Chris Pye: WoodCarving

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Acknowledgement

I am very grateful indeed to my friend Mark Kimble for so generously proof-reading this manual, and in such a sensitive, painstaking and compassionate manner.

Photo courtesy of Les Rosenau, SeaCoast Woodworkers.

Disclaimer

Although I have highlighted many safety aspects, I cannot know of the particular circumstances under which you follow this course of instruction, nor the attitudes with which you undertake it.

I accept no legal responsibility whatsoever for any consequence arising from the application of information, advice or instruction given in this publication.

Selecting & Sharpening your V Tool:

Giving & Receiving...

In return for downloading his free woodcarving manual, benefiting from my work and the contents, you agreed to make a donation to charity on my behalf.

Please, don't forget!

Personally, I would appreciate it if you made your donation to Amnesty International but you are free to give what you want and to wherever you want, balancing what you feel you are receiving. I leave it to you and thank you very much!

Chris Pye

Choose to donate to Amnesty International.

1

Introduction

1.1 my aims for this manual

Hello!

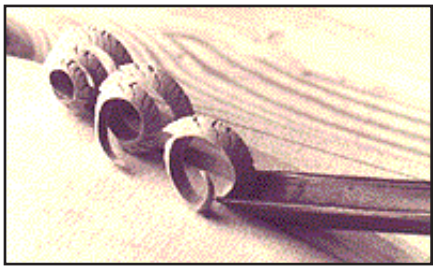
I'm Chris Pye and I'd like to welcome you to this workshop manual which concentrates on that very useful friend of the woodcarver: the V tool.

This manual - **Selecting & Sharpening your V Tool:** - is a systematic approach that focuses on 2 things:

- **Helping you choose a V tool that has been made well and is right for the work you want to do.**
- **Showing you how to sharpen that particular tool, or any other V tool, with complete confidence.**

I will be concentrating especially on this last aim: sharpening, which causes so much heartache.

Over many years I have shown a large number of other woodcarvers how to sharpen their V tools. In this manual I will be leading you along a **path** that I know to be very successful, one that I have carefully refined into a **series of steps**.



Why the V tool?

I have selected the V tool for special attention because, more than any other carving tool, it seems to cause problems - even for quite experienced carvers.

When you've worked through and thoroughly digested this manual, you will:

✓ **Understand what your V tool consists of, what it can do for you, and which V tools would be useful to own.**

✓ **Know what to look for when you buy your V tool; how to choose a well-made tool and avoid a poor one.**

✓ **Be able to sharpen your V tool to as perfectly shaped an edge as possible, and then re-sharpen and maintain as you move forward.**

✓ **Be confident that your keen, correctly shaped V tool will contribute to many happy hours carving!**

In the original version of this manual: "The Accomplished V tool", I used that word, 'accomplished' in the title of this manual because of its two distinct meanings:

- **"To achieve or complete successfully"**
- **"To be highly skilled or trained in a particular activity"**

Consider these things for a moment, because they summarize what I want for you as I write this **Selecting & Sharpening your V Tool** manual.

An Important Note

This manual has a very specific objective: mastering the V tool.

However, woodcarving is a huge world. I have said much more elsewhere about other carving tools and sharpening equipment; about wood and holding devices; and about design and 'finishing' your work.

In particular, I strongly recommend the 2 volumes of my book: Woodcarving Tools, Materials & Equipment, for filling out invaluable background to what I discuss here.
I will be referring to these companion volumes a number of times throughout this manual.

Right, where do we start?

1.2 how best to use this manual

To succeed, you must conscientiously pursue the course outlined in this manual.
This is how I'd like you to work:

✓ **First, browse or skim through the manual.**

This will give you a general 'road map' of what we'll be doing.
Then, start at the beginning, this time reading more carefully.

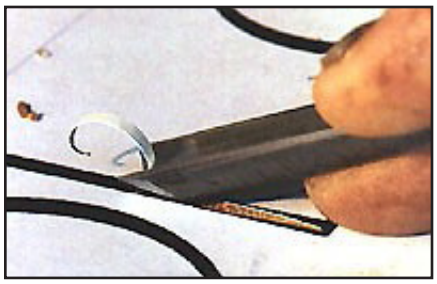
✓ **Don't skip!**

This is a *step-by-step* guide.
You *must* go through each step carefully and in order, fulfilling each objective in turn. If you don't proceed systematically, you're not likely to get optimum results.
Even in cases where you think you're on familiar ground, still read it through: there may well be issues you hadn't considered before.

✓ **Print out any pages you need and take them to your workshop.**

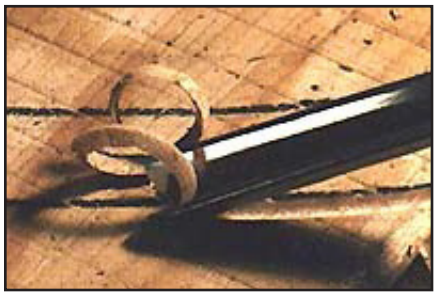
I think you'll find the special **checklists** particularly useful if you print them out.
This manual works something like a sort of self-contained web site.
Printing will depend on how your web browser and equipment handle the task of printing web pages.

Even if the pages divide strangely the information should still print well enough to provide you with workshop copy. You can scribble on the pages, spill coffee, whatever... then go back and print another!



1.3 your path to success!

The manual you are now reading is probably the next best thing to learning at my workbench.
But the fact is, we're not together at the workbench.
(Though we could be...)



Nevertheless, have faith in the process.

For example: when it comes to *sharpening*, you can believe that your V tool will end up with a keen and correctly shaped edge.

✓ **How can I be so sure?**

> **...because I know that each step in my sharpening plan is built on the preceding step.**
>
> **Thus, so long as you:**
>
> - **start at the beginning with a well-made tool, and**
> - **follow me step by step, and**
> - **fulfil the objectives each exercise sets...**
>
> **...then you cannot fail to sharpen your V tool properly.**

✓ **But remember *your* part of the bargain:**

You must start at the beginning of this manual, work through each chapter, and carry through each step exactly as described.

Otherwise, sad to say... all bets are off!

OK - now what?

Let's start at the beginning, with... you!

1.4 what's your problem?

Be honest, do you recognise any part of yourself somewhere in the following?

- **You're a newcomer to carving....** you've got a V tool that you've heard is very useful - but you're not sure what you're looking at.

- **You've tried carving with your V tool...** but maybe it wasn't sharp when you got it so you sharpened it but you're unhappy with the results.
Or maybe your V tool *did* come factory-sharpened, but you've dulled it and can't seem to get it sharp again.

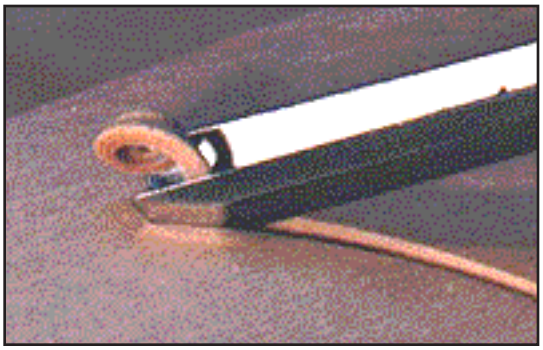
- **Or you *did* get your V tool sharp...** and it *does* cut cleanly, but all-in-all it's still a bit disappointing. You've tried carving with your V tool and found it to be hard work, not so easy to control and get the cuts you want.

Any of this sound familiar?

Take heart... You are not alone!

It's relatively easy to pick the right V tool for a job and assess the quality of the blade.
But when it comes to sharpening, the V tool has a nasty reputation for being 'tricky'.

More than a few carvers, even some with lots of experience, approach the V tool with trepidation.



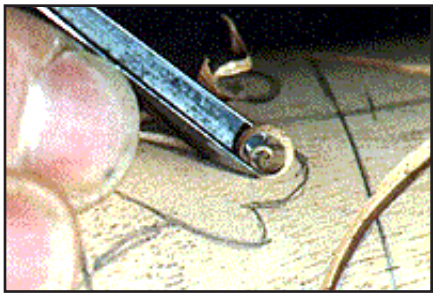
Too bad... the V tool is potentially one of the most useful carving tools you can own!
There is always one V tool, sometimes several, out on my bench. Indeed, it is a rare carving that doesn't see me using a V tool somewhere along the way.

✓ **Let's begin our quest for mastery**
by anticipating those features that will give you problems when you try to sharpen, or carve, with your V tool.

We'll start with some basic questions that I'm often asked about V tools.

1.5 bedrock: 4 good questions...

I'm regularly asked certain questions:



1: 'What is a V tool?'

2: 'What will the V tool do?'

3: 'Which V tool do I need?'

4: 'Which are the best makes?'

Choosing a well-made V tool, one that is right for the carving job in hand, depends on correctly answering these questions.

So, even if they seem simple, *please don't skip over my answers.*

In fact, try writing down your *own* answers *before* reading my suggestions.
Start with this:

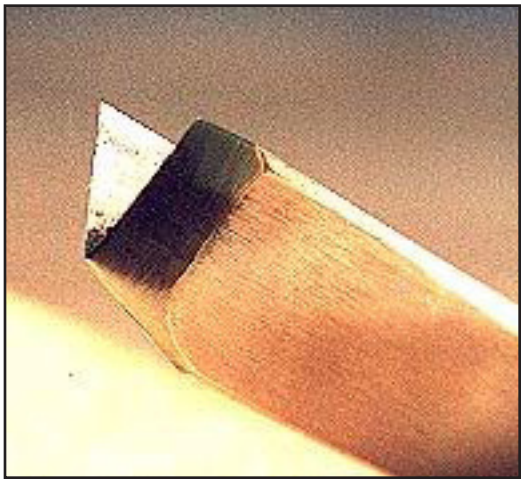
2

The V Tool

2.1 what is a V tool?

Let's name the parts of the V tool.
Better still, why not have a go at this yourself first?

Take up your V tool.
Identify all the bits that make up the 'working end' - the part that does the cutting.
Then compare with what I have to say below.

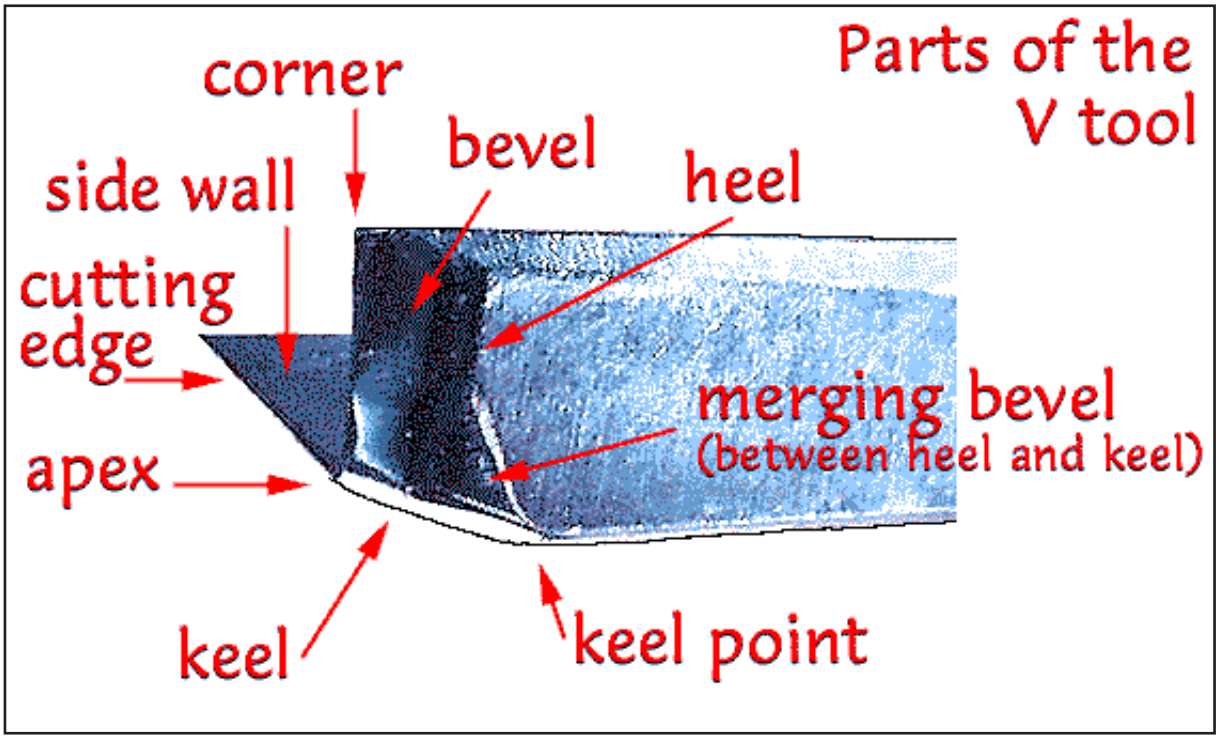


If you don't have a V tool yet, just read on for now, but revisit this chapter when you get one.

