Kushed Bulletin

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Welcome New Members

Whilst The Shed is closed, it is heartening to see people are still joining up

Please provide a warm (virtual) welcome to our newest members: Barry Russ, Trevor Lum and Fred Murray–Walker.

When The Shed reopens we look forward to meeting you in person

Spreading The Word

Ku-ring-gai Council hosted the **Everything For Seniors Day** on the 17th of February.

The Shed had a table there and provided information on what we do and services we can provide. The day provided a forum for us to drum up new members and raise our profile in the community.

Repairing Parker Chairs

Parker Chair restoration project by Max E

If you have upholstered dining chairs from the 60s or 70s, chances are the seats are sprung with Pirelli rubber webbing and not traditional coil springs supported by Jute webbing.

The problem is that the rubber age hardens and progressively loses its elasticity, so after about 20 years the seat starts to sag. By about 30 years it becomes brittle and completely fails.
This is the situation I encountered with my daughter's set of Parker dining chairs. So, with time on my hands I decided to restore them. Here's how it was done.


The first task was to remove the seat from the frame. This simply meant removing 4 wood screws from the underside for the seat to lift off and the back panel to slide out.
I immediately noticed the simple elegant design and quality Parker craftsmanship. There was absolutely no movement in the frame. Mortise and tenon joints secure the legs to the frame with screwed and glued corner pieces.
Next was to take a look at the underside of the seat. After removing the calico covering it was obvious that the original Pirelli rubber webbing had completely failed. Note that it is attached to the top of the timber frame, requiring the upholstery and foam padding to be removed.


This meant taking out a large number of old staples. This isn't a job for a screwdriver or small chisel as you will invariably make a mess of the fabric and timber seat frame.
I use a special staple lifting tool that makes easy and neat work of it without causing any damage.

The foam padding was moulded and glued to the edges of the seat frame, so it had to be carefully cut away with a sharp Stanley knife to get to the top where the webbing is attached.

After removing the old webbing (also stapled onto the frame) the job of rebuilding could at last begin.
After stapling one end of the first piece of new elastic webbing to the frame, I measured the amount of elongation needed to get the right tension. It needs to be stretched quite tightly to give a twang when plucked.
The other 5 pieces of webbing were then attached with exactly the same elongation.

I also lightly stapled a piece of hessian over the webbing to give the foam a bit more protection.

The next task was to fold down and reattach the foam. I used a pressure can of foam adhesive to fix the foam back onto the timber edges of the seat.
Then it was simply a case of reattaching the upholstery followed by new calico undercover.

Finally came restoration of the timber chair itself.

In my case it was in quite good condition even after about 40 years of regular family use. So after cleaning with a little turps on a soft cloth I sanded everything lightly with 220 grit paper, wiped again with turps and applied the first coat of clear satin oil based polyurethane.
There are a few things to note when doing this. First don’t shake the can as this introduces small air bubbles that will result in blistering on the final finish. Stir the can well as the additive that gives it the satin (or matt) finish settles to the bottom and if

not completely dispersed you can get a gloss finish from a can of matt or satin. Use a really good quality brush, and apply quickly in long strokes with plenty of product on the brush. Avoid over-brushing too much but certainly go back over any parts where the cover looks too thick or there is evidence of running.


I left the first coat overnight to properly cure and then sanded it again with 320 grit paper before applying a final coat. For this I thinned the polyurethane with about 20% turps. This makes the product flow easily and eliminates brush marks.
When it had fully cured, I lightly rubbed everything with super fine steel wool (0000 grade) to take off any blemishes and finished with Orange Oil for a beautiful finish.

If you are interested in the Parker Furniture story, have a look at
https://www.homestolove.com.au/tony-parker-furniture-history-1984

Making Round Holes in Wood

Most of us make holes for screws to clamp part together or to make a hole or make a disk or countersink or make a round recess, etc. So, here is a primer on the bits that may be useful when we open the Shed again.

