfaces and make it more versatile.

### **Tubed and Tubeless Tyres**



We have all kicked a ball around once in a while. And we all know that what keeps a ball round is the bladder, a thick rubber balloon that is inflated with air. Most modern football now a days don't have a bladder, which helps in reducing weight and improving swing.

Tyre tubes are very similar to football bladders. Tubed tyres are cheap and easy to maintain, suffer blowouts, which can cause accidents. Tubeless tyres do not have a tube, but have a reinforced sidewall. They are lighter, and hence more fuel efficient.

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# **Reading a tyre**

While checking out from a store, the attendant scans your purchases with a barcode scanner. The barcode contains black and white lines that contain all the information pertaining to the product.

Similarly, every tyre has a set of markings on the outer wall, which can tell you everything you need to know about the tyre.



- 205 is the tyre tread width in millimetres.
- 55 is the aspect ratio, which is the ratio of the sidewall height to the width.
- 88 R14 is the diameter of the tyre in inches), R indicating radial construction.

- 95 is the load rating and H is the speed rating, in this case meaning 270 kmph.
- In case you have a doubt, consult an MRF T&S for help.
- <sup>88</sup> You can find out the location of a T&S near you by going to www.mrftyres.com

# Upsizing



So you wake up one day and decide that your bathroom is too small, your living room cannot accommodate that 51 inch TV that you were dreaming of buying and the parking lot can only house one of your three cars. What do you do? Go in for a larger house, obviously. But when it comes to tyres, bigger is not necessarily better. When going in for larger tyres, you "upsize", or upgrade. These are things you need to keep in mind while upsizing.

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- Upsizing involves fitting larger tyres, which may or may not require a rim change.
- 🏽 While upsizing, the overall outer diameter must remain the same.
- 68 The aspect ratio of a tyre is inversely proportional to the wheel diameter, which is also an important factor to be considered.
- This is because choosing a tyre of incorrect dimensions can affect handling, fuel efficiency, ABS operation and cause underbody damage.
- Always stay within 3 percent of the stock tyre specifications (rolling radius and circumference) to be on the safe side.

# **2. Maintaining Tyres**

# Checking tyres for wear

Tyres are the main point of contact between the road and the car. Just like a pencil tip wears when used, so do tyres. Worn tyres can reduce grip, fuel efficiency, and can cause accidents.

So this is how you can check if your tyres are worn out:

- Every tyre has a treadwear indicator, which looks like an upward-pointing arrow.
- If the outer wall of a tyre touches the tip of the indicator, it must be replaced.
- Tyres must have a minimum of 2mm tread depth left, to be effective.

# Inflating tyres correctly



A tyre is like a football. Just like an over or under inflated football can spoil a game, an improperly inflated tyre can cause a lot of problems. While an overinflated tyre can result in a hard, bouncy ride, an underinflated tyre can damage handling and steering quality. Always keep in mind the proper inflation pressure for your tyre. Pressures differ depending on the weather, the size of the tyre and the amount of load to be carried by a vehicle. As a rule, it is better to overinflate tyres rather than underinflate them before setting off for that drive you have been planning for ever.

# **Fixing punctures**

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In many places across India, the roads are not properly laid out. Bad news for tyres? Yes! Absolutely. Broken pieces of tarmac, debris from road accidents, rusted bits of construction material litter our roads everywhere. Add to this potholes and you have a destructive mix leading to tyre punctures. So what do you do when you suffer a flat? Keep in mind these points.

- As far as possible, fixing punctures without trained assistance is not recommended.
- In case there is a puncture, stop the car, park it at the side of the road and turn on your hazard lights.
- 68 Check where the puncture has occurred.
- Once done, use the vehicle jack to lift the car.
- Loosen the wheel lugs first, then remove them.