I'll use this V tool as my example:
It was made by Ashley Iles.

Your own V tool may well differ in some features but it *will* be substantially the same.

Naming of Parts
I've labelled the working end of my V tool:



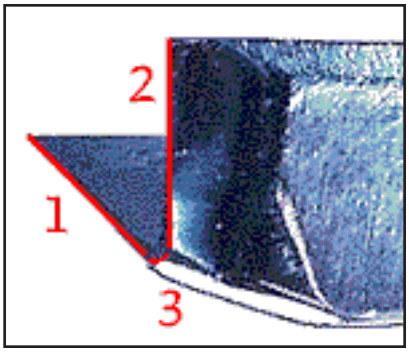
Selecting & Sharpening your V Tool:

Look at the sharp end.

In effect, the V tool is made of 2 chisels joined together at the side.
You can see how this produces the familiar V-shaped channel and angle.

These two 'chisels' are usually called: **sides**, **walls**, or **sidewalls**, but I want to emphasise the idea of 'chisel' for now.

Cutting Edges
There are three parts to the actual cutting edge:



1: a **chisel**: on one side

2: a **chisel**: on the other.

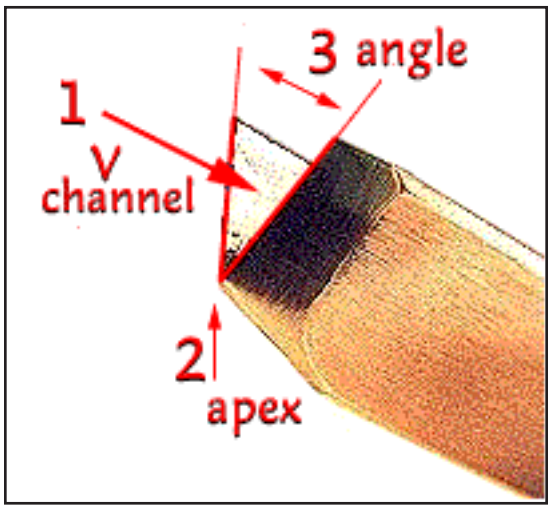
3: a cutting **apex**: in the middle where these 2 chisels meet.

✓ **We'll discover that one of the secrets to sharpening the V tool is dealing with these 3 cutting edges separately.**

Often Confused Terms
Be careful to distinguish three terms:

1: V channel: containing all that empty, triangular space 'inside' the V, formed by the 2 chisels.

The shaving runs though and out of here as you push your V tool through the wood.
Notice that the deep, inner corner (or root) of the V channel is not sharp but slightly rounded, along its entire length.



2: Apex: the cutting edge at the very end of the V channel.
Because the V channel is rounded at its root, so too is the apex, a fact that becomes important when we are sharpening.

3: Angle: the number of degrees formed by the joining of the two chisels.
The angle can vary from a narrower 45° to a wider 90°. The angle most commonly used by woodcarvers is 60°.

Selecting & Sharpening your V Tool:

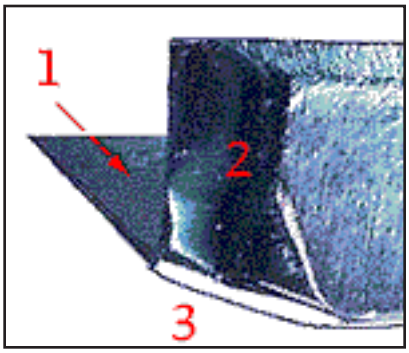
Bevels

Turn the V tool upside down - so the V channel is facing downwards.

You'll see that each chisel has a bevel.
This bevel is a wedge of metal that starts, at its thinnest, at the cutting edge.
The bevel ends at the heel where the bevel metal becomes the full thickness of the blade.

Look at where the sides of these two chisels bevels meet in the middle.
Take note of the way the chisel bevels come together to form a line or ridge, somewhat reminiscent of the underside of a boat.

This joining line is called the **keel**.
The keel is in fact a third bevel.



So you have **three bevels to consider:**

1: a **side bevel** - for one 'chisel'.

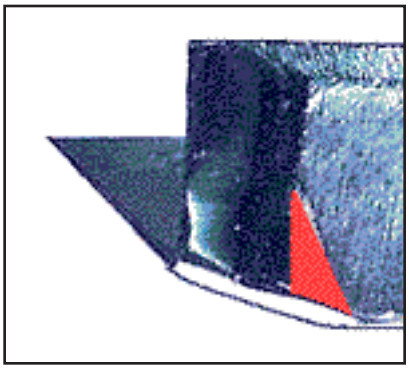
2: a **side bevel** - for the other 'chisel'.

3: the **keel** - where the side bevels meet in the middle at an angle.

✓ **The shape of this keel decides how the V tool *performs*, how easily you can push its cut through the wood.**
So, getting the correct shape of the keel is a vital step in sharpening your V tool.

In my example of a V tool, did you notice the funny triangular area or facet where the side bevel merges with the longer keel?

It's coloured in red in this picture:



I'm calling this extra facet a **merging bevel**.

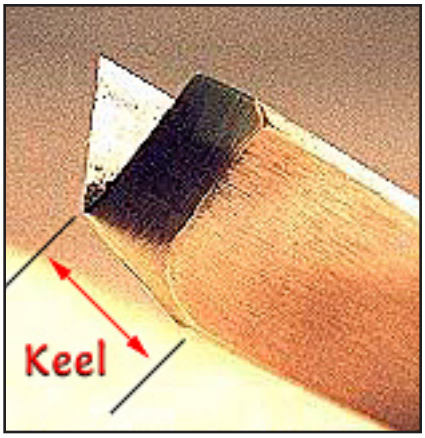
Now, unless you have the same make of V tool as the one I'm showing, the chances are that yours **won't** have this merging bevel and will look more like this one on the left.

This one is made by Auriou - no merging bevel.

You might have something in between, or an even bigger merging bevel.

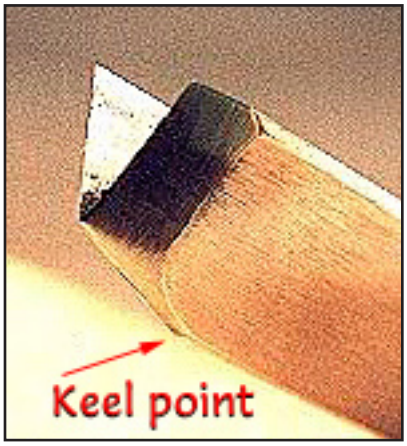
Selecting & Sharpening your V Tool:

This merging bevel is not a 'good' or 'bad' thing but is necessary depending on how the tool is made.
I will say more about it later when we assess our V tool.



Keel
Look closely at the keel.

Note that the keel is not sharp but smooth and slightly rounded.

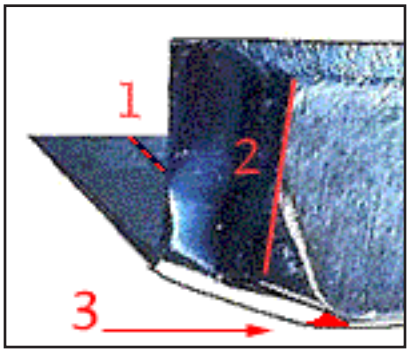


This softening of the keel allows the tool to negotiate corners smoothly.

The line of the keel starts at the cutting **apex** - the very tip of the V channel - and runs along to a point where the heels of the 2 chisel bevels meet in the middle.

*I'll call this point, where heels and keel merge, the **keel point**.*

Heels.
If there are 3 bevels, there must be 3 heels: the places where the bevels run into the metal of the blade proper.

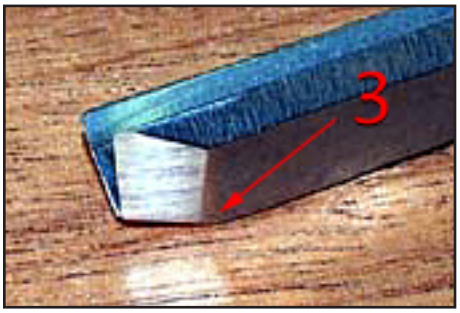


1: a **side heel** - for one 'chisel'.

2: a **side heel** - for the other 'chisel'.

3: the **keel point** - where the keel runs down to meet these side heels.

***With a merging bevel**, the keel point will be further back than the heels on the sides:*



*When there is **no merging bevel**, as here, the keel point is more usually in line with the heels on either side.*

The keel point is like the inverted tip of a pyramid, where everything seems to meet.

✓**Along with the keel itself, you must also shape the keel point correctly to get efficient performance from your V tool.**

Summary
This 'naming of parts' - analyzing the working end of your V tool - is the basis of deeper understanding, and a step in the road to successful sharpening.

Do go through what I've said here carefully and you will find there's a simple, logical sense.

✓**To sharpen the V tool correctly, we must deal with these three separate, but integrated elements:**

1: the **3 cutting edges** (apex and two sides or 'chisels')

2: the **3 bevels** (keel and two side or 'chisel' bevels)

3: the **3 heels** (the keel point and those of the 'chisel' bevels on each side)

✓ **Before moving on you should be should readily be able to identify the various parts of your V tool.**

Here's a list to test yourself.
Point to the:

1: two chisel cutting edges (one on each side)
2: cutting apex
3: V tool *angle*
4: two chisel bevels (one on each side)
5: keel
6: merging bevel (if you have one)
7: two chisel heels (one on each side)
8: keel point
9: corners (one on each side)
10: V channel

Now that you know all the basic V tool parts, you can anticipate what we'll be dealing with and understand what we'll be talking about.

In most cultures where wood is carved, you'll find a form of the V tool.

Let's briefly look at why this tool is so useful to woodcarvers.

Selecting & Sharpening your V Tool:

2.2 what can V tools do for *me*?

I want to approach the function of the V tool from an unusual angle, by looking at its name.
In fact, in English we have three names:

- **V tool** - the term most popular today.
- **Parting tool** - more common in the past, and not to be confused with the same name for a type of woodturning tool.
- **Dividing tool** - disused now as a name, but you'll find it in old carving books.

Look at these names in some other tongues:

- In **Germany**, carvers call it **Gaißfuß** - literally a goat's foot, and pointing to its 2-sided, cloven appearance.
- In **France** the tool is known as a **burin** - we, in the UK, know the **burin** as a solid triangular-ended tool for wood-engraving: 'digging into' or decorating a surface in a shallow sketch-like manner.

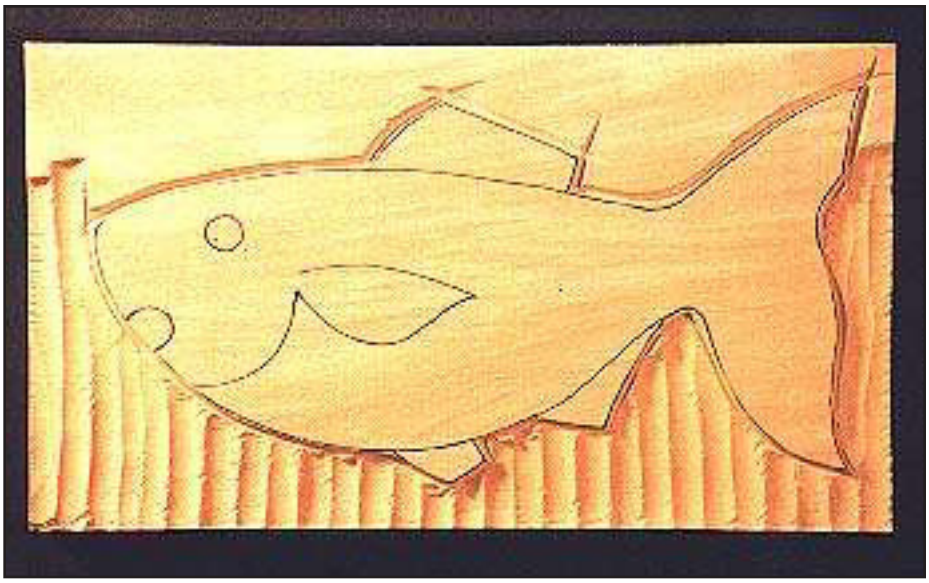
These names suggest the tool's double nature.
It would be fair to say the V tool has something of a split personality!

