

3

Repairing a puncture

Bike Maintenance

Introduction

For safe and happy cycling, it's important to understand how to check your bicycle before you set off on your journey and how to keep it maintained for optimum performance.

This series of guides, produced by Cycling UK, provides some basic tips on maintenance and repair.

You'll find most of the common issues covered: the basic checks you should carry out before setting off, the essential tools you should always carry, how to fix a puncture, and how to adjust your brake and gear cables.

Here's what we'll cover

1 What you need

2 Quick releases and wheel removal

3 Removing the wheel

4 Replacing the inner tube

5 Repairing an inner tube

6 Replacing the wheel

But remember, if unsure about your repairs, seek the advice of a qualified mechanic at your local bike shop.

1

What you need

Punctures are one of the most common problems facing cyclists as the majority of bicycle tyres use an inflatable rubber inner tube that can be punctured by sharp stones, flints, thorns, and nails.

Although punctures can be a nuisance, especially if you're in a hurry, they can be quickly and easily repaired if you're carrying:

- 1 Self-adhesive repair patches**
- 2 A spare inner tube**
- 3 Tyre levers**
- 4 A pump**



In this guide you'll find step-by-step instructions on how to remove both your front and back wheels to carry out the repair, how to replace an inner tube and how to repair a puncture using patches.

Before reading on, you might like to watch our short film on how to fix a puncture.

2

Quick releases and wheel removal

Quick releases are designed for quick and easy wheel removal or replacement and seatpin adjustment. Some quick release levers have the words ‘open’ and ‘closed’ marked on them referring respectively to loose and tight.

Some wheels now have additional securing mechanisms. For details on these, please seek the manufacturer’s instructions.

To use quick releases properly:

1

Ensure they are appropriately tightened: the quick release lever should be free for its first $\frac{1}{4}$ turn (until the lever sticks straight out from the bike). At this point it should start to tighten (or nip up) and hold the wheel/seatpin lightly in place.



2

Where adjustment to the tightness of the quick release is required, simply consider the quick release to be a nut and bolt. Holding the loose quick release lever in place, turn the nut on the opposing side as required (clockwise to tighten, anticlockwise to loosen).



3

The next $\frac{1}{4}$ turn of the quick release lever tightens the system up 3 appropriately.

4

Ensure the lever is tucked out of the way (upwards or backwards), especially on the front wheel so that it can't catch on passing vegetation etc.



3

Removing the wheel

The front wheel

1

Keep the bike the right way up at least initially.

2

Where the bike has V-brake or another caliper system, release this by pulling the noodle (piece of bent tube) away from the opposing calliper, and just dropping the connector out of its locating slot (see photo). You might at this point want to turn the bike upside down, but it doesn't necessarily make wheel removal any easier – personal choice.

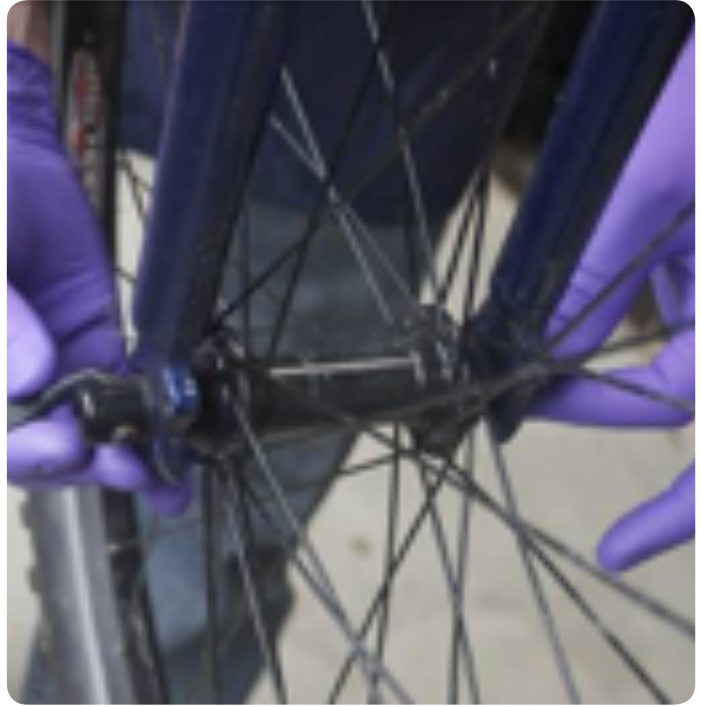


3

Undo the quick release.

