

CARVING BY NUMBERS

Mike Davies

www.CarvingbyNumbers.com



Woodcarving by Numbers is a simple to follow programme that guides woodworkers of all skill levels to become competent woodcarvers. Available with a selection of tool sets, simply match your carving tools to the numbered profile chart, and follow the step-by-step guidance through a wide selection of projects. As a bonus with each tool set, you will have access to a comprehensive treasure trove of technique tutorials, project, and guidance videos. Watch and learn the Significant Six carving techniques and practice them on a selection of projects, graded in difficulty, designed to put your skills to the test. The ultimate goal is to create designs of your own to add a unique point of difference to your woodworking projects.

Please refer to the **Significant Six techniques tutorial** or watch the **Foundation Skills DVD** at www.carvingbynumbers.com for safety and guidance with your techniques.

Patera

This project makes use of tool numbers 1, 3, 4, 6 and 7. For instructions on how to complete using the Essential Collection only, please refer the Woodcarving by Numbers book at www.CarvingbyNumbers.com

Sweep Profile Reference Chart

Essential Collection:



Pattern Carving Set:



Spoon Carving Set:



Comprehensive Collection:

Bonus Gouge



Pic 1. Patera are popular forms of decoration with a multitude of uses. They stem from classical architecture and were later used to decorate furniture. Patera can be used for many applications, as decorations set into the tops of table or chair legs, or into the frieze of a fire place for example. They could be used to decorate the lid of a turned bowl or even carved as a small gift.

I chose walnut as the timber to carve this particular style of Patera, however, you could choose any timber to suit your application. If you try an internet search for 'Architectural Patera' you will see a wide selection of shapes, sizes and designs. Once you have mastered this one, why not try designing your own?

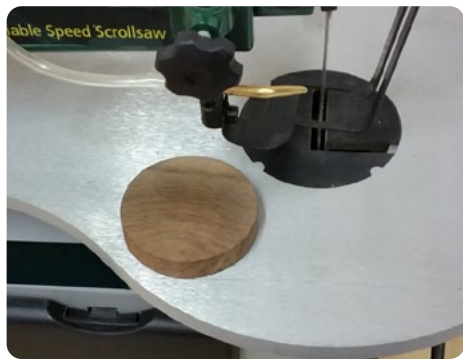


Picture 1.

This project will put your 'Significant Six Techniques to the test'.

Please refer to the **Significant Six techniques tutorial** or watch the **Foundation Skills DVD** at www.carvingbynumbers.com for safety and guidance with your techniques.

To begin, first cut out a blank that is 65mm in diameter and 15mm thick. I would suggest cutting 4 or 5 blanks so that you have a few in reserve if you make a mistake. **Picture 2**



Picture 2.

Next, you will need to secure the timber blank to a board, which can be clamped to the work surface whilst carving. First ensure that the bottom face of the carving blank is clean and perfectly flat. 'Key' the surface, by shallowly scoring it with a marking knife to create a chequered pattern. Then lightly rub a candle over the surface to apply a thin layer of wax before gluing and cramping the blank to a board. The score marks allow the glue to form a strong bond while the wax provides a barrier between the two surfaces, which enables you to release the carving easily on completion. You could use any sort of glue, but PVA is ideal. If you wish to start working on your carving immediately, you could use a quick set glue or even a 2 part wood filler. When the adhesive has dried, the blank should be secured enough to allow you to carve. On completion, it can be raised by working the blade of a thin pallet knife underneath the carving, concentrating on freeing in the outer edges before moving to the centre. After a little persuasion, the carving should lift quite easily, leaving a clean service to use as a base. It is possible to use paper instead of wax, although this may result in a weaker joint and the back may require more cleaning up. If you do choose to try paper, apply glue to both sides before placing it between the carving blank and the board. **Picture 3.**



Picture 3.

For this project it will be important to ensure that the grain of the blanks will be horizontal to you when the board is fitted to the bench.

When the blanks are secure, you can begin with the shaping process. Use chisel #4 to shape the blank, leaving the edge square and approximately 4 mm deep **Picture 4.** Form the dome with tool #1 or 6, holding it in the first position and using the tapping technique. **Picture 5.**



Picture 4.



Picture 5.

