



BIKE TIRE & TUBES 101:

Why do my bike tires keep losing air?

Bike tires and tubes lose air for two main reasons: because rubber is porous and naturally allows air out through tiny pores, and because there's **an object in the tire tube or some other kind of wear** that has made the tire susceptible to air loss. ... Therefore, over time, bike tires will lose air and even go flat, when not used. Flats occurring in the desert are often caused by dried weed branches that shed "goatheads," and are sharp like needles. These are the enemy of bike riders. Summer storms produce winds that blow goathead branches in and onto city roads and bike paths.

Can heat make you lose tire pressure?

In general, **tires will lose or gain 1 PSI (pound per square inch) for every 10°F change in temperature.** Therefore, your bike will encounter natural forces that cause your tire pressure to go up and down throughout the day. Your tire is most likely to go **flat from sitting during the hottest months of the year.** High temperatures cause the air in your tires to expand, which in turn increases the tire's internal pressure, and pushes small amounts of air out. When the pressure rises, so does your chance for a major leak or total blowout. The hotter a tire gets, the higher the risk of failure. Leaving your bike inside a car where it would be exposed to 140F or similar for an extended period would also cause loss of pressure. Remember to periodically check your tires air pressure and inflate as needed and desired.

What happens when you inflate your tires to the maximum pressure?

Since tires **inflated to the max can't give as much on the sidewall**, you might see strong cornering performance, but it could be at the risk of your braking threshold. One quick corner and your back end could slide out. On smooth, paved paths, we recommend pressure 10% less than maximum. If you are riding on an unpaved and uneven surface, reducing air pressure can provide a smoother ride. Fat tires have become popular because of the cushioning and gripping power they provide.

What is the most common cause of a bike tire flat?

Goatheads proliferate in dry, lower elevation climates, and when ran over with a bike tire, they easily puncture the tube and cause the flat. Other road hazards are also prevalent, such as tiny wires, nails, staples, and other materials that prick a hole in the tube. To determine the leak point where you will need to patch, take the tube out, pump it to 5 pounds or so, close the valve and with a transparent container of water run the tube slowly around the tube in the water and look for slow leaks (bubbles). Also, check the inside of the tire for something still present that punctured the tube, and remove it.

What can I do to help prevent flats?

Of course ... when riding, be aware of the terrain and road hazards, including weed branches with goat heads, and avoid them. Bike riders need a bike trail strategy, riding where stickers are less prevalent – or be prepared for flats. Off-road trails equal flat tires, without protection. Should you carry an air pump, patch kit, and tools with you on your ride? You'll need to decide. Will you do your tire repair, or bring the bike to a shop for repair? Remember, when you transport your bike to a shop, protect the derailleur and other components from getting bent. Described in further detail below, we recommend Ultraseal liquid sealant, Mr.Tuffy liners that thicken the wall between tire and tube, and the best are Tannus foam inserts that further thicken the wall between tire and tube (read below). Heavier duty tubes and tires manufactured with a liner can also be ordered and installed.

PROTECTING AGAINST FLATS:

Goatheads: Nasty puncture weeds - your tire's #1 enemy in the SW U.S.! Nails, screws, staples, metal shreds, and glass aren't far behind.

Nasties



For bicyclists in the Western US, goatheads are the leading cause of flat tires. Often an overnight wind storm blows the vine branches onto trails and roadways, and are just plain hard to avoid. Goathead vines, aka nasty weeds, produce little tacks and burs that are sharp enough to puncture bike tires (and other commonly used equipment, such as wheelbarrows, small trailers, jogging strollers, etc.). Try to avoid them as best you can when riding. ... and of course, the broken glass, nails, tacks, and other sharp metals are not tire friendly. So, what can you do to help your tires and tubes survive nasties? Here are a couple of suggestions:

- 1) Use a tube sealant. At Open Road Motosports we find the Ultraseal sealant we offer to be beneficial inside the tubes. We insert up to 4 ounces of Ultraseal into the tube. When the tube encounters a sticker on a ride, your tube may lose air. Locate the stickers, remove them, and then reinflate. When reinflated, spin the tire a few revolutions, which allows the sealant to fill into the hole and seal it. You will be able to see the shiny spots on your that are now filled with sealant. Sealant can save you from having to remove your tire and tube, patch the tube, and then reinstall the tire and tube on the bike. Not so easy on the side of a path. Whew. <https://gemplers.com/products/gemplers-extreme-heavy-duty-grade-ultraseal-tire-sealant-1-gal>

ULTRASEAL



MR TUFFY



TANNUS ARMOUR



- 2) Bicycle tire liners we use at Open Road Motosports are the popular “Mr. Tuffys,” and are thick, lightweight protectors that provide a physical barrier for your tube - deflecting thorns, small nails, glass and other debris that cause flats. Tire liners install easily between the tube and tire to offer puncture protection. We offer this installation as a service.
<http://mrtuffy.com/>

- 3) The best solution we have found is to install a thicker foam insert. Tannus Armour foam inserts provide a thicker barrier between the tire and tube, and offer an even greater level of protection, because the approximate one-half inch of foam is thicker than most goatheads. To properly fit, a one size smaller tube may be required in conjunction with the Armour, and then you will keep air pressure in the tube around the same as the TPI rating on the sidewall. <https://tannus.com/armour/>

- 4) Purchase heavy-duty tires with in-built liners, and thicker tubes.

- 5) Carry an air pump or digital tire inflator. We recommend carrying a pump and a few tools in a strapped-on bike bag – just in case. A pocket knife can be helpful in removing stickers from the tire and tube, and a small magnifying glass if eyes aren’t what they used to be.