✓ Personality 1: Parting/Dividing

The V shape of the tool allows it to 'part' or 'divide' one area of a carving from another in a stroke.

You'll see this happening most commonly in relief carving when, for example, a carver outlines a subject with their V tool before safely cutting away the surrounding waste wood.
This is called **lining in**: a very important stage in correctly lowering a background.

I go into the method in detail in my practical course: Relief Carving in Wood from which the picture below is taken.



You can see the preliminary lining in of the subject with the V tool running along the top of the fish's profile.

In the bottom half, the vertical channels indicate where unwanted background wood has been cut away.

Alternatively, instead of simply lining in one subject, you might be dividing *two* adjacent subjects, such as leaves, or locks of hair.

✓ **Personality 2: Linework**

The V tool cuts fluid lines: long or short, deep or shallow.

The lines in themselves ornament or decorate the surface of the wood, perhaps creating hair or feathers.

This is a corner of an 8ft. fire surround.

The whole needed hundreds of peacock feathers and somewhere around 90% of these were carved with a V tool alone.

You can use the V tool on its own for decoration, or add to the effect by combining it skew chisels or gouges.

I will be focusing on the decorative aspect of the V tool in the next manual: *The Accomplished V Tool II*.

These, then, are the 2 principal functions of the V tool: parting and lining.
You can easily imagine you'd want to do either or both of these things - and of course you do, in most types of carving.
The more you carve, the more you will find just how immensely useful your V tool is. For example you could use it for **undercutting** a leaf, or making **stop cuts** to control grain.

But this is only the beginning: you can buy the V tool in a range of shapes and sizes to tackle different carving jobs.

Let's have a quick look at other V tool shapes to be found in the catalogues of woodcarving toolmakers and suppliers.

Selecting & Sharpening your V Tool:

2.3 variations on a theme

Since woodcarvings are so diverse in shape and size, you'll eventually need some variation on the basic V tool to cope with particular carving situations.

The shape of your V tool can change in one of three ways:

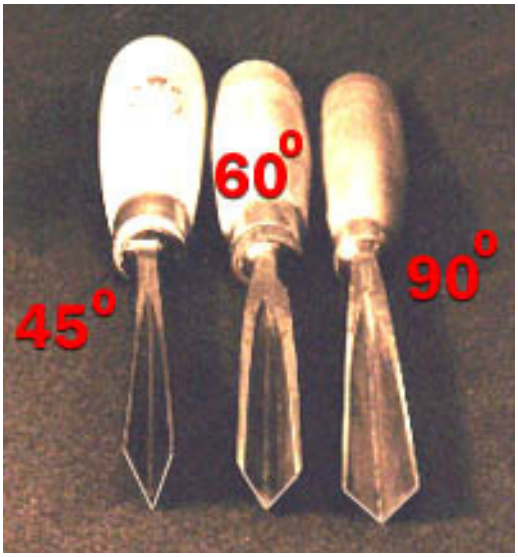
1: Angle
2: Lengthwise Bend
3: Width

1: Angle

Manufacturers provide 3 more or less 'standard' angles at which the sides come together, more or less as standard.
Choose your angle according to the V trench or groove you need to cut:

- **45°**: tightest angle; deep, narrow groove.
- **90°**: widest angle; broad, shallow groove.
- **60°**: cutting a groove between the two.

Sometimes you'll see others, 70° for example.



2: Lengthwise Bend

You'll need a curve or bend on your V tool to carve in hollows in the wood. The deeper or tighter the hollow, the more bend you need.

Not every manufacturer makes all possible bends but the two main types are:

- **Longbent V tool** - for shallow hollows.
You may find the shape of the longbent V tool called **salmon** or **swan neck**.
- **Shortbent V tool** - deep hollows.
The short bent is commonly called **spoon** shaped.

From top:
Longbent and 2 shortbent V tools

Also worth mentioning, but very unusual:

- **Backbent V tool** - for cutting on convex surfaces.

I know only one firm that makes such: Ashley Iles, and even that is small and designed for use by wildlife carvers.

From left:
Small (1/16inch 1mm) - longbent, straight and backbent 'mushroom' handled V tools from Ashley Iles.

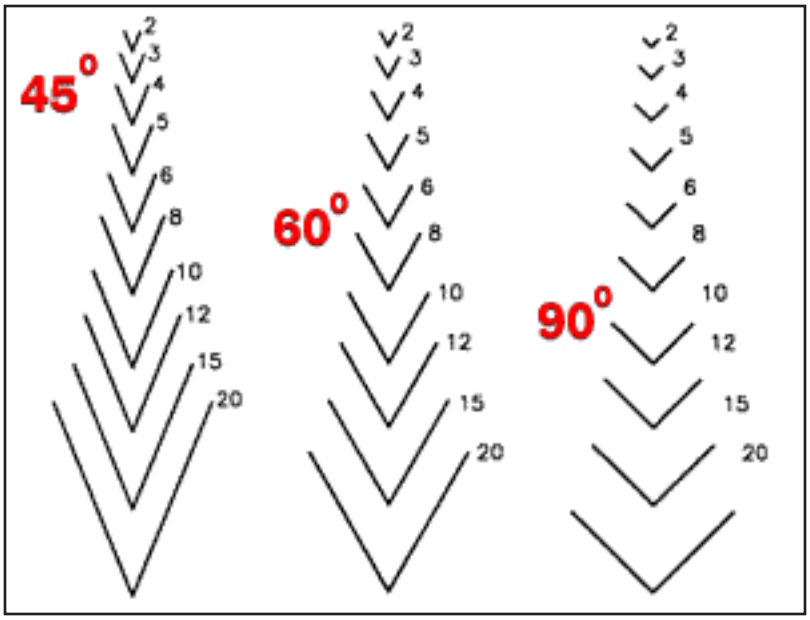
3: Width

The width of any V tool is measured from corner to corner in a straight line.

Each angle of V tool (45, 60, 90), and most of the lengthwise shapes (long and shortbent), can be bought in a range of widths.

Widths vary from 1/16inch (1-2mm) for tiny grooves, to 1inch (25mm) and bigger for sculpture.

Manufacturers will always show the angles and widths of V tools they make in their literature.



Who Makes What?

You'll have to study dealers' catalogues to see just who is making or supplying V tools. It's a good idea to build up a reference library of tool catalogues.

Manufacturers always show the angles of their V tools in end view, and the widths at which you can buy them.
If you are new to carving, the range of available tools may come as a shock: wide, narrow, 45°, 90°, bent, straight V tool - an embarrassment of riches!

It can be difficult deciding which are the most useful to buy.

Let me give you some advice...

2.4 which V tool do I need?

Here's a question:
At any given time, what tool does a carver need?

The answer?
It all depends on what the carver wants to do.

Whether *you* need a straight or a bent V, a wide or narrow, or a particular angle, depends on the woodcarving you have in mind.
True, but not very helpful when you're beginning to carve. And what if you don't have a V tool at all? Or what if you're still unsure whether yours is the 'right one'?

Since you've got to start with *some* V tool, I'd advise you to begin with one that in my experience has been the most useful.
I'll be sharpening this particular V tool in the next section.

- **60° angle**
- **Straight**
- **Width: 3/8in. (10mm)**

The rule for buying *any* woodcarving tool - including, of course any V tool, is this:

✓ **Always buy your carving tool on the basis of need.**

So, for the V tool, proceed like this:

- Start with the V tool I recommend.
- Somewhere along the line you'll find that specific tool won't 'do' what you want it to.
- Consider how you would change the size and shape of your 'one' V tool to cope with what you now want it to do.
- There's a very good chance you'll find your new 'specifications' somewhere in your library of manufacturer and supplier catalogues.
- Buy your new V tool: sharpen it, carve with it.
- At some point even further down the line, this tool, in turn, will fall short of something you need to do.
- Consider how you would change the size and shape of this V tool to cope with your new challenge.
- And so on

Selecting & Sharpening your V Tool:

Because the V is such a useful tool, you will very likely end up with a selection.
As we've already seen, you're given plenty of choice...

I have now answered 3 of those 4 'bedrock' questions (the ones I am continually asked):

1: 'What is this V tool?'
2: 'What will the V tool do for *me*?'
3: 'Which V tool do I need?'

We now come to the last:

Selecting & Sharpening your V Tool:

2.5 who makes the best?

We carvers are lucky in being served by many well-established, specialist carving tool makers.
In my experience, all manufacturers have their particular strengths and weaknesses.
And each manufacturer has its own idea about what is best for you the carver, or what they can most safely - or economically - make.

However... follow these rules, and you won't go wrong:

✓ **Always buy from an established carving tool maker** with a reputation to keep.

✓ **The tools may seem expensive, but consider them a lifetime's investment.** Buy the best. Beware cheap tools from market stalls!

✓ **Send away for catalogues** from all the tool suppliers and makers. Keep them for reference.

✓ **Look around at what other carvers are using** before settling for brand loyalty.
Get opinions; ask to try a brand you haven't used if the opportunity arises.

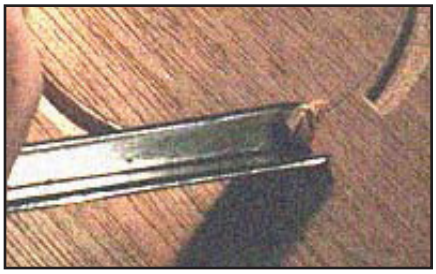
Some of the best known manufacturers (alphabetically):
I suggest you search the web for up-to-date suppliers.

MAKER	#
Ashley Iles	39 x 3/8in. (10mm)
Auriou	G 06 20 060 010
Bristol Design	28-60° x 10mm
Flexcut Regular	MC360 x 5/16in.
Henry Taylor	3739 x 3/8in. (10mm)
Kirschen	3141 x 10mm
Pfeil**	Cut 12 x 10mm
Stubai	5244 x 10mm

** **While Pfeil tools are generally excellent and certainly popular, in my opinion the Pfeil V tool has a particular problem with a shape that needs correcting. Thus, it's not the V tool of choice - though it's one you may already own.**
The problem and its solution are described in the Checklist)

✓ **This is how I view good carving tools:**

- Tuning a violin is a preliminary - and essential - stage to playing.
- Sharpening a carving tool is a preliminary - and essential - stage to carving.
- If your violin had a corkscrewed neck, no one would expect you to play well - even if you could tune it!
- Likewise; you cannot carve cleanly and efficiently with your V tool - if it not correctly shaped.



And - trust me - there *are* 'correct' and 'incorrect' shapes.

From what we've covered so far, you should now be able to select the size and angle of V tool you need.

Selecting & Sharpening your V Tool:

The sharpening section in this manual is based on your selecting a well-made V tool.
You need to be able to tell 'well-made' when you see it..

You can certainly expect good steel and reliable tempering if you buy tools from any of the reputable woodcarving tool firms.
But do realize that the reputation of the maker is no absolute guarantee that a particular V tool is made as well as it should be.
Don't be fooled by polished metal or nice packaging!

Many carving tools include a high degree of handwork. It is in the shaping - the forging and grinding - that V tools mostly differ among makers...and it's here that problems or faults may occur.
A mistake in quality control may let out a V tool with a different thickness of metal on each side, a pointed 'nose', a poorly shaped keel, or incorrect cutting angles.

Some 'faults' simply add 'character'.
Others may make sharpening difficult but can be corrected.
In the case of very serious manufacturing errors, you may be unable to sharpen the tool - which should cause you to reject it outright.

