

PEDESTAL DRILL

Shown below is a diagram of a pedestal drill, also known as a pillar drill. The pedestal drill has a long column which stands on the floor. This means it is capable of being used to drill large pieces of materials and produce larger holes. This is because the table can be lowered allowing long pieces of material to be positioned into the machine for drilling.

SAFETY

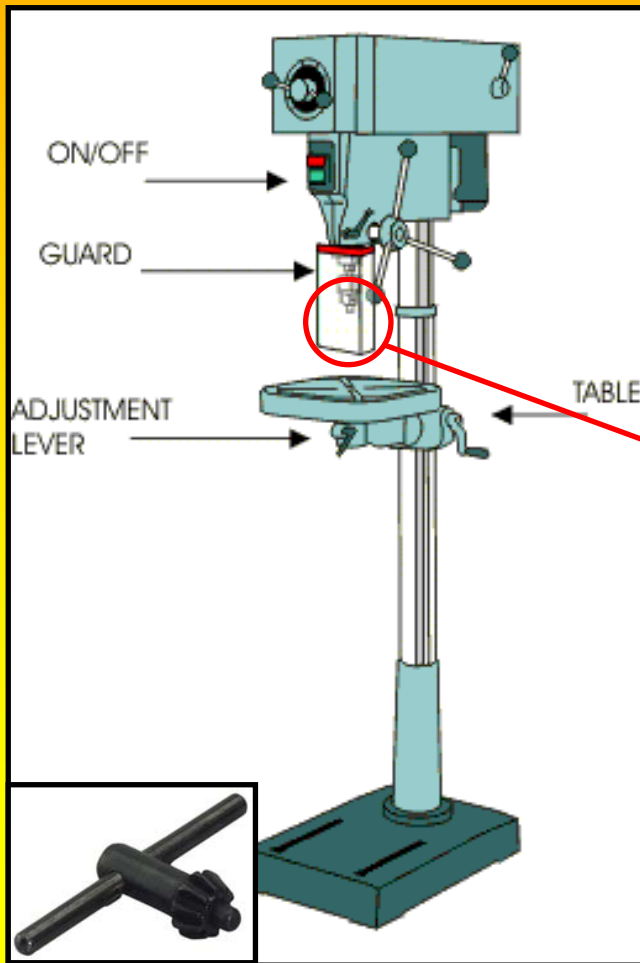
1. Always use the guard.
2. Wear goggles when drilling materials.
3. Clamp the materials down or use a machine vice.
4. If your hair is long enough for you to be able to tie it, it must be secured and tucked inside a collar.
5. Make sure loose or baggy clothing is held back securely.
6. Follow all teacher instructions carefully.

TYPES OF DRILL BIT

1 - Twist Drill - Used for drilling holes. A normal drill set will include sizes from 1mm to 14mm.

2 - Forstner Bit - Used for larger diameter holes. When using this bit the hole is drilled very slowly so that the bit does not 'jam' in the wood.

3 - Hole Saw - For large diameters a 'hole saw' can be used. The advantage of this type of drill bit is that the blade can be changed to give different sizes of diameter.



SANDERS

ORBITAL SANDER



WHAT IS IT ?

A power tool used in the woodwork room

WHAT IS IT USED FOR ?

An orbital sander can take the boredom out of sanding large flat surfaces in woodwork. A sheet of abrasive paper is fixed to the base and the base rotates at high speed in very small circles. This movement produces the rubbing required to remove the top surface of the wood.



BELT & DISC SANDER

WHAT IS IT ?

A woodwork machine tool

WHAT IS IT USED FOR ?

The belt sander and disc sander is used to produce flat smooth faces on pieces of timber. It is particularly good at achieving smooth faces on the end of a piece of timber. If you have ever tried this by hand you will have found it very difficult to smooth the end grain of a piece of timber by hand.

Know the safety precautions for this machine !

MORTICING MACHINE

WHAT IS IT ?

A power tool for drilling square holes in wood

WHAT IS IT USED FOR ?

There are various times when you would want to produce a square hole in a piece of wood rather than a round hole. The most common would be when you were making a mortise and tenon joint (look it up if you have to).

The mortising machine basically works like the pedestal drill that you will be familiar with using. The difference is in the cutter. The cutter has a pretty standard drill surrounded by a square blade. The tip of the drill is very slightly lower than the end of the square cutter.

This means that, as the whole arrangement is driven into the wood, it cuts a round hole first then a fraction of a second later the square blade picks out the four corners to produce a square.

The whole table can be moved left and right and also in and out so that not only squares but rectangles can be cut.



cutter in the 'up' position

CORDLESS DRILL

WHAT IS IT ?

A power tool for drilling holes

WHAT IS IT USED FOR ?

It can very often be awkward to drill holes in wood, metal or plastic using a pedestal drill. The shape or size of the material being drilled might mean you cannot use the standard workshop drilling machine.

A cordless drill can often be much more convenient in these situations although, because it is being held by hand, it might well not produce a hole which is as accurate as the one you would get using a pedestal drill.

Cordless drills are often supplied with an extra battery which allows on to be charged while the other is being used. The batteries generally clip into the base of the drill.



spare battery

JIGSAW

WHAT IS IT ?

A power tool for cutting out complex shapes out of large sheets of wood and plastic. It has a blade which moves at high speed up and down while the whole saw can be pushed along on two runners not unlike water skis.

WHAT IS IT USED FOR ?

Any time when a curved line needs to be produced in wood or plastic sheet, a jigsaw might be the very tool. First the required line is drawn on the sheet then the saw follows this line cutting as it goes. The advantage of this saw over most others is that it can cut relatively tight bends and curves.

In the photo below however, the worker is using a straight edge to act as a guide to produce a long straight cut.



ROUTER



WHAT IS IT ?

A power tool for shaping the edges /corners of wood

WHAT IS IT USED FOR ?

You may well have seen coffee tables, window ledges, shelves etc. with fancy moulded edges. These would be almost impossible to achieve by hand. A router fitted with a shaped cutter can produce these edges quick and easily.

There is an element of danger with this tool and it must always be used as per the manufacturers instructions and with the proper guards in place. For this reason, pupils are not allowed to use this equipment.

POWER SCREWDRIVER



WHAT IS IT ?

A power tool for driving in screws

WHAT IS IT USED FOR ?

It does exactly what it says on the tin.

It can be very time consuming if there are a lot of screws requiring to be driven in by hand. A power screwdriver can speed the process up considerably.

They come with a wide range of attachments which can be fitted to accommodate a wide range of screw heads (slotted, phillips, pozidriv, allen etc.). In the photo shown, the screwdriver is fitted with a phillips attachment.