

Click and Clack's Official Guide to Changing a Flat Tire

Important: In general, we don't recommend changing a flat tire yourself, especially if you're not familiar with the process.

Changing a flat is dangerous—and especially so, if you're by the side of the road, with semis blazing past at 75 mph. Only consider undertaking this task if you can drive to a safe location, well away from traffic.

If at any point in this process you feel like you're in over your head, just grab the nearest cell phone and call for help.

STEP 1: Find a Level Place to Stop and Find the Tools You'll Need

You can change a tire if you're parked on an incline, but it's much more difficult... and dangerous! So if you find yourself with a flat on a hill, DRIVE slowly to level ground. Put the transmission into "Park" (or put the gear shift into reverse if you have a manual transmission) AND SET THE HAND BRAKE. Now you're ready to go looking for the tools you'll need.

Tip: When in doubt, take a minute and check your owner's manual. (Remember that? It's that shrink-wrapped, unread booklet that's been in your glove box since you drove your car off the lot.)

Tip: High-end vehicles such as BMWs and Audis may use "run-flat" tires. If that's the case, you might not have a spare tire in your vehicle. Instead, you can drive slowly to the nearest gas station for assistance. If you're unsure if you have run flat tires, check your owner's manual.

STEP 2: Chock a Wheel

To provide an extra degree of safety, put two chocks against the tire diagonally opposite from your flat. Chocking means to put something large, like a brick, a large rock, or a piece of a tree limb you found on the side of the road, or even a book, in front of, and also behind, the tire to keep it from moving. You can use anything that's more than a few inches high, over which the tire can't easily roll. Chocking is an extra precaution, but it's one we recommend.

STEP 3: Lay Everything Out

Tip: Got a cell phone? Snap a couple of pictures of how all the tools fit together in your car's trunk. You can look at the screen for guidance when you're ready to put everything back in its right place when the time comes. You might want to take a picture of yourself, so your family can remember how good you looked before that semi hit you.

Or, then again, if you're like Tommy... just throw it all in the backseat and worry about it in daylight!

STEP 4: Loosen the Damaged Tire's Lug Nuts

You might not be able to loosen the lug nuts by hand, since they were probably tightened by a mechanic with an impact air-powered wrench. But you can give it a try. Find the lug wrench—that's the wrench that fits on your wheel's lug nuts. Put the wrench on any lug nut with the handle facing to the LEFT since you want to turn the wrench counter-clockwise (remember "righty tighty, lefty loosey"). Then, push down on the end of the wrench with as much strength as you can muster.

Once the nut breaks lose, you'll probably be able to turn the wrench easily by hand. Loosen all the nuts this way — BUT ONLY LOOSEN EACH OF THEM ONE TURN. DO NOT REMOVE ANY OF THE NUTS — YET.

Tip: If you're driving a classic car that was manufactured earlier than 1972, some of the wheel nuts may have reverse threads that loosen when you turn them to the right. If you're unsure, look for an "L" imprinted on the lug nut.

STEP 5: Jack Up Your Car

Find the correct location on your car to place the jack. Your owner's manual will have a diagram. (Remember the owner's manual?) Now, expand the jack by hand, until it's as tall as it can be and still fits under the car. This'll save you work later — and who doesn't like avoiding work, right?

Now, you're about to raise the car — or at least one corner of it. Unless your name is Charles Atlas, you'll need the jack's handle. Now's the time to insert it into the jack according to the instructions.

Start cranking. Take your time. There's no hurry. Before you know it, the corner

of the car will be off the ground. By the way, thanks to the miracle of mechanical advantage, you'll be amazed at how easy it is to lift your car off the ground—even if you only weigh 98 pounds!

Tip: You don't need to go 20 feet off the ground. All you need to do is get the flat tire far enough off the ground so that your fully inflated spare tire has room to slide on. Save your muscles for lifting the celebratory ice cream sundae you'll be buying yourself later.