As the title indicates this article will only deal with round holes in wood, as distinct from other materials and shapes, and only round holes as square holes need square drills, we are still working on that one. The article is further limited to application by power tools and machines rather than hand tools.

The above range is of the most common drill bits used in the Shed and shows the wide variety of options available. The trick is to pick the right bit for the job.

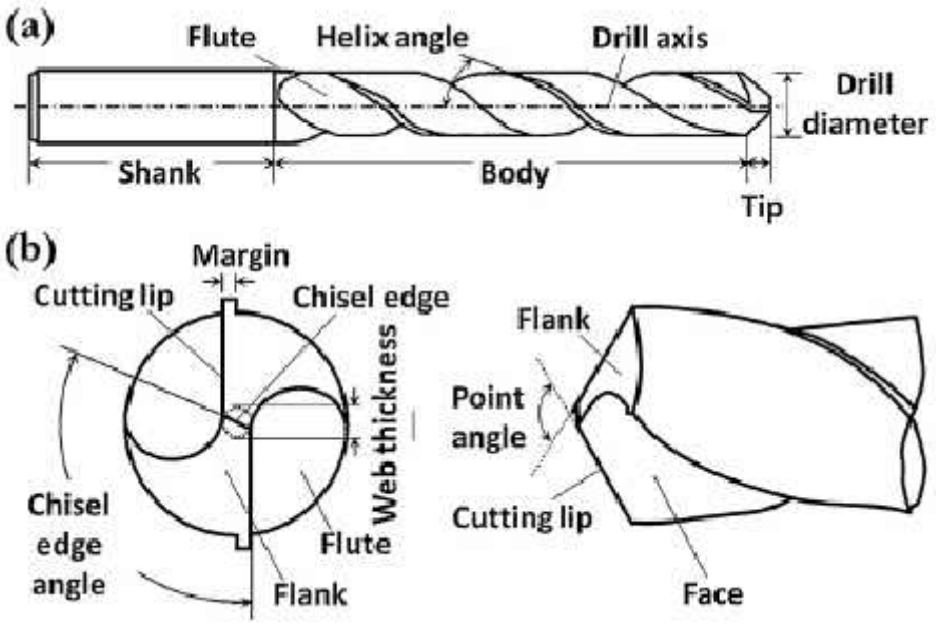
See also the Shed accreditation document at
http://www.kushed.org.au/AccreditationDocs/AccredW5DrillPr22-10-13WebP.pdf
on how to use the drill presses in the Shed. It is a useful guide for the novice and the experienced shedder on their safe use.

Twist Drill Bits

The most common bit is the Twist bit and is produced in largest quantities today. It comprises a cutting point at the tip of a cylindrical shaft with helical flutes; the flutes act as an Archimedean screw to lift swarf out of the hole.

Twist drill bits range in diameter from 0.05 to 89 mm and can be as long as 650 mm.

The most common twist drill bit (sold in general hardware stores) has a point angle of 118 degrees, acceptable for use in wood, metal, plastic, and most other materials, although it does not perform as well as using the optimum angle for each material. In most materials it does not tend to wander much or dig in.



A more aggressive angle, such as 90 degrees, is suited for very soft plastics and other materials but it would wear rapidly in hard materials. Such a bit is generally self-starting and can cut very quickly. A shallower angle, such as 150 degrees, is suited for drilling steels and other hard materials.
This style of bit requires a starter hole or pilot hole, but does not bind or suffer premature wear so long as a suitable feed rate is used.

Most twist bits are made from either:

- 'High speed steel' (HSS), these are suitable for drilling most types of material, when drilling metal, the HSS stands up to the high temperatures.
- 'Carbon steel', these bits are specially ground for drilling wood and should not be used for drilling metals, they tend to be more brittle, less flexible than HSS bits.