This project is perfect to help you understand the cutting directions of timber and to practice holding the carving tool in left hand to carve to the left of the bench and vice-versa for the right. Refer to **figure 2** for cutting directions.

Any imperfections can now be smoothed away with sandpaper. You may wish to use a lathe to reach this stage if you have access to one.

Use Tool ref #3 to set in a circle in the centre of the dome. Use the profile of the carving tool to form a circle that is approx. 13-15mm in diameter. Then with tool ref #7, carve the surrounding timber from around the central circle to form a dish shape approx. 25 millimetres in diameter. Carve down to a depth of roughly 6mm. Leave the inner circle untouched at this stage, and ensure that the sides are vertical and that the circles perimeter does not become smaller as you carve deeper. **Picture 6.**



Picture 6.

To form the petals, mark 8 divisions around the circumference of the flower with dividers and draw straight lines through the centre of the disc to link each of the marks. Then divide each section equally once again. This will give you 16 evenly spaced divisions, 8 of which are linked by lines. **Picture 6.**

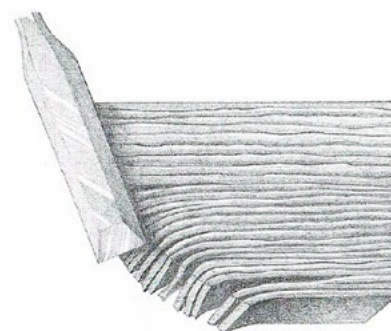
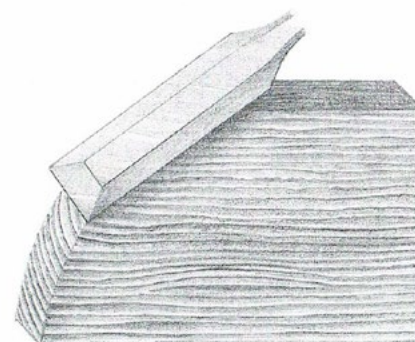


Figure 2



Picture 7.

Round over the centre button with Carving tool Ref # 3. You may need to deepen the dish shape a little deeper with tool ref 12. Try the tapping technique and remember to use the right-hand to carve to the right hand of the bench and vice versa for the left. **Picture 7.**

Next drill a series of 2mm holes to form the eyelets of the flower. Try running the drill in reverse to prevent the drill bit tearing out any timber on the surface. Alternatively try filing the end of a nail to form a smooth dome. When used in the drill the resulting hole will be polished and have a smooth base. Each hole should be located on your long dividing lines exactly 15mm from the centre. **Picture 7.**

Form the petals using Tool Ref #4 by setting in shallow cuts, linking the short marks to the longer lines. **Picture 7.**



Picture 8.

In **Picture 8** you can see how tool ref #4 has been used to remove small sections of timber from either side of the pencil lines, which fall between each petals. Note how a high central ridge is formed in between each petal, and how the cuts are clean as they define each of the petal shapes.

Extend the drill holes into teardrop shapes with Tool Ref #1. Point the teardrops down towards the petals using a punch to define the shape further. To make a shaped punch, simply gather a collection of nails or metal bar and file the required shapes into the end. These are especially helpful for occasions when you are

unable to remove fine splinters of wood from tiny crevices. The punch is used to define the shape, compress the splinters and form a clean area with a flat base. **Picture 9.**

Now cut a shallow dividing line down the middle of each petal using tool ref #1. Make sure this line radiates accurately from the centre of the flower. **Picture 9.**

Use Tool ref #4 or 7 to cut from the perimeter



Picture 9.

of each petal down towards the centre line, forming a v shape with rounded sides. As you work, gradually deepen the centre cuts with a tool ref #1. **Picture 10.**

Use Tool ref #3 to shape the tips of the small



Picture 10.



Picture 11.

petals, which are located between the larger ones. Trim the outside edge of each small petal, from the central ridge down towards the larger petals in an arc shape on both sides, creating a pointed tip. Complete this shaping process with a number of small cuts to avoid splitting the larger petals. **Picture 11.**

With tool ref #4, round the shoulders over the eyelets, down towards the centre cut lines on the larger petals. Continue to deepen the central line on each petal with controlled cuts. Try to achieve a consistent depth for each petal. **Picture 12.**



Picture 12.

