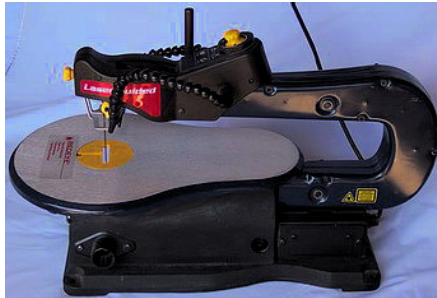


## ADVANCED POWER TOOLS

The following discussion is related solely to power tools. It is by no means a complete or essential list and is intended as a guide only. In fact for kit builders the majority of items won't even apply as this section is mainly aimed at the kit basher, advanced kit or scratch builders who like to manufacture their own parts.

Scroll saw; this is probably the most essential of all items on this list. They can be used to cut the ply bulkheads and false keels as needed for POB construction. These saws are also used for cutting the part pieces of frames or fully glued up frames as required in POF building. Scroll saws come in a variety of brands and essentially their cutting action is similar to a sewing machine in that it involves two parallel arms moving up and down. A fine hacksaw type blade is attached between the two arms.

A jig saw is similar in action and can be used for the same work as a scroll saw but there are some limitations in the control of the cut material. One of the big advantages of scroll saws is that they can be used to cut internal holes by releasing and removing the blade, inserting the timber and re-fitting the blade. The reverse procedure applies after the hole is cut. Scroll saws do have limits in what size material they can cut, generally it is limited to thin ply and similar. As the pictures of the two scroll saws show some do have other features such as the disc sander attachment with the Dremel model.



Band saw; these saws come in various sizes, from model making varieties with a 150mm throat size to full commercial workshop size. These saws use a full circle (endless) type blade which runs on two internally mounted rubber rimmed wheels. The blade unlike a scroll saw's cannot be removed for internal hole cutting; it is strictly an outside cutter. A band saw can cope with much thicker material than the scroll saw and is really only governed by its power and throat size. It can be used for lighter ripping with a guide fence for accurate cutting. A handy but not essential power tool.



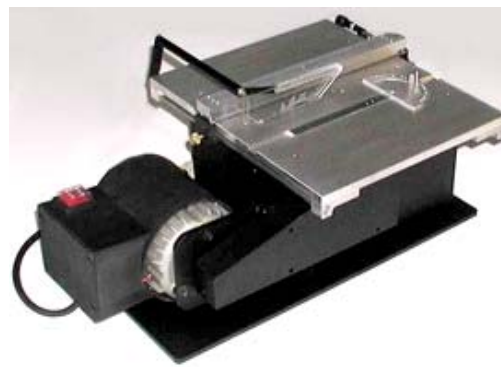
Table saws; there are numerous brands, attachments and sizes of these machines available. The larger the machine the more versatile is it going to be as table size is a big factor. It is really a matter of what you want to cut your stock from, you can't cut large pieces of timber on a small table with any accuracy or safety. Small tables can be extended a little with the addition of a board front and rear to aid in the control of the longer materials. Safety is a very big factor with these saws.

Smaller saws are excellent for cutting thin planks and other small pieces especially if they come with an accurate fence adjuster (d) as is available with the Byrnes model. The Proxxon (a) and Byrnes (b + c) brands are just two of a number of good smaller sized table saws on the market. These smaller saws range from those with a 50mm diameter blade up to a 100mm diameter blade. The blades come in a large variety of types, thickness and teeth materials. Saws with adjustable blade height are more useful than those with fixed blade height but they are more expensive.

One major consideration is the blade to table clearance. With tilting arbour saws the blade to table clearance needs to be greater than the non-adjustable types as the table can be tilted over to a maximum of 45 degrees. This means the blade needs more room to allow for the table tilt. This can create excessive clearance between blade and table and the timber gets chewed up and disappears down this blade / table gap. A blade insert can be made up to rectify this problem but individual inserts have to be made up for each table angle as required. With a straight 90 degree cutting blade clearance is generally not a problem because these saws have close running blades with little gap, something to take into consideration when purchasing. Small table saws are essential for kit bashing, advanced and scratch builders alike.



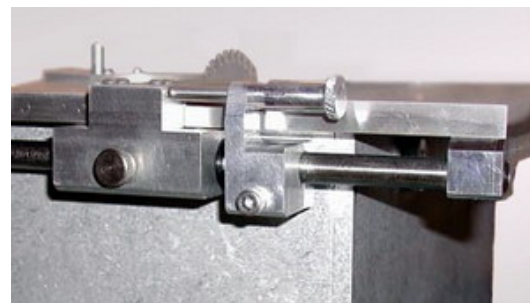
(a)



(b)



(c)



(d)

Drop saw; one of the favourite and most used tools. These are archery arrow making saws and are readily available on eBay. They feature a 50mm fine tooth blade. Proxxon make a very good quality machine but it is dearer than the eBay versions. The pictured saw has been in use for quite some time now and it hasn't missed a beat. These saws cut at angles up to 45 degrees very accurately. With some imagination an extended table can be made up to suit if you find it necessary to hold longer material although the small vice works perfectly well in most applications.