4

At this point the wheel may simply drop out, or may need the quick release loosening off as described in the Quick Releases section – undo the quick release nut a few turns whilst holding the lever static. Avoid winding the nut completely off the quick release skewer as the holding spring is likely to come off and be difficult to find on the roadside.



5

This loosening opens the quick release up to allow it to get over the drop out lips. Now the wheel should drop out, if you just lift the front of the bike up by its stem.

The rear wheel

The rear wheel works in exactly the same way as the front wheel, though the rear mech and chain may get in the way a little.

1

Before you start, put the rear mech into the smallest sprocket. This helps the rear mech get out of the way when removing the rear wheel.

2

Go through the same processes as for the front wheel: disconnect the brake then undo the quick release.

3

As the wheel begins to come out (where you have the bike upright, lift the frame or saddle a little to facilitate this), try to move the rear mech a little away from the frame in a vertical direction.

4

Sometimes the rear wheel just needs a little gentle persuasion to release so push the top of the tyre vertically downwards, whilst it is just lifted off the ground slightly.



4

Replacing the inner tube

For the most part, you are unlikely to mend inner tubes on the roadside, as replacing them with a new one is quicker and easier. There are potential situations however where mending inner tubes does happen.

1

Fully deflate the inner tube by pressing the centre of the valve. For presta (narrow) valves, you will need to unscrew the locking nut to do this. For Schrader (car valve type) valves, you can turn the valve cap the other way up and press that onto the central valve stem.

2

Hold the tyre in one hand whilst going round the rest of the tyre pressing the tyre bead (the edge) into the centre of the rim (a). The centre of the rim is usually a smaller diameter than the rim edge, so this loosens the tyre and helps it come off.

3

Insert a tyre lever with the spooned side towards the tyre bead under the bead, and lever the tyre over the rim (b). This can then be hooked under the nearest spoke to hold it in place.



4

Use a second tyre lever if necessary in exactly the same way. Insert it under the bead 50 - 75mm (2 - 3") away from the first (c). The tyre should now be loose enough for the tyre bead to be pulled off the rim all the way round. Note that only one side of the tyre is removed; the other bead remains on the rim.



5

The inner tube can now be pulled out. Do this gently and at the valve, push the valve through the rim before removing the inner tube altogether (d).



6

Check the tyre for sharp objects which caused the puncture by running a rag or cloth round the inside of the tyre in a complete circumference (e). Some items, like thorns, are usually best removed by pushing back out through the tyre with a tool or tyre lever. Ensure anything sharp is removed to prevent a further puncture.



7

From here either mend the puncture (see the Mending Punctures section), or get a new inner tube out ready to fit.

8

Pump up the inner tube slightly so that it just inflates to a round shape (f). This helps the tube fit within the tyre and prevents further punctures as you put the tyre back on.



9

Insert the valve into the valve hole in the rim and push the tube inside the tyre and into the rim. The tyre bead can then be replaced under the rim edge (g). Avoid leaving the valve area until last as this often pinches the tube. The valve may just need pushing into the rim slightly to help the tyre seat properly at this point.



10

Inflate the tube until it fills the tyre and reaches a soft squashy pressure. At this point go around the tyre flexing it over the rim on each side. This helps seat the tyre squarely on the rim all the way round.

11

Pump the tyre to its appropriate pressure. Where the puncture was a snakebite (impact puncture) you might want to increase the tyre pressure (or slow down) to reduce the chance of it reoccurring



5

Repairing an inner tube

Repair patches are available from most high street and online bike retailers.

1

Remove the inner tube from the wheel as per puncture repair guide.

2



Use your pump to inflate the tube and check for the hole (a).



