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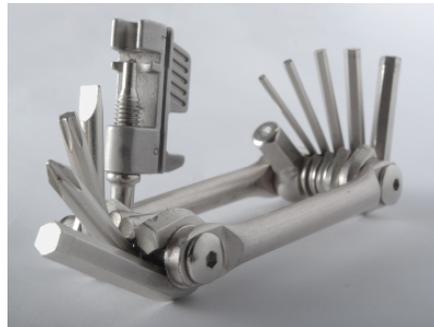
Trailside Fixes and Flats

With the proper maintenance and care of your ride, you can minimize your downtime on the trail. However, flat tires and broken parts are almost unavoidable and knowing how to handle them properly can save your ride or race! Begin your ride by being preparing with the basics of what to carry with you at all times when out riding. You'll need:

- A spare tube that it the right size for your bike and a patch kit.
- A CO2 powered inflation system and at least 2 spare CO2 cartridges.
- Tire tools for removing and installing your tube.
- A multi-tool with a chain tool and multiple wrenches/Allen keys.
- Some anti-flat tire mojo.

What I also recommend for the trail:

- Zip ties and a small roll of tape.
- An extra section of chain that matches your bike or a master link.
- A small (well sealed) bottle of chain lube.
- An extra shift and brake cable.
- Cannon Cyclery Business Cards!



Some Dirty bike Facts

- Proper chain lubrication is one of the most beneficial and often overlooked pre-ride rituals. Ideally you should spray or drip lube on the chain *every other ride*. The best practice is to apply a thin coating to the chain only and then wipe off the excess with a dry rag. When the chain is properly lubed it will shift and run quietly, wear longer, and keep other drive train parts lasting longer.
- Creaking and popping sounds coming from your steed are not normal and are usually a sign that something is loose, worn, or cracked. It's not a bad idea to occasionally check the important bolts on your stem, crank arms, and headset etc... Be careful not to over torque them however, only tighten them if they are loose.
- Bicycle cables and housing will last approximately 2 years and will stretch, wear, and corrode over time.

- A good quality bicycle helmet has a lifespan of approximately 3 years, after that the polystyrene of which it is constructed will be deteriorated and will not function properly in a crash.

REPAIRING A FLAT (Mountain Bike Tire)

Everyone *will* have a flat tire at one time or another, so as a cyclist it is your duty to be prepared for when it occurs. Removing and repairing a punctured tube is much easier than you think, and after a little instruction and some practice you will be able to do it with no problem.

Here's what you need to do:

1. Get to a safe place on the trail that will provide you enough room to work. It works well to use a tree to hang the bike from.
2. Open or release the brake system to provide sufficient room to remove the deflated wheel if you have "V" or Cantilever brakes. If you have disc brakes, be sure to NOT squeeze a brake lever with the wheel out.
3. Open the quick release and remove the deflated wheel from the frame or fork. If the flat is on the rear, shift the bike into the two smallest gears. This will allow the cassette to slip past the derailleur a bit easier.
4. Begin to remove the tire by loosening the *bead* from the *hook* of the rim. This is where the tire levers will come in handy. Place the *spoon* end of the lever under the *bead* of the tire and lift it over the lip of the rim and out of the *hook*. Repeat this in a second or third spot as necessary to unseat the bead completely.
5. Next, slide the tire lever all the way around the inside of the *bead* and loosen the tire completely from the rim surface, exposing the inner tube.
6. Now, remove the punctured tube from the inside of the tire and watch for the *valve stem* and its relation to the tire. Often times you can trace the puncture to a corresponding hole or tear on the tire. This is where it is handy to have the label of the tire located at the valve hole of the rim.
7. Once you have located the hole in the tube check to see if your tire is damaged as well. If the hole or tear in the tire is large enough, you will need to *patch* or *boot* the damaged area. Slide your hand around the inside of the tire and check for any debris that may be stuck in the tire; such as thorns, sticks, staples, nails, or glass or other things that don't belong in your tire. Here's where a dollar bill (a \$20 seems to hold better) or power bar wrappers come in handy.