Rotary power tools; another handy but not necessarily essential item. However if you are short of workshop space then the Dremel machine (a) powers a lot of smaller accessories and can be included as the power source in such things as a drill press (b). When used with a flexible shaft (c) the Dremel is good for grinding, cutting and sanding etc. So for many people it is a good choice. There are quite a few cheaper clones on the market which seem to be equally as good and most offer the flexible shaft as an accessory. Another useful accessory to the Dremel is the foot pedal speed controller (c) this is essential if you intend to base your work shop around the Dremel or a similar power tool. One failing of the Dremel without the foot controller is the inability to use the machine single handed once the speed control is adjusted and the machine turn on. It also means the machine is running when you touch the tool tip on the ship, with the foot controller the machine is still stopped and is therefore a better and safer control feature. Also, stop is available with a simple movement of the foot, essential in the event of a problem. In essence the foot control is considered essential.



(a)



(b)



(c)

Accessories for rotary power tools; along with Dremel several manufacturers make a great range of accessories and tool bits. They come individually or in larger barn door type plastic or timber boxes. These contain a great variety of very handy “bits & pieces” which range from; cutting discs, sanding drums and arbours of various sizes. A good range of dental burrs for power wood carving, grinding stones for final finishing and reaming out mast holes etc are also included. All essential for the advanced kit builder, kit basher and scratch enthusiast alike.

- a. These inexpensive kits are plentiful in hardware shops for around \$30 AUD and on eBay for a little less. Many not only come with numerous attachments but also a power source as in this American (a) made model. While these tools may not be of the same quality as Dremel they are excellent value for money. Again just make sure the collets close down to zero for use with the micro drill bits. The accessories only kit (b) was purchased for the princely sum of \$15 AUD, the “bits & pieces” may not have a long life span but they will do nicely for at least one or two builds.

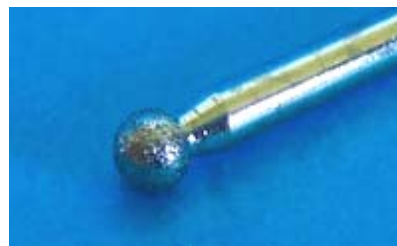


(a)

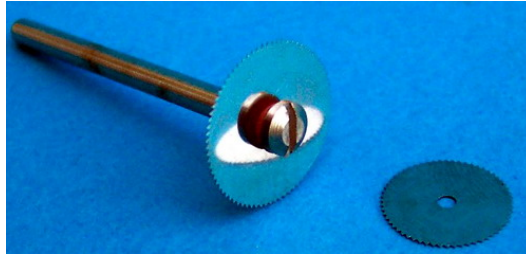


(b)

- b. Dental burrs and specialist carving attachments; very effective for use in power wood carving, ships head carvings and ornate stern fixtures. As well as a host of other projects around you model.



- c. Small circular saw blades; Ideal for those pesky gunport and deck hatch cut outs. These blades range size from 50mm fine blades down to 20mm. They are readily available on eBay for around \$18 US a set including the mandrels. Excellent and very handy when needed but watch the fingers, they are very sharp. They work in engravers and Dremel machines, a great item to have.



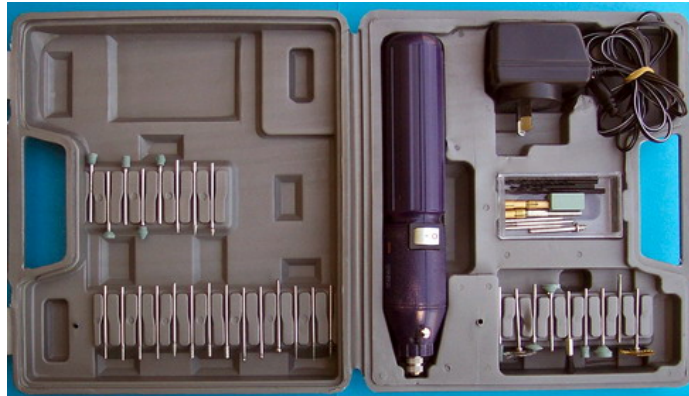
- d. Sanding drums; Modellers from beginners to scratch builders will find a myriad of uses for the sanding drums. The drum sleeves come in coarse, medium and fine grits. Coarse and fine long life tungsten sleeves are also available.



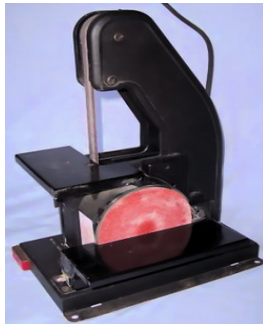
Engravers; these are extraordinarily useful for all ship building operations. Sanding, drilling, cutting, grinding, these little 12 volt DC tools are a wonder. Just make sure the collets close down to zero; this is essential for the use of the smaller micro drills (0.3mm). Another feature with the Arlec range is the finger tip control switch. With the addition of an optional variable speed controller this tool's use is unlimited. Some speed controllers also have the option of a forward and reverse switch, essential for power carving. If the speed controller is not available a simple electric train set speed controller will suffice, just use the "track" feed lines.



