

# CARVING BY NUMBERS

Mike Davies

[www.CarvingbyNumbers.com](http://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](http://www.carvingbynumbers.com) for safety and guidance with your techniques.

## The Significant Six Techniques

This 'First Cuts' project uses tool reference number 3

### Sweep Profile Reference Chart

#### Essential Collection:



#### Pattern Carving Set:



#### Spoon Carving Set:



#### Comprehensive Collection:

Bonus Gouge



### Part 1

When starting out as a woodcarver it can be a daunting task to select a beginners set of tools from the vast selection available.

There are literally hundreds of tools available, but as with most things in life, Pareto's principal, 'the 80/20', rule can be applied. It is the law of the vital few, that 80% of your work can be done with 20% of your tool kit.

As a professional woodcarver and teacher for over 30 years, one thing I can be certain of is that there are the favourite few tools that are used on every job. It is this small selection of tools that I have based the Woodcarving by Numbers education around.

Throughout the 'Woodcarving by Numbers' series, I will share with you tips and techniques that will put you on the road to becoming a competent woodcarver. I will also provide you with a selection of projects to put theory into practice.

A common misconception about woodcarving, is that you need to be artistic. This is not the case, as all that is required is a logical step by step approach.

I have given each blade profile a number, and as the tool is required I will make reference to the profile in the text. The projects are broken down into stages and I will refer to the various techniques for each cut required.

**"Simply match your profiles to the chart provided. Please note that the printing process may lead to slight changes from actual sizes."**

### The Significant Six Techniques

These techniques are the Foundation Skills for carving. If you start out with good techniques they will provide a solid foundation upon which your carving skills can be built.

Let's first clarify some terms. When referring to the 'shank' of a carving tool, I am referring to the entire length of steel blade between the handle and the cutting edge. The 'cutting edge' is the razor sharp edge that used to cut the timber. Finally the 'profile' is the shape of the cutting edge, which can vary from flat to a full semi circle, from a V shape to a U. The first two techniques cover how to hold the carving tool correctly.

### The Pinch Position

Pinch the blade between your finger and thumb. Don't worry if you are left or right handed, simply hold the tool in whichever hand feels comfortable.

This position is used for fine work or for 'setting in' a cut. 'Setting in' is where the shank of the carving tool is held at around 90 degrees to the surface of the work.



Photo 1.



Photo 2.

## The Fist Position

Make a fist around the shank of the carving tool making sure that the cutting edge is next to your little finger. You should have around 25 to 30mm of blade exposed. Holding the tool in this way will simply give you a firm grip. Once again, don't worry if you are left or right handed. Just hold the tool in whichever hand feels most comfortable.



Photo 3.

## Anchoring

It is absolutely essential that the hand holding the carving tool, or the arm of the hand holding the carving tool is always firmly anchored to the work or workbench.

This will ensure that you have control of the blade at all times which will prevent you from slipping.

Note in the pictures for the pinch and fist positions how the hand that is holding the tool is firmly fixed to the work.



Photo 4.

## The Tapping Technique

The tapping technique involves the combination of both the 'Fist Position' and 'Anchoring'.

When motivating the chisel forward it is essential that we only ever use controlled arm-weight. We should never apply bodyweight behind the carving tool as this may lead to a loss of control.

When using the tapping technique, hold the carving tool in the fist position. Establish a fixed position with your anchoring hand and tap the handle of the tool with your mallet. Practice first without removing any timber. Can you see that after each tap the cutting edge returns back to its original position?

When using this technique to remove timber, you can apply an increased force and maintain control at all times. Practice this technique to remove fine shavings of timber and then larger pieces with heavier blows.



Photo 5.

## The Sliding Technique

If you were cutting a loaf of fresh bread, and you 'only' applied a downward force on the knife, then regardless of the knives sharpness, the resulting cut would be very ragged and torn.

The cut becomes effective as soon as you slide the cutting edge, and this principal applies exactly the same to a carving tool.

As you motivate the carving tool forward, try to include a sliding motion too.

Note how the entire length of the cutting edge is being used in the 3 images below, and how the handle is being rotated with the cut.



Photo 6.



Photo 7.



Photo 8.

## Becoming Ambidextrous

Once you have mastered those 'foundation five' techniques, there is just one more to remember. This one really makes life interesting, and is why it doesn't matter if you are left or right handed.

When carving to the left hand side of the bench you should hold the carving tool in your left hand, and vice versa for the right.

