

Bike Care

Prevention is better than cure. If you keep your family's bikes in good condition then you'll have fewer problems to deal with. Check the bikes every week or two and give each an annual overhaul, either personally or via the bike shop.

If you want to go beyond the basic checks described here, you'll need a book that's solely about cycle maintenance. The Haynes Bike Book is pretty good, as is the Big Blue Book of Bicycle Repair by Park Tool. Or you could get yourself a video guide, such as The Bike Inn's General Maintenance and Roadside Repairs DVD.

Many tasks aren't technically demanding but make a big difference. Chief among them are keeping your tyres pumped up firm and oiling the chain. Soft tyres and a rusty chain are inefficient, and soft tyres also make bike handling poor and increase the risk of punctures.

Inner tubes slowly leak air so you'll need to top up your tyres every couple of weeks. There will be a pressure rating on the side of the tyre, such as 6 - 7bar or 85 - 100psi. (1bar = 14.5psi.) The lower figure is your minimum.

Get a floor pump with a pressure gauge and it will be effortless to keep your tyres topped up. There are two common valve types: Schrader (like a car tyre) and Presta, which requires a narrower pump grommet. With a Schrader valve, you just remove the valve cap, press the pump head onto the valve, and flick the pump's locking lever to hold it in place. With a Presta valve, you also need to back off the little top nut on the valve as far as it will go before you start pumping (screwing it down after you've finished). If you're using a hand pump, hold one hand around the pump head and tyre to prevent sawing the valve back and forth.

If you're still plagued with punctures even with firm tyres, don't be tempted by solid ones. They are truly awful. Try a sealant like Slime in your tyres or use tyres with Kevlar or similar puncture protection.

A wet chain rusts. After any wet ride or washing, dry the chain with an old rag or a piece of kitchen roll. Then apply a water displacer such as WD40 or a PTFE lubricant to the chain while you turn the cranks backwards. Spray each link as it comes out of the rear derailleur. Let it stand for a while, then wipe off any excess.

Essential bike checks

You won't need to do these checks on your own bike every time you go out on it, because you'll get used to hearing and feeling when things need attention. They're really useful for your children's bikes or your partner's, which you won't have been riding.

Start with the front wheel. Is the tyre firm? Lift the bike by the handlebar or stem so the wheel is just off the ground. Turn the wheel, checking the tyre for damage, and then spin it to make sure it isn't buckled and that the brake isn't rubbing. It shouldn't wobble side to side by more than 2-3mm. Before you put the bike down, hit the top of the wheel with your palm to make sure it doesn't drop out of the fork. Put the bike down and make sure the hub's quick release lever is done up, or that the axle nuts are tight if it uses those instead. Hold the top of the wheel and try to rock it side to side to check for play.

Move up to the handlebars. Squeeze the front brake fully on – the lever should not touch the handlebar – and push the bike forward, so that the back wheel starts to come up into the air. With both wheels on the ground, try rocking the bike backwards and forwards while you hold the front brake on. If

there's play then the headset probably needs tightening. Then squeeze the rear brake lever and move the bike forwards. The back wheel should skid. When you squeeze each brake, check that the rim brake blocks hit the middle of the rim squarely.

When the brake is applied, you can see the end of the cable where it goes into the lever, so check it's not frayed. Next, grip the front wheel between your knees while you stand over the front of your bike and try to twist the handlebar side to side. It shouldn't move. Each end of the handlebar needs a grip or end plug; an open tube could apple-core you in a crash.

Move down to the transmission. Pedals should not be loose or bent and should turn easily. Hold the cranks with your hands and check for play by rocking them from side to side. To check the gears, you need someone to lift the back of the bike up. (If you're on your own, you'll need a workstand.) While you turn the cranks forward with one hand, click through the rear gears with the other. Each click should shift the chain one sprocket over. If it doesn't, the gear cable tension may need adjusting. Send the chain from the top to bottom sprocket and back again. If it won't shift onto a sprocket or shifts the chain off the cassette completely, you'll need to tighten (to move less) or loosen (to move further) the set screws on the derailleur: the one marked H sets the derailleur's outer limit, the one marked L its inner limit. Repeat with the front shifter and derailleur. Make sure the chain runs freely. If it skips, there could be a stiff chain link.

On a bike with hub gears, click through the gears to make sure each is available and doesn't allow the cranks to slip forward and 'pedal air'. The chain on a bike with hub gears or a single-speed gear shouldn't be drum-tight but nor should it be slack. If you can move the upper run of chain up or down more than a couple of centimetres then it's too loose.