Even if you are working to a strict budget there are cordless engravers which can be purchased very cheaply at many hardware stores. They come with a good accessory range and have enough power to do most of jobs which the more powerful engravers are capable of. Again just make sure your purchase has collets which close down to zero for the micro drill bits.



Belt and disc sanders are handy to have but not essential. Numerous brands are available and all seem to be of quite good quality. Most have either contact glue stick on pads or Velcro stick pads. The addition of a little heat from a common hair dryer is a means of un-sticking and changing the glued pads, even though the sand paper seems to last forever anyhow.



Bench top drill press; this is certainly one of those “handy if you have it” tools. They are small easily portable and do a good job. They can be used apart from drilling for the drum sanding of both frames and bulkheads. With the addition of an X – Y table they can also be used for overhead milling operations. Most are belt driven with variable speed.

Although the cheaper electric drill stand (a) is available by the time you also purchase a suitable drill you could have bought a reasonable quality drill press (b) for around the \$100 AUD dollar mark at most chain hardware stores.



(a)

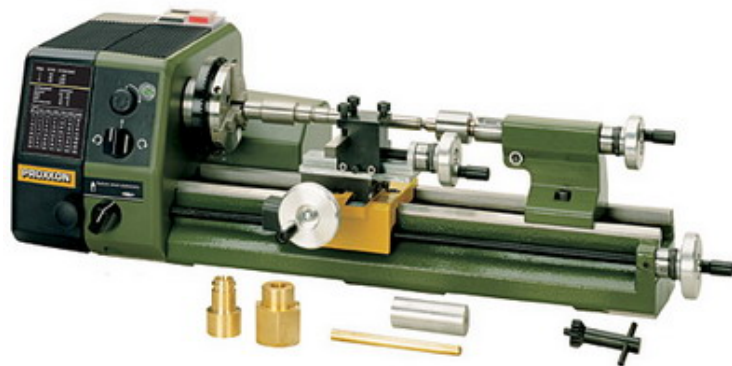


(b)

This little tool is one of the handiest things to have in your workshop. It has a 50mm sanding pad made of hard plastic. The sanding discs normally have a Velcro fastening system that leaves a little to be desired. Gluing the sandpaper on with a small daub of contact glue is an alternative option. Gentle heat is all that is required to melt the glue and remove the spent sanding pad. Although this particular brand is now out of production, Proxxon or Micro Mark have comparable models for around the \$70 US mark.



Lathes; these are for the serious modellers. Metal (a), wood (b) and wood turning chisels (c). Both lathes are very useful if it is your desire to make your own cannons or turned wood stanchions etc. Expensive in either hobby size or the larger workshop sizes but considered essential for the enthusiast. These machines are extremely handy once you master them properly. Metal lathes can turn wood but wood lathes can't turn metal with accuracy. There is an excellent tutorial elsewhere in the Model Ship Data Base by "Old Salty" regarding the use and care of these machines which is recommended reading if you are going to purchase and use one of these lathes in the future.



(a)



(b)



(c)

Thickness sander or drum sander; like lathes these machines are essential for serious scratch building modellers. They are expensive items to buy so you must be sure that you will get significant use from the machine in order to justify the expense. Pictured are the Jim Byrnes model (a) and the Microlux model (b) which features a weighted in feed roller (c) and feed table height adjustment (d). Both machines do an excellent job and sand pre sawn material down to the desired thickness. Great for producing thin planking, but again research is the key. Make sure the machine is capable of sanding down to your required material thickness as some do have limited ranges.



(a)



(b)



(c)



(d)

Thickness planer; essentially a planer does the same job as a drum sander but instead of sanding it uses a series of planing knives to carve or chip the excess material away. Another expensive workshop item (the pictured planer is priced at \$1200 AUD) so be sure that you will get enough use from it to justify the cost.





Dust extractor; an essential item if you build your models inside the house whether it is the basement or the attic. If you want or have a collection of power tools which includes things like table saws and thickness sanders then dust collection is vital. These tools really do create an enormous amount of saw dust which will spread throughout the house and lungs without a suitable extractor (a) to collect it. Good extractors often come with multiple fittings so that a number of machines can be connected at one time. Most bench top power tools are fitted with a vacuum port (b) especially designed for connecting to an extractor. Like most things these extractors come in a huge range of types, styles and prices so do your homework before purchasing.



(a)



(b)

This concludes our list of power tools for the model shipwright's workshop. The majority of builders will not own or need every tool which we have described. Some are definitely for dedicated scratch builders only but there are some tools on this list which kit builders will need or want after just one build.

**\*\*Written and prepared by Dirk De Bakker (Kelvin12) & Greg Brooker (Southlander) for the exclusive use of the Model Ship World website.**