You don’t need that old black magic to fix runflat tires.

The idea of reinforced sidewalls seems simple enough, but what does it do to the ride, and how are you going to demount/mount such rigid tires (courtesy BMW).
aaahhh, runflat tires . . . No more jack, no more spare. No more air, no more repair. And you can ride on ‘em forever, right?

Not quite. Most self-supporting-type runflat tires -- for example, Goodyear and Dunlop Extended Mobility Tires (EMTs) -- are essentially tires with ultra-stiff sidewalls that don’t flex very much when there’s little or no air pressure, and thus can be run “flat.” (DISCLAIMER TO TIRE ENGINEERS: There’s a ton of extremely sophisticated material and construction engineering involved, okay?)

Runflat tires can be driven at up to 50 miles per hour for 150 miles or so (your mileage may vary; see owner’s manual for details . . .). The idea is to get you to a repair facility in case of a flat.

Assuming you don’t exceed the limits above and don’t shred the tire, they can be repaired. CAUTION: Some car manufacturers, BMW for example, don’t recommend repairing runflat tires, which makes for some interesting conversation on BMW owner blogs.

Beemer bloggers blast away

For example, “Louis,” Member #2567, wrote in January that he was considering leasing “a 2007 328i sedan, which (like most or all new BMWs) comes with runflat tires. Like most people, I don’t like the idea of runflat tires. I just can’t stop thinking about the problems I will have to deal with if one of the tires goes flat. What I have heard is that one can drive 50 miles or so on the flat.”

To which “Doug” replied, “You are not alone and as of right now the whole run-flat tire scam should be worrying everyone that enjoys high performance automobiles. But I will refrain from a full ranting and hopefully we will see some better answers along with some unbiased commentary in the BMW CCA Roundel magazine soon. HINT! HINT!

“To answer your questions the range is 150 miles driven gingerly. No, they should not be and most of the independent tire dealers I have spoken with will not repair them. Yes, by all means they can be replaced with non-runflats on the same wheels. Yes, they are expensive to replace if they go bad and, no, your local tire dealer is not likley (sic) to have them in stock, although your BMW dealer may, at tire prices only the devil himself would charge. I have heard rumors of $600+ each.

Demounting/mounting tires with such stiff sidewalls isn’t easy, but our friends at Hunter Engineering supplied this series of photos to show us how to do it without damaging the bead. First, get as much lube on the upper bead seat as possible so the bead can slide down into the drop center of the rim without too much force being applied.
With one side deeply into the drop center, you should be able to lever the opposite side over the lip of the rim.

For mounting, you start this bead depressor “tail” . . .

. . . then insert these spacer blocks to keep the bead down in the drop center. If you tried to just force it, you’d tear the bead and perhaps damage your nice tire machine.
Unlike some other manufacturers, Goodyear says its runflats can be repaired providing the proper procedures are used.

Here are the Goodyear runflat repair instructions verbatim, which are applicable to other runflat tires, too; however, not all runflat manufacturers recommend repair and say you’ll void the warranty if you do it.

SUBJECT: Puncture Repairing and Retreading of tires that are “H” Speed-Rated and higher (equal to or greater than 130 mph) includes Goodyear EMT & Dunlop DSST tires.

A Goodyear, Dunlop or Kelly-Springfield manufactured speed-rated tire may be repaired to correct a commonly repairable nail hole puncture in the tread area only, but proper materials and procedures must be applied.

INCORRECT OR IMPROPER REPAIR WILL RESULT IN THE TIRE NO LONGER BEING SPEED-RATED BY GOODYEAR and the warranty may also be affected.

A Goodyear, Dunlop or Kelly-Springfield manufactured speed-rated tire is retreaded, it no longer is speed rated by the company (and most runflat tires are, by and large, speed-rated).

DETAILED POLICY - Puncture Repair of Speed-Rated Tires

A. The puncture must be confined to the tread area only.
B. Restrictions on the number and size of repairs must be followed.
C. A detailed repair procedure must be followed.
D. A speed-rated tire repaired in strict accordance with items II-A, B & C will retain its speed rating.

REPAIR PROCEDURE FOR SPEED-RATED TIRES

GENERAL

The objective of the puncture repair is to seal the tire against loss of inflation pressure and to prevent damage to the carcass from moisture. In all puncture repairs, approved by Goodyear, Dunlop and Kelly-Springfield, the hole must be filled with a plug, and a patch covering the hole must be applied according to repair material manufacturer instructions to the inside of the tire. Never repair tires which are worn below 2/32” tread depth.

NOTE: NO TIRE IS TO BE REPAIRED WITHOUT FIRST BEING REMOVED FROM THE RIM.

REPAIR AREA

Repairing is limited to the tread area only within the outside grooves. No repairs are allowed in the tread area beyond the outside grooves or in the sidewall area of the tire.

