Guide to Changing Your Wheel

Does your car have a spare wheel?
While this might appear a bit obvious, you need to check if your car has a spare. Often in an effort to increase economy figures by saving weight, manufacturers leave out spare wheels and provide puncture repair kits or space saver spare wheels instead.
What's more, it's not just in small hatchbacks, seven-seaters, sports cars, and performance specials have all received such treatment. The general rule is to make sure you know which solution you've got in the boot.

If you're looking for your car's spare wheel, you'll usually find it mounted in a recess under the boot floor. While this is the most common location, some models have their spare mounted externally. Some 4x4s have it in the obvious location on the back door, while some others have it mounted under the rear of the car.

If it's under the car, then it needs to be released from within the boot - as a security measure to help prevent theft. You'll find the information on how to remove it in the owner's manual. If the car you're driving doesn't have a spare wheel, it will either have a puncture repair kit or run-flat tyres instead.

Tyre repair kit

A car tyre repair kit is nothing like the one you'd get for a bicycle, and it normally consists of a bottle of gloopy tyre sealant, that you fill the tyre with via the unscrewed valve, and a 12 volt-powered air compressor to reinflate the tyre.

The repair kit is really designed to be a get-you-home solution, because if the damage to the tyre is anything more severe than a small hole caused by a nail or similar, the sealant won't go far enough to plug the gap. If the tyre damage is greater than that, then recovery by a breakdown firm is the best solution to get you home.

Run-flat tyres

Run-flat tyres have stiffer sidewalls and special internal construction that can support the weight of a vehicle if the tyre is flat, and cars fitted with them usually have tyre pressure monitors that tell you when pressure loss has occurred.

When this happens, a dashboard warning will come up, and it will recommend you reduce your speed so as not to do any more damage. Whether you use sealant or have run-flats, you must get your tyre replaced as soon as possible, as both solutions are temporary measures designed to get you home, nothing more.

How do I change a car wheel?

If your car comes with a spare wheel, or you were smart enough to tick the spare wheel option when buying your car, then your next point of call is your car's owner's manual. We'd all like to think we're as smart as the bloke from Wheeler Dealers when it comes to car repairs, but even the simplest tyre change needs a bit of research before you get stuck in, and going in blind could be as dangerous as trying to drive on a flat tyre itself. The owner's manual will first be able to tell you where your car's toolkit and jack are located.

Most cars have a toolkit in the boot, usually within the spare wheel itself, although some cars have them hidden away in compartments behind the rear wheelarches, or even under the passenger compartment floor. If you need to change a wheel while at home, you can always use a trolley jack, which will be easier to use than the car's own kit.

The other important piece of information to be found in the owner's manual is where the car's jacking points are. The jacking point is a spot on the underside of the car that has been strengthened to take the car's weight. There should be four jacking points - one for each corner, near the wheels - while the car's jack will usually have a specially designed bracket that matches the jacking point of the car.

If you haven't got the owner's manual for your car, then there may be telltale signs on the sills of the car showing you where you can jack the car up, such as arrows pointing at parts of the underside of the car, or indents in the body seams. The other way of testing a jacking point is to push it with your hand - if the metal has any flex, then it probably isn't strong enough to take the weight of the car at that point.

Before you lift the car

Remove excess weight
Once you've decided that you need to change your car's wheel, you need to prepare it for removal. First things first, you should try and get any passengers and luggage out of the car. If the spare wheel is in the boot, then the latter should already be done, and removing any excess weight will make it easier to lift the car on the jack.

Remove wheel trims and wheel nut covers
If your wheels have plastic trims, then they will need removing - the car's toolkit will usually have a plastic-tipped tool designed to prize them off without causing damage - and you'll also need to remove any plastic wheel nut covers to expose the metal nuts below.

Find the locking wheel nut key
If you have locking wheel nuts on your car, then hopefully the key will be in the boot of the car, although if you've left it at home for security's sake, this could stop your wheel change before you've started, and you'll either need recovering, or if you're close to home you can go and get it.

Apply the parking brake
It's important to ensure that the car won't roll away when you lift it, so make sure the parking brake is on, while leaving a manual car in-gear, or an automatic in park, will give added security against the car moving.

If your car is on a slope and can't be moved to a flat surface (if you're going to replace the tyre once it's removed, then there's no harm in driving very slowly on it to get the car level), then you should chock the wheels to prevent the car from moving. You can do this using house bricks or other solid items that will provide resistance.

