

Auto Repair Guide

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How to Change a Tire

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Have you ever been stuck on the side of the road with a flat tire? Do you want to be able to change a tire without having to ask for help? Fortunately, changing a tire is a pretty simple task, provided you're prepared and willing to exert a little effort.

Steps

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- 1** Find a flat, stable and safe place to change your tire. You should have a solid, level surface that will restrict the car from rolling. If you are near a road, park as far from traffic as possible and turn on your emergency flashers (hazard lights). Avoid soft ground and hills.



- 2** Apply the parking brake and put car into "Park" position. If you have a standard transmission, put your vehicle in first or reverse.



- 3** Place a heavy object (e.g., rock, concrete, spare wheel, etc.) in front of the front and back tires.



- 4** Take out the spare tire and the jack. Place the jack under the frame near the tire that you are going to change. Ensure that the jack is in contact with the metal portion of your car's frame
- Many cars have molded plastic along the bottom. If you don't place the jack in the right spot, it will crack the plastic when you start lifting. If you're not sure about the right place to put the jack, read your owner's manual.
 - For most modern uni-body cars, there is a small notch or mark just behind the front wheel wells, or in front of the rear wheel wells where the jack is intended to be placed.
 - For most trucks or older cars that have a frame, look to place the jack on one of the beams of the frame just behind the front tire or in front of the rear tire.



- 5** Raise the jack until it is supporting (but not lifting) the car. The jack should be firmly in place against the underside of the vehicle. Check to make sure that the jack is perpendicular to the ground.



- 6** Remove the hubcap and loosen the nuts by turning *counterclockwise*. Don't take them all the way off; just break the resistance. By keeping the wheel on the ground when you first loosen the nuts, you'll make sure that you're turning the nuts instead of the wheel.
- Use the wrench that came with your car or a standard cross wrench. Your wrench may have different sizes of openings on different ends. A correctly-sized wrench will slip easily over the nut, but will not rattle.
 - Try to prepare for any unforeseen tire changes by keeping the exact socket size for your lug nuts as well as a breaker bar handy in the trunk.
 - It can take quite a lot of force to break your lug nuts free. If all else fails, you can use your body weight or stomp on the wrench (be absolutely certain you are turning it the correct way - counterclockwise). However, using your body weight or stomping means you run the risk of stripping the lug nuts, as it is difficult to maintain full contact.



7 Pump or crank the jack to lift the tire off the ground. You need to lift it high enough to remove the flat tire and replace it with a spare.

- As you lift, make sure that the car is stable. If you notice any instability, lower the jack and fix the problem before fully lifting the car.
- If you notice the jack lifting at an angle or leaning, lower and reposition it so that it can lift straight up.
- It is always a good idea to keep a small jack stand handy in the vehicle as well, in case the jack gives out during the tire change. Using both the small jack and the normal jack will keep you safe in the event of a jack failure.



8 Remove the nuts the rest of the way. Turn them counterclockwise until they are loose. Repeat with all lug nuts, then remove the nuts completely.

- Although rare, some vehicles actually have reverse threaded lug nuts. These are usually much older cars from Chrysler and GM.



9 Remove the tire. Place the flat tire under the vehicle so in the event of a jack failure the vehicle will fall on the old wheel, hopefully preventing injury. If the jack is placed on a flat, solid base, you shouldn't have any problems.

- The tire might stick due to rust. You could try hitting the inside half of the tire with a rubber mallet to loosen the tire, or use the spare tire to hit the outside half.



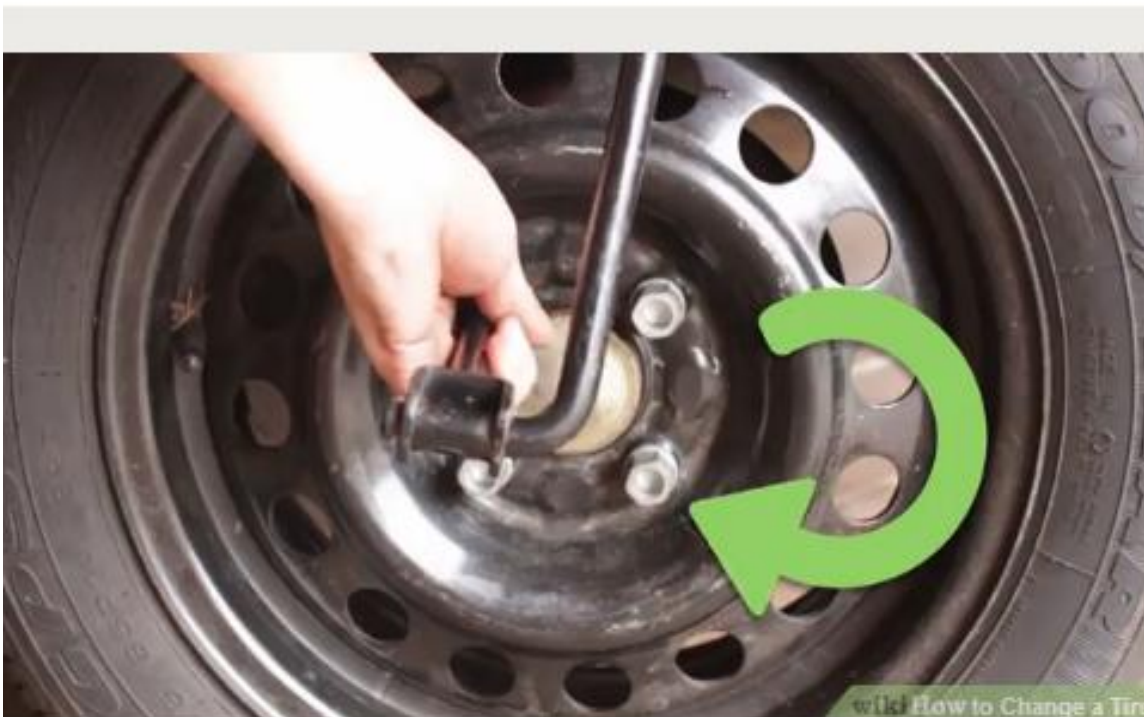
10 Place the spare tire on the hub. Take care to align the rim of the spare tire with the wheel bolts, then put on the lug nuts.