Look and feel for the air escaping (b).

3

Lightly scuff the tube with the sandpaper provided in the patch kit (c).



4

Peel the backing from self-adhesive patch and press patch firmly onto the tube. The tube must be clean and dry for the patch to adhere properly.



5

Replace inner tube into tyre, re-seat the bead against the rim and inflate to the correct pressure as per puncture repair guide.



6

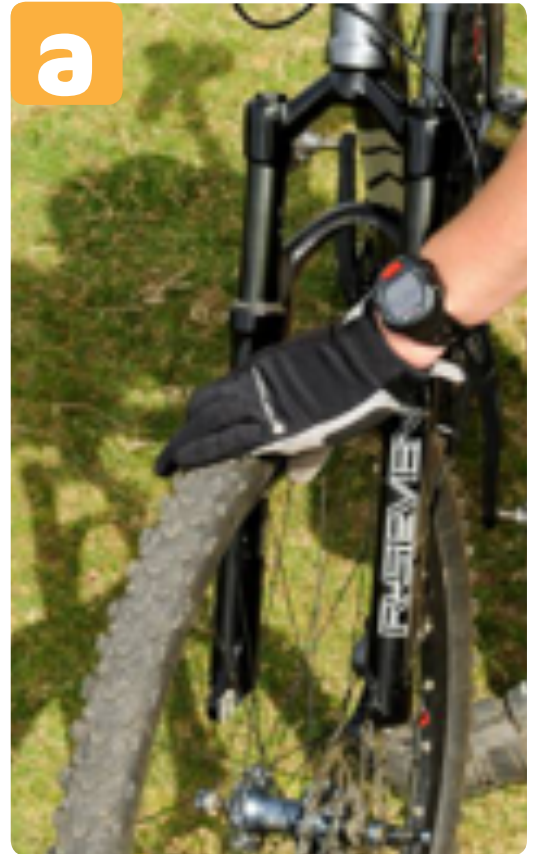
Replacing the wheel

The front wheel

1

Place the front wheel inside the forks with the quick release to the left-hand side of the bike (a).

a



2

Locate the dropouts over the hub / quick release and drop the forks onto the wheel (if bike is the right way up) or the wheel into the forks (if the wrong way up).

b



3

Where a bike has disc brakes, this can take some careful lining up with the disc and quick release (b).

4

Adjust the quick release nut appropriately and tighten the quick release into place.

5

Reattach the brake connection where V-brakes or cantilevers are fitted. (c)

c



6

Ensure that the brake works and that the wheel is held firmly and goes round without rubbing. If the brakes are rubbing, or are over to one side and weren't before, then the wheel is likely to be improperly located: - With the bike the right way up and the wheel resting on the ground, loosen the quick release. - Don't remove the wheel but move it slightly from side to side to let it settle in the right place at the dropouts.

The rear wheel

1

As you position the rear wheel within the frame, place the quick release nut and sprockets in between the two chain lengths (a).

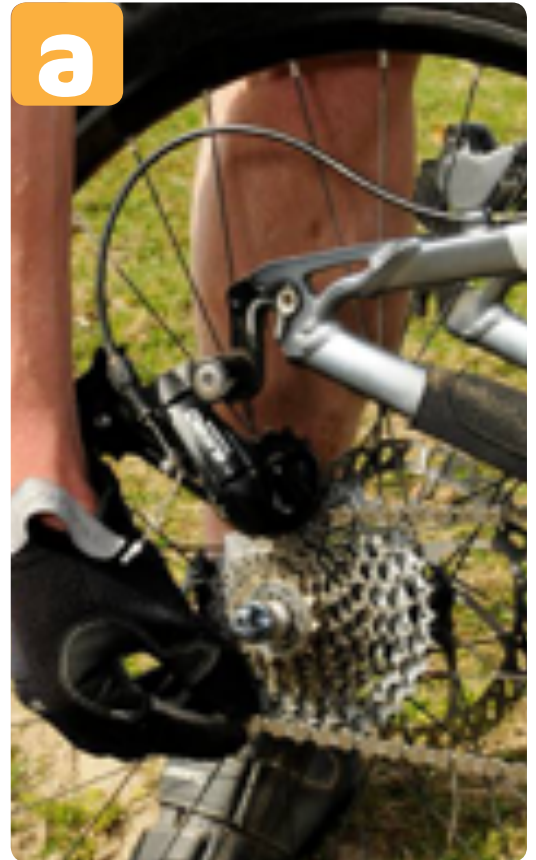
2

Replace with: Place the chain onto the smallest sprocket possible (b).