Now a palette knife can be used to gently slide underneath the completed flower, freeing the edges first. After releasing the flower, scrape the base with a flat to chisel to remove any remaining traces of glue or wax. **Picture 13.**

You can now remove any tiny splinters of timber from the back of carving using tool ref #1. This process is referred to as 'backing off'. Certain relief carvings and in particular three-dimensional carvings, often require all surplus timber to be removed. This process is carried out by placing the carving upside down on an old cushion or similar material so as not to damage the surface details.



Picture 13.

Hold the carving securely with one hand and using carving tool ref #1 carefully remove any surplus timber that was not previously accessible. Remember to always cut away from the hand holding the carving, and only remove tiny slivers of timber at a time with a minimum

of force. If done incorrectly this process can be extremely hazardous, so make sure that you are in control of the carving tool at all times as one slip could lead to a nasty cut and several stitches. The general idea is to remove timber without making the carving too weak. In **picture 14**, you will see how only the very tips of the carving have been reduced to a fine point and the bulk of the remaining timber is out of sight.



Picture 14.



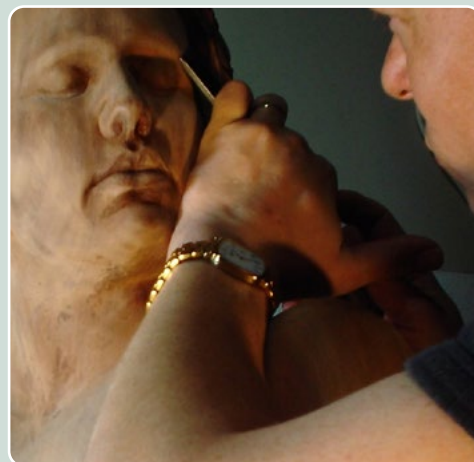
About the Author:

Mike Davies is an accomplished craftsman, who has completed projects for royalty, national trusts and private collectors alike. He has surveyed and restored works by many of the great designers and carvers from the past.

As a qualified teacher, he originally developed his 'Woodcarving by Numbers' educational system in 1994. It was created to help woodworkers of all skill levels to master the art of woodcarving.

Since then, his system has been published in magazines and books. It has been televised and used to teach students in schools and colleges around the world.

The information contained within this document, forms part of an educational package, which has been developed in cooperation with many of the world's leading carving tool manufacturers.



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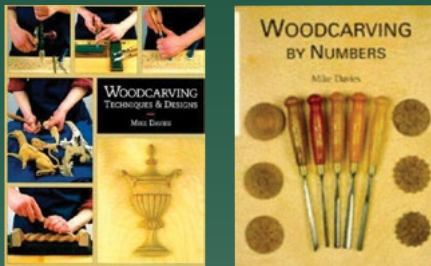
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Lettering



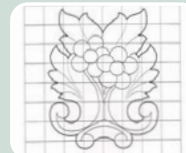
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CARVING BY NUMBERS

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Essential Collection:



Pattern Carving Set:



Spoon Carving Set:



Comprehensive Collection:

- + Essential Collection
- + Pattern Carving Set
- + Spoon Carving Set
- + Bonus Gouge
- + Canvas Tool Roll



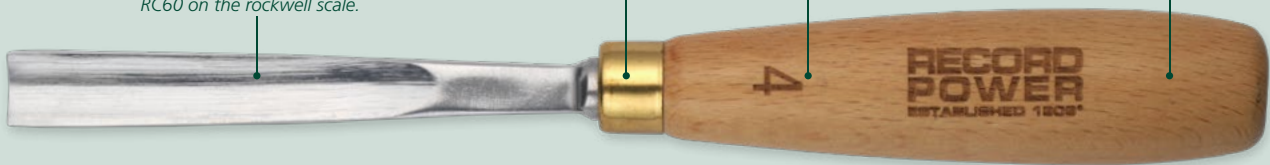
Premium Wood Carving Tools:

Chromium-vanadium alloy steel offers enhanced durability and edge retention over standard carbon steel. Hardened to around RC60 on the rockwell scale.

Brass ferrule

Numbered reference for educational system

Hardwood beech handle



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