

Fuel Tank Care

So your fuel tank is rusting or leaking? In the case of a fractured fuel tank, the first thing to do is figure out what happened because it might be only a symptom. If you do not fix the cause, then the leak will eventually return, usually the week after you spend \$500 on a paint job. Some causes are common to all tank materials, some are specific to the material and some are specific to the brand of motorcycle. Some general hints and solutions are listed below. If you have a classic fiberglass tank, then be sure and read that special section.

Whatever your fuel tank material, finding the cause of your leak will allow you to focus your responses on realistic repairs. This will keep you from wasting your time and money on repairs that can, at best, only be temporary.

Vibration

It's not enough to say vibration caused your tank to crack. Plenty of bikes are riding around with the same tank and similar vibration levels without cracks. Here are some specific areas you might want to investigate...

- Tank touching the frame or fittings anywhere. Look for polished spots under the tank.
- Petcock or spigot touching frame, carb or something else stationary
- Non-stock isolation pads under tank (i.e. a cloth towel in place of rubber pads)
- Old, hard fuel tank isolation pads
- Old, hard fuel lines that will not flex freely
- Missing or additional hardware on the center post mount (BSA and Triumph)
- Excess vibration caused by poor engine mounting. (BSAs and Triumphs need to have the bottom-center frame-to-engine union checked for snug fit.)

You get the idea. The tank has to be free to move in it's own direction, which is often opposite of the frame and engine. To allow the needed freedom, the tank needs at least 1/4 inch isolation clearance from all other hardware. Additionally, new mounting rubbers and supply hoses that allow free movement to occur are also required.

Corrosion

A hairline crack could possibly be caused by rust thinning the metal. Fuel systems attract water, which collects at the low points. Water then causes localized oxidation making the steel thinner. If water was to collect around the welded-in mounting or petcock fittings, then fractures could occur because there has to be a minimal amount of metal to support these highly stressed areas. Products such as JB Weld might be used to successfully build up an unstressed area of the tank, but due to continual flexing of these areas, an epoxy would probably have trouble staying attached over the long haul.

If you have a doctor or gun collector friend, they may have a lighted fiber optic scope for looking into deep, dark places. Take a look inside your fuel tank and see what's going on for yourself. (Helpful Hint: If you borrow one from a doctor, make sure to clean it first!)

Rust can be best cleaned off using phosphoric acid, which also leaves a corrosion resistant phosphate finish. Additionally, it also cleans and brightens aluminum.

If phosphoric acid is not available, then a solution of 1/3 muriatic acid can be used in a solution with 2/3 warm water. However, with muriatic acid the corrosion restarts the instant the tank is dry so you must be ready with a coating product. Additionally, muriatic acid attacks aluminum and zinc alloys, so it should not be used if the tank contains cast aluminum parts such as filler caps, petcocks or fuel gauges.

Fiberglass

Special care must be used when dealing with classic fiberglass tanks made using polyester resins such as the ones on Norton, BSA and other British motorcycles. Modern fuel oxygenates (esters, alcohols and ethers) added to all current fuels do a pretty good job dissolving the older fiberglass walls and epoxy seams. Not only does this create fuel leakage and seepage, but the fiberglass and epoxy residue often ends up in your carburetors, gumming up your entire fuel system. It's always best to clean a fiberglass tank and then use one of the recommended tank sealing products before use.

Ethanol fuels found in some "racing fuels" attack even modern vinylester. Again, a fuel tank sealer to separate the fuel from the tank is advised.

Resources

The two products held in highest regard by the motorcycling community for both metal and fiberglass fuel tanks are the Caswell Plating (www.caswellplating.com) 2-part epoxy tank sealer and the Bill Hirsch Auto (www.hirschauto.com) single part tank sealer. The Caswell product, being more viscous, will actually seal areas that are rusted completely through.

POR15 also makes a good tank sealer (www.por15.com), but in our survey clearly ranked in a distant third place. There are also several aviation tank sealers that work well on motorcycle tanks. When you use any of these chemicals, be sure and follow the manufacturer's instruction carefully to obtain the best results.

There was no one in our survey who recommended the Kreem fuel tank sealer. In fact the users who had tried Kreem were very vocal about their complete dissatisfaction with the product. Try to avoid this product.

There are also several fuel tank restorers available for motorcycle tanks. One of the recommended services is Moyer Fuel Tank Renu (www.gas-tank.com).

Hope this helps!

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