So:

✓ **You need to know:**

- **What a 'good' V tool should look like.**
- **What faults you can correct or live with.**
- **What is 'fault' enough for you to reject the tool out of hand.**

Remember the violin:
To follow this step-by-step guide successfully, you must **start off with a well-made V tool.**

Remember your goal:
Always try to **select well-made V tools**.

And so... we must now look more closely at this 'quality' aspect of V tools.

2.6 well-made V tools: checklist

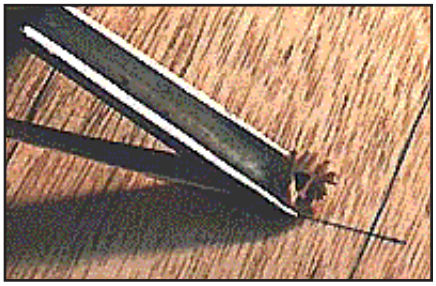
Here's the rub: If you don't have a well-made V tool, you're likely to be in trouble from the start, both sharpening and using it.

I'm now going to list desirable characteristics in your V tool.
Always look for these.

I'll also tell you about other, poor qualities that can cause problems and what to do about them. Look for these too. You must deal with any you find before going on to sharpening.

Pick up your V tool now.
Whether new or old, 'ready sharpened', previously used for opening paint cans - no matter. **Just check it against the following list carefully.**

- **You don't have a V tool yet?** Still read through these notes: you'll get to know what to look out for.
- **Buying one?** Make a note of the main points and use them to help select a well-made V tool.



Checklist for choosing a good V tool

Each item below links to a page with an explanation, a note on possible problems and what you can do about them.

- ✓ **Good steel; well-tempered?**
- ✓ **Surface finish: polished or 'black outside'?**
- ✓ **The blade fitted in line with the handle?**
- ✓ **Sidewalls ('chisels') of equal thickness?**
- ✓ **Sidewalls relatively thin?**
- ✓ **V channel aligned along the axis of the tool?**
- ✓ **V channel faces dead flat - no bellying?**
- ✓ **Keel a narrow uniform line?**

There is a summary page of the checklist here for printing.

Please read the following pages in section 2.6 and inspect your V tool thoroughly now - *before* continuing on to the next part!

This is one of my steps!
If you don't go on from here with a good quality well made V tool, you may well find sharpening is difficult, frustrating and, in some cases, impossible.

Now you have completed your inspection we can turn to sharpening your V tool.

We must have the right equipment to sharpen it:

2.6.1 Steel

✓ **Good steel, well-tempered:**

You can only assume good steel and tempering in a blade **if you buy your carving tools from a well-established, reputable manufacturer.**

The tool should look as though care has been given it in the making. You can expect the maker's mark and list number on the blade, and possibly a size.
If your V tool is unmarked by the maker, or otherwise an unknown quantity, there's only one way to find out what the steel is like...

- **Problem?**

  Poor steel - or tempering - shows itself quickly as the cutting edge microscopically crumbles, loses keenness and begins to leave scratchy lines in the cuts.

  An edge of high quality, well tempered steel remains sharp for a long time, provided you maintain it by **stropping**.
  You also need to **carve properly** with the tool: not scraping the cutting edge across the wood, or levering a blade when it is buried in the wood, for example.

- **What to do:**

  If the tool is problematic, you can't know whether it is the steel itself, or the way it has been hardened.
  Since the steel is what it is, your only option is to **re-temper**.

  I have a chapter on hardening and tempering carving tools in my book Woodcarving Tools, Materials & Equipment.
  Frankly, however, for the time and effort: buy yourself a better V tool.

2.6.2 Surface Finish

✓ **Polished or 'black outside' finish?**

The toolmaker's personal preference determines whether carving tool blades - V's or gouges (as right) - are polished or finished black.

- **Problem?**

  The black finish or oil comes off on your hands, transfers to the wood and soiled your carving.

  Carving tools by themselves should never leave your hands dirty.

- **What to do:**

  1: Rub the black, oily metal surface with fine sand or 'wet & dry' paper and light oil of the sort you will use for sharpening (3-in-1 for example).

  2: Wash the tool in paraffin (kerosene) or warm soapy water.

  3: Dry it well.

  4: Wash your hands too!

2.6.3 Blade

✓ **The blade should be fitted in line with the handle:**

- **Problem?**

The blade and handle do not form a straight (axial) line: there's a bend between blade and handle.

How the blade is fitted to the handle has nothing to do with sharpening the V tool or how it cuts wood. In fact, it's quite possible to carve superbly with misaligned blades if you become used to them.
However, in extreme cases, too much misalignment will weaken the blade.

Adopting an attitude of respect and love for the tools of your art and craft will contribute importantly to your growth as a carver.

- **What to do:**

Misalignment may be caused by an out-of-line tang (the spike that fits into the handle) or the hole in the handle itself, or both. You can improve matters if you find the errors compensate.

- **Grip the blade carefully in a vice and knock the handle off.**

- **If the tang is bent:** reshape it on the grinder or give the hole a compensatory angle.

- **If the hole's improperly drilled:** try rotating the handle and re-applying it to the tang - sometimes you'll find you can simply fit it better.
Plug the hole and rebore.

2.6.4 Sidewall thickness

✓ **The sidewalls (i.e. the 'chisels') should be of equal thickness, giving the bevels - and the blade along its length - a uniform appearance to the bevels.**

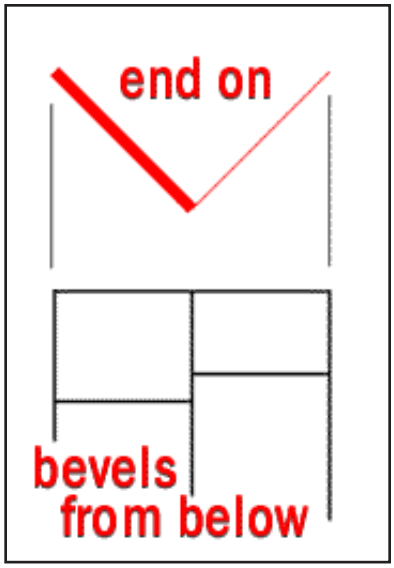
- **Problem?**

  One side, or 'chisel', of the V tool is thicker than the other.

  If this is so, the bevel on the thicker side will appear longer. This is because, when both are sharpened at the same angle, more metal is ground away on the ticker side.
  You'll see an uneven arrangement of keel and heels.

  You might not notice this as you are carving unless the difference is severe. You would then feel a 'supermarket trolley effect', with the tool wanting to veer left or right.

  More importantly, someone new to sharpening might be confused and, frustrated by different 'chisel' thicknesses and the irregular shapes of heel and bevel.



- **What to do:**

All you *can* do is grind away some of the thicker side, down to that of the thinner.
If you have a choice, however, reject it and choose a V tool with equal sides.

2.6.5 Thin Side walls

✓ **The side walls should be relatively thin.**

- **Problem?**

  Thick 'chisel' walls will force you to push more metal through the wood, requiring more effort than you need.

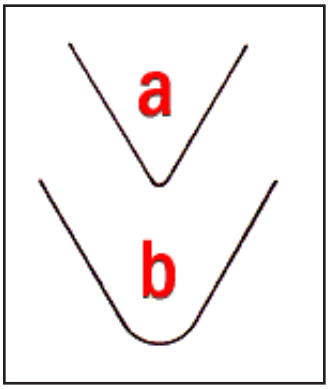
  You may also have the nasty **conical keel** problem described here.

  And there is a third potential problem:
  It's virtually impossible to carve fine lines with a thick-walled V tool.

The problem explained:

Look at the cutting edge end on.
The keel is normally slightly rounded or 'softened' - not sharp. This allows the tool to negotiate corners smoothly.

In the drawing:



a: The best cutting edge at the apex is a curve with a tiny radius.
With just such an apex you can run a fine groove with the V tool - very useful for decorative carving.

b: If your V tool has been forged from thick metal, you are quite likely (though not necessarily) to have a very wide radius at the apex.
This tool will cut a much wider groove - like that of a narrow deep gouge. You'd be better off using the gouge.

Obviously, if the metal of your blade is *too* thin, you'll have a weak blade.
However:

✓ **As a general rule: the thinner the metal the better.**
Carving tools only need thicker metal as blades get larger, when they will be used more vigorously, say with a mallet.

- **What to do**

  You cannot alter the inner diameter of the cutting edge at the apex even if you grind metal from the sides.

  The diameter of the apex was set when the tool was forged.

  Keep your V tool with thick-walled V tool for wide cuts and larger, heavier work - more 'parting'. Use your small deep gouge ('veiner) for finer grooves.

  If you haven't yet bought your thicker-walled version - don't!
  Pick a V tool with thinner walls

2.6.6 V channel alignment

✓ **The V channel should be aligned along the axis of the tool:**

- **Problem?**

  At the cutting end, the sides start off more or less equal in thickness. However, the V channel skews off well to one side towards the handle.

  The best tools are hammered to shape from a red-hot bar of steel in the forge.
  The V channel becomes untrue when this bar is misaligned between the swage blocks which used to the forging - the shaping of the blade.

  The upshot is that the sidewalls are no longer of even thickness throughout their length and, as the tool wears down, one side will gradually get thicker.
  Sharpening then becomes a problem similar to what we discussed in a previous checkpoint.

- **What to do**

  - **The manufacturer may have adjusted the thickness of the sides towards the working end, so the sides become visibly unequal only towards the handle** and this should not affect how the tool feels or performs when you carve.

  - **If this is not so:** make the fix now. Grind away only what is necessary.

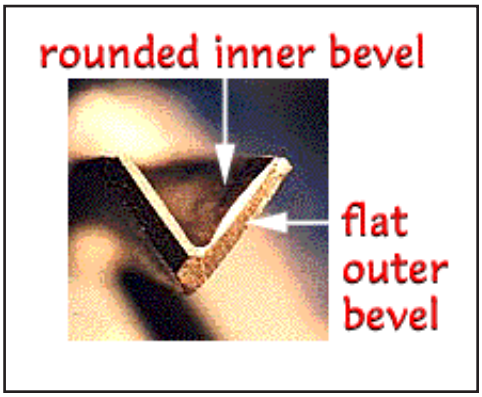
  If, through use, you do wear your v tool back to a point when uneven wall thickness causes problems - be happy that you have achieved so much carving!

  Still, you've paid for sloppy forging.

2.6.7 Flat Inner Faces

✓ **The inner faces of the V channel should be dead flat.**
Any roundness or swelling in these inner faces is called 'bellying'.

Check this by looking at your V tool end on:
In this V tool, only one wall is bellied.



Bellying is a serious fault that makes the tool more difficult, usually impossible, to sharpen correctly.

Problem?

No matter what your sharpening strategy, you continually find a big nick arising in the cutting edge to one side of the apex,
The corner on one side also 'disappears' - becomes rounded as you sharpen away metal from the bellied part on that side.

You won't succeed in sharpening the edge because, though you are sharpening the outside bevels on the flat benchstone, you really need to be reducing the excess metal on the *inside* face of the V channel.
As you reduce the thicker metal of the belly, you cannot help but remove vital metal from the thinner parts - thus you end up with the notch next to the apex and missing corner.

What to do

You can try to flatten the inner face of the V channel with a slipstone.

Use the stone like de-burring in the sharpening section, but work flat side angled edge directly on the belly portion of the inner face of the 'chisel' side.

This is not easy job. You are more likely to rub the slipstone on the thinner area near the apex and make the problem worse.

For the time and effort: get a better V tool straightaway.

2.6.8 The Keel

✓ **The keel should be a narrow uniform line.**

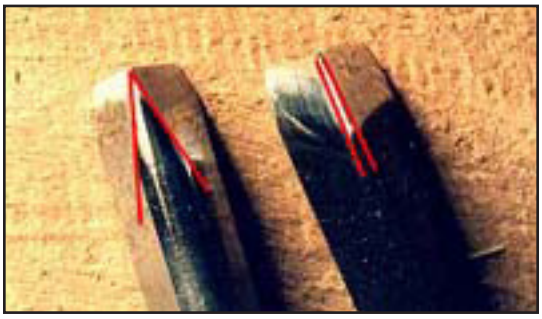
The keel is the primary bevel on which the V tool cuts.
One popular maker of V tool (not the only one) consistently shapes their keels incorrectly.
A poorly shaped keel is a common cause of a badly cutting V tool.

