

Types of Flats

There are many types of flats. Determining which type you have can help you do an effective repair and prevent recurrence.

Outside of tube:

Holes in the outside of the tube are usually caused by objects piercing the tread of the tire and puncturing the tube. These objects can remain lodged in the tire, so make sure to check for and remove these objects before installing another tube.

Inside of tube:

Holes on the inside of the tube are usually caused by a misplaced, damaged, inappropriate, or absent rim-strip. Rim strips are placed on the rim (i.e., the outside portion of a wheel) to protect the tube from things like spoke-holes or spoke-nipples. This type of flat can also be caused by dirt, debris, or sharp edges on the rim, so make sure to check the rim and rim-strip for smoothness and cleanliness.

When a rim has a valley (i.e., a deep, wide, central groove) in it, it's important to place layers of rim strip into this valley to level it with the surrounding parts of the rim. Otherwise, the tube can get caught in the valley and get cut. Valley flats occur most commonly near the valve (often on both sides of the valve at once), but they can happen anywhere along the tube.

Pinch:

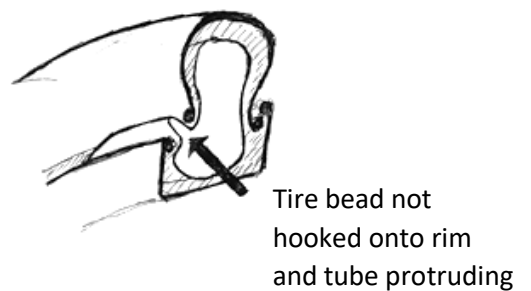
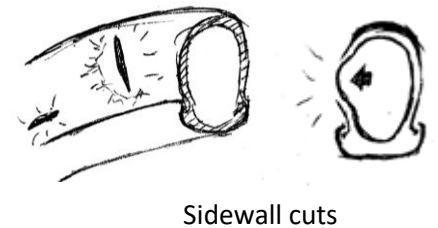
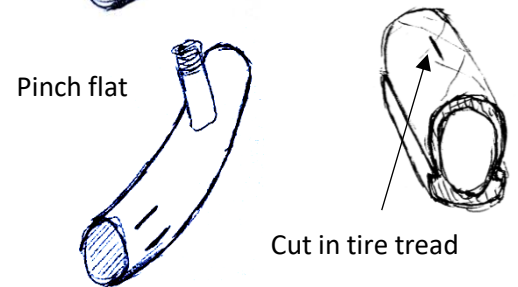
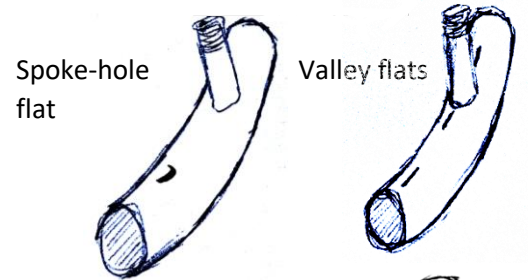
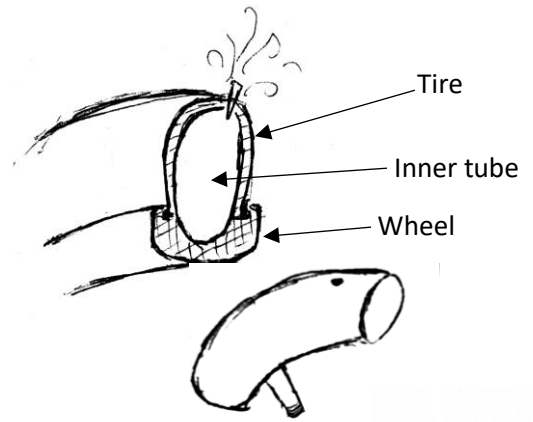
A pinch flat is comprised of two, parallel cuts on the side of the tube. They occur when the tube is pinched between the rim and tire while riding over something jarring to the rider like a bump or pothole. Pinch flats are more likely to happen when tires are under-inflated. However, a pinch flat can occur even with properly-inflated tires. Pinch flats can also cut the tire in the same way, so make sure to inspect the tire for damage as well.

Hole in tire:

Holes in the sidewall or tread of the tire can allow portions of the tube to expand out of the tire and explode or get punctured by objects outside the tire. If a hole is larger than 2-3 millimeters in any dimension, it probably needs to be replaced. A temporary repair for small holes in the tire tread is a tire boot (i.e., basically a patch on the inside of the tire). Holes in the sidewall are generally not repairable and instead necessitate replacing the tire. While inflating a tire, it's possible for the tire bead not to hook onto the rim. If the tube continues being inflated, it can explode as though there was a hole in the sidewall.

Folded or twisted tube:

A tube, especially a new, out-of-the-box tube, without any air may fold or twist during installation and develop a puncture when pressurized.



Folded tube

Twisted tube