

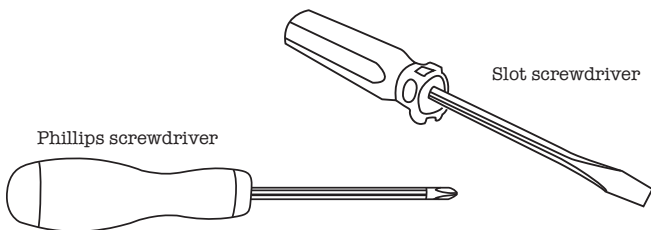
Useful tools for home repairs

OVERVIEW

This is the first BUSH TECH in a series that discusses tools and materials for minor building projects and repairs around your home. This first BUSH TECH will talk about tools, because the most urgent thing is usually a maintenance problem, and that involves choosing the right tool for the job.

As a rule of thumb, a very cheap tool from a bargain table at the hardware store may appear the same as a better designed one, but will often be made of cheap materials, and either will not do the job or not last very long. If you have not had experience with a particular type of tool before — seek advice from someone who has.

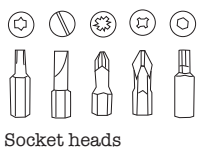
SCREWDRIVER



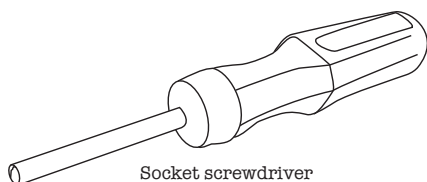
General purpose screwdrivers come in two basic types, slot (-) head and Phillips (+) head. You will likely need several sizes of each if you are going to do a variety of jobs around home. Some screwdrivers come with a magnetic head (has a darker colour than the shaft), which holds the screw and makes insertion easier. Short stubby screwdrivers are useful in confined spaces, but don't provide as good a grip for fully tightening or undoing a really tight screw.

If you are not going to be using these tools often, it may be worth buying a good quality screwdriver designed for interchangeable heads. The backs of these heads have a standard hexagonal (six sided) shape which locks into a socket on the screwdriver shank. Most hardware stores stock a full range of low cost, good quality head sizes and types.

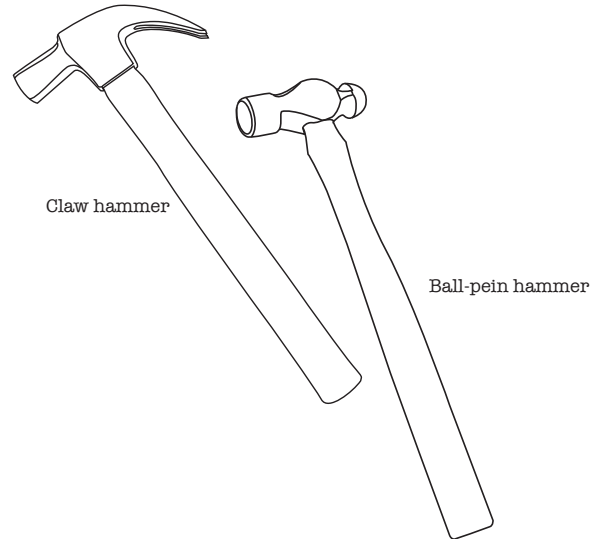
Watch Out! Use a screwdriver head that fits the screw head firmly. If the fit is loose it will be hard to tighten or undo the screw or tighten it properly, and may round over the screw slot, making it impossible to turn. Slot head screwdrivers with worn edges will cause similar problems.



Socket heads

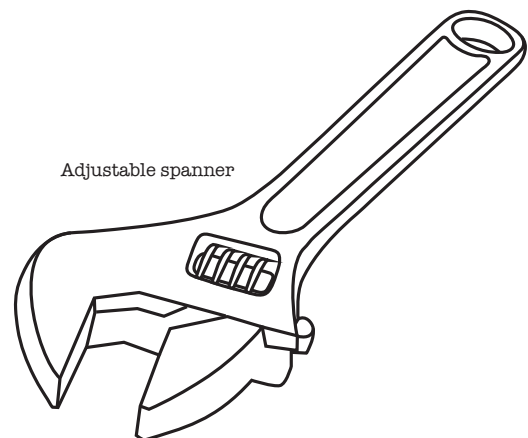


HAMMER



A hammer is a tool that is used for banging in nails, fitting parts, forging metal and breaking up objects. There are two types of hammers: a claw hammer and a ball-pein hammer. Claw hammers are the most common type used mainly for carpentry work, as it is useful for pulling out nails. Ball-pein hammers are used in metal work.

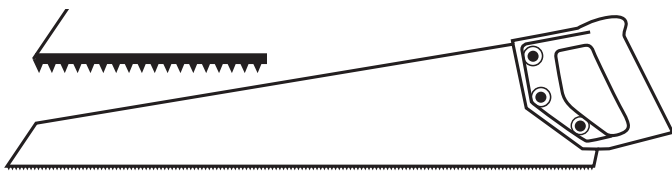
SPANNER



While the correct size fixed spanner provides the best grip, adjustable spanners ('shifters') offer the best value for money for a variety of jobs. The critical thing to watch for in a shifter is that the jaws tighten smoothly around the bolt head, and the screw that adjusts the jaws runs smoothly in and out, and does not slop or jam.