- **Problem?**

The keel is cone shaped and thick, not parallel and narrow.

Two V tools: two significantly different shapes of keel.

Look carefully:
The left hand keel is a fat cone - this is a poor shape.
The keel on the right is much narrower and parallel - this is ideal.



The Problem Explained:

The cutting edge of the keel - the apex - is a curve with a small radius.

This neat apex enters the wood first when you start cutting a groove with your V tool. The rest of the keel then follows.

If the keel is cone shaped, an increasing diameter of metal is trying to follow that small apex along the groove.
Then, as you deepen the cut, the cone-shaped keel begins forcing the V tool to rise up out of the groove.

The threefold upshot of a thick or conical keel is:

- You have to **press down harder to cut more deeply**.
You are fighting this tendency of a conical keel to rise up and out of the cut, the more so the deeper you want to go. Additionally, the wider metal often bruises the edges of the v trench as you cut it, softening its appearance.

- You have to **work harder to propel the tool forward**.
You are pushing, overall, a larger wedge of metal through the wood.

- You have **less control** over the cut.
You'd have more control if you were pushing less forcefully.

Ideally, the shape of keel along its length should have a radius similar to that of the apex.
Your V tool will then push through the wood with far less effort, move in and out of its cut readily, and be far more responsive and controllable.

Why, then, do some manufacturers make cone-shaped keels?

Straight up: I don't know.
I think it might have something to do with forging the V from thicker metal. The maker then grinds away the sides to give a thinner look. But this leaves excess metal around the heel junctions - which ends up as a conical keel.

- **What to do**

You need to remove this extra metal: slim down the keel from a cone to its correct streamlined shape: narrow and parallel.
You'll find, when you do this, that you create a merging bevel.
(See here for a reminder about merging bevels.)

I'm going to show you an easy form of merging bevel: not so neat as the one pictured in section 2.1, but just as effective.

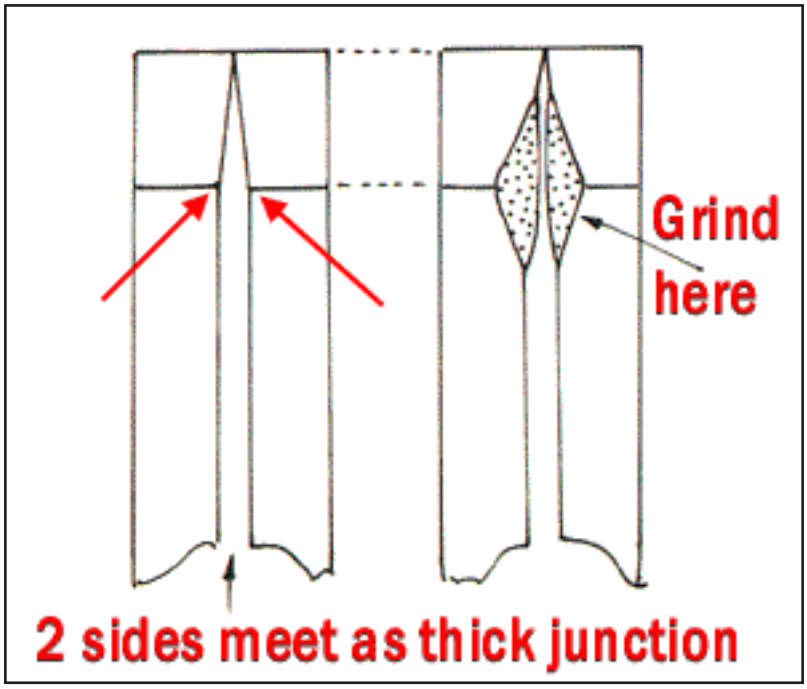
Do this only *after* you've completed the step-by-step sharpening in this manual.
Correcting a conical keel won't affect the cutting edge and you will have needed to set the cutting angle of the keel first

Method:

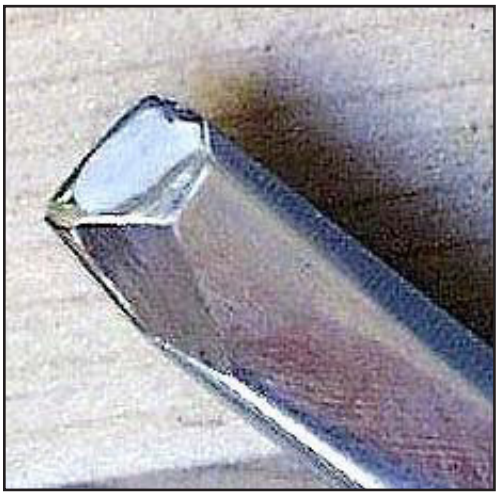
- In my experience, the best way to remove the excess metal from the keel is to use the **corner edge of the grinding wheel like a knife**. But you can use the face or side.
A coarse benchstone will work too, although a lot more slowly.

- **Grind directly on the pyramid-like point where the heels and keel point meet** - indicated by the red arrows in the picture.
- Touch the blade lightly to the wheel, then look at the scratches on the metal to see how accurate you are.
- **Be precise!**

The red arrows in the picture aim at the pyramid-like point where the heels and keel point meet - start removing metal here:



- **Gradually extend this grinder facet** into the surrounding metal, aiming for a narrow, parallel keel. Monitor your progress regularly.
Be prepared to take away a surprising amount of excess metal.
- **The new merging bevels should be flat - and should not meet in the middle (in which case, you've ground away the keel!).**



Left: *The result will look something like this - seen from the side*

Right: *The same tool seen from below.*

- The narrower the keel, the more effortlessly will your V tool push through the wood. It will readily descend in and along a deep cut readily, and be far more responsive and controllable.

Try it!

- To finish, you can now grind further to blend this new bevel with the heel and form a true merging bevel - as in the picture in section 2.1.
Slick up the newly ground surfaces with finishing strop or honing wheel.

3

Sharpening Equipment

3.1 what you'll need

Reference:

I've written extensively about sharpening equipment: benchstones, slipstones and such in my book: Woodcarving Tools, Materials & Equipment.

In 2 parts, this book fills in a large amount of essential background material for woodcarvers and I strongly recommend you get it for general reference.
I only have space in this manual for a simplified list of the equipment you need, without the detailed commentary.

Power Sharpeners:

I am choosing to sharpen using **benchstones** etc., rather than a honing/polishing machine. Such machines are quick at taking away metal; they easily result in a misshaped tool, especially in the hands of a beginner.

✓ **I advise you to learn to sharpen 'by hand' first - as we are doing here.**
Once you are confident that you know *exactly what you are aiming for*, introduce your honing machine.

Please go through the following list of sharpening equipment carefully.
You *must* have the correct means to sharpen your V tool correctly and well.

Checklist for Sharpening Equipment

Each item below links to a page with appropriate notes.

- ✓ **Bench Grinder (optional)**
- ✓ **Shaping Benchstone (Coarse/Fine Carborundum)**
- ✓ **Finishing Benchstone (Translucent Arkansas)**
- ✓ **Finishing Slipstone (Angle-edged, Translucent Arkansas)**
- ✓ **Light Machine Oil**
- ✓ **Benchstrop**
- ✓ **Angled Slipstrop**

There is a summary page of the checklist here for printing.

Please check your sharpening equipment now *before* continuing on to the next stage!

✓ **If you are a registered user of this manual and have a question about other stones or equipment that I haven't dealt with, please write to me: chris@chrispye-woodcarving.com.**

Remember:
Sharpening stones and equipment are an investment.
Good quality stones will last a lifetime and give the perfect results you want. It's false economy - and the road to frustration - to think otherwise.
You will need sharpening stones I am recommending, not just for your V tool for your other carving tools as well. The exception is the slipstone: you'll need a few more.

So:

✓ **You have a well-made V tool?**

✓ **You have shaping and finishing stones, and the strops?**

Before we move through the practical stages of sharpening, focus on what we are trying to achieve:

Selecting & Sharpening your V Tool:

3.2 bench grinders

✓ **Bench grinder:**

A grinder will save you lots of time whenever you need to remove substantial amounts of metal from a carving tool.

Types:
There are two sorts of grinders: 'dry' and 'wet' (water cooled).

- **Dry Grinder:** These rotate fast, relative to the water-cooled wheels, and throw off sparks.
  You'll need coarse and fine grinding wheels, not be less than 6inch (15cm) in diameter.

I'll be using this machine:
Coarse wheel on the right; fine on the left.

It is all too easy to overgrind (misshape) or overheat your V tool (turn the edge blue) if you are not precise and vigilant.

As an alternative you can use just the benchstones, as I'll be showing you, or a wet grinder.

✓ **Protect your eyes form the dry grinder's dust and sparks!**

- **Wet Grinder:** an alternative, running in a water bath.
  Much more expensive than dry grinders. Slow, but safe from over heating.

Tips:

✓ **Both types** - Make sure the working surface of the wheel is **flat and true**.

✓ **Both types** - Grind a **little at a time**. Remove the tool from the grinder rest. **Check your progress** and how warm the tool is. Grind a little more...

✓ **Dry** - **Protect your eyes** from sparks. **Light pressure** only. Keep the blade cool by dipping it frequently in a jar of water.

Right from the start of my step-by-step sharpening method, I'll be using my grinder: shaping the end of the V tool and 'setting' the angle of the bevels.

If you haven't got a grinder - or if you hate or simply feel unsure about them - just use the coarse benchstone wherever I indicate the grinder. (I'll be indicating when and how.)
You can achieve exactly the same results. You may even be more accurate. It just takes a lot longer.

However, do read through all the sharpening steps carefully, including those that use the grinder.

3.3 shaping benchstone

✓**Shaping Benchstone:**

Differentiate between:

- **Shaping** - the first stage in rendering an edge fit for carving. Here you create the overall form of the cutting end and set the correct bevel angle.
- **Sharpening** - the second stage. Here you finish the bevel to a keen cutting edge, ready to carve.

You need stones of differing coarseness for each stage

For the shaping stage, you need either:

- **a Coarse Carborundum benchstone, or**
- **Fine/Coarse 'Combination' benchstone.**

These stones remove metal quickly.
I recommend the 'Combination' stone, with a coarse side and a 'fine' side.
In this case, the 'fine' is not 'fine enough' for finishing to a sharp edge. But it does enable you to remove metal a little more sensitively than the coarse stone.

Top: *A Combination stone - half fine (yellow), half coarse (grey) Carborundum. The most economical to buy.*

Below: *The stone in its box.*

How the coarse benchstone fits into the sharpening scheme:
We'll start by shaping the V tool with the grinder.
I would normally follow, and refine, my work on the grinder with the coarse benchstone.
But you'll see me miss the benchstone out entirely!

Why?

Think of your grinder as a coarse benchstone in fast motion.
I'll be showing you how to grind your V tool accurately and, with a little practice, your results can be very close to those you'd achieve with the coarse benchstone - only achieved much more quickly.
And this is what I would like you to try.

I still consider the coarse benchstone essential to have. You can carefully refine, even replace, the work you do on the grinder - even replace the grinding, as we've already discussed.

Tips:

- ✓ Buy the **largest** benchstones (8inch), of the **best quality**, that you can find.
- ✓ Make sure your benchstone is **flat!**
- ✓ You may have useable surfaces near the edges even if your stones are 'dished' or hollowed in the middle from use. To work really accurately, though, you should maintain the stone as flat as possible.
I have advice in my Woodcarving Tools, Materials & Equipment for flattening stones.
- ✓ Use with plenty of light oil ('3-in-1', bicycle oil, etc.).

3.4 finishing benchstone

✓ **Finishing Benchstone:**

First, we use the coarse benchstone to shape the bevels of our V tool.
Then we turn to the fine, finishing benchstone for that keen cutting edge: one that carves cleanly without tearing the wood.

Although I've called it a 'finishing' stone, it's not the final step in sharpening: we must still polish the bevel and edge to their sharpest finish by stropping.

Of all finishing stones I've tried, in my opinion the TRANSLUCENT ARKANSAS benchstone is the best.
This is the stone I strongly recommend you use.

A translucent Arkansas benchstone in its box, grey from the oil and (below) a new one.