Twist bits are also available coated with Titanium nitride; these are easily identified by the gold like colour. This coating increases the hardness of the bit and adds a self-lubricating property. The coating is only really effective when metal is being drilled, it has little effect when working with other materials.
Twist drills are designed for drilling relatively small holes, they sometimes tend to clog quickly especially when the wood is 'green' so when drilling deep holes (especially in hardwood) the bits should be withdrawn regularly to remove the waste.
The larger drills should be used at slower speeds, to prevent overheating of the bit and charing of the wood

Wood spade bits

Spade bits are used for rough boring in wood. They tend to cause splintering when they emerge from the workpiece.
You can avoid splintering by finishing the hole from the opposite side of the work.
Spade bits are flat, with a centring point and two cutters.
The cutters are often equipped with spurs in an attempt to ensure a cleaner hole.
With their small shank diameters relative to their boring diameters, spade bit shanks often have flats forged or ground into them to prevent slipping in drill chucks.
Spade drill bits are usually available in diameters from 6mm to 36 mm.

Lip and Spur or Brad Point Bit

This bit provides accurate positioning for starting the hole. The bit is precision ground for use in furniture making, doweling,

cabinetry, and other woodworking applications where an exact hole size is required.

It is a variation of the twist drill bit but is optimized for drilling in wood. Sharp spurs at the drill bit's circumference cut cleanly through wood fibres, while horizontal lips shear out material as the drill moves through the workpiece.

Conventional twist drill bits tend to wander when presented to a flat workpiece. For metalwork, this is countered by drilling a pilot hole with a spotting drill bit. In wood, the lip and spur drill bit is another solution:
The centre of the drill bit does not have the straight chisel of the twist drill bit, but a spur with a sharp point and four sharp corners to cut the wood. The sharp point of the spur simply pushes into the soft wood to keep the drill bit in line.

Wood drilled across the grain has long strands of wood fibre. These long strands tend to pull out of the wood hole, rather than being cleanly cut at the hole edge.
The lip and spur drill bits have the outside corner of the cutting edges leading, so that it cuts the periphery of the hole before the inner parts of the cutting edges plane off the base of the hole.

Step drill or Unibit

A step drill is a roughly conical bit with a stairstep profile. Due to its design, a single bit can be used for drilling a wide range of hole sizes in material thinner than the step in the drill. Some bits come to a point and are thus self-starting. The larger-size bits have blunt tips and are used for hole enlarging.

Step drills are commonly used on sheet metal and in general construction. They are often used on softer materials, such as plywood, particle board, drywall, acrylic, and laminate. They can be used on very thin sheet metal, but metals tend to cause premature bit wear and dulling.

Step drills are ideal for use in electrical work where thin steel, aluminium or plastic boxes and chassis are encountered. The short length of the step drill and ability to vary the diameter of the finished hole is an advantage in chassis or front panel work. The finished hole can often be made quite smooth and burr-free, especially in plastic.

An additional use of step drill is deburring holes left by other bits, as the sharp increase to the next step size allows the cutting edge to scrape burrs off the entry surface of the workpiece. However, the straight flute is poor at chip ejection, and can cause a burr to be formed on the exit side of the hole, more so than a spiral twist drill bit turning at high speed.

Hole saw

Hole saws take the form of a short open cylinder with saw-teeth on the open edge. It is used for making relatively large holes in material that is no thicker than the vertical side of the saw. Turning the work piece over and drilling from the other side can double the maximum thickness the saw can handle. It also gives a cleaner edge to the exit hole They remove material only from the edge of the hole, cutting out an intact disc of material, unlike many drills which remove all material in the interior of the hole.
They can be used to make large holes in wood, sheet metal and other materials.

Hole saw diameters are commonly available from 20mm to 100mm in diameter.
Remove the centering drill bit with an Allen key to make a disk without the centre hole. Make sure that the work is securely clamped to the drill stand or workbench.

The saw on the edge will easily clog-up in the narrow groove that it cuts. When that happens, the teeth are unable to cut. For both wood and plastic, remove the saw from the work regularly and use a stiff brush, like a wire brush, to remove the debris from the holes. The friction in the groove will generate heat, causing the wood to char. It will generate enough heat to melt the plastic, causing the saw to get jammed.
Use light pressure and regularly lift the saw to let the drill and the plastic cool.

