Mini Max C26 Genius Combination Machine

by Neville D Powell

Will the Mini Max C26 Genius Fit in Your Shed?

Most woodworkers start out by building up a collection of portable power tools, but at some point those who are fortunate enough to have their own ‘shed’, i.e., a dedicated workshop, will consider investing in stationary equipment such as a table saw, planer and thicknesser. The most convenient way to do this is to purchase a combination machine.

The addition of a combination machine needs some careful thought. Firstly, will it fit? This is just a matter of mathematics. Determine the location and size of the machine and see how much room you have left. If it helps you, draw the outline of the machine on the floor in chalk. Don’t place the unit against a wall. Operating a combination machine will at times require a 360° work area. Most home workshops do not have an oversupply of floor space so you may find the fitting of a set of wheels to the base of the machine is a big advantage or even a necessity.

In terms of physical size, the Mini Max C26 Genius is a winner. With extensions folded away for storage, the unit occupies only one square metre of workshop floor space.

What Will It Do?

Your combination machine should not only fit in the workshop but also provide you with satisfaction in the quality of the work the machine produces. This relates to the model’s functions, versatility and build quality.

Designed for the domestic, i.e., non-industrial, market the C26 is manufactured in Italy by Mini Max, part of the SCM group which is one of the largest manufacturers of high quality woodworking machinery in the world.

The C26 has five primary operations — Rip Saw, Sliding Table Panel Saw, Surface Planer, Thicknesser and Spindle Moulder — and is powered by three independent 2HP 240V single phase motors.

Rip Saw

Although the cutting of solid timber and flat panel material is done by the same circular saw on the machine, the operation is different so the two functions have been separated for a better understanding of how the machine works.

The saw blade has a speed of 3900 rpm which results in a cutting speed of 3060 metres per minute or about 10,000 feet per minute in the old scale. This is an ideal speed when using Tungsten Carbide Tipped (TCT) blades for ripping (Photo.2).

To rip on the C26 the blade should be 250mm dia. with a tooth pitch of approximately 15-20mm and a ‘rip’ tooth profile to give a clean curled shaving. For best results set the saw blade at its highest position to give a vertical or chopping action where the teeth meet the timber.

Some timber species tend to spring (either open or closed) when cut. To avoid the risk of the timber binding on the blade (even when the riving knife is set correctly), it is a good safe practice to set the aluminium rip fence to a forward position, with the rear edge lining up approximately with the centre of the saw blade.

On the C26 the maximum distance from the blade to the rip fence is 500mm and the maximum depth of cut is 70mm. As well as a precision rise and fall adjustment to the blade the machine has an accurate tilting adjustment from 90° to 45°. Always ensure the sliding table is in the locked position prior to carrying out any ripping operations and use the push stick wherever possible.

Another advantage of the C26 is that the 250mm saw blade can be lowered below table level (specifically designed to permit the use of the spindle moulder). This feature enables the operator to carry out shallow grooving operations on the saw without having to change the blade.

Sliding Table Panel Saw

The sliding table (Photo.1) is primarily used for the dimensioning of flat panel material, such as plywood, chipboard (particleboard), MDF and most panels faced with decorative veneer or melamine.

It is here that the Mini Max C26 demonstrates its ability to give optimum results to the woodworker. Its cutting capacity is very large when you consider the actual size of the machine. The sliding
table has a travel of 1070mm and slides close to the saw blade, resulting in a more controlled cut since the panel is not being moved across a 'dead table' as is the case with some other combination machines.

When the rip fence is lowered until it only projects about two side of faced panels the blade should be lowered until it only projects about two side of faced panels the blade should be lowered until it only projects about two side of faced panels the blade should be lowered until it only projects about two side of faced panels the blade should be lowered until it only projects about two side of faced panels the blade should be lowered until it only projects about two side of faced panels the blade should be lowered until it only projects about two

The sliding table surface is anodised to prevent the marking of melamine-faced panels.

The sliding table can also be used in conjunction with the spindle moulder for European open box type tenons. If required a slot mortising attachment can be obtained as an optional extra for the C26 to complete the standard closed type mortise and tenon joints, carrying out dowel boring for chair making, etc.