These stones must genuinely show translucence if they are the real things - light showing through, but not a clear image.

Cost:
Translucent Arkansas benchstones seem expensive for bits of rock.
They *do* cost a lot more than artificial stones because they are quarried from seams and 'dressed' to shape and, unfortunately, there aren't the quantities there once were.

However, this stone will last a lifetime and be one of the most important investments you make towards enjoying your woodcarving.
So, cost is relative: I've had mine nearly 30 years and, to me, it's worth its weight in gold.

Tips:

✓ You can sometimes find a genuine translucent in flea-markets, 'yard' or 'car boot' sales.

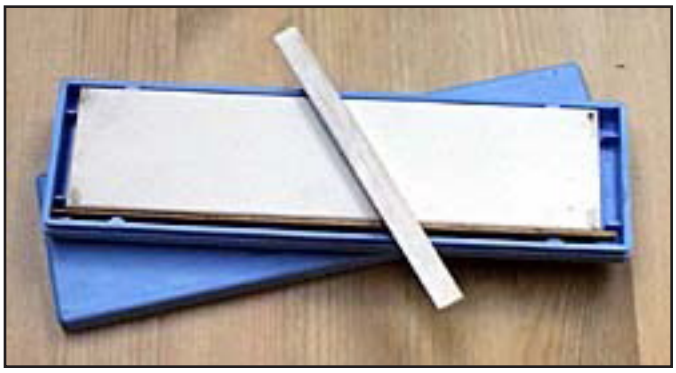
✓ Clean them up with kerosene (paraffin).

✓ Make sure your benchstone is **flat!** - I have advice in my Woodcarving Tools, Materials & Equipment for flattening stones.

✓ Use all these stones with **light oil** (3-in-1 bicycle, light machine, sewing machine)

Alternatives:

- **Fine White Arkansas** benchstone:
This is an inferior and cheaper grade of the translucent, more readily available and nothing like as good as a quality translucent stone, being more like a fine Carborundum.
Because Arkansas is a naturally occurring mineral, quality varies widely. Translucence is always a good sign but some, more opaque stones *can* be good enough.
Look for a smooth silky feel to the surface.
- **Your Own Stones**
If you have already been happily using alternatives to sharpen your carving tools then by all means carry on using them - **providing you can achieve what I am asking of you.**
For example some carvers successfully use Ceramic benchstones (1200 grit Spyderco no. 302F - use dry) and slipstones, or Japanese Waterstones (use with water).



The 1200 grit (Spyderco no. 302F) ceramic benchstone in its light-blue box, and slipstone.

These stones, and others, have different working characteristics which I cannot go into here. Also, slipstones are often neither available nor in the most useful range of size and shape for V tools.

Again I'd refer you to the fuller information in my book: Woodcarving Tools, Materials & Equipment. In summary:

I am using the translucent Arkansas as my model for the fine finishing benchstone.
If you fully understand what I am doing, but you aren't able to achieve proper results, then I advise you to change to the translucent Arkansas.

3.5 finishing slipstone

✓ **Finishing, angle-edged, Slipstone**

In woodcarving you use slipstones for 2 purposes:

- **To *shape* the inside bevels on carving tools**
  For this you need slipstones of similar cut to the coarse benchstone.
- **To *finish* a cutting edge by removing the inner 'wire edge' or 'burr'.**
  The **burr** is a fine feathering of very thin metal that is pushed over to one side of the edge as you sharpen on the other.
  You feel for this burr with your finger; it means you are coming close to a finished edge.

We will not be shaping the inside of the V tool, just cleaning off any wire edge left inside by the finishing benchstone.
So you need a fine slipstone, of the same cut as the fine finishing benchstone.

I recommend the Translucent Arkansas for your finishing slipstone, so matching your benchstone. It must have an angle edge.

The shape we need is slim and called 'angle-edged'. It must fit the angle of the V tool - in our case 60°.

This is the end view of the slipstone you need.

The angle allows you to work inside of the V tool, right down to the apex.

Tips:

✓ **Have the slipstone angle slightly smaller than that of the V tool**: you can work on one side of the V channel without fouling the other.

✓ **It mustn't be a larger angle**, however, because you won't be able to get to the apex at all and are more liable to remove metal to the side of it.

✓ You'll need a tighter (more acute) angle of slipstone for a tighter angle of V tool.

✓ If your slipstone is too big, or the wrong shape, **rub it on a coarse benchstone to reshape it**.

✓ Use plenty of **light oil**.

3.6 strops

✓ **Strops:**

Your strops will live on your carving bench.
You'll use your strops to polish up the final cutting edge of your V tool and maintain its sharpness.
You will need two strops, which you can very easily make yourself:

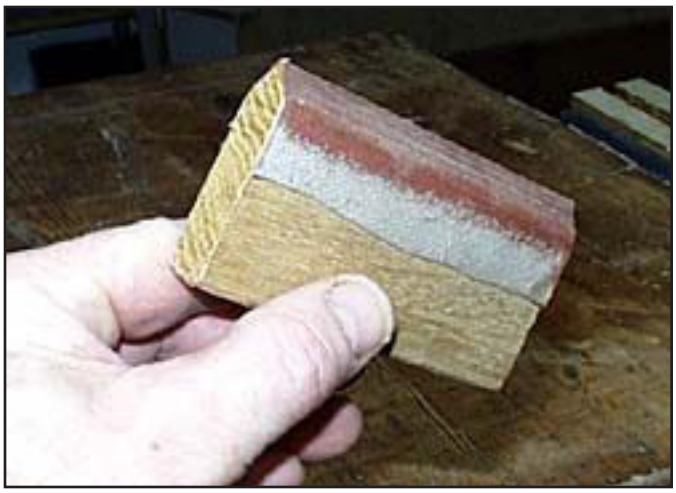
- **Benchstrop**
- **Slipstrop**

You can very easily make these yourself.

Benchstrop

Make this a **good size**: 12in x 4in (30cm x 10cm).
Glue thin leather onto **flat**, scrap wood (ply) and dress the working surface with a fine abrasive.
Add a cover to keep out dirt and wood chips.

Slipstrop



Shape one long edge of a 4inch x 2inch (10cm x 5cm) piece of wood to an angle **slightly smaller** than that of your V tool - you need to allow for the leather and to get right into the apex of the V.

Cover the working edge, and only a little of the sides, with leather.
Dress the working surface with a fine abrasive.

- **Where do I get leather?**
- **Where do I get abrasive?**
- **How do I 'dress' the leather?**

TIPS & WARNINGS!

✓ **Always *drag* the blade towards you. The blade will cut the leather if you push it forwards.**

✓ **Keep your fingers well clear of, what will now be, the very sharp cutting edge.**

Buffing/Polishing Wheels
In the step by step guide, you'll be using strops for the final stage of sharpening your V tool, but you could just as readily use a buffing wheel at this point.
This is similar looking to a grinder but with felt or hard paper wheels dressed with fine abrasive polishing for buffing bevels and edges.

Work carefully: such soft fast turning wheels abrade the metal quickly and will easily alter the shape of the cutting end.
In particular they will round the bevels or keel and so raise the cutting edge.
To polish the bevel and edge, use as hard a buffing wheel as you can - and as little as you need.

Where do I get leather?
If there are no leather workers near you, a cheap source is old leather bags from charity shops or flea markets.
Choose your leather carefully. Glue the "fuzzy" (inner) side to the wood - otherwise the loose leather fibers will rise up always round the edge.
The firm (outer) side takes the abrasive stropping paste ('dressing') and it's surface may be lacquered, or otherwise finished. Rub over the surface with fine sandpaper so the stropping paste adheres better.

Where do I get abrasive?
Most woodcarving suppliers sell proprietary strop pastes: essentially a fine abrasive in a soft medium which grips the leather.
You can make your own using 'Crocus Powder' (for polishing silver) or fine valve-grinding paste, and melted tallow (suet).
I have more information in my book: Woodcarving Tools, Materials & Equipment.

How do I 'dress' the leather?
Just rub it in - sparingly! - excess only comes off anyway.
Avoid areas of the strop that will come into contact with your fingers.

4

Sharpening

4.1 the sharpening process

You should have arrived here, at this section of the Selecting & Sharpening your V Tool:

- ✓ **Understanding the structure of your V tool, inside out.**
- ✓ **Holding a well-made example: straight, 60°**
- ✓ **Having the correct sharpening equipment, in proper condition.**

We now have the very best chance of sharpening the V tool successfully.

This is how I want you to proceed:

1: Read through the following step-based guide first to familiarise yourself with the method.

2: Then work methodically, in a relaxed way and a step at a time, through the sharpening process, paying close attention to the key points.

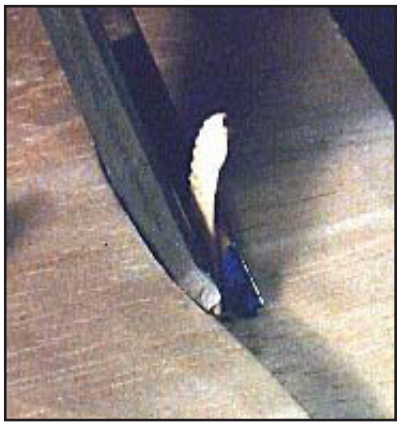
3: Each step rests on the previous one, so complete each step fully and well, and match your results against mine before carrying on to the next step!

There are 2 main stages in the sharpening process:

1: Shaping
In this stage you **create the overall form** of the cutting end and set the correct bevel angle using grinder or coarse benchstone. This is followed by:

2: Sharpening
Here you **finish the cutting edge and apex to a keen cutting edge**, ready to carve. Use fine bench and slipstones, and your strops, for this stage.

I'm going to guide you through the full sharpening process. Recognise, however, that *your* V tool is not the same as *mine*.



It is quite likely to be a different make, or in a different condition, and therefore need different work to be done.

Your V tool might need a lot of initial grinding to repair a damaged end.
Or you bought a V tool 'ready-sharpened' in the factory and may have been sharpened quite well.

Your V tool might only require a little 'tuning' or some major surgery to correct a conical keel problem.

Selecting & Sharpening your V Tool:

Once you are familiar with the whole, step by step sharpening process, you will be able to exercise judgment: selecting what your V tool needs to improve its the overall performance.

✓ **Here's a checklist to print out, a summary of the steps which you will follow.**

It always helps to know where we are going!
So, before we actually get down to sharpening your V tool, let's briefly go over what we're aiming for.

Exactly what qualities should your V tool have when we're finished?

Selecting & Sharpening your V Tool:

4.2 what we are aiming at...

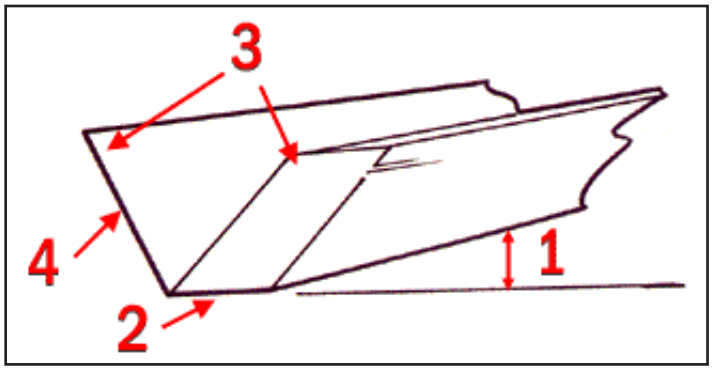
I'm going to lead you through a process, aimed at... exactly, what?

You are likely to answer: a sharp V tool of course! But what, exactly, *is* that?
What should the cutting end of the V tool look like? How should it 'feel'?

This is what we want to achieve:

Checklist: Sharpening Aims for your V tool

*** Drawing numbers refer to bullet points**



✓ **1 A cutting angle (at which the tool starts cutting the wood) of around 15-20°.**

This angle is suitable for the most common range of carving woods; it can be a little higher for harder woods and a little lower for softer ones.

It is the keel - the centre bevel if you like - which cuts the wood first, so the keel must certainly be set at this cutting angle.
The angles of side bevels should be the same.

✓ **2 Flat bevels; straight keel.**

If the bevels or keel are rounded, you effectively get a higher cutting angle, which diminishes your control over your V tool.

