

Steps for Fixing a Flat Tire

1. **Inspect the outside of the tire for obvious puncture sites**
2. **Remove the wheel**

Front Wheel:

Release the brake cable

Quick release lever on axle – flip it open

Note: Most factory forks may have safety tabs (“Lawyer Lips”) which require some unscrewing of the quick release knob to release the wheel.

Remember that “A lever is a lever and a knob is a knob” - hold lever, spin knob - just enough to loosen it.

Rear wheel:

Shift chain onto the smallest cog

Release the brake cable

Quick release lever – flip it open. *No Lawyer Lips here, but you may need to hold the lever and spin the knob a bit to loosen the wheel.*

Work from the rear of the bike: push the wheel either down or forward, depending on the frame dropout style. In a forward and down direction, free the cogs from their engagement with the chain and derailleur pulleys.

3. **Remove the tube**

Most Important! Alignment!!

Keep the tire and the tube in alignment in order to help match the hole in the tube to the source of the flat on the tire. *If you cannot source the cause of the flat, the culprit may still be hidden in the tire, and it will flatten your new tube within minutes!!*

Standard protocol: **Align valve with tire brand mark**

Tire brand mark is always on the GEAR side of the bike

Note that your tire may have an arrow indicating roll direction.

You may or may not need tire levers to get the tire off the rim – it depends on the type of tire you have, If you do need levers – be very gentle so that you do not damage the tube!

Always start working in the area OPPOSITE from the valve stem – 180 degrees away. This will prevent possible damage to the stem/tube junction.

4. **Possible causes of flat tires:**

Glass shards, metal “staples”, nails, screws, thorns

Pinch flat due to low tire pressure and hitting rocks or sharp curb

Rough edge of the rim tape or valve hole

Rim tape shifter to expose spoke nipple

Crack at the valve/tube interface

Old worn tire - tube can push out and a blowout happens

5. OK, Sherlock, time to find the culprit!!

Partially inflate the tube to find the leak – look and listen. Your lips are very sensitive to the air movement. A touch of spit will bubble on the leak to confirm it!

Is it on the outside, roadside surface of the tube? (puncture or pinch flat) or is it on the inside, rim-side surface of the tube (valve stem, rim tape or spoke issue).

Align the leak with the tire to help locate the puncture. You already know that the valve was aligned with the tire brand mark (right?), so this sets you up to locate the culprit. Since the tube could have been aligned forward or backward, you have only two possible places to check.

Look for the culprit. You can *CAREFULLY* use your fingers, very gently, to “feel” for the sharp object – don’t cut yourself doing this!!!.

Remove the culprit! Use a tool, knife or tweezers. If it is rim tape, reposition the tape to cover the spoke nipples. If the tape is rough or the rim has a burr, you can use a stone to smooth it.

6. Replace the tube or patch it

Patch: If the puncture is small (less than ¼”) you can patch the tube. Follow the directions in your patch kit. Rough up the tube in the area of the puncture with sandpaper. Apply a thin coat of glue (rubber cement) to an area slightly larger than the patch; wait a few minutes to set. Remove the foil backing from the patch (located on the sticky side of the patch) and apply it to the tube. Press the patch down firmly. It’s OK to leave the cellophane cover on the patch. Check your patch kit periodically – that tube of rubber cement, particularly once it is opened, will soon dry out and solidify.

New tube or patched tube replacement:

A thin coat of baby powder on the tube helps to keep it from sticking to the tire.

Partially inflate the tube to give it some shape before inserting into the tire.

Align the valve stem with the brand name of the tire (aligned for that *next* flat-tire-Sherlock-Holmes-investigation...). Note that your tire may have a direction to it – align it so the arrow points in the direction of the forward motion of the bike. With the tire brand visible on the cog side of the wheel, direction will be correct.

Put one side of the aligned tire into the rim.

Align the valve stem with the hole in the rim, and carefully tuck the tube into the tire. Insure that the valve stem is straight. Replace the other side of the tire into the rim. Hold the wheel horizontally against your stomach and work the tire on from your stomach outwardly to the point furthest away from you.

Some tires are hard to replace on the rim – use tire irons for that last few inches, carefully. Look to be sure the bead is completely within the rim. Pump up the tube a bit more and recheck the valve stem and that the bead is completely within the rim.

Pump it up as best as you can with your mini pump.

7. Replace the wheel

Wheel alignment in the frame is important (tracking, braking)

Quick release lever is on the non-gear side of the bike. If you forget, just note where it is on the other wheel.

On rear wheel, work from the rear of the bike, behind the seat. Bring the cogs into the center of the chain “circle” and hook the chain over the smallest cog. Bring the tire up between the brake pads. Continue to bring the wheel back or up into the dropouts until it is seated. Keep it straight. If you have horizontal dropouts, position the wheel from the rear of the bike, pressing it back into the dropouts with your right hand while you tighten the lever with your left hand.

Tighten the Quick Release: Align lever 180 degrees away from final locked position. Hold lever still, tighten partway with knob. Not too loose, Not too tight!!! Tighten and retighten until you see the impression of the lever on the palm of you hand.

Spin wheel to be sure it is centered – no rubbing on the frame or brake pads.

Close the brake cable release. This will be the best test of wheel alignment – the rim sides should be at equal distances from the brake pads.

Test brakes to be sure wheel is centered. If not, try again until it is centered.

REMEMBER!! Inflate your tire every time you go for a ride, or every other time if you are riding every day. The air will slowly diffuse out of the tire over time. Appropriate tire pressure depends on rider weight. Most of us ladies do not need the maximum recommended pressure. Do not use less than the minimum; go for a mid range.

Check your tire tread and health regularly. Rubber ages (oxidizes) over time stiffening it and making it brittle (think of old rubber bands).

You may need to replace your tires after approximately 2000 – 3000 miles of wear. Note that your rear tire will lose its tread faster than your front tire.

Schraeder Valve – wider valve – car or some mountain bike tubes

Presta Valve - narrower valve – most road bike tubes

Most pumps can do both types by inverting the rubber parts in the valve head

Quick release skewer reconstruction:

Units consists of 4 parts: lever/skewer, 2 springs, knob.

Those 2 springs go in with the narrow end pointed toward the inside of the hub.