

The Complete DIY Plumbing Guide

Everything a UK homeowner needs to tackle household plumbing safely - written by Mike Collins, plumbing instructor at The Plumbing School, Deeside, Flintshire.

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Inside:

- 1 What is safe to DIY - and what is never DIY
- 2 How water gets into your house
- 3 Isolation: the habit that prevents floods
- 4 Your essential toolkit
- 5 Stop a dripping tap
- 6 Fix a running toilet
- 7 Clear a blocked sink
- 8 Bleed a radiator
- 9 Fresh silicone that lasts
- 10 Joining pipes: compression, push-fit, soldering
- 11 When to call a professional - honestly
- 12 Learn it properly on real rigs

What is safe to DIY - and what is never DIY

Most household plumbing is simpler than it looks, but a handful of jobs are never DIY. Know the difference before you pick up a spanner.

Fine for a careful DIYer

- Dripping taps and new washers
- Running or leaking toilets
- Blocked sinks and traps
- Bleeding radiators
- Replacing tap and shower heads
- Isolation valves on existing pipework
- Fresh silicone around baths and showers
- Push-fit and compression joints on accessible pipework

Never DIY - always a professional

- Anything involving gas. It is illegal for an unregistered person to work on gas appliances - always a Gas Safe engineer
- Boilers and central heating system internals
- Work on the incoming mains supply itself
- Major bathroom electrics - bathrooms mix water and electricity, and much of it must be signed off
- Drains and soil stacks beyond simple rodding

If a job involves altering pipework connected to the mains, water regulations apply in England and Wales - a qualified plumber will know them. When in doubt, make a call instead of a mistake.

How water gets into your house

Water enters through one pipe from the mains, usually passing your stopcock close to where the pipe enters - often under the kitchen sink or near the front of the house.

From there it splits: some goes to cold taps and the toilet, the rest climbs to the hot water cylinder or combi boiler.

Older houses often have a loft cistern feeding the hot cylinder by gravity; newer setups are mains-pressure throughout. This matters because it decides how fast water comes out of an open pipe - and how much you will be mopping up if you get it wrong.

Do this today: find your stopcock and turn it a quarter-turn and back. Repeat every few months. A seized stopcock is why some people watch water pour through their kitchen while they fight the valve.

Second thing: pressure is the push behind the water (mains gives plenty; a loft cistern gives gentle pressure by height alone). Flow is how much comes through. A weak shower is usually a flow problem - kinked hose, clogged head, or gravity fighting uphill.

Isolation: the habit that prevents floods

Every job starts the same way: isolate the water, then open the lowest tap to prove it worked.

- Appliance isolation valves - small levers under sinks, behind toilets, at washing machines. Quarter-turn to close. Fit one if a pipe has none: the cheapest flood insurance there is.
- The stopcock - the whole house. For bigger jobs close it and drain down: open the cold taps until flow dies, then open a low tap while you work.
- Hot water - turn off the immersion or boiler hot water, and remember a loft cistern keeps feeding the cylinder until you stop it.

Put a towel down and keep a bucket to hand even on a five-minute job. Residual water lives in every trap and horizontal pipe.

Your essential toolkit

You do not need a van full of kit. For every job in this guide:

- Two adjustable spanners (hold and turn)
- Water-pump pliers for tap and trap nuts
- Flat and Phillips screwdrivers
- A proper sink plunger
- Bucket, towels, head torch
- PTFE tape for threaded joints
- Replacement tap washer assortment
- A radiator bleed key
- Silicone gun, scraper and finishing tool
- A set of Allen keys for shower heads and cartridges

Total spend: less than one plumber call-out charge. Buy decent mid-range spanners and pliers - you will use them every time.

Stop a dripping tap

- Isolate the tap and open it to release pressure.
- Remove the handle: often a screw under a decorative cap, or a grub screw on the side.
- Traditional tap: undo the headgear nut, lift out the jumper, swap the rubber washer. Check the valve seat - if scored, reseal it or replace the tap.
- Modern mixer: usually a ceramic cartridge. Note brand and size, buy a match, swap it in.
- Reassemble, restore water, check for drips at the spindle as well as the spout.