You also end up with a thicker bevel, so you must push harder to drive the tool through the wood.

✓ **3 An edge square across.**

In other words corners at 90° and including the apex.
Unless you have a good reason, this is generally the best shape.

Do aim to preserve the corners of your V tool. However, *some* rounding is acceptable since this won't affect the cutting action of the tool, which is focussed in the centre (the apex).

✓ **4 A keen cutting edge and apex**

The apex cuts the root or deepest part of any V groove; the side walls or 'chisels' V cut the faces of the groove.
You'll certainly want that clean, polished look, 'straight from the chisel'.

Link to a summary of this checklist here.

✓ **Print out this summary list here so that you can keep these 4 aims in mind as we proceed.**
You'll find them falling into place as we sneak up on the V tool step by step.

You need one last thing under your belt before we get down to the practical business:
You must be able to judge your progress *on your own*.
After all, I am here, and you are there!

How will you know whether you are getting it 'right' or 'wrong'?

I'm going to tell the big secret now...

4.3 checking your progress

If you start with a well-made V tool, follow my step by step instructions and complete each part correctly, then you cannot fail to have a sharp V tool: one which zips through the wood beautifully.
But it's easy to go astray. When you do, here's my advice:

Don't panic! Help is at hand!
There *is* a way you'll know what effect your sharpening is having on the blade.

In fact, there are 2 ways:

> ✓ **Look frequently at the scratch marks on the bevel**
>
> **- to check what you are doing to the bevel and keel**

The grinder and coarse (shaping) benchstones will leave *coarse* scratch lines on the metal.The smooth (finishing) benchstones will leave *finer* scratches, more a grey surface.
Scratches from different abrasives are easily distinguishable.

'Read' the scratch marks on the bevel carefully, and they'll show you precisely how you are offering the bevel to the grinder or benchstone: exactly what point of the blade is touching, and in what direction you are moving it.

> ✓ **Look frequently at the line of light on the cutting edge**
>
> **- to check how thin the cutting edge is getting**

This white line (or 'line of light') is reflected from metal at the very end of the V tool, the cutting edge to be - but only if the tool is blunt!
In a sharp tool, you will not be able to see this white line.

At the beginning, when the tool is blunt, the white line is easy to see. But as the edge gets sharper, the line gets thinner and trickier to spot.
You may have to tilt your V tool this way and that to reflect light off the edge and examine it clearly.

Your aim will be to monitor this line of light as you sharpen and keep it even at all times as you work to eliminate it completely.

✓ **Here's a page with these 2 important features for printing.**

These two guides: bevel scratches and the white line will serve you very well indeed. If they are not so clear now, they will become clear as soon as you put metal to stone.

Remember:
Constantly check these 'guides', and adjust what you are doing in the light of what you see.

OK?
Last Checklist:

- ✓ **You have your correctly made V tool at the ready?**
- ✓ **You've got your sharpening equipment sorted?**
- ✓ **You have in mind the '4 Aims'?**
- ✓ **You are clear about the '2 Ways-to-Check-What-I'm-Doing'?**
- ✓ **You have printed the checklists to keep with you?**

Right, then let's go!

4.4 step 1: square the edge

I am using my grinder for this step, but you may choose to substitute a coarse benchstone: Read through what I describe below, then go to step 2. **Follow the notes at the top of each step.**

Remember:

- **Read through each step first!**
- **Pay close attention to the key points!**
- **At each step along the way, match your results against mine before carrying on!**

Equipment:

- **Grinder**
- **Jar of cooling water**

Method:

1: Place your V tool on the grinder tool rest.

2: Point it to the wheel axis. This will be perpendicular to the grinding wheel.

3: Grind dead straight across the end of the tool, to include the apex and each side (chisel).

4: Grind a little at a time, removing the tool from the rest and checking the end. Trust your eye; there is no need to use a marking square.

5: Check your blade frequently for warmth: don't let it get more than warm to the touch before cooling it in the jar of water.

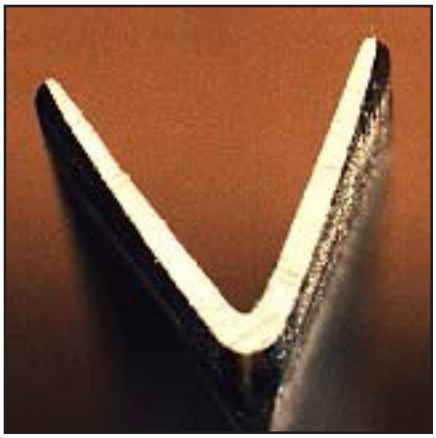
Selecting & Sharpening your V Tool:

Results:

✓ **The cutting edge will appear as a thick white line** - thicker or less depending on how much metal you removed from the end of the blade.

✓ It should be as **square across**, and include the corners.

✓ The **coarse scratch marks** from the grinder will be clearly visible on the edge - far more than in the photo.



To square the end, I removed more metal from the apex than the corners. Note the sight difference between sides - that's quite common, but not a problem as long as the inside walls of the V channel are flat.

Key points:
We've started by getting the end of the V tool square.

- This is quite a drastic thing to do: you are shortening the length, and thus the life, of the tool.
- **As a rule, only grind back the edge enough to give clean metal from corner to corner.**
- Use the grinder, as here, to square off a broken or badly notched edge, or re-shape a winged or nosed V tool.
- If your V tool needs only a very small tidying of the edge, go to the next step and use the fine benchstone

If your V tool wasn't blunt before, it certainly looks blunt now!
As you gaze down aghast at the thick white line at the end of your V tool, you have to remember that *somewhere* in there is your finished cutting edge.
And fear not, we'll find it!

Now the very edge of your V tool square, we'll refine its scratched surface.

4.5 step 2: polish the edge

If you came to here from step 1 **not using a grinder:** Use the method described below to square off the end of your V tool, *substituting a coarse benchstone*. Then continue with this step to polish the end.

Look at the squared-off end of your V tool and its scratches.
Hidden within that thick 'white line' of metal is your final cutting edge.

As you sharpen your V tool, the metal and the white line gradually thin.
You will find it easier to see and monitor the white line of the cutting edge if you remove these scratches by polishing the end.

This is what we are going to do now.

Equipment:

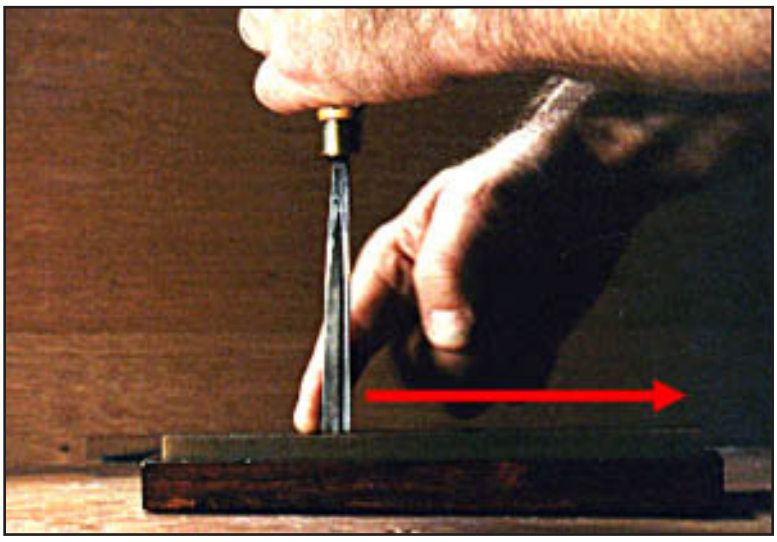
- **Finishing Benchstone** (Translucent Arkansas or equivalent)
- **Light oil**

Method:

1: Hold the V vertical to the stone, as in the photograph.

2: Light pressure

3: Pull the blade across the benchstone with your finger. Keep the handle **perpendicular** to its surface.



4: Take several passes across the stone, flattening, cleaning and refining the metal at the very end of the tool.
Work precisely to keep the edge as square as possible.

5: Check the end after each pass. You will see how and where the newly polished surface has replaced the coarse marks left by the grinder.

6: Polish the whole edge right across, from corner to corner.

Results:

Did the metal screech on the stone like your teacher's fingernail on the blackboard?
I hate that!

✓ **The end should be polished all across, corner to corner.**

✓ **Be careful to ensure that you keep the end square**.

The edge of my V tool after polishing: shiny and square.

Key Points:

- Try to keep the edge as square as possible by not leaning more on unpolished areas.
- **Keep the index finger low down as you pull.**

So now we have a square ended, polished cutting edge.

Let's get some shape into it.

4.6 step 3: set the keel angle

If you have arrived here from step 2 **not using a grinder:** Still study the information below - particularly the result you want to achieve in this stage. Use a coarse benchstone and the method in step 6 to set the keel angle. Then go onto step 4

Setting the keel angle is one of the most crucial steps in sharpening your V tool. Please follow carefully as I explain what we are doing:

You are now going to 'set' or shape the 'cutting angle' of your V tool - this is normally around 15-20°.

✓ **In other words: when you pick up your V tool to start a groove, you should have an angle of 15-20° between the tool itself and the wood.**

Because you begin a cut with your V tool by resting the keel on the wood, it is the angle at the keel that we need to set - the keel angle.
The cutting angle of a V tool is the keel angle. This is what we set - at 15-20°.

The trick to finding cutting angles for carving tools:

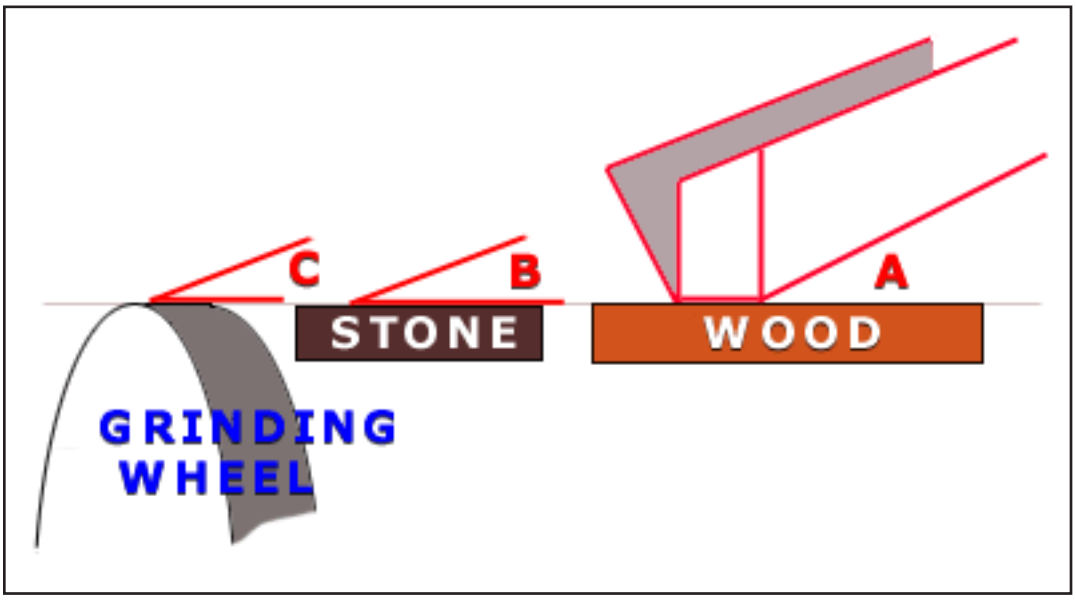
- Pretend your flat sharpening surface (a benchstone, say) is the wood you want to carve.
- Present your carving tool to this sharpening surface with the handle at the cutting angle you're trying to achieve.
- And the bevel must take up the cutting angle and sharpen accordingly.

✓ **So, to get the cutting (keel) angle of your V tool at 15-20° present it to your flat benchstone at 15-20°.**

But, hang on, Chris! I've got a grinder, not a benchstone!
True, but you will need this information for benchstones in later steps. And:

Selecting & Sharpening your V Tool:

✓ **In the same way you transferred the cutting angle on the wood to the flat benchstone, you can transfer it again to the grinding wheel.**



A: *The cutting (keel) angle at which you carve your **wood**.*

B: *The same angle on the flat **benchstones**.*

C: *The same angle **across** the **grinding wheel**.*

A = B = C

Because the wheel is round, the only place you can find a flat surface is across it, from side to side.