This will definitely feel awkward at first, but do persevere, and just like riding a bike it will soon become second nature.

The most important aspect of this technique is that it prevents you from having to contort yourself into compromising positions, or from having to constantly move your work.



Photo 9.



Photo 10.

## Cutting Directions

To carve timber in the most effective directions it is helpful to first understand how the timber is formed. This, in turn, will help you make decisions about the appropriate direction to cut.

Imagine a piece of wood as being a bundle of long drinking straws, the length of the straws representing the direction of the grain.

The illustrations show that the cut will always be more effective when it is directed from short grain to long.

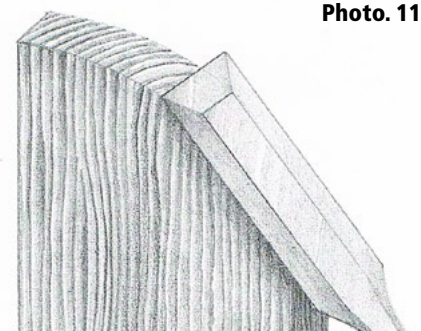
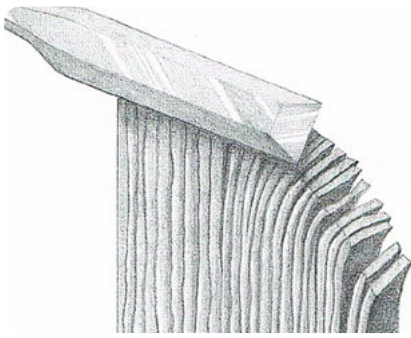


Photo 11



**Photo 12**



**Photo 13.**

### First cuts

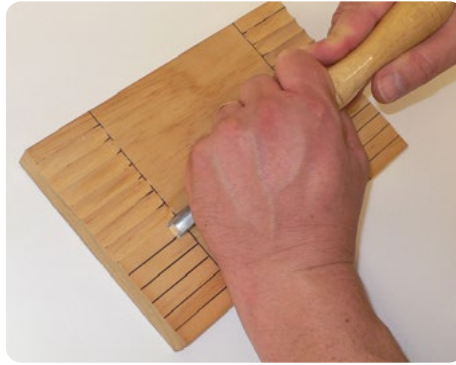
Before you dive into a project, it is good practice to familiarize yourself with your tools and the six basic techniques. The following exercise is also ideal to test the sharpness of the tools. Sharp tools are absolutely essential for effective woodcarving. We will take an in-depth look at sharpening techniques in a dedicated tutorial.

1. Select a clean, flat piece of timber that is light in weight with a close straight grain. Pine is perfect to practice with and the piece should measure approximately 250mm x 140mm x 20mm.
2. Mark two square lines across the board, measuring approx. 50mm in from each end
3. Then mark a series of parallel lines measuring approx. 10mm apart running with the grain as shown in photo 14.
4. Fix the timber firmly to your work surface making sure that the grain is running horizontally in front of you. In whichever hand you feel most comfortable, hold chisel #3 in the fist position. Slide the chisel through the timber in the direction of the grain, making sure that you anchor.

Remove small scoops at a time, moving the chisel with controlled arm weight only. If you find that you need to apply body weight, you are trying to remove too much timber in one go. The objective is to create high ridge lines in place of the parallel lines. The ridge lines need to be perfectly straight.

5. Next try holding the carving tool in the opposite hand and carve the lines in the opposite direction. Remember, hold the carving tool in the left hand to carve to the left of the bench and vice versa for the right. It will feel awkward at first, but do persevere and practice until it becomes second nature!!

6. Now try the tapping technique to form the channels. Try to produce clean channels, formed by a number of taps, without any visible chatter marks from the blade.



**Photo 14.**

7. Next mark a series of parallel lines across the grain measuring 10mm apart so that we can practice on a series of 'flutes'. Draw two lines running in the direction of the grain, 60mm apart to form the top and bottom of the flutes. See photo 20 for reference.

8. Continuing with Tool #3, hold the tool in the pinch position so that the shank of the tool is 90° to the timbers surface. Gently 'set in' the profile of the blade to form the bottom of the flute. At this stage try not to set in your cut any deeper than 2 mm. See photo 15.



