

Flap Sanders

For use in Hollow Vessel Turning

By Eugen Schlaak

In the past I have turned quite a few Hollow Vessels in many sizes and shapes. Contrary to the opinion of many wood turners I believe that the inside finish of my vessels must be as smooth as the outside if the top opening is large enough to see the inside or if it is large enough for a probing finger. On vessels with voids it is obvious that the inside surface must be as smooth as the outside.

I strive to sand all inside surfaces to 400 grit, just as I do all the outside surfaces. On vessels with relatively small top openings say 3 " or smaller, as low as ¾" diameter the problem of how to sand the inside arises. Smallish Flap sanders as shown in Fig.1, (let us call them "vertical" sanders for this discussion) are available from various sources in many diameters and grit sizes.



Fig.1

They are generally rectangular shaped, very stiff and are mostly used in metal fabrication shops. They can be used to sand wood but must be worn or pre-shaped to a roundish ball type shape to be practical for inside turning. The sizes are limited to a minimum of 2" diameter. 3M also distributes flap wheels for the woodworking industry, and a variety of Flap wheels are available from Klingspor. Sizes and grit sizes are limited and to accumulate a collection of various grits and sizes can be very costly.

But the major draw back is that they are not flexible enough to fit through a small opening and do not expand once they are inside the vessel.

In the last few years products called “Sanding Mops” (which I call a horizontal wheels for this discussion) are being sold by Klingspor, 3M, the Stockroom here in Canada and others. They are used for contour sanding in the woodworking industry.

Some distributors are marketing very small sizes such as the 1”, 1 ½” or 2” diameter, such as the “Mini Mops“ by Klingspor with a 1/8” diameter shank. But again a collection of all required grit sizes can be a very costly affair and they are not robust enough.

All are based on the principle of stacking strips of sandpaper onto a mandrel. So, why not make them yourself in any diameter, thickness and grit size?

This article will describe how I make them at a relatively small cost suitable for my needs.

All you need is a collection of cloth backed flexible paper (F-Type preferably) in any width. I happen to have accumulated a lot of surplus paper in 1” and 2 “ width in roll shape, Fig. 2. Klingspor sell a large variety of the stuff in all sizes through their “Bargain Box” deals and it does not break the bank to get a good variety of suitable cloth backed flexible paper for this purpose. You might already have suitable paper from your other sanding needs in woodturning.



Fig. 2

In Fig. 3 I have shown some of the specifications of the cloth backed paper I have in stock. There are a few manufactures presented and some is paper used for metal finishing, but as long it is flexible enough the actual type of coating is not important, in my opinion anyway. This sandpaper is not used for flat sanding and the loading and clogging abilities of various coatings do not play a role in this usage as flap sanders.



Fig. 3

In the following photos I show how simple and inexpensive it is to make these horizontal wheels or flap wheels.

Most flexible cloth backed sandpaper tears very easily in the length direction and for this sample I use a 180 grit, 2" wide Klingspor belt LS312 and tear it in three equal wide strips about 5/8 wide and cut the strips to about 3" long with an old pair of heavy duty scissors. Fig.4.and 5.

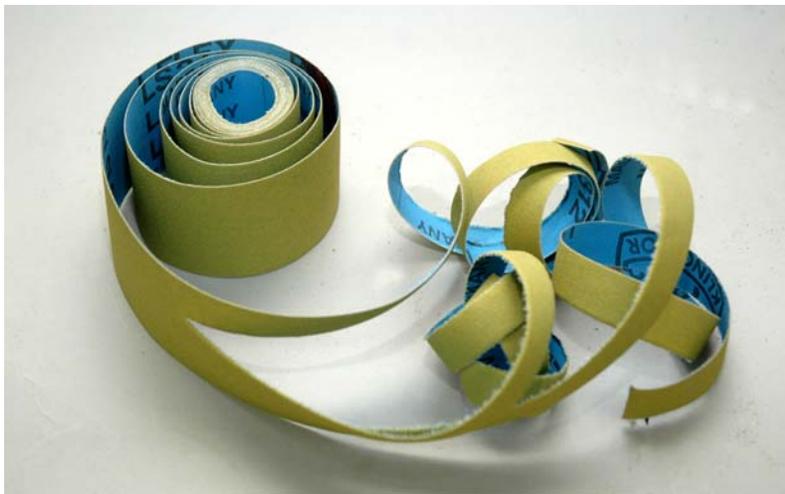


Fig. 4



Fig. 5

One other item is required. If you want to be fancy find some specially made arbors sold in some hardware stores. I know they are available from “ Canadian Tire “ here in Canada and some industrial supply catalogs list them also. I use only 1/4” shank sizes because all drill extensions come in that size and the electric drill I am using for all my power sanding is only a 1/4” drill, good logic, Eh!