Forstner bit

Forstner bits bore precise, flat-bottomed holes in wood, in any orientation with respect to the wood grain. They can cut on the edge of a block of wood, and can cut overlapping holes; for such applications they are normally used in drill presses or

lathes rather than in hand-held electric drills.
They are useful for drilling through veneer already glued to add an inlay.

The bit includes a centre point which guides it throughout the cut but also spoils the otherwise flat bottom of the hole. The cylindrical cutter around the perimeter shears the wood fibres at the edge of the bore, and also helps guide the bit into the material more precisely.
Forstner bits have radial cutting edges to plane off the material at the bottom of the hole. The bits shown in the image has two radial edges; other designs may have more.
Forstner bits have no mechanism to clear chips from the hole, and therefore must be pulled out periodically to remove the cut timber.

Bits are commonly available in sizes from 8–50 mm diameter. Bits with a sawtooth on the cylindrical edge are available up to 100 mm diameter.

The Forstner bits used at The Shed are Carbide tipped for extra wear resistance. The drill press should only be started when the bit is not in contact with the wood

Countersink

Although not a true 'drill', it is used to make the conical recess for the heads of countersunk screws. These bits tend to be designed for use on soft materials such as timber and plastics, not metals.
When used with a power drill to counter sink an existing hole, the bit tends to 'chatter', leaving a rough surface. Better results be will obtained if the countersink bit is used before the hole is drilled, then take care to ensure that the drill hole is in the centre of the countersunk depression.

Countersink with clearance drill

These combination bits are quite clever,
they drill the clearance hole and

countersinks it all in one stroke.
They can be used in a power drill.
Different bits are required for different size clearance holes.
They are probably not cost effective unless a large number of a given hole size need to be drilled and countersunk.

Tips for Drilling Holes

Many jobs require a hole of some kind to be drilled - whether it is putting up a shelf, building a cabinet or hanging a light fitting. To drill a satisfactory hole in any material, the correct type of drill bit must be used.

·Use as slow a speed as possible. In general, the larger the diameter of the drill bit, the lower the speed and vice versa

- Back out of the hole every so often to remove material when drilling. This prevents the power drill from being overloaded and the bit overheating. This is essential with flat wood bits which don't have flutes (the helical slots on the sides).
- When drilling in metal, lubricate the bit and workpiece with light machine oil if drilling steel. If you're using a pedestal drill, you can use an oil can or some form of "squirty" bottle to spread oil into the hole. Alternatively, if using a power drill, keep a bottle capful of light oil nearby, and dip the tip of the drill bit into it every so often to keep it cool.
- Kerosene or soapy water is suitable for lubricating softer metals such as aluminium or brass which have a more "sticky" swarf (the waste material which spirals out of the drill hole). Diamond drill bits can be lubricated with water. Wood or masonry bits don't need to be lubricated.
- Don't hold small workpieces by hand while drilling. Make sure they are held in a vice or clamped securely with quick release or G clamps. Otherwise if the bit jams while drilling, the workpiece can spin around uncontrollably. When drilling heavy or fixed objects, this is unnecessary.
- When drilling plastic, especially acrylic (Perspex), a sharp bit is essential to reduce friction and heat which will tend to melt the plastic and coat/clog the bit, further increasing friction. Use as slow a speed as possible. A lip and spur (brad point) wood bit is best for drilling plastic.

For basic requirements, a set of high-speed steel twist drills and some masonry bits will probably be sufficient for the average handyman. But for more sophisticated jobs

or material others bits will be required for large holes or bits designed for a specific material/purpose.

Good quality drill bits can be expensive, so take care of them, keep them in a case or box if possible, rather than allowing them to roll around loose in a toolbox where the cutting edges may be damaged.