- Be sure to install the spare tire the correct way and not backwards. The valve stem of a doughnut tire should face outwards, away from the vehicle.
- If your vehicle uses acorn-style lug nuts, it is easy to put those on backwards as well. Be sure the tapered part of the nut faces the wheel when tightening it down.



11 Tighten the nuts by hand until they are all snug. They should turn easily at first.

- Using the wrench, tighten the nuts as much as possible using a star pattern. To ensure the tire is balanced, don't completely tighten the nuts one at a time. Going in a star pattern around the tire, one nut across from another, give each nut a full turn until they are equally tight.
- Avoid using so much force that you risk upsetting the jack. You will tighten the lug nuts again once the car is down and there is no risk of it falling.



12 Lower the car without applying full weight on the tire. Tighten the nuts as much as possible.



- 13** Lower the car to the ground fully and remove the jack. Finish tightening the nuts and replace the hubcap.



- 14** Put the old tire in your trunk and take it to a mechanic. Get an estimate for the cost of repair. Small punctures can usually be repaired for less than \$15. If the tire is not repairable, they can dispose of it properly and sell you a replacement

Quick Summary

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If you need to change a tire, place the jack under the frame of the car near the tire that you are going to change, making sure the jack is in contact with the metal portion of the vehicle. Raise the jack until it is supporting, but not lifting, the car. Remove the hubcap and use a cross wrench to loosen the nuts by turning them counterclockwise, then crank the jack to lift the tire off the ground. Remove the nuts the rest of the way and remove the old tire, then slide on the new tire, tighten the nuts, and replace the hubcap.

Did this summary help you? [Yes](#) [No](#)

Tips

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- If your wheels have locking lug nuts, be sure to keep the key-lug where you can easily find it. You will need it to change the tire.
- Sometimes the wheels will seize to the hub, resulting in great difficulty in removal of the flat tire. If this happens, you will need a sledgehammer and a 2x4 or other piece of wood to remove a seized wheel rim. Rotating your tires will prevent this from happening when you do have to change a tire.
- When loosening and tightening the nuts, arrange the cross wrench so that you are pressing down (with gravity). This will remove risk of injury to your back and also allow you to use your body weight rather than just your arm strength. Press on the end of the wrench for the best leverage. You can even use your foot, but make sure to keep your balance and steady yourself against the car.
- When replacing nuts, be sure that the tapered side goes into the wheel. This centers the wheels and locks the nuts in place.
- Familiarize yourself with this procedure and with the particulars for your car before you get a flat tire, so that you don't have to learn by the side of the road, in the dark or in the rain.
- A cross wrench will give you much more torque than a standard single-handled wrench.
- Check occasionally to make sure that your spare tire has sufficient air pressure (PSI).
- Be sure to get spare tires replaced with new ones because they are temporary and should not be used as a permanent replacement.
- Rotating your tires at manufacturer's recommended intervals can prevent a common problem when changing a flat.

Warnings

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- Be aware of your surroundings. If you're on a busy road, be particularly wary of vehicles driving by that might get too close. There are hundreds of people killed each year while changing a tire on the side of the road; don't do this unless you must.
- For safety, place an object such as a log, large rock, etc., under the vehicle after jacking, but before removing the tire. Place it so that it will stop the vehicle from dropping in case the jack is dislodged or shifts for some reason while the wheel is removed. Place it near a part of the frame or other supporting part not too far from the wheel.
- Most spare tires (the undersized "donut" tires) are not designed for speeds of more than 50 mph (80 km/h) or for long distances. Exceeding this speed can cause problems, including failure of the spare tire. Instead, drive slowly and carefully to a shop and have your tire repaired or replaced.
- Never use cinder blocks or makeshift jacks. A car is very heavy and if you use anything else you are putting yourself and your car at risk.

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