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THE "ART" OF TIRE-

PART ONE

by Paul H. Smith

As motorcycle overlanders and backcountry riders, one thing we need to master is the "art" of tire changing. Whether it's fixing a flat, replacing a worn tire, or swapping it with another type, this is one skill you don't want to leave home without.

Our two-part series focuses on in-the-field tips and tricks for getting non-motorcycle-specific tires off and on their rims—as quickly and effortlessly as possible. Over the last three years, we've gathered and tested virtually everything out there. This series is an attempt to distill it all down into what we consider the most practical and workable system. *Part One* details tire removal, while *Part Two* (next issue) will discuss getting it back on the rim. We hope you'll find this useful.

Optimized procedures

After the wheel is off, you'll need a surface that is free from dirt, and firm but soft enough to not damage the wheel's rim or disc brake(s). Starting with a drop cloth of some kind, make a simple platform with the wheel up on a rim, high enough to protect the disc brake. Do this using found objects—bricks, wood, items from your bike's kit, a heavy set of motorcycle boots, etc. Another trick is to dig a hole big enough to recess the disc brake from surface contact.

If you'll be remounting the same tire, use a grease marker to indicate the location on the tire next to the valve stem. When the tire is remounted, use this mark to relocate this position. This trick will save you from having to rebalance. Similarly, many new tires come with a painted mark that's intended to be located next to the valve stem. Apparently, this mark indicates the position on the tire that has slightly less rubber to compensate for the valve stem when balancing. It doesn't take the place of balancing, but typically requires less lead to do the job.

Using a tool like *BestRest Product's BeadBrakR* makes one of the most difficult in the field tasks of breaking tire beads not just easier, but possible.