Drill Bits for Plastics

You can use the same bits as for wood. However, drill slowly. If you drill fast, friction can rapidly cause the plastic to melt, clogging the tip and flutes of the drill with melted shavings, especially if the bit is blunt.
As shavings cool and get stuck in the flutes the problem gets worse and the bit can jam in the hole. It's not such a big deal when drilling through thin plastic, but when drilling through thicker sheets, and specifically acrylic (commonly known by the brand names "Plexiglass" or "Perspex"), this can be a problem.
The same goes for cutting plastic with a jigsaw and hole saw, use a slow speed and clean the saw teeth regularly.

With thanks to Wikipedia and other resources.

Working From Home!

Di S is continuing with "in house" and "in garage" picture framing .
The photo shows some of her work. Nine pictures, two shadow boxes and one mirror.
For any Shedders framing at home and looking for virtual assistance, please contact Di via **kushed@bigpond.com**

Scrunched Baklava with Rosewater

Following up from the main course in the previous Bulletin, here is the Dessert Course for you to try-out and impress. Happy cooking.

Ingredients

1 cup (250g) pistachios
1 cup (250g) almonds
1 teaspoon ground cinnamon
¼ cup (55g) castor sugar
6 sheets filo pastry
100g olive oil or unsalted butter (melted)
Slivered pistachios to serve
Sugar Syrup with Rosewater
½ cup (110g) castor sugar
¼ cup (65ml) water
1 tablespoon rosewater
Above items available from Woollies or Harris Farm.
Makes 12.

To make the filling –

Preheat oven to 180C. Place the pistachios, almonds, cinnamon and sugar in a food processor and pulse until finely chopped. Cut filo sheets in halves. Brush ½ sheet of filo pastry with olive oil (or melted butter). Sprinkle ½ of the sheet with the nut mixture and fold over to enclose. Scrunch the pastry into a rosebud. Place into a tray lined with baking paper.

Bake the Baklava for 15 – 20 minutes or until deep golden colour.

To make the sugar syrup–

While the baklava is baking. Place the sugar and water into a small saucepan over medium heat. Stir gently until the sugar has dissolved.

Bring the syrup to the boil and simmer for 5 minutes or until golden colour and thickened. Add rosewater and

set aside.
Pour the syrup over the cooked baklava and stand for 5 minutes before serving.

To serve the baklava -
Sprinkle the slivered pistachio over to serve.
Add berries or yogurt to your taste.

Welding at The Shed

The Shed has a wide range of appliances and techniques for heating and joining metals.
These all employ some method to heat the metals to be joined to a suitable temperature, and a filler to bind the metals together. They often use a flux or inert gas to minimise contamination of the weld. These machines are electrical only, gas/electrical and gas only. This is a brief introduction, with links to further information about the particular welding technique.

Soldering Iron
A soldering iron is used to join small to medium copper wires and to assemble electronic circuits.
Here is a starters guide article or Youtube Video
There are a range of soldering irons located on the electrical bench and adjacent cabinet.

MIG
MIG (metal inert gas) at the shed is used to join steel and stainless steel, using a steel wire as filler.
We use an argon/ carbon dioxide blend as the inert gas.
Here is a starters guide article or Youtube Video

TIG
Thanks to a recent grant from Ku-ring-gai Council, The Shed now has an AC/DC TIG (tungsten inert gas) machine.
This provides the ability to weld Iron, steel, stainless, steel, aluminium, copper, titanium, even two dissimilar metals, and is handy for making tricky welds (e.g. s-curves, or welds on round things).
Here is a starters guide article or Youtube Video

STICK (Electric Arc)

This is back to basics welding, using a stick containing the weld filler and flux.

It is mainly used at The Shed for cast iron and steel plate.

Here is a starters guide article or Youtube Video

Oxy Acetylene

This method uses the burning of Acetylene with Oxygen to create the heat required.

It lends itself easily to brazing, braze-welding, metal heating (for annealing or tempering, bending or forming), the loosening of corroded nuts and bolts, and other applications.

