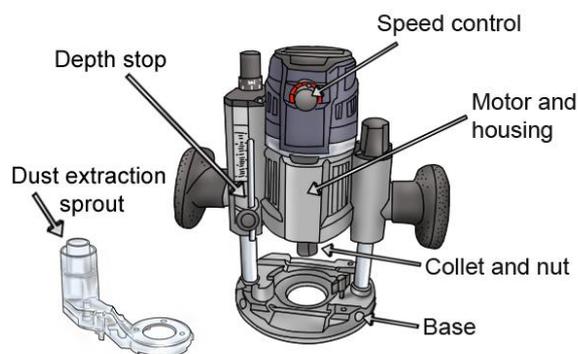


## Woodworking Router – Training notes

The router is a very versatile machine for producing a wide range of mouldings and finishes. It can be used freehand, with guides and jigs or mounted in a table.



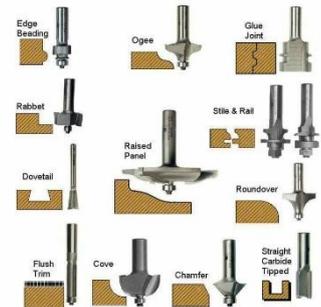
Routers and their cutters are available with various shank sizes. Most commonly  $\frac{1}{2}$ " ,  $\frac{1}{4}$ " , 6mm & 8mm. Often routers will be supplied with a few different collets to allow use of different size cutters.

Generally,  $\frac{1}{2}$ " routers are heavier duty and more powerful.

Although versatile tools, due to the size, weight and speeds, they are potentially dangerous and **MUST** be treated with care.

### Cutters/Bits

Router bits are available with an incredible range of sizes and profiles. The chart gives a small sample of the bits available and illustrates the profiles produced.



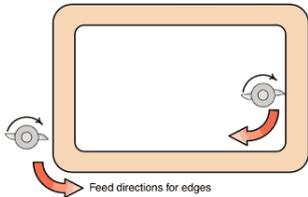
### Safety

1. The router must be unplugged from the mains before any fitting or adjustment is carried out.
2. Ensure the correct collet is inserted to match the cutter –  $\frac{1}{4}$ " = 6.4mm so a  $\frac{1}{4}$ " cutter may seem to fit in a 6mm collet but will not be held securely.
3. When fitting a cutter ensure at least  $\frac{2}{3}$  of the shank is inserted into the collet.
4. Do not try to increase the bit's depth of cut by inserting less of the shank in the collet.
5. Ensure the collet is fully tightened using the machines spindle lock and appropriate size spanner.
6. If the machine has a speed control set it to a suitable speed for the size of the bit being used. The following is a rough guide to speeds

Bit Diameter	Maximum Speed
Up to 1"	24,000 rpm
1" to 2"	18,000 rpm
2" to 2½"	16,000 rpm
2½" to 3½"	12,000 rpm

7. Wear eye-, hearing-, and dust protection devices, and either short-sleeve shirts or long-sleeve shirts with rolled-up cuffs. Wear a shop apron or tight clothing. Make sure that your hair, jewelry, etc., will not become entangled with any moving parts of the router.
8. Fit the dust extraction spout and attach the extractor.
9. Make certain that all workpieces are securely clamped and will not shift during routing.
10. Always grip the tool tightly, especially when starting up the router when you have to resist the initial motor torque. Keep both hands on the knobs or handles.
11. If the router or work tends to ride upwards and requires extra pressure to feed, turn off the power immediately. This indicates the bit is dull, it is slipping out of the collet, or just that you have selected the wrong bit design.
12. Don't force-feed the router or work in any situation.
13. Ensure the cutter is not in contact with the workpiece before the machine is started.
14. Where necessary take several small cuts to prevent overloading the machine or burning the workpiece.

## Using the router for edge moulding and grooving



Always feed the cutting edge of the **INTO** the work piece against the direction of rotation. Feeding the wrong way will result in the router 'climbing' the work and snatching.

For edge moulding the depth of the cutter must be set and locked. Take care to protect both the cutter and yourself as the cutting edges will be exposed.

Bearing guided bits are particularly useful for edge mouldings especially on internal faces.

When grooving, the depth stop must be set to the required depth of cut and the plunge lock released to enable free movement of the plunge mechanism.

Fit an appropriate guide or fence to control the position of the cut.

Feed the router such that the bit rotation will tend to pull the machine towards the fence/guide.

There's a wide range of jigs and aids available for use with the router – A short while skimming through catalogues such as Axminster Tools can be quite informative. Many jigs etc can be homemade – see some of the books in the coffee area.