Watch Out! If possible, test it while in the store by tightening it fully onto a fixed bolt head or square surface, applying pressure, then seeing that the spanner can be easily removed from the bolt head and refitted to it without needing to adjust the screw.

HANDSAW



A hardpoint handsaw can be recognised by its blackened teeth.

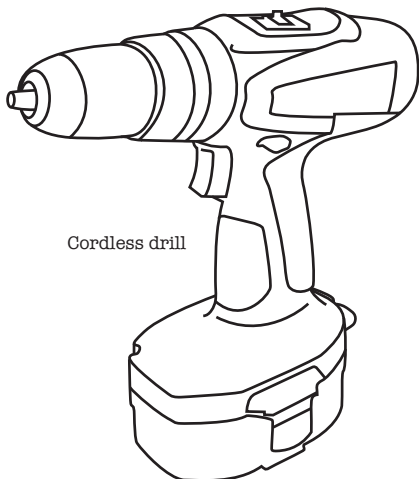
A handsaw is essential for a range of timber cutting jobs. 'Hardpoint' handsaws are the best style for general purpose use. Although they cannot be re-sharpened, the teeth of these saws are hardened to last much longer before becoming too blunt to use.

Most of these are 'crosscut' or 'combination' saws, which means that the teeth are designed to cut across the timber grain rather than along it. The grain usually follows the long side of a piece of timber, so cutting a plank to length (the most common job for a handsaw) requires a crosscut saw. Where cutting along the grain ('ripping') is needed, it is usually done in the timber store on a power sawbench.

The number of points or teeth per inch (tpi) is a guide to the type of work the saw can be expected to do: 8 or 9 tpi indicates a saw for general purpose cutting; 7 tpi for fast cutting or coarse material; 11 tpi or greater is for fine work such as cutting plywood.

Watch Out! Cheap handsaws often have a very thin blade, which may be sharp, but is difficult to use because the blade bends easily on the push stroke. Choose a hardpoint saw with a relatively stiff blade. Keep the blade dry between uses, as it can rust relatively quickly.

DRILLS AND DRILL BITS



Cordless drill

These days, cordless drills or mains powered (240 volt) electric drills with hand tightened chucks (jaws holding the drill bit) are low enough in price to be a cost effective tool for most drilling jobs. The simplest jobs will involve drilling into soft timber or through a thin (less than a couple of millimetres thick) piece of metal. For occasional light jobs like this, a cordless drill in the hundred dollar range is adequate. A two-speed or variable-speed cordless drill is more versatile than a single-speed one, since the slower speeds can also be used with care for driving screws and are better for drilling into metal.

Watch Out! When fixing screws with a cordless drill, it is often difficult to judge how far to tighten each screw, and damage to the work may result. To be on the safe side, run the screw to within a turn of tight, and finish the job with a hand screwdriver.

Watch Out! Correctly recharging the batteries in a cordless drill is important to ensure they are long-lasting. Follow the user instructions that came with the tool, because different battery types require different charging arrangements.

DRILLING INTO METAL



High Speed Steel drill

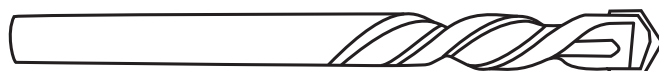
Drill bits for general purpose drilling in timber and metal are made of High Speed Steel (HSS). Look for an HSS stamp on the individual bit and the packaging. When drilling metal, follow these steps:

1. Make sure the work piece can not move or rotate
2. Mark the hole position
3. Punch the metal (a hammer and nail may be sufficient to do this) to prevent the drill bit from wandering
4. Add a few drops of motor oil to the contact surface
5. Centre the drill over the work, making sure that it is vertical to the surface in two directions (get someone to guide you).
6. Drill using steady pressure and a steady low speed.

Where a large hole size is needed, drill a pilot hole with a small diameter bit (say 3mm) first.

When the bit is cutting properly, there will be a steady build-up of shavings around the hole. If this is not happening, the drill bit may be blunt. This can be due to a too-high drilling speed or not enough lubrication. If oil doesn't help, you will need to replace the drill bit.

DRILLING INTO CONCRETE



Masonry drill

For drilling into concrete, brick or stone (ie. masonry), the tools described above won't do the job. These materials are harder than high speed steel, and need to be drilled in a different way, so both the drill type and the bit type need to change. A hammer or impact-drill is needed. Many mains powered drills and some higher powered (and higher cost) cordless drills have both a 'normal' and a 'hammer' setting. The hammer function requires considerably more power but a low speed, and vibrates the bit up and down against the work, helping to crush the material rather than cut it. Bits for drilling in this way are called masonry, tungsten or tungsten carbide tipped (TCT) bits. These have a very hard tip and cost more than HSS bits. Because they are not as sharp as HSS bits, masonry bits won't cut timber or steel, and HSS bits will blunt immediately if used for drilling masonry.