Here is a starters guide article or Youtube Video

Oxy Propane

Here we use propane with pure oxygen, rather than air.

This provides a higher temperature than normal propane but is cheaper than using Acetylene.

It has similar uses to Oxy Acetylene, but for smaller work

Here is a starters guide article or Youtube Video

Propane

This gas also provides the heat for your BBQ. It is used for heating for soldering copper pipes, heat treating steel in our small furnace, brazing and silver soldering

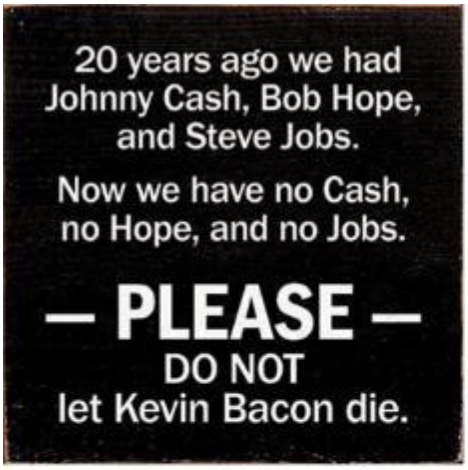
Here is a starters guide article or Youtube Video

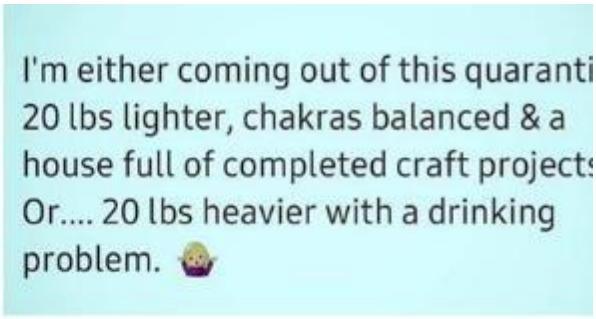
Welding Etiquette at The Shed

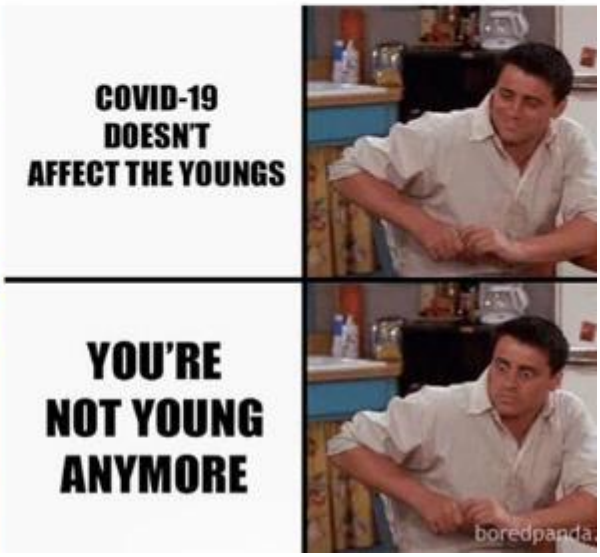
- Most of these appliances are fragile, expensive and require skill and experience to use effectively and safely..
- They are only to be used by members who have been accredited for the particular appliance.
- If you need some welding done, there are accredited members who want to keep their skills up to date. Please talk to a Building B Coordinator, who can direct you.
- Members using these appliances are required to donate to The Shed to cover the cost of consumables (Gas, Filler Material, Tips and Nozzles).

- The Shed runs occasional MIG Welding classes and is looking to provide TIG classes as well.

And on a Lighter Note







Community Announcements

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Location: St Ives Showground, 450 Mona Vale Road, St Ives.
Phone: (02) 9983-9732
Web: http://www.kushed.org.au
Email: kushed@bigpond.com
Our mailing address is:
Ku-ring-gai Community Workshop 'The Shed' Inc
PO Box 216
GORDON, NSW 2072
Australia
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