**Photo 15.**

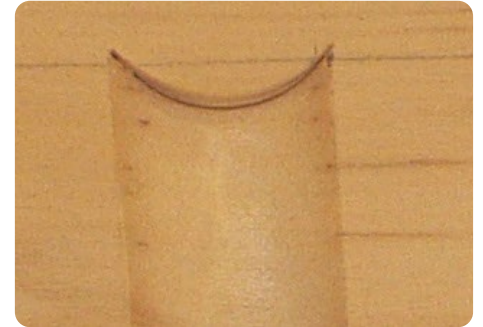
9. Now with tool #3, in the fist position carve across the grain using the sliding technique. The goal here is to remove a uniform channel of material between the lines and creating a perfectly straight line on the surface of the timber. You will need to practice sliding the blade to get a clean finish across the grain. This is where you will need razor sharp tools. Use your anchor to give you control as your channel meets the set in cut. See photo 16.



**Photo 16.**

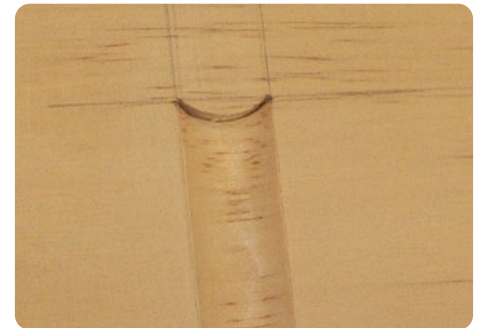
10. You will need to set the base of the flute in a little deeper. However, we need to be careful that we don't leave heavy cuts on either side of the flute where it meets the surface.

The base of the flute needs to be deeper and the sides shallower. Note in **Photo 17** how the base of the flute is shallower as it meets the sides.



**Photo 17.**

Photo 18 has a heavier cuts at the base which should be avoided.



**Photo 18.**

To achieve this you will need to use the tips of the cutting edge like a knife blade and slide the cutting edge to create a deeper cut in the base of the flute. The shape of the blade profile will follow the 'set in cut' if you angle the handle and slide the blade.



**Photo 19.**



**Photo 20.**

Once mastered, these skills can be translated to numerous designs and decorations. Here is a small selection to try.

