

## Rotary Sanding Pad Making and Repair

How to make new and repair old sanding mandrels as done by Dave Rawson:  
Created for the Kamloops Woodworkers Guild Members.

These pads are used for sanding either power sanding (drill) or static (inertia) sanding. Costs of these are from \$10 and up and their lives are short lived in some cases. Heat build up is the most common failure of both the Velcro hooks and the backing for the foam pads which are glued and have plastic that hold the drive shaft which sometimes melts and throws them out of round.

I like to have a dedicated mandrel for each grit of sand paper that I use so that I don't have to pull the sand paper off from the pad each time that I change grits. Each time they are pulled off from the hooks the loop backing seem to lose some of its holding power and eventually the glue that holds the loop material to the sand paper fails.

I personally have mandrels for 60, 80, 100, 150, 220 and 320 grit paper and a couple in case I need to change a mandrel for some reason. This is 8 mandrels at a cost of \$10 each. If you were to buy them, this can become costly.

I use  $\frac{3}{4}$  inch hdo. Plywood (but any good plywood without voids would work) for the backing for my sanding pads. I cut them with a  $2\frac{1}{4}$  inch hole saw. (I have heard of people that use Corian, but I found that the t – nut barbs will not penetrate it well)

### **Process**

Mark out a piece of plywood and first drill a recess to accept a  $\frac{1}{4}$  x 20 t – nut with a forestner bit or a spade bit then with a hole saw and cut most of the way through leaving about a  $\frac{1}{8}$  inch of wood. Then I use a drill bit of the appropriate size and drill out a recess to accept the shank of the t – nut. When this is done I turn the plywood over and cut through the last bit of wood. (This way you can remove the wood from the hole saw with less difficulty)

I then put a t – nut into the recess and from the back side put a bolt with a nut and a washer (with the head cut off, I use  $2\frac{1}{4}$  inch but you can use what you prefer) I use a wrench to tighten the nut which draws the t – nut into place.

I then mount it into a Jacobs chuck mounted in the head stock of the lathe (use a draw bar to hold securely in the head stock) to shape the plywood to the preferred shape and size.

After this is done I coat the face with contact cement and put it aside to dry. (I have heard of folks using Shoe Goo (several forms of Goo are available at most hardware stores) and CA. Glue but haven't tried these myself)

I then cut some rounds of foam with a hole saw that has had the pilot bit removed (use light feed pressure and have your drill speed fairly slow) and some Velcro hooks with a modified hole saw (teeth ground off and sharpened with a bolt added so it can be used as a hole punch) then apply contact cement to the back of these. When the contact cement is dry I mount the foam puck on the plywood and cut to desired thickness using a hacksaw while it is spinning in the lathe and sand to shape using coarse sand paper. Then apply contact cement to the face of the foam and when dry apply the Velcro hooks. Now I have a new or repaired mandrel ready to accept sand paper discs. Sand paper disks can be cut with the same hole punch used to cut the Velcro. (There are lots of loop backed papers available sheet, roll, and replacement disks for larger sanders that you can use.) This will cut the cost of buying the disks individually (price this way is only a few cents each.) not .25-.30 each if bought individually.

To repair an old mandrel, remove the old Velcro if needed or the foam from the drive backer and sand flat and contact cement new pieces together and you are set to go.

I get my Velcro hooks from Kamloops Industrial Sewing and Fabrics (they are in the phone book) they have it in up to 2" widths and it is very inexpensive if you get the stuff that has no glue on the back. Also you could use the replacement hooks for a random orbit sander and cut your own from it. Glenn Allen Gets his from the Rona store pre-cut don't know the price.

The foam that I use has come from many sources mostly stuff that I have had around the shop.

Thin foam mats for camping, old mouse pads, any close cell foam that is flexible. You get the idea.

You can also make interface pads of softer or harder foam to put between the mandrel and the sand paper to suit your personal preference.

To make the handles for the inertia sanders I have several plans that I have in .pdf format that I can email to you upon request. Also I am sure that Carl, Glenn, Bob and others who use these will share there ideas and knowledge.

**Note:** You can make these any diameter that you want.

When choosing a hole saw remember that the size marked is for the outside diameter not the inside diameter.

If you have any questions contact me and I will try to answer them.

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Be creative and have fun with these.

Dave