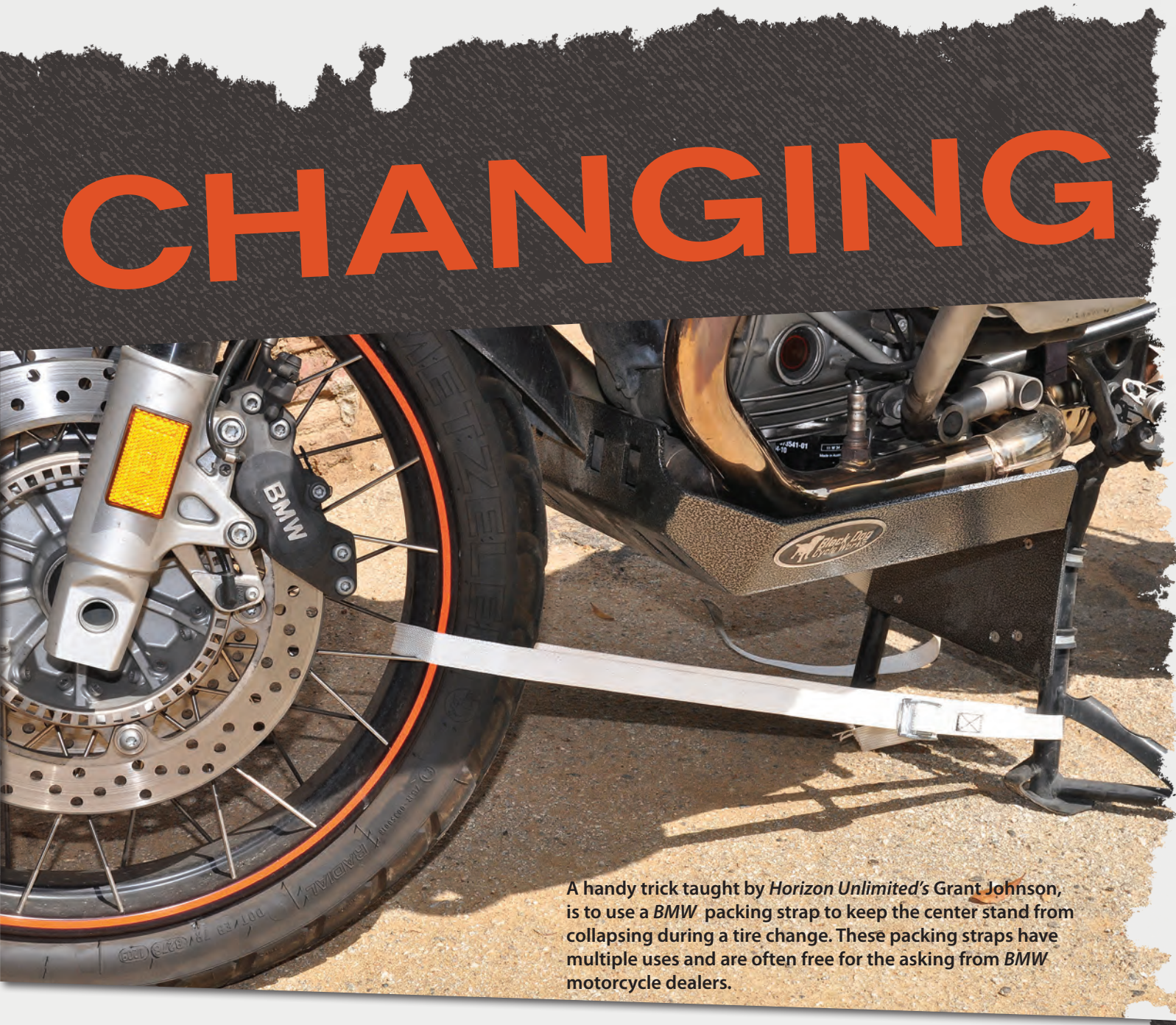
Tire removal

Start by removing the valve stem core. There are special tools for this purpose, but the simplest is a valve stem cap with a coring tool built in. Deflate the tire first, then unscrew the stem's core. Do this carefully as any remaining air pressure could accidentally eject the tiny core… a difficult object to find if you lose it.

The next task is to "break" the bead. All tires have two ringed beads that either hold the tire to the rim (tubed versions), or seal the tire against the rim (tubeless). You must "break" beads on both sides of the tire in order to remove it. Beads are REALLY stiff and difficult to work with ONLY if you don't use proper technique. The methods we settled on use the sidestand's foot, and/or a special tool designed for the purpose, such as *BestRest Product's BeadBrakR*.

One of the most vital, yet often overlooked, kit items is tire lube. Use watered-down dish soap, *WD40*, or preferably a substance made specifically for this purpose such as *BestRest Product's BeadGoop*. Start by liberally lubing the area of the

CHANGING



A handy trick taught by *Horizon Unlimited's* Grant Johnson, is to use a *BMW* packing strap to keep the center stand from collapsing during a tire change. These packing straps have multiple uses and are often free for the asking from *BMW* motorcycle dealers.

tire against the rim on the first bead. Work fast because the lube must be wet to function. Apply more as necessary. Using either the foot of the sidestand, or a device like the *Bead-BrakR*, push down on the tire about ¼" out from the rim until it separates (this procedure requires A LOT of pressure!).

Note that separation of the bead from the rim may be impeded by tire rubber that's partially annealed (stuck) to the rim. Know that it will break free… it's just a matter of working it. And, sometimes it requires a combination of methods to get the job done. The *BeadBrakR* is a great tool for the task—but use your motorcycle gloves for added leverage, and to insulate your hands from the hard metal edges of the lever. The *BeadBrakR* kit may seem heavy and complicated, but keep in mind that it comes with three perfectly-sized tire irons (which can be substituted with Titanium versions to save weight), and all of its other components weigh less than a pound, taking up little space. Whichever tool you use, keep pushing down on the tire until it breaks free of the rim. Then repeat about every four inches along the bead until the bead is fully separated—turn it over and do the other side. You can also use your feet to help separate the bead from the rim after it's initially broken.

After the beads are broken, getting the tire off the rim is far less effort than many suppose. Both Grant Johnson and Dave Petersen* (see sidebar) warn that if you're working too hard, then you're doing something wrong. All motorcycle rims have an inner trough (groove or channel) that must be utilized for this process. The inner trough reduces the parting circumference just enough to allow the bead to clear the rim. Lube plays a vital role, too.

Above left **Using the side stand to break the bead often does the job. It certainly has the leverage. But if you don't have a center stand to balance the bike on, the maneuver can be difficult, if not impossible, to pull off.**

Above right **Knee pads (or padded riding pants), plenty of tire lube and a little leverage will help to get the tire off the rim.**

Tire-Changing Kit (the Basics)

- **Tire pressure gauge**—most are junk, spend the money for a good one. Recommendation: *EZ Air Gauge* by *BestRest Products.*
- **Tire pump** (manual or electric)—electric is more convenient and easier to use. Recommendation: *CyclePump Adventure Model* by *BestRest Products.*
- **Tire irons** (set of three)—consider the Titanium option for weight reduction. Recommendation: The *BeadBrakR* kit from *BestRest Products*, comes with three tire irons.
- **Lube**—it's easy to destroy a tire without lube, and the process is virtually impossible without it. Recommendation: *BeadGoop* from *BestRest Products.* You may also use *WD40* or watered down liquid soap.
- **Valve stem removal tool**—there are valve stem caps that double as removal tools.
- **Donor hose**—the brilliant invention of Dave Petersen (described in *Part 2* of this article) from *BestRest Products.*
- **Talcum powder**—necessary for puncture-free tube insertions.
- **Dyna Beads**—a way around complex tire balancing methods with lead weights.
- **Grease marker**—for marking tires.

