

Tire Safety and Care

Tires are perhaps the most important component on a motorcycle. We seldom think about the fact that the two tire contact patches (only a few square inches each) are all that separates us from the pavement below. Tires must withstand extremes in temperature, exposure to the elements, potholes, and debris on the road. They must maintain traction while transmitting acceleration and braking forces and steering inputs to the road surface. The air pressure in the tires supports the weight of the bike and helps absorb shocks. All this is done through those two small interfaces between the bike and the road. Knowing this, it is not hard to understand the importance of tire maintenance.

Tire Pressures

Maintaining your tire pressures is one, if not the most important maintenance task you perform. Always keep the motorcycle manufacturer's recommended air pressure in both tires. This is an important requirement for tire safety and mileage. Your motorcycle owner's manual will tell you the recommended cold inflation pressure. On some motorcycles, the recommended front and rear tire pressures will be different. The pressures stamped on the sidewall of the tire are only for maximum loads so follow your owner's manual recommendations.

Always check tire pressure when the tires are cold - motorcycle parked at least (3) hours. Use a good quality gauge that holds a reading. Time and outside temperature affect the pressure within your tires. It is normal for a tire to lose about 1 pound per square inch (psi) per month. As temperature goes, so goes pressure. A tire's pressure can change by 1 psi for every 10 degrees Fahrenheit of temperature change.

Check your pressures daily when you are on a trip and remember that every 4 psi of inflation air lost is approximately equivalent to losing 60 or 70 pounds of load carrying capacity. That means that if your tire pressure is 36 psi instead of 40 psi, then you need to take 60 or 70 pounds of load off the motorcycle.

Loss of pressure may be due to worn out or badly seated valve cores. Check the valve cores and if necessary, tighten for correct seating, or remove and replace them. A metal or hard plastic valve cap with an inner gasket should be used and installed finger tight to protect the valve core from dust and moisture, and to help maintain positive air seal.

While tire pressure is certainly the main element of load carrying, it is also a critical factor in motorcycle handling and stability. Under inflated tires can result in imprecise cornering, higher running temperatures, irregular tread wear at the edge of the contact patch, fatigue cracking, oversteering and eventual failure of the tire carcass. The over flexing that occurs from running a tire for an extended period of time in an under inflated condition can cause the tire to split in the sidewall. A particular hazard of an under inflated tire is hitting, for example, a pot hole. This may result in a sudden deflation or it can buckle the tire over the rim flange causing extensive damage to the tire and eventual failure. Over inflating tires does not increase load carrying capacity, but will result in a hard ride and accelerate tire wear in the center of the contact patch.

Tire Wear

Motorcycle tires should be replaced by the time they reach a groove depth of 2/32". The greatest wear will usually occur in the center of the tire. All street motorcycle tires sold for use in North America must, by law, have minimum groove depth indicators or "wear bars" in several positions around the circumference of the tire. These are at a depth of 1/32" and can be seen as raised ledges in the bottom of the tread pattern grooves. Having an adequate tread groove depth for channeling water from the road is of prime importance on a motorcycle. This is why both tire manufacturers and some motorcycle manufacturers recommend replacing a tire at a minimum of 2/32" rather than the legal limit of 1/32".

Tire Repair

Some punctures in motorcycle tires can be repaired if no other damage is present. Dunlop recommends only permanent plug-patch repairs of small tread area punctures from within the demounted tire by a qualified tire repair shop or motorcycle dealer. Never perform an exterior repair, and never use an inner-tube as a substitute for a proper repair. Liquid sealants are not recommended. These are a form of temporary repair which may adversely affect ply material and mask secondary damage caused by the penetrating object. Reliance upon sealants can result in sudden tire failure and accident. Repairs reduce a tire's load carrying capacity and may void the tire manufacturer's speed rating. Motorcycle manufacturers can be even tougher on repairs than the tire manufacturers. The Honda Gold Wing Owner's Manual states, "If a tire is punctured or damaged, you should replace it, not repair it".

Sidewall Treatment

You should never use protectants, cleaners or dressings on your tire sidewalls. These may degrade rubber and remove the inherent ozone cracking and weather checking resistance put into the rubber by the tire manufacturer. Use a mild soap solution to clean your sidewalls, white striping or lettering, and rinse off with plain water.

Tire Storage Precautions

Try to avoid frequent and varied extremes of temperature during storage. Do not keep tires next to radiators or sources of heat. Tires subject to these conditions will age more quickly than those stored in a cool, constant environment. Tires stored in direct sunlight for long periods of time will harden and age more quickly than those kept in a dark or dimly lit area. Do not store tires where electric motors are present; the high concentration of ozone will accelerate tire aging. Prolonged contact with oil or gasoline causes contamination of the rubber compound making the tire unsuitable for use. Wipe off any oil or gasoline immediately with a clean rag.

Tire Replacement

When you need to replace your tires, refer to your owner's manual for recommended sizes and type. Use radial tires only when they are specified by the motorcycle manufacturer. Rear tires tend to wear out quicker than front tires, but it is a good idea to replace both tires at the same time. For optimum performance, it is very important to correctly match your front and rear tires. At a minimum, the front and rear tires should have complementary tread patterns, and ideally be the same make and model.

When mounting a new tire on a rim requiring a tube, a new tube should be used. Old tubes become stretched, and if an old tube is fitted within a new tire, it can crease and fail due to thinning of the tube rubber.

Tire and wheel assemblies should be balanced before use and rebalanced each time the tire is removed or replaced. Unbalanced tire and wheel assemblies can vibrate at certain speeds and tire wear will be accelerated.

New tires should not be subjected to maximum power or hard cornering until a reasonable "run-in" period of approximately 100 miles has been covered.

A Final Word

Look at your tires routinely. If you notice tread groove stress cracks, sidewall cracks, blisters, bulges, uneven wear, cuts, punctures, flat spots or knots – replace the tire! It cannot be repaired. If you are unsure, call the manufacturer. Note what your tires are telling you while you're riding. If your steering response is slow or mushy, or if cornering and braking response is heavy, there's a good chance your tires are under inflated. Vibration or wobble may signal that actual tire damage has occurred and failure is imminent! A tire's performance degrades as it approaches the end of its useful life. This degradation is gradual and you may not even notice it. This is no place to skimp by trying to squeeze those last few miles out of a set of tires. Replacing your tires before they are totally worn out may end up saving your life.

If you follow these guidelines, you will not only extend the useful life of your motorcycle tires, but you will increase your chances of many miles of safe riding.