*Do not overtighten on reassembly. Tap parts seal on rubber, not brute force.
Hand-tight plus a small nip.*

Fix a running toilet

A toilet that keeps hissing is nearly always the fill valve (refills the cistern) or the flush valve (lets water into the bowl). Both are cheap and designed to be replaced by anyone who can undo a nut.

Diagnose in one minute

- Water keeps running into the bowl = flush valve not sealing (tired flapper or siphon diaphragm).
- Cistern overfills and escapes = fill valve not shutting off (float level wrong or valve furred up).

The fix

- Isolate, flush to empty.
- Fill valve: adjust the float to stop below the overflow line, or swap the valve - one nut underneath holds it.
- Flush valve: the flapper or drop-rod assembly lifts out; photograph the old one, buy the same type, fit.
- Refill, watch one full cycle, check the level sits at the marked line.

Clear a blocked sink

Almost always a fat-and-hair plug in the trap. You rarely need chemicals - just 20 minutes and a bucket.

- Plunge first: block the overflow with a wet cloth, fill the basin to cover the cup, steady pushes - it is pressure that moves the blockage.
- Still slow? Bucket under the trap, undo the hand-tight nuts, clear the gunk, rinse, refit. Hand-tight plus a small nip - over-tightening cracks plastic.
- Blocked further along? A hand-cranked drain auger sorts most waste pipes.

Skip harsh caustic chemicals. They rarely clear a proper plug and make the trap job nastier for whoever does it next.

Bleed a radiator

- Heating off, or the pump drags more air in.
- Bleed valve at a top corner; bleed key with a cloth, turn anti-clockwise slowly.
- Hissing is air escaping. When a clean jet of water comes, close it - hand-tight.
- Repeat around the house, then check the boiler pressure gauge; top up with the filling loop if it dropped below the recommended bar.

Warm at the top and cold at the bottom is different - that is sludge, not air. That one belongs to a heating engineer.

Fresh silicone that lasts

- Remove every trace of old silicone - scraper, remover, wipe down. New sticks to old about as well as it sticks to soap.
- Clean with methylated spirits, then dry fully. Moisture behind the bead is why mould returns.
- Fill the bath part-way with water before you run the bead, mask both edges, cut the nozzle to match the gap.
- One steady bead, tool it in one confident pass, remove tape before it skins.
- Leave 24 hours before the first shower.

This finishing work is exactly what we drill on the 5-Day Bathroom Fitting Course - the last 5% is the difference between DIY and professional.

Joining pipes: compression, push-fit, soldering

Compression

A brass nut and olive grip the pipe. No heat, no special tools. Always fit a new olive - reused ones weep.

Push-fit

Pipe in, collet grips, O-ring seals. Push fully to the depth mark and support heavy runs. A release tool removes them.

Soldered

Clean, flux, heat, and capillary action pulls solder round the joint. Strong and permanent - but a naked flame on pipework: empty the system, mind timbers, practice on scrap first.

Whichever you use: clip long runs, add isolation valves for future servicing, and pressure-test before boxing anything in.

When to call a professional - honestly

- Gas, always. Boilers, gas pipes, gas fires - Gas Safe engineer, no exceptions.
- Mains supply work - the pipe before your stopcock is the water company territory and high-pressure.
- Bathroom electrics - much of it legally needs certification. Do not guess.
- Repeat leaks - the same joint weeping twice needs diagnosis, not a third tighten.
- Anything you cannot isolate - water through a ceiling with no obvious stopcock means emergency plumber, today.

Rule of thumb: DIY everything you can isolate, see and reach. Call a pro for anything pressurised, gas-fired, certified or hidden.

Learn it properly on real rigs

Reading is a great start, but plumbing is hands-on. The difference between "I watched a video" and "I have done it" is a rig, real parts, and someone correcting your grip before it becomes a habit. That is what we do at The Plumbing School in Deeside, Flintshire.

3-Day Complete Plumbing Course - £550

Taps, toilets, radiators, pipework, leak repairs and copper soldering, hands-on, in a group of no more than four. No experience needed.

Thursday Skills Club - £30 a session

Practical training on the rigs every Thursday evening. Perfect for keeping your hand in or trying us out first.

See all courses and dates at theplumbing-school.co.uk/courses.html - or WhatsApp Mike on 07414 249796. Tell him what you want to be able to do and you will get an honest answer, even if it is "you do not need a course for that".

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