D. MATERIALS NEEDED
1. Precured rubber plugs - 1/4” (6mm) diameter
2. Precured patches
3. Precured plug/patch combi-units
4. Chemical vulcanizing cement
5. Pre-buff cleaner
The French way

There is another type of runflat tire, the Michelin PAX System, consisting of a conventional tire and an inner composite-type ring mated to the wheel. When the tire goes down, the weight is supported by the ring. As for repair, Michelin advises that the tire should be taken to an authorized Michelin PAX System repair outlet. Michelin has set up service centers around the United States, including all Honda dealers. A toll-free number finds the nearest one. Part of the PAX warranty is to replace any PAX wheel-tire system that has incurred air loss.

Goodyear says, “Like any other Goodyear speed-rated high performance tires, the Goodyear runflat EMT tire may be repaired to correct a nail hole puncture in the tread, but proper materials and procedures must be used.”

Goodyear supplies runflats for a number of OEM vehicles, including Corvette, Mini Cooper, Cadillac CTS-V, Rolls Royce, Lexus SC430, Maserati Quattroporte, Ferrari F360, Jeep Grand Cherokee SRT8 and several BMW and Mercedes models.

Goodyear’s attitude

“Some tire makers disallow puncture repairs on runflat tires,” says Goodyear spokesman Jim Davis. “However, punctures in our runflat tires can be repaired, according to the same guidelines as other tires. The servicing outlet needs to obtain information from the driver, and inspect the tire to make certain there are no signs of the tire being degraded due to being run at zero pressure for an extended period, much the same as an outlet would treat any other punctured tire. In any case, there is a product service bulletin on the proper repair of speed-rated tires, which includes EMTs” (see the sidebar).

If you want to bag it and send the customer to a Goodyear Run-Flat EMT service facility, or to get information on proper repairs, call 1-800-RUN-FLAT.

For other tires, be sure the repair doesn’t void the warranty, although even if it does, the customer may want you to go ahead and repair the tire so he or she can get back on the road.
E. REPAIR PROCEDURE

1. Carefully remove the tire completely from the rim.

2. Locate the puncture on the inside of the tire and circle with crayon.

3. Remove puncturing object if it is still in the tire.

4. Carefully inspect tire on a good tire spreader, with ample light, that will show any cracks, breaks, punctures, damaged or broken beads.

5. Check liner for cuts, cracks, or holes which may cause the tubeless liner to lose air.

6. Check the injury with an inspection awl:
   a. Determine size and angle of injury.
   b. Check for ply or belt separation.

7. Reject any tire that has separation, loose cords, damaged bead(s), or any other non-repairable injury.

8. If the hole is simple and round, steps 9 through 17 of the puncture repair procedure will be successful.

   NOTE: If the hole shows evidence of fabric splitting, such an injury cannot be properly repaired using this puncture repair procedure. Such an injury must be skived out and repaired as a section (reinforced) repair, which will maintain the serviceability of the tire, but will invalidate the tire’s speed rating. If a section repair is necessary, the customer must be advised, before the repair is made, that the tire will lose its speed rating, and must not exceed operation at normal highway speeds.

9. Use a pre-buff cleaner and a scraper to remove contaminants from the liner in the area to be buffed around the injury.

10. Use a 7/32” carbide cutter for ¼” repairs to clean out the puncture.
   a. Make sure that the drill follows the direction of the puncturing object.
   b. Always drill from inside to outside of tire.

11. Using chemical vulcanizing cement, lightly coat at least 1/2 of tapered end of the repair plug. Install the plug in the prepared puncture according to the manufacturer’s instructions. Trim the liner side of the plug slightly higher than the surface of the liner without stretching the plug.

12. Center the patch (or patch template) over the injury without removing the backing. Adhere to patch or template instructions, as to positioning as related to bead location. Using a marking crayon, mark around the outside edge of the patch, approximately 1/4” larger than the patch.

13. Buff the liner and plug at the puncture location. The buffed area should be slightly larger than the patch. The buffed surface should be finely grained (RMA 1 or 2 texture) and even for proper bonding. Use care to prevent burning the rubber with the buffing tool. Do not buff through the liner. Do not buff into the marking crayon.

   Clean the buffing dust from the tire using only a vacuum or brush. Do not use gasoline or other petroleum solvents on the buffed area.

   Coat the buffed liner surface and the patch with one evenly applied coat of chemical vulcanizing cement in accordance with the recommendations of the repair materials manufacturer. Allow the cement to dry thoroughly. Do not touch the cemented areas.

   Install the patch with the beads of the tire in the relaxed position. Position the patch over the puncture according to the markings on the patch. Stitch the entire patch starting from the center, keeping the strokes close together to avoid trapping air under the patch.

17. Cut off the protruding end of the plug about 1/8” above the tread surface.

   FINAL INSPECTION -- The repair must seal the inner liner and fill the injury. After remounting and inflating check the repair, both beads and valve with a soap solution to assure a complete seal.