✓ **Present the keel of the V tool across the wheel at an angle of 15-20° and you will set your cutting angle correctly.**

If you are not sure what this 15-20° angle looks like, make a cardboard cut-out to guide you. It doesn't have to be exact, but it must lie somewhere between the 2 numbers.

And in practice:

Equipment:

- **Grinder**
- **Jar of cooling water**

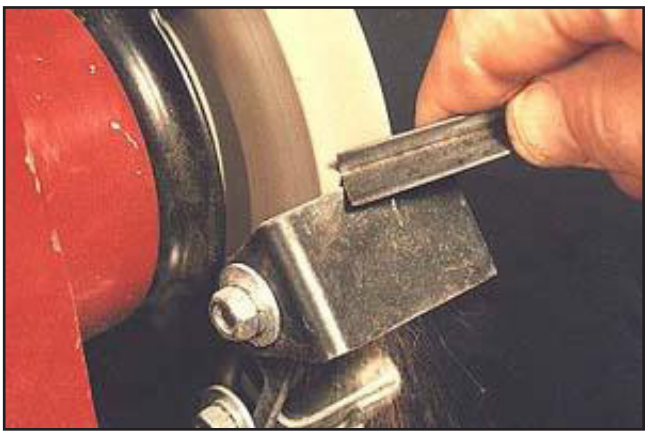
Method:

(**Remember:** Read through all the steps first for the 'road map'.
Then go back to the beginning and work through them carefully step by step.)

1: Take a trial run before turning on the machine.

2: Present the tool at **right angles to the wheel**.

3: **Use the tool rest** - don't hover in the air. You may prefer to have a finger between the tool and the rest.



4: Repeat: Imagine a line across the surface of the wheel is the wood you will eventually cut.
Present the keel at 15-20° to this line.

5: Remove a **little** metal and **have a look at the new scratches on the keel**.

6: Grind off a little more metal and re-inspect.

7: Check for warmth - dip the tool in the water before it becomes hot.

8: Gradually set the keel angle, keeping the keel dead straight.

9: Look at the end: you will see the apex beginning to look cut off - see the picture below. This effect becomes more pronounced as you take metal from the keel,

Important!

10: Continue until the thickness of the white line at the apex is reduced to about 1/32inch (1mm) - about the width of a narrow pencil line - then **STOP!**

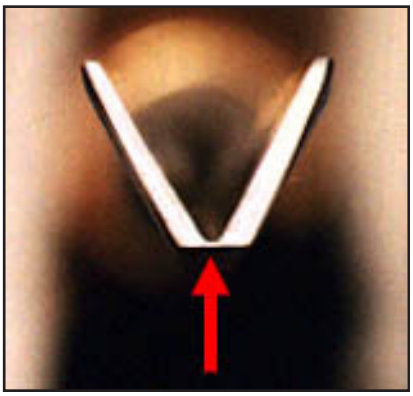
Results:

✓ The keel should be **straight**

✓ The keel should have **a cutting angle 15-20°**

✓ The keel should be **equally placed between the two sides.**

✓ **The end will look cut off** where the metal at the apex has been ground away.



Setting the keel angle creates a squared 'cut off' look to the end to my V tool.
***Note** that little bit left at the apex, indicated by the arrow.*

Key Points:

- **You *must* leave a little thickness - 1/32inch (1mm) - of metal at the apex** for later and final sharpening on the benchstones.

If you grind it away, you'll end up in the V channel - in which case you will then have to go back, re-square and re-polish the end, and then return to this step and regrinding the keel.

We have now set the principal cutting angle at the keel, but there are two others: those of the sidewalls (or 'chisels').

These we set next.

4.7 step 4: set the bevel angles

If you are not been using a grinder: Still study this section, setting your side bevel angles with a coarse benchstone, using the method described in step 5. Continue from there to step 6.

Remember: your V tool is essentially two 'chisels' joined on one side to form an angle. Thus you have 2 chisel bevels - a bevel on each side.
We will now set the cutting angle of each chisel in turn. This angle will be the same as that of the keel: 15-20°.

✓ **Concentrate on one 'chisel' at a time and ignore the other entirely as you work.**

Equipment:

- **Grinder** - use the coarse or fine wheel according to the amount of metal you need to remove.
- **Jar of cooling water**

Method:
If you use the grinder in the normal way - as in the first picture below - the curved edge of the grinding wheel will tend to hollow the 'chisel' bevels.
However, hollowed bevels are undesirable because they weaken the cutting edge. You want your bevels flat.
So: although you *start* by using the circumference of the wheel to remove most of the excess metal in the bevel, you must *finish* the bevel off on the flat side.
Thus, the process involves alternating between the edge and the flat side of the wheel.

WARNING!
Bench grinders are not designed to take sideways pressure.
You must only use the very lightest touch to flatten the metal.
An alternative is the flat coarse benchstone, as in the next step.

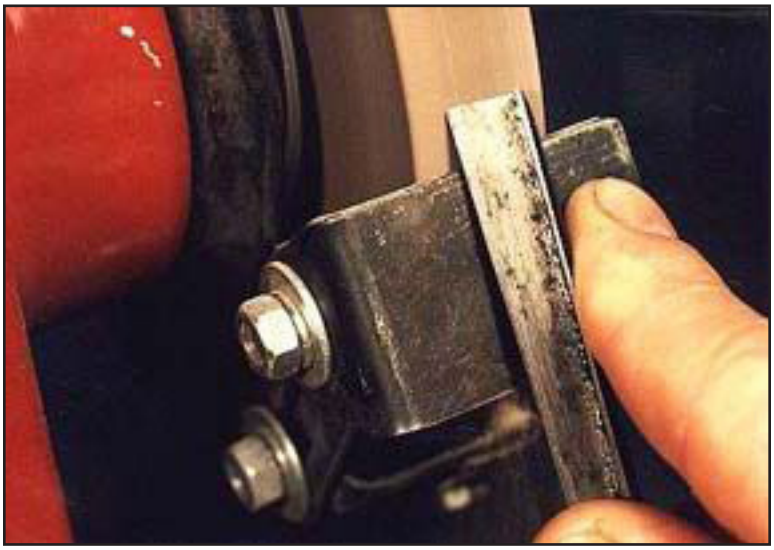
Selecting & Sharpening your V Tool:

Start with the edge of the wheel:

1: Have a 'dry run' first, without the wheel turning.
Begin with either 'chisel'.
Really pretend it is a chisel for the moment and disregard the V shape.

2: Present the 'chisel' in line with the wheel at the cutting angle (15-20°).

Use the tool rest - don't hover in the air. You may prefer to have a finger between the tool and rest.



I offer one side bevel to the wheel in the 'normal' manner. The circumference of the wheel must hollow the metal a little.

4: When you are ready, start setting the bevel angle (15-20°) on the edge of the wheel.
Look at the scratches on the bevel and white line to guide you.

After you have removed a little metal, turn to the side of the wheel:

5: Gently and precisely flatten the bevel with a light touch.

Keep the correct cutting angle (15-20°) by imagining the flat side of the wheel is the wood you want to carve, just as you did before.

I imagine the flat side of the wheel is the wood I want to carve. I then offer the blade of the 'chisel' at the cutting angle.

6: Go back and forth between the round edge of the wheel and its side, looking repeatedly at the bevel scratches and white line for guidance.

7: Carry on until the white line of the 'chisel' edge is the same thickness as that at which you left the apex: 1/32 (1mm).
Then **stop!**

8: Repeat on the opposite side.

Selecting & Sharpening your V Tool:

Results:

✓ **The bevel angles of the sides should be the same as the keel**, and all at the cutting angle of 15-20°.

✓ **Both bevels should be flat**.

✓ The cutting edges should appear as **thin, even white lines**, rendered the **same thickness as at the apex** 1/32 (1mm) - about the width of a narrow pencil line.

The edges are thin, equal and the same thickness as the apex. In this magnified view, the 'squareness' of the apex is still visible as small corners - I haven't touched this part.

✓ **The apex will still look 'cut off'**: it will get its own special treatment later on.

Key Points:

- Whether the cutting edges at the end of the sides are parallel to the heels will depend on the side walls being of equal and even thickness.
  As long as you have flat bevels at the correct angles you can ignore any small discrepancy.

- The **keel will frequently be longer than the bevels** because the metal is likely to be thicker here.
  This is fine as long as the keel is straight and at the correct cutting angle.

Quick recap:
The steps up to now have all been about *shaping* the working end your V tool.
This initial shaping stage is completed when the cutting edge is square, and the keel and side bevels set to their correct cutting angles.

Correct shaping underpins the next sharpening stages. So:

Before you move on:
it is vital that you have shaped the working end of your V tool correctly.

Your V tool should be looking a bit better now!
It's *shaped*, but of course it isn't *sharp*.

It is this to which we now turn.

4.8 step 5: sharpen the sides

We now turn from the grinder to the benchstones.
Whether you need the coarse benchstone or not depends on how much metal you left from the previous stage.

As a guide:
You can go straight to the finishing Arkansas benchstone if the edge is already about 1/32inch (1mm) - about the width of a narrow pencil line - from your accurate grinding.
If not, work on the coarse benchstone first.

Equipment:

- **Coarse benchstone (Carborundum)**
- **Finishing benchstone (Arkansas or equivalent ceramic)**
- **Angled Slipstone**
- **Light oil**
- **A piece of medium-hard, carving wood** (Lime, Basswood, Mahogany, Walnut etc.)
  Choose something decent: no knots etc. - the type of wood you'd normally carve.

Method:
Keep thinking of each side as a separate chisel.
Do not touch the keel at this stage.

If you are starting with the coarse benchstone:

1: Place the benchstone end on.
Position one 'chisel' of the V tool at the cutting angle of 15-20° to its surface.

You can hold the V tool anyway you like.
I suggest using 2 hands: one on the handle, the other with fingers pressing down on the blade firmly.

2: Rub the bevel back and forth to reduce the white line evenly.
Keep the bevel flat and the angle consistent by not raising or lowering the handle!

3: Use the **scratch marks** on the bevel to check the angle at which you are holding the your V tool.
Look frequently at the **white line** to monitor the thickness of the cutting edge.

4: Thin the white line to that about the width of a narrow pencil - 1/32inch (1mm) - then **STOP!**

5: Do exactly the same on the **other side** (chisel) of your V tool.

Selecting & Sharpening your V Tool:

Once you have got the cutting edges thin as narrow pencil lines - 1/32inch (1mm), you can switch from the coarse to the finishing one.

Finishing benchstone:

6: Position the benchstone end on and place one chisel of the V tool at the cutting angle of 15-20° to its surface.

7: Return to the first side (chisel) of your V tool.

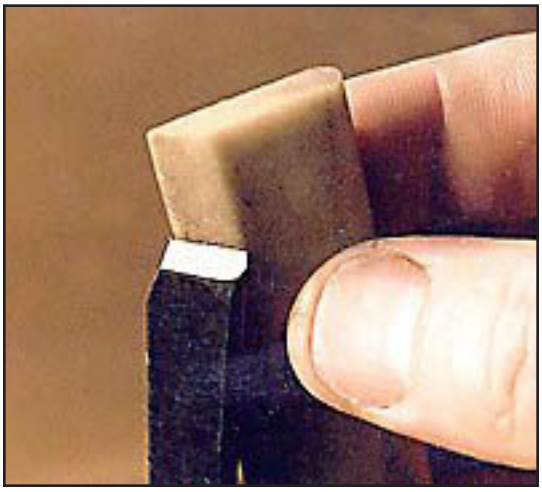
8: Start rubbing the bevel backwards and forwards: the white line will begin to thin.

✓ **If find you're thinning the white line more at any one point:** turn the tool in a way that lets you exert a little more pressure on the thicker part of the edge - keeping away from the thinner part.
Return the wire line to even thinness before continuing.
Your aim is to thin the white line evenly at all times.

When the white line becomes something like a hair's width:
Take up your angle-edged slipstone.

10: Rub the flat of the angle edge slipstone against the inner face of the 'chisel'.
Whether you can feel it or not, the slipstone will remove any burr that might have formed thus far.
We are not sharpening the apex at this stage, or forming an inner bevel, just removing any burr (wire edge) that has