

# Tire Plugging and Patching

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## Why do we care about tire plugging and patching?

Almost everyone has had a flat tire on their car. No big deal, you carry a spare. Jack it up, swap the tire, and you're on the road again. Not many car owners care about making a field repair on their car tire because they carry a spare.

At some point during your motorcycle ownership, you're going to get a tire puncture. Could be years away, could be tomorrow. I know guys who have gotten brand new tires and within 10 miles they picked up a nail. You may have a tire warranty, but you'll still need to get the bike back to the dealership – either make your own repair or call a wrecker.

Most punctures occur in the rear tire because the nail/screw/or other sharp object is kicked up by the front tire, and when the rear tire comes along that object pokes a hole.

You <could> rely on luck, hoping this will never happen, and perhaps your plan of action is to pull over to the side of the road, call a wrecker, wait who-knows-how-long, and have the bike hauled to a dealer for a new tire. Hopefully this doesn't happen on a weekend, or 200 miles from the nearest dealer. In that case it's gonna ruin your ride.

It's wise and prudent to prepare for tire punctures, to have a plan of action, the tools needed to make repairs, and the ability to reinflate your tire so you can get back on the road.

So... can you SAFELY make an emergency tire repair (ETR) and get back on the road? Yes, and no.

ETR's are just that – for emergencies. A good rule of thumb is that a motorcycle repair is good for 50 miles, travelling at no greater than 50 MPH. This rule applies to any brand of tire repair gear.

Keeping this in mind, when you get back home you should carefully inspect the tire and evaluate whether the tire needs to be replaced.

Most motorcycle shops WON'T make tire repairs due to liability issues, and because they'd rather sell you a new tire than plug a hole. Unlike automotive tire repairs, motorcycle tires are much more critical when it comes to rider safety. That repair MUST work and if it fails the rider could be injured. No room for error.

What are the types of repair available for motorcycle tires?

First you must identify what type of tires your motorcycle has. Tubed? Or Tubeless? Each style requires different repairs, some are easier than others.



# Tubed Repairs

How can you tell what type of tire you have?

- Tubed tires have a locking nut on the outside of the rim.
- Tubed tires are usually found on smaller displacement bikes.
- Tubed tire rims have spokes that go to the center of the rim, and have adjustable nipples.
- Sidewall may identify the tire as being a “tubed tire”.

Identified by looking at the valve stem and the spoke configuration.

To repair a tubed tire the wheel must be removed from the bike, the beads broken from the rim, and the tube pulled out so a patch can be applied to the hole. Always look for more than one hole in the tube!!!

- Mark the hole, then scuff the rubber around the hole.
- Apply cement to the tube and allow it to “flash off”.
- Peel the protective coating from the patch and apply over the hole.
- Use a tool to press the patch evenly into place.
- Reinstall tube into tire, reseal the tire onto the rim.
- Partially inflate so the tube assumes proper position, without kinks or bends.
- Deflate, then reinflate to proper pressure.
- Reinstall the wheel assembly on the bike.

Allow at least an hour for this process. If you’ve never done a tube repair, it’s going to take longer. When you select your tube tire repair kit, spend a few extra dollars and get a QUALITY kit. Simple rubber cement patches aren’t suitable for the stresses and heat found on motorcycle tires. Many of the cheaper kits are only suitable for wheelbarrows or floating tubes.

## Tubeless Repairs

I won't talk about tubeless tire repairs like you see used at an automobile tire shop – in that case the tire is removed from the rim and the inside of the carcass is scuffed, then a special patch is applied using industrial glue. This type of repair is the best, but impractical for a motorcyclist in the field.

Motorcycle tubeless wheels/tires are often cast aluminum. Tire sidewalls may identify that the tire is for tubeless use. Check the owner's manual.

A tubeless repair is much simpler than a tubed repair. The tire remains on the rim, the wheel remains on the bike. The hole is identified and is plugged in some fashion. Some repairs use glue, some don't.

Simple rubber cement won't keep the repair in place.

Before making repairs, the nail or screw must be removed to make room for the repair. Carry pliers to pull out the nail or screw.

## Slime or Some Kind of Sealant

- Viscous fluid is injected into the tire from a pressurized canister.
- The fluid coats the inside of the tire and the fluid leaks out the hole.
- The idea is that the fluid (and the solids in the fluid) will create a dam inside the hole.

Reliability? Questionable.



# Gummy Worms

These are strings (or worms) that are inserted into the hole in the tire. Worms have a coating that looks and feels like rubber cement.



- A reamer is used to clean out and open up the hole in the tire.
- The worm is inserted into the hole by use of a probe.
- Once the worm is halfway inside the hole the probe is removed, leaving the string in place which fills the hole and prevents air from escaping.

Reliability? Adequate. Strings can heat up and be expelled as you ride.

# Rubber Mushroom Plugs

These are plugs shaped like a small mushroom.



- A reamer is used to clean the hole, and make room for the insertion tool.
- A special tool is used to insert the plug into the hole, screw action is used to force the plug thru tool.

NOTE – these plugs are lubricated with motor oil so they will pass thru the tool, which means the plug is oily and doesn't stick to the rubber of the tire.

Reliability? Questionable because the plug is lubricated. Ride over a stone and the plug can be pushed into the tire and the hole opens up.

## Rubber Impregnated Strings

Usually called DynaPlugs. It's a cool little tool that contains four plugs, a reaming and insertion tool. Cotton strings that have been rubberized. Have a metal penetrator on the end.



- Ream the hole with reaming tool.
- Insert string into hole, remove the tool, leaving end of string outside.

Reliability? Adequate. Rubber does not chemically bond to rubber of tire and can loosen.

## Vulcanizing Strings

These are strings that are coated with a special rubber compound that's activated by a special glue.

- Hole is reamed using a tool.
- String has a protective coating that's removed, then coated with special glue.
- String is inserted with a crochet hook tool

Reliability? Highest available, and is the type used for truck tires on 18-wheelers.



## Inflation After Repairs

OK. You've made the repair, now you have to re-inflate the tire.

- Hand pumps – shop wisely making sure it can do the job (high pressure, low volume VS low pressure high volume).
- Foot pumps – too bulky to carry on the bike?
- CO2 cartridges – you're going to need more than three of them if they're the small cartridges.
- Canister of air/slime.
- 12V inflator – test it before you hit the road. Make sure it will fill the tire and that your power port will handle the load.
- Any 12v inflator will probably do the job, but some do it better.



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