But you also can use a 1/4” full thread bolt with two flat washers and that works just as good.

Fig. 6 shows a stack of sandpaper strips with the center marked and a couple of possibilities for an arbor. The width, length, number of the strips and the washer diameter ultimately determine the flexibility and your own requirements will soon tell you what you need. These factors can always be changed during use.

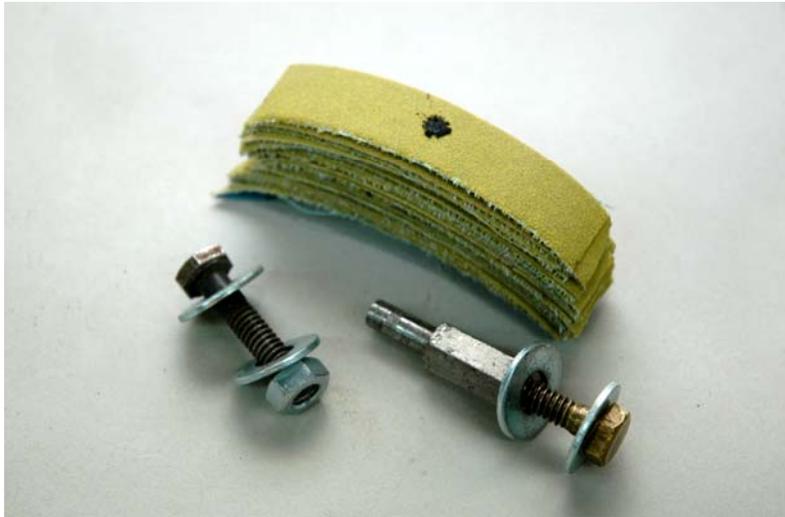


Fig. 6

This stack of cut sandpaper can easily be drilled with a 5/16” diameter drill on the drill press as shown, by using a clamp to compress the strips and hold them safely in place, Fig. 7. If you drill a lot of these stacks do not expect the drill to last very long!



Fig. 7

The main part of making these flap wheels is done now. Assemble the strips onto the arbor or bolt and fan them out equally spaced, Fig. 8 and 9. The further you space them the more flexible the flap wheel will become. After using them, you soon find out what is most suitable for you.

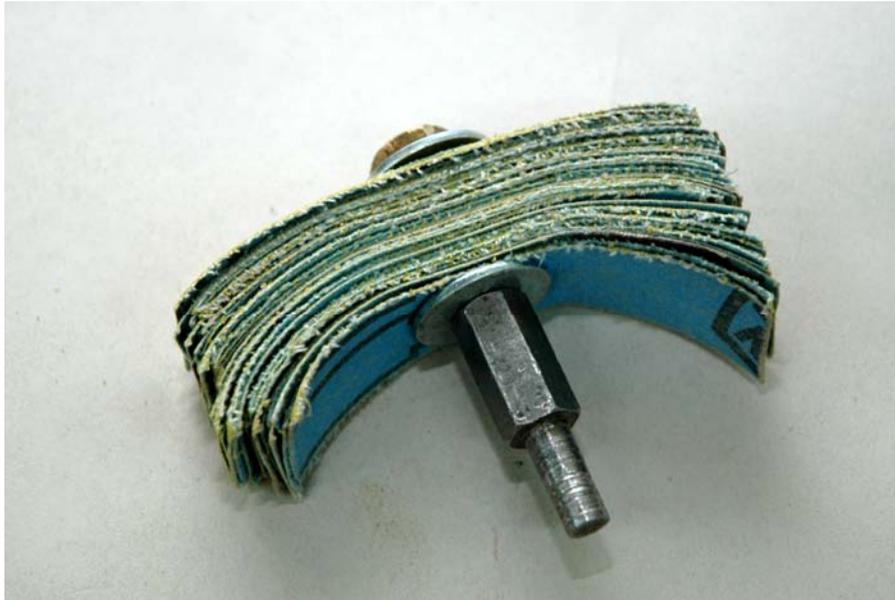


Fig. 8



Fig. 9

I find that I can push a very flexible wheel of about 3" diameter through a 1 1/4" diameter hole and it will fan out to the original size during high speed sanding of the interior surface of a Hollow Form.

A reverse assembly of the strips, e.g. the sanding surface facing the arbor shank or drill chuck is perfect for sanding under the shoulders at the top of Hollow Vesselsthe area being explored first by searching fingers first.

There are of course many other methods to make these Flap Wheels, but once you have made a few and have a collection of various sizes, configurations and grits it will be hard to believe how easy it is to sand inside Hollow Forms.

There is a very small initial outlay (in addition to a few drill extensions of various length) in material cost and some of the wheels shown in Fig. 10 have been used for quite a few years in my shop.



Fig 10

For any additional information contact me via E-Mail goingwiththegrain@gmail.com

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