Car Talk Warning: Keep everyone else away from the car while it's on the jack. The car is not terribly stable while it's jacked up. Why do cars fall off jacks? We don't know. But it happens. So keep valuable friends and family members at a safe distance. Kids should be out of the car, in addition to adults. When kids get bored, they'll jump around inside the car—and that can cause the car to fall off its jack.

STEP 6: Take Off the Damaged Tire

Now it's time to remove the lug nuts the rest of the way. Fortunately, you've already loosened them, so it should be easy. Take the wheel off, and behold! You're looking at the brake rotor or brake drum, a brake caliper if you have disc brakes, brake pads—heck, you can even see the strut, the spring, control arms and brake lines. Yippee!

Put the wheel down in a safe location away from traffic. Don't put it in the car just yet, either. (Your car is jacked up, remember? Don't toss anything heavy into it until it's firmly on the ground.)

Tip: Once you've removed the lug nuts, put them in a safe place where you know you'll be able to find them ten minutes from now. Your pocket is a good place. Scattered around you on the road is NOT a good place. Neither is the hubcap. Why? If you accidentally kick the hubcap, those lug nuts are going to go flying down the embankment, and into the Class 5 rapids in the river below.

In the event that you do lose your lug nuts, however, all is not lost. Remove one from each of the remaining wheels, and use those three lug nuts. Then, drive very slowly to the nearest gas station. Cool, eh?

STEP 7: Install the Spare Tire

Remember the spare tire? Time to put it on!

Line the lugs up with the holes in the wheel and gently slide it on. Don't worry too much if you bang up the threads on the lugs a bit. They're designed to take it. The lugs are those four, five or six things that you're sliding the wheel onto. (AH HA! That's why the nuts are called lug nuts.) By the way, not all cars use lug nuts. Some actually use bolts. The most common examples of manufacturers that use bolts rather than lug nuts, are BMW, Audi, Volkswagen and Volvo.

Tip: Check your owner's manual for important details regarding the maximum speed and travel distance for the spare. Not all spare tires are labeled "Temporary Use Only" — but most are. Now, screw on those lug nuts that you sensibly placed in one, safe location a few minutes ago, and tighten as much as you can using your fingers.

But—and this is important-- we're not done tightening the lug nuts just yet.

However, we are taking a break to lower the car. Lower the jack and allow the corner of the car to come firmly back onto the ground.

STEP 8: Tighten those Nuts

Now that the car is on the ground, it's time to really tighten the lug nuts. This has to be done in several steps.

Step 1: Tighten all 5 or 6 lug nuts, now using the wrench. The order in which you tighten isn't critical.

Step 2: Now you're going to really tighten — and the order IS important. Pick any nut to start with. Put the wrench on the nut — as you did when removing the nuts — but this time with the handle facing to the right (Lefty loosey, RIGHTY TIGHTY!). A good rule of thumb is that you want to use about as much force to tighten the nut as it took to get it off.

Now you repeat the previous steps — BUT IN A PARTICULAR ORDER.

- The second nut you tighten is the one that's "diagonally" opposite (there is no nut that is really diagonally opposite). There are two that are sort of diagonally opposite — pick either one. Follow the steps on the previous page.
- The next one to tighten is the one that's (sort of) diagonally opposite from number two.
- And the next is sort of diagonally opposite from number three, etc., etc., until you've done all five.

- Then go around the circle one last time to make absolutely sure that they are ALL as tight as you can get them.

Now we're ready to REALLY tighten those lug nuts! You don't want them to come off when you're driving, do you? (We sure don't. We can't afford to lose any more listeners!) Here's how it's done: Fully tighten the lug nuts by using *the full force* of your weight to push down on the wrench with your arms.

STEP 9: Clean Up After Yourself!

Tip: Do yourself a favor, and don't toss everything in the trunk of your car. Put it back exactly the way you found it, so it's there the next time you need it — and so it doesn't rattle every time you go over a bump, and slowly, inexorably drive you totally bonkers.

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