The selection of the correct type of blade for panel work is just as important as for the rip saw. The standard TCT saw blade has teeth be 250mm dia., with 10 teeth, zero cutting angle and an alternative top bevel tooth profile. Such a saw blade is ideal for cutting all unfaced flat panels.

To obtain the best results when cutting faced panels, use a saw blade with 80 TCT teeth and a Triple Chip tooth profile. This profile produces a progressive cutting action resulting in a very clean finish to the face and edge of the panel.

To minimise breakout on the underside of faced panels the blade should be lowered until it only projects about two gullet depths above the panel being cut. This results in more of a slicing action as the tooth passes through the panel.

Surface Planer

The provision of a surface planer (Photo.3) is one of the big advantages of moving from working with just a set of portable power tools to owning a combination machine. Its main use is the preparation of solid timber prior to thicknessing or moulding.

A typical process would be to face and edge solid timber to obtain a 90° edge, then final dimension it through the thicknessing unit. For the best results plane the widest face first. This then gives you a good wide surface to rest against the fence so as to achieve a true square edge.

The surface planer can also be used to straighten solid timber. When feeding the work over the cutter block, the hand-over-hand method is the safest, ie. one hand on the work at all times. To straighten timber, hand pressure should only be applied on the outfeed table after sufficient timber has passed over the cutter block. In this manner the timber is dragged over the cutterblock rather than pushed from the infeed table.

Generally speaking straightening is best achieved on timber which does not exceed the length of the infeed table. However, longer lengths can be straightened by passing the convex face over the cutterblock. This may take more than one pass depending on the extent of the bow in the work piece.

The C26 has a surfacing width of 260mm and a cutterblock speed of 5500 rpm. The surfacing tables are 1040mm long. I found the bridge type cutter block guard supplied with the C26 to be one of the safest and easiest guards I have used. Another useful feature is that the planer fence can be used in the 45° position.

Thicknesser

The thicknesser (Photo.4) is used to either dress stock to a given dimension after planing or to ensure a uniform thickness of stock, regardless of the source of supply.

The cutter block in the thicknesser is the same as that used for the surface planer. With a cutter block speed of 5500 rpm and a feed rate of 6 m/min, the C26 achieves a surface finish of approximately 1mm cutter pitch. This high quality surface will minimise, and for some components eliminate, sanding.

Other details of the C26 thicknesser are a maximum working width of 260mm, maximum working height of 150mm and the ability to machine stock down to 3mm. It is equipped with anti-kick-back fingers to prevent the work piece being thrown back against the operator.

Spindle Moulder

The spindle moulder (Photo.5) is more versatile than a router table due to the greater range of moulding profiles available.

The C26 has two spindle speeds of 4000 rpm and 6500 rpm. This enables the use of large diameter tooling such as Tenon cutter discs at the lower speed and a comprehensive range of mouldings at the higher speed.

As with the surface planer, the operator's hands can come close to the cutter equipment so extreme caution must always be used. For spindle moulder work there are boxed sets of safety tooling available from the supplier of your C26 (Photo.6). There are many different profiles available in these cutter sets and each profile has a mating limiting plate so as to reduce the amount of stock removal. Not only does this improve operator safety but it also results in a superior finish to the particular moulding.

Safety

The Mini Max C26 conforms to the European CE stringent standard of guarding for woodworking machinery and is supplied with a CE Compliance Statement. However the placing and setting of the guards is the responsibility of the operator and they should always be set in accordance with the C26 operating instructions. In addition you should always maintain a clean work area.

The C26 has dust outlets located conveniently at the rear of the machine. Various types of dust extraction units can be purchased as a separate item from the supplier of the Mini Max C26.

Overall the C26 is a high quality well-made combination machine in a compact package and with plenty of important features. After you've worked out your space requirements and what you want from a combination machine, the Mini Max C26 Genius is worth a close look.

For further information or to inspect a C26, contact your nearest Gabbett Machinery outlet (see p.19) or phone 02 9831 5044.

Born at Waterloo NSW in 1933, Neville liked woodwork at school and went on to complete a five year apprenticeship as a wood machinist at Ultimo Technical College. He continued working for 10 years as a Journeyman with a Chippendale furniture manufacturer and then became involved in the woodworking equipment industry. He is now retired.