Loosen the wheel nuts a little
Once you've ensured that the car won't move, then you should loosen off the wheel nuts with the wheel wrench before jacking the car up. Don't take them off completely, as you want the wheel to stay in place while you're lifting the car up. It's useful to loosen the nuts before jacking, because the resistance of the car's weight makes it easier to undo the wheel nuts, as they will probably be quite stiff if they haven't been undone for a while.

How to jack up a car

With the wheel nuts loosened slightly, it's time to get the jack in the right spot, as indicated in the owner's manual, ready for lifting. It's best to wind the jack up slightly, then offer it to the jacking point before starting to lift the car, just to ensure that you have the jack in the right position as the car is being raised.

As you raise the jack, the car will start to move slightly on its wheels until the wheel you want to change starts coming off the ground. This shouldn't be a concern, as the car will stay in place if you have the handbrake on, the car in gear and have the wheels chocked. The car's suspension will extend as you lift the car, so you will have to raise it further than you might imagine, but you don't need to lift the car to the full extent of the jack's travel, you just need enough height to get the new wheel on without it touching the ground.

How to remove a car wheel

With the car raised, it's time to undo the wheel nuts completely with the wheel wrench. Undo the lowest nut first and work your way up to the highest one, as the wheel will rest on the wheel hub once all the nuts are removed. Do it the other way, and there's a risk that the wheel could fall off when you undo the final nut.

Once the wheel is nut-free, lift it off the hub, so as to not cause any damage to the hub, and then put it to one side. If you can keep the nuts somewhere so you don't lose them, all the better.

How to fit a car wheel

In best Haynes Manual tradition, fitting a wheel is the same process as removal, only in reverse. First, line up the holes for the nuts - if the car has bolts on the wheel hub instead, then this will be easy - and rest the wheel on the hub as you screw in the highest nut first.

Go round and fit all of the wheel nuts so that they're finger tight - you'll probably have to push the wheel flush with the hub while you're doing this to ensure the holes line up - and make sure the nuts go on smoothly. If there's resistance as you screw the nuts in by hand, it means the thread hasn't lined up properly, and if you force it, you could end up with a crossed thread.

Once all the nuts are on, go round again with the wheel wrench and tighten the nuts further, but do them in a specific order so that the wheel remains flush on the hub. On four-stud wheels, tighten the first nut, then the one opposite, while on five-stud wheels, tighten every other nut as you go around the wheel. Do this until they are all tight with the wrench. Once tightened, it's time to lower the car again. Modern car jacks 'unwind', so the car is lowered as slowly and safely as it is raised. If you're using a trolley jack, then you need to activate the jack's bleed valve. Again, do this slowly, so that the changed wheel returns to the ground safely and in control.

Now that the car is back on all four wheels, go round and tighten the wheel nuts one more time. A useful way of doing that is by putting the wheel wrench on each nut so it's horizontal with the ground, and pushing down on each nut, as you can put all of your weight behind it to make sure they're tight.

Is there anything else?
If you've changed on to a space-saver spare wheel, be aware that the space-saver is only designed to get you home and has a speed limit of 50mph, so you'll need to get the flat tyre repaired or replaced and back on the car as soon as possible. It's also worth pointing out that the flat tyre might not fit in the space designed for the space saver spare.

Most cars will have a wheel well large enough, but cars like the Jaguar F-Type, which has a space-saver option, won't have enough room in the boot to put the flat tyre in. If that's the

case, you'll either need to wrap it so it doesn't get your car's interior dirty, or invest in some cockpit cleaner once you've sorted the tyres out.

What happens next?
As soon as you get the chance, tighten the wheel nuts using a torque wrench, that way you won't over-tighten and damage the nuts, and it should make it easier to remove the wheel the next time it's needed.

If your car has a spare wheel that matches the standard wheels, then in theory you could just keep running with the replacement in place. However, if the spare is considerably newer than the other three tyres, it might be worth replacing one of the other tyres, so that you've got a matching pair of tyres on one axle, then you can use the remaining tyre as the spare.

Of course, if your car has a space-saver spare wheel, then you will need to replace the flat tyre as soon as possible. Driving any further than necessary on a space saver is dangerous, as the space saver has less grip than the standard tyres, and the odd balance of the space saver could affect the car's handling.