DO NOT USE LONG LEVERS! They only increase the chance of damaging the bead, the rim, or both. An inviolate rule is if you think you need them… you're doing it incorrectly. The procedure is best performed with three short (~8.5") levers, like those that come with the *BeadBrakR*. Again, if you're doing this correctly, you'll be able to remove even the heaviest big enduro tires with these tools.

Lube the bead area of the tire and the metal rim. With the wheel on your makeshift platform to prevent damage to the disc brake, and the valve stem farthest away from you, use your knees (motorcycle pants with knee padding work great) to push the tire's bead immediately in front of you into the trough around the center of the wheel. Take a single tire lever, insert it at the rim about 1" to the right or left of the valve stem, and peel the bead away from the rim. It should come relatively easily if your knees are doing their job. Holding the first tire lever, insert another about 3" away and repeat. Now, you must hold both levers towards the wheel hub while you insert the third lever, and peel back more bead over the rim. It's a bit of an awkward maneuver, but essentially this procedure is repeated until about half of the bead is off the rim. Then, reach under the bead and push the wheel away, or pull the rest of tire away from the rim. If you've pushed the bead into the rim's trough with your knees, and use lube, it'll come right off. It may take a little manhandling, but again, if the effort is too high, you're doing something wrong. Double-check these instructions.

For the flipside use lots of lube around the rim and bead (it's tricky to get it in there!), push the bead down and into the trough with your knees on the opposite side of the valve stem, and with a single lever, pry the bead over the same rim as you did on the first side. Then, using the other two levers, keep working the bead away from the rim until

Left **Tire rubber often sticks to the rim, making a less than optimum surface for setting the bead. It can be cleaned with a piece of emery cloth.**

about a third of it is off. At this point, it's usually easier to stand the wheel up on end, with the peeled section facing up, push the rim down with one hand while using your knee and the other hand to pull the tire away from the rest of the rim. Again, this requires a little manhandling, but if you've pushed the bead sufficiently into the trough of the rim, and use lube, it'll be much easier. The knee pads of your riding gear are a great help, too.

With the tire off the rim, inspect the rim for damage and/or a buildup of annealed rubber. If there's rubber stuck to it, it's a good idea to take the emery cloth and polish it off. Also, if it's a tubed rim, it'll have some kind of rubberized strap around the center trough. If this is damaged you'll have to repair or replace it.

In the next issue, *Part 2* will go over tips 'n tricks for in-the-field tire mounting. ADV

The Gurus of Tire-Changing

Easily one of the key resources for tire-changing tools and information is *BestRest Products* (BestRestProducts.com). Dave Petersen, the company's head honcho, seems to have devoted his life to the task. He's invented and/or amassed a collection of tire changing methods and repair tools optimized for in-the-field repair. With few exceptions, we found that Dave's tools made the tasks easier. Another key resource is Grant Johnson, of *Horizons Unlimited* (HorizonsUnlimited.com) fame. Grant is not only the co-founder of *HU,* but may also be the best educator of resourceful tire changing techniques in the field.

Special thanks to the following people and companies for their kind assistance:

- David Petersen, BestRest Products (BestRestProducts.com)
- Grant Johnson, Horizons Unlimited (HorizonsUnlimited.com)
- Christopher Wall, Metzeler/Pirelli (Metzeler.com)
- John Leale, Vee Rubber (VeeRubberUSA.com)
- Helge Pedersen, GlobeRiders (GlobeRiders.com)
- Kurt & Martha Forgét, Black Dog Cycle Works (BlackDogCW.com)
- Paul Guillien, Touratech (Touratech-USA.com)
- JC Matsuura, Alpina Tubeless STS (AlpinaWheelsUSA.com)
- Michael Battaglia, On Any Moto, Tuscon, AZ (OnAnyMoto.com)
- Curtis Smith, Eurogeek Motosport, Flagstaff, AZ (Facebook.com/EurogeekMotosport)

Optional Kit

- **Bead breaking tool**—often a side stand will do the job, but it can be awkward. Recommendation: *BeadBrakR* by *BestRest Products.*
- **Tire bead setting tool**—for stiff tires, especially tubeless, that aren't cooperative. Recommendation: *BeadSetR* by *BestRest Products*. This modified ratchet set has multiple other uses.
- **High capacity CO2 canister inflator**—another trick for seating the bead, but expensive to use. Recommendation: *Genuine Innovations* (Touratech-USA.com).
- **Changing mat**—alternatively you can use your riding jacket or a towel. Recommendation: *Changing Mat* by *TrailMaster Adventures* (BlackDogCW.com).
- **Emery cloth**—for cleaning rubber and debris from a rim.