8. To patch or boot your tire, you will need to insert a liner (power bar wrapper, dollar bill, or tire boot works fine) in between the tube and the inside of the tire, forming a barrier to keep the tube from ballooning out of the hole and popping. This step is not always necessary as it depends on the size and type of puncture.
9. Now, remove your replacement tube from your emergency kit and *inflate it slightly* by mouth. This will make it much easier to install in the next step.
10. Install the valve stem in the rim by pulling the tire halfway back and exposing the valve hole.
11. Fold the tire back over the valve stem and tube, and seat the tube inside the tire.
12. Push the tube all the way inside the tire and above the inside of the rim.
13. Beginning at the valve stem, insert the *bead* of the tire into the *hook* of the rim, and walk the tire all the way around the rim leaving as little unseated bead surface as possible.
14. Now insert your tire lever between the unseated bead and rim surface with the spoon side facing the rim.
15. Beginning at one end of the unseated bead, begin to roll the bead into the hook of the rim. Be careful not to pinch the tube with the tire lever as you perform this step.
16. Walk your hands around the tire, ensuring that the tire is completely seated into the rim and that no tube is exposed.
17. Install your inflation device on the valve stem, and inflate the tire by bursting small amounts of air into the tube while watching the tire. Fully inflate the tire once you are confident that the tire is completely seated on the rim. Do not rest the tire on the ground while inflating it as this may cause the tire to unseat during inflation. Instead, lay the wheel on its side as you inflate the tire. (If you have a frame pump or hand pump, throw it into the woods and wait for someone to come by with a CO2 system. This may actually be faster than attempting to pump a fat mountain bike tire with it.) HA!
18. Reinstall your wheel into the frame or fork. The most effective way to do this is to place the bicycle upright, resting on its wheels. This step will ensure that the wheels are properly seated in the dropouts.
19. Tighten and clamp your quick release, and reset the brakes.
20. Lift up the bike and spin the wheel to ensure that all has been installed properly.

If your ride is equipped with a Tubeless system with a sealant (Highly Recommended) and you are experiencing a rare flat tire, the process for installing a tube is exactly the same as above. However, you'll need to remove the valve stem from the rim to install the tube. Just be aware that a tubeless tire is a much tighter fit and will often "pop" loudly as it seats in place. It can sometimes take as much as 60psi to properly seat a tubeless tire.

Blown or Broken Chain Quick Fix

In most cases, a broken chain on the trail is usually caused by a “blown” or broken chain link from a missed shift or damaged chain. The outside portion of the link frays or bends open where the pin connects and breaks apart from the inside portion of the link and disconnects from the rest of the chain. It’s a major bummer during a ride, but can be easily repaired and shouldn’t cause too much down time. Here is how to fix it quickly:

- Get to a safe place on the trail that will provide you enough room to work. It works well to use a tree to hang the bike from.
- Using your chain breaker on your multi tool you’ll need to remove the damaged link from the chain at the pin in the same position on the next closest link. This includes one outside and one inside section, a total of (3) pins and (2) sections.
- DO NOT remove the chain pin completely from the chain! Instead, push the pin through only about $\frac{3}{4}$ of the way through and twist the damaged link out. The factory set chain pins are not designed to be re-installed and will not go back through the chain.
- Re-route the chain back through the cassette, derailleur, and chain rings making sure it is freely moving across the cogs, rings, and derailleur pulleys with the partially pushed chain pin to the outside of the bike.
- Press the open sections of chain back together on the bottom side of the drive train and use the partially pushed pin to hold the chain together. Use your chain tool to push the pin through the chain and watch that it does not go too far in. You should have an even amount of the ends of the pin exposed on both sides of the chain.
- Check to make sure the new connection is not stiff or sticking and then look for any damaged teeth on the chain rings or cassette that may have caused or been damaged in the break. If the connection is stiff, you can loosen it up by wiggling the chain from side to side until it loosens up.