- In case you have a doubt, consult an MRF T&S for help.
- 8 You can find out the location of a T&S near you by going to www.mrftyres.com

# Tyre rotation



In test cricket you will notice that the fielding team's captain keeps changing his bowlers after brief spells. This not only helps the bowlers recover their energy but also keeps the batsmen on their toes because of the fresh bowlers in the attack. Interestingly, this concept can also be applied to tyres. Most cars in India are front wheel driven, which means that the front wheels wear out faster than the rear. This can cause serious handling problems. To tackle this, tyres need to be swapped, or rotated every 5000 km. Every manufacturer provides the rotation schedule in the user's manual. The main reason why tyres are rotated is to ensure equal wear on all the tyres.

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Most cars in India are front-wheel driven, so the wear on the front wheels is more than that on the rear.

Tyres must be rotated every 5000km

## Nitrogen inflation



Just like you like wearing cool shades, wearing a cool jacket and having that cool hair-do, there is a way to make your tyres cool as well? How? Nitrogen. Yes the same gas that makes up 78% of air. Nitrogen is an inert gas, so it does not expand as much as air when your tyres get heated up. Not only that, Nitrogen does not contain any water molecules, which protects the rim in the long run. Since the gas molecules are larger, tyre pressure is maintained over a longer period of time compared to air. In case you didn't know, Nitrogen is used to inflate tyres used for fighter jets and race cars. Think about it.

- Inflating your tyres with nitrogen prevents sudden blowouts
- Nitrogen molecules are larger, meaning that it cannot escape from microscopic pores in the tyre, whereas air can.
- This means that nitrogen-inflated tyres lose less pressure than air over the same period of time.
- Nitrogen is lighter than air, which leads to fuel savings
- Every MRF T&S is equipped with a state-of-the-art nitrogen generator which ensures that only 95.5% pure nitrogen is used for your tyres.

# Wheel alignment



The next time you go for a walk, have a look at your feet. No seriously, stop and look at your feet. You will notice that they are curved. Why so? That is because when you stand, your body weight flattens it. This helps you walk straight. The same applies to your car's wheels. When a car is loaded, you will notice that it dips a bit for a fraction of a second. This is because the extra load is transmitted to the suspension, which then pushes down on the wheels. This causes the wheels to move outwards slightly. This is so that the load gets evenly distributed among all four wheels via the tyres. This setting however, is disturbed by bad roads and potholes. Your car will start pulling to one side while driving if your wheel alignment is off. Even if your car steers properly, it is always good practice to get your wheels aligned every 5-8000km and when you have bought a new set.

- Wheel alignment is done regularly in order to ensure proper handling, equal tyre wear and reduced load on the suspension.
- There are three parameters to be considered while getting your wheels aligned:caster, camber and toe angle.
- Caster is calibrated to improve steering feedback.
- Camber is adjusted to improve handling.
- Toe angle is dependent on the camber and is calibrated to ensure equal tyre wear.
- Wheel alignment should be done every time new tyres are fitted.
- Every manufacturer provides wheel alignment data, and it is recommended to adhere to the same.

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# Wheel balancing



Ever been on a merry-go-round when young? Imagine if a group gets on one side when you are alone on the other side. What will happen? The merry-go-round will tilt to one side when it rotates. To compensate it, you bring on board another kid. And another. Till there is perfect balance. This is exactly what happens during wheel-balancing. Wheel balancing is done when there are vibrations at high speed. The wheels are removed, and then weights are attached to the rim till the rotation is perfectly balanced. It is very important to get your wheels balanced every time you get a new set of tyres.

- Wheel balancing is done to prevent vibrations at high speed.
- If not done , an unbalanced wheel set up can drastically hamper ride quality.
- Wheel balancing should be done every time you go in for a tyre service/repair/replacement.

# **Basic Dos and Don'ts**

- Don't brake hard
- Don't turn the steering wheel when the car is parked
- Look out for potholes and obstacles
- Go for tubeless tyres
- Inflate your tyres to the recommended pressure
- Always inflate your tyres to 2 psi above the normal pressure when planning on a long drive
- Replace worn or dirty valve caps if using tubed tyres
- Inflate the spare tyre when you inflate the active ones
- Never mix tyre types or brands
- Consult MRF personnel before going in for an upsize