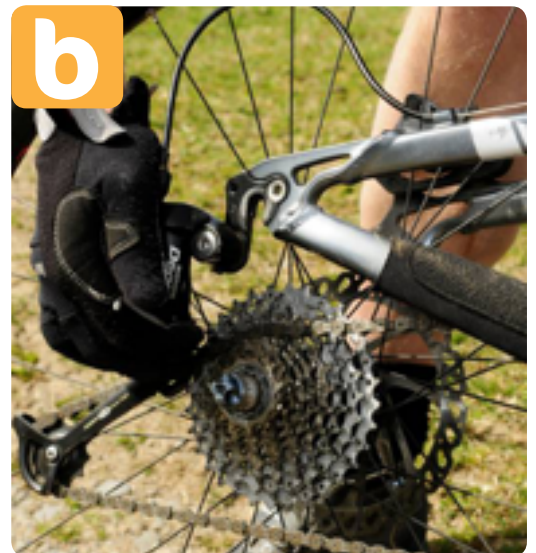
3

You may find moving the rear mech vertically away from the frame as when removing the wheel helps push the wheel past the rear mech.

a



b



4

Line the rear wheel up with disc brake calliper (if fitted) and drop outs and push it into position (c).

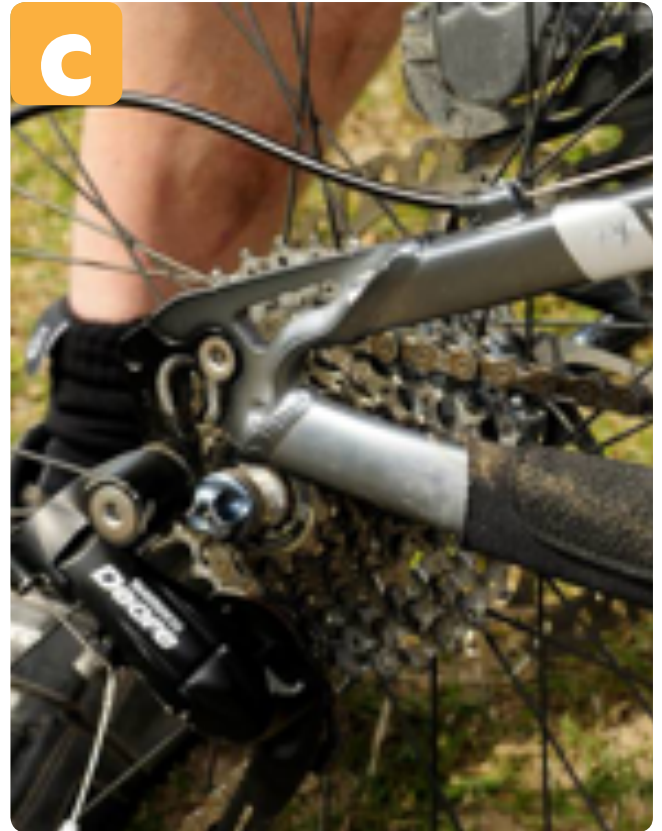
5

Tighten the quick release and check the chain and rear mech line up.

6

Reattach and check the brakes where V-brakes are fitted.

C



Wheel nuts

Some bikes don't use quick releases and fix wheels in using wheel nuts.

These are a simple mechanism, but should be tightened appropriately, with a (usually) 15mm spanner. Make sure to carry a spanner too as part of your puncture repair kit if your bike uses wheel nuts. When replacing a wheel with nuts, ensure that it is located correctly once both nuts have been tightened. The wheel can sometimes move and rub against the brakes.