Move up to the saddle. Try to twist it side to side and up and down. The saddle itself should be level, or nearly so, and the seat-post should not have its 'maximum height' marker exposed.

Move down to the rear wheel and make the same checks as on the front wheel. When you've finished, you'll have checked the bike over in an M-shaped pattern: front wheel, handlebar, transmission, saddle, rear wheel. For that reason, this is called the M-check. Finally, check all fittings – everything from reflectors to mudguards to carrier racks – to make sure nothing is loose or rattling.

Wheel removal

You need to be able to get the wheels off your bike to fix a puncture. It can also be necessary when transporting your bike, whether it's in a large, padded bike bag or the back of a car.

If your bike has rim brakes rather than disc brakes you will first need to unhook the brake so that the tyre can fit past the brake blocks. To unhook a V-brake, use one hand (i.e. not the lever) to squeeze the brake onto the rim. With your other hand, pull the J-shaped metal 'noodle' out of the yoke that's attached to one of the brake arms. Sidepull brakes have a cam lever on one side of the brake; release this to gain some slack.

If you are removing the front wheel, you can now turn the bike upside down, resting it on its handlebar and saddle – unless you have a workstand. For the back wheel, first change gears so that the chain is on the smallest chainring and smallest sprocket, and then turn it over.

Undo the wheel's quick release lever or back off the large track nuts. For the front wheel, you will also need to back off the knurled nut on the opposite side of the quick release lever in order to clear the safety lips on the fork drop-outs.

The front wheel can simply be lifted out. To remove the back wheel, pull the rear derailleur back against its spring so that it's out of the way, and pull the wheel up and forward (or down and forward if the bike is on a workstand the right way up).

On a bike with a single-speed rear wheel, you need to slide the wheel forward in the drop-outs when you've undone the quick release/wheel nuts to get some slack in the chain. You can then unship the chain and lift the wheel out. Hub-gear rear wheels are trickier. You need to disengage the gear cable and sometimes undo a torque arm that's bolted to the frame. Procedures vary. Consult a manual or your bike shop.

To refit the front wheel, slot the axle into the drop-outs – and the disc rotor into the calliper if your bike has disc brakes. With wheel nuts, tighten each nut with your spanner, working alternately a turn or half a turn at a time. With a quick release, tighten the knurled nut and then close the quick release lever fully. There should be some resistance when you close the lever, enough that it takes a firm hand and leaves a temporary imprint on your palm from the lever. You can undo the lever and tighten or loosen the knurled nut if there's not enough or too much resistance.

To refit the rear wheel, you also need to get the chain onto the smallest sprocket as you put the wheel in. Pull the derailleur back out of the way and move the sprockets past the top run of chain – it's the bottom run of chain, of course, but the bike is upside down – and engage the smallest sprocket with the lower run of chain as you slot the wheel into the drop-outs. The rest is the same as for the front wheel.

Punctures

First remove the wheel. Starting opposite the valve, slide a tyre lever under the wire bead in the edge of the tyre and lever it over the rim. Hook the lever to a spoke. Repeat with a second tyre lever about six inches from the first. Using a third tyre lever – or your first if you have only two – hook it under the edge of the tyre several inches further on and then slide it around to peel the tyre off the rim all the way round on one side.

Before you can pull the inner tube out of the tyre, you need to free the valve from the valve hole. Remove the valve cap, and possibly a knurled lockring if it's a Presta valve, and carefully push the valve through. Now get the inner tube out.

Pump up the inner tube until it's twice as fat as the tyre or until you hear hissing, whichever comes first. Turn the tube past your ear to hear air escaping. If you can't hear anything, try passing the tube in front of your lips to feel the air. Submerging the tube under water to see bubbles is a last resort. If you use it, remember to dry the tube afterwards.

When you've found the hole, mark it with a big cross using a ballpoint pen. Hold the inner tube next to the wheel, lining up the valve with the valve hole, and then check the tyre for sharps where the inner tube's hole is. Turn the tube 180 degrees, keeping the valve aligned with the hole, if you can't remember which way it came out of the tyre.

Deflate the inner tube. Then stretch the tube over your saddle or your fist while holding it, ballpoint pen cross uppermost, and gently roughen the tube with the sandpaper from your puncture kit. Apply *one* layer of glue in an area much bigger than the patch you're about to use, spreading it around with your finger.