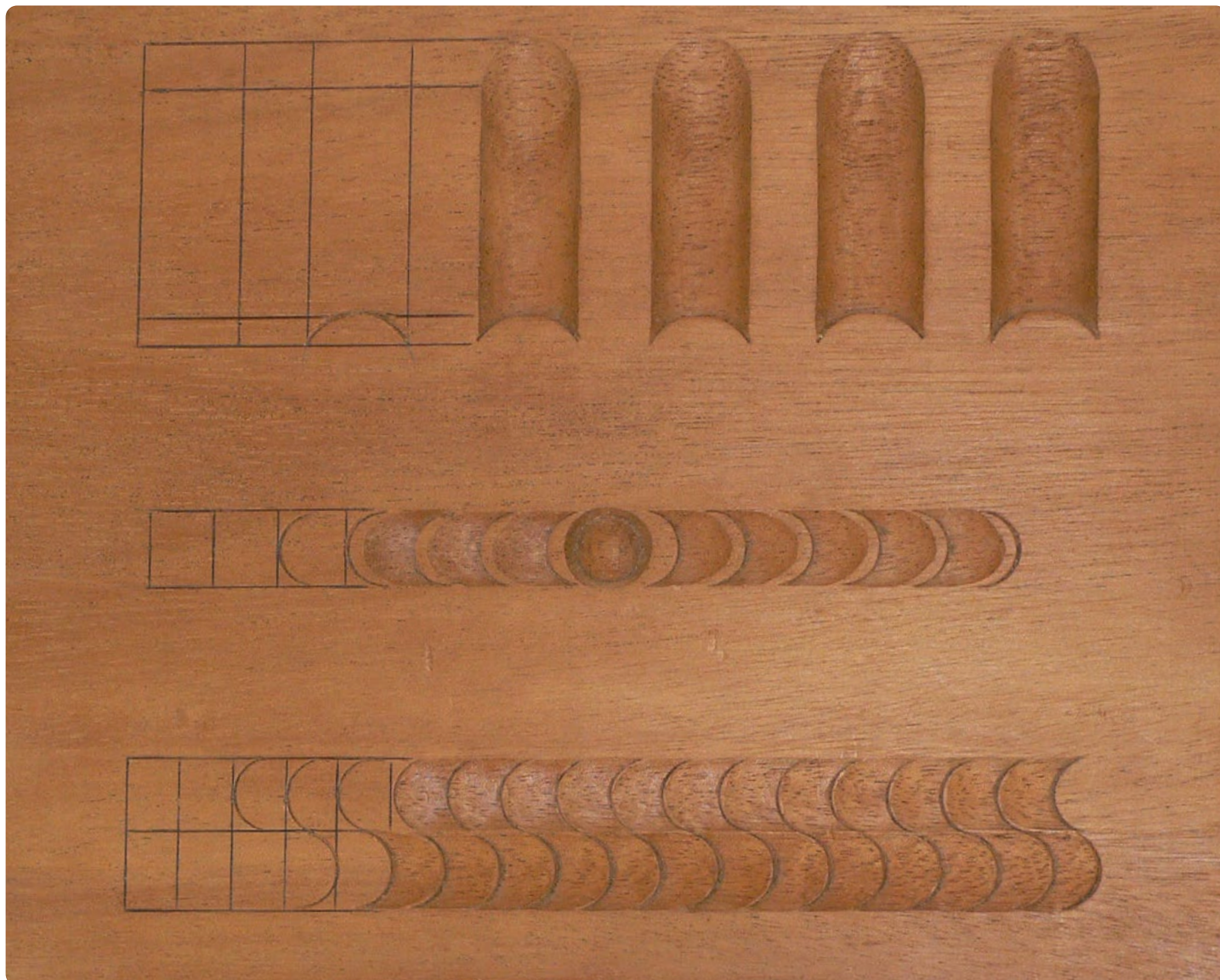


Photo 21.

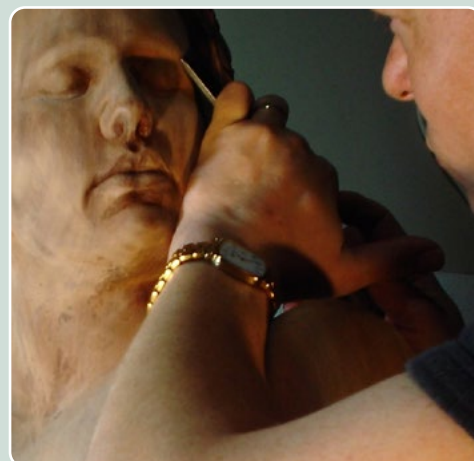
### About the Author:

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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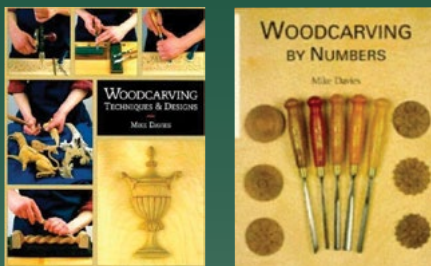
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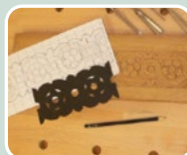
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Lettering



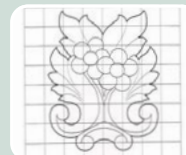
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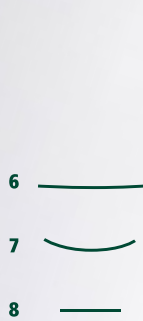
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Learn how to carve beautiful patterns and designs, with the Carving by Numbers step-by-step project cards and this range of compatible carving tools, manufactured by Record Power.

## Essential Collection:



## Pattern Carving Set:



## Spoon Carving Set:



## Comprehensive Collection:

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



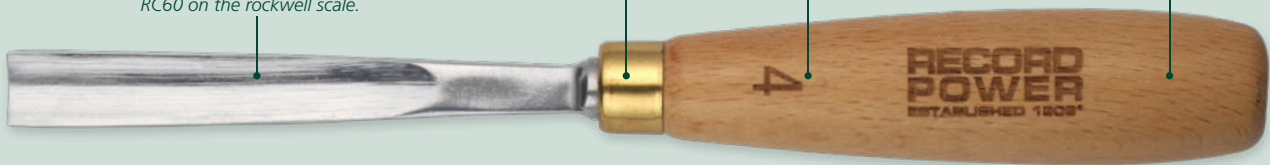
## Premium Wood Carving Tools:

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



Record Power has a long and impressive history. Established in Sheffield, the heart of the UK's steel industry, and stretching back over 100 years, we enjoy an enviable reputation for creating high quality tools through our many years of experience and unparalleled knowledge in manufacturing and design.

In addition to our UK-made products, we work with carefully selected partners from across the globe to ensure we supply only the best quality products possible. Record Power products are exported to more than 30 countries worldwide.

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