Spindle moulder

Background

The spindle moulder is a great all-rounder that can be used for moulding grooves, profiles, rebates, etc. You can mould many different profiles in both straight and curved workpieces. The machine is primarily used for small production runs and one-offs. For larger production runs, you should instead use a planer moulder which can cut several profiles at the same time.

Machine structure

In a spindle moulder, the stock is cut from the side.

Spindle

Most spindle moulders have a vertical spindle in the middle of a horizontal table. Tools (cutters) are secured to the spindle to perform different moulding tasks. Backing rings are placed in the table opening where the spindle comes through, to make the hole for the cutter as small as possible. There are fences on each side of the spindle, which are adjusted depending on the workpiece.

Various tools and moulding spindles are available to give the machine as many applications as possible. The most common spindle type is the ring spindle. There is also the chuck spindle, which is used to attach routing tools. The spindle can always be raised and lowered and can often be tilted between 5° back and 45° forward. The ability to tilt the spindle means each tool can be used in various ways.

Fences

Fences come in many different types. Various methods are used to protect the area over the tool, for example

- folding "fingers"
- loose aluminium bars
- clamped plywood
- slats.

Guard

To stop your fingers touching the tool, there is a guard in front of the fence. The guard can also be used to push the stock down on the table and against the fence.

Rollers

Most spindle moulders can be equipped with rollers to push the workpiece down and against the fence.

Sliding table and tenoning sled

Some spindle moulders can be equipped with a sliding table and tenoning sled. These are necessary in order to work on the short sides of the workpiece, to do things like tenoning or slotting. The workpiece is clamped to the tenoning sled and rolled past the cutter.

Manual feed or power feed

The spindle moulder can be used with manual feed or an attached power feed. Most moulding tasks can be done with the power feed. The power feed has many advantages, for example a more constant feed rate, a smooth finished surface, easier handling and faster feed. It is also safer as there is no need to get your fingers near the tool. Always use the power feed if possible.

Stop and think!
When feeding manually, always feed against the direction of rotation of the tool (conventional cutting). Climb cutting – feeding in the direction of rotation of the tool – is dangerous because the workpiece can easily be violently ejected. That is why you should always use a power feed for climb cutting.

A power feed is placed on a frame with an arm adjusted to the correct position. The power feed usually has three or four rubber wheels. The wheels may be sprung so that the workpiece can vary in thickness. On most power feeds, you adjust the feed rate by turning a wheel. The power feed can work horizontally and vertically. When working with engineered wood you may want to use a power feed with a belt drive as the belt acts on a large surface area for a better grip.

Select a tool
There are many different tools types that can be used in spindle moulders. Each tool can also be used differently if you tilt the spindle or use a guide ring with a template for example. Here are some standard tool types.

Stop and think!
All the tools used in a spindle moulder must be MAN-marked.

Cutters
Fixed cutters are the most common type of tool for spindle moulders, and they are available in many different designs. The cutter inserts can either be permanent or replaceable.

Adjustable cutters are highly versatile because they are several cutters in one. An adjustable bevel cutter is a good example. The inserts can be tilted along a marked scale. Another example is an adjustable groove cutter, in which the height of the cutter can be changed. This means you can adjust the width of the groove.

Inserts
Profile cutters are versatile because one set contains many different profiles. The replaceable inserts consist of cutting knives and limiters. The cutting knives cut the material and the limiters prevent kickback and excessive cutting.

Blades
Blades are effective tools. They are commonly used for grooving. It is quick to set up the spindle moulder if the blade as the same diameter as the groove. The problem is that you need many blades with different widths. Blades are also great for slotting. To do this, secure several blades to the spindle separated by spindle rings the same thickness as the blades.

Stop and think!

Never put the tool down on anything other than a wooden board. The tool is fragile and easily damaged.