Don't apply the patch yet. Hang the tube up and leave it for five minutes. Make a cup of tea. One other job you can do is to run your fingers carefully around the inside circumference of the tyre to double-check for sharps. When five minutes is up, peel the foil backing off a patch and apply it to the

tube. Hold it down firmly, then leave it another couple of minutes. Then peel off the transparent film on the top of the patch, taking care not to lift up the patch at the edges.

If you have some talc or dust to hand, lightly dust over the spare glue that surrounds the patch. Inflate the tube a little, just enough to give it shape. Insert the valve through the valve hole and feed the rest of the tube into the tyre. Make sure the other edge of the tyre is still on the rim, pushing it down into the rim where necessary.

Now you can fit the other edge of the tyre, levering tyre and inner tube back into the rim at the same time. Start opposite the valve. That way there's more slack in the inner tube and it will be easier to lever on the tyre. Avoid using tyre levers if possible as they can pinch the tube and create another hole. Lever it on using your thumbs and fingers. This takes some strength, but it's mostly a matter of technique. Work your way around the tyre until you get to the final tight bit. If you can't push it on with your thumbs, grab the tyre in both hands from the other side and pull it on by tilting your wrists down. No joy? Let a bit more air out of the tube. Lubrication with a light dusting of talc can help tight tyres slide on, as can a water-soluble lubricant such as KY Jelly.

Two special tyre levers that can help those with a weaker grip are the VAR tyre lever, the Crank Bros Speed Lever – the latter is better at removal than fitting.

Before you re-inflate the tyre, run your hands around it and press it down into the rim to make sure it's properly 'seated'. Then pump it up again and refit the wheel – not forgetting to hook up the brake!

It's much easier to fix punctures at home than when you're out on your bike, which is why it's worth carrying a spare inner tube or two. Just fit that instead, first checking the tyre thoroughly for sharps before you do so.

Brakes and gears

If brake and gear cables are too slack, they won't work properly. You need to tension the cable. The easiest way to do that is to progressively unscrew the barrel adjuster for that cable. That's found by the lever (V-brakes or mechanical disc brakes), the brake calliper (sidepull brakes) or just behind the rear derailleur. If the cable is still too slack, or there is no barrel adjuster, you'll need to undo the bolt where the cable is clamped – which is always on the brake or derailleur – pull some more cable through and re-clamp it.

Cleaning and oiling

To clean the bike you'll want a bucket and a collection of brushes and old rags, maybe a sponge too. Use a detergent without salt, such as car shampoo, and warm water. A garden hosepipe is useful too, although you should avoid spraying high-pressure jets directly at any bearings (headset, bottom bracket, wheel axles, pedals).

To get the bike more clean more easily, spray it with a biodegradable bike cleaner. Leave it for a few minutes, and then clean it with your water and brushes. Use a water-soluble degreaser on the chain.

You can buy bike-specific brush kits and scrapers or use a combination of tooth-, scrubbing- and bottle-brushes, with screwdrivers for scraping. Clip-on chain cleaners are also available, but a couple of nail brushes clamped in one hand over the chain works just as well. Do the muckiest jobs first.

When you've finished, rinse the bike with cold water and let it drip dry(ish). After using a PTFE or water displacement spray on the chain, oil it. 'Dry' lubes are fine for bikes used on road in the summer. For bikes used off-road in Britain or in the wet, a stickier 'wet lube' is better. Apply to each

link. After giving it time to soak in, wipe off any excess. Take care to avoid getting lubricants on rims or disc brake rotors.

You will also need to lubricate brake and gear pivot points – a drop or two of light oil is all it takes to keep them running smoothly. Bare cables need to be lubricated where they enter cable housing. Shift the chain onto the smallest sprocket and chainring and unhook the brakes so all cables are as slack as they can be. Pull the cable housing away from the cable stop along the line of the frame tube and then away from the frame, letting the bare wire slot through the gap in the cable stop. Squirt a bit of PTFE into the cable housing end, then put it back in the cable stop.

Essential Toolkit

Must have:

- Hand pump
- Puncture kit with tyre levers
- Allen keys
- Phillips head screwdriver (there's one on most multi-tools)
- 6in or 8in adjustable spanner (worth getting a good one)
- Oil and spray lubricant

Good to have:

- Floor pump
- Chain tool (on many multi-tools)
- Spoke keys (ditto)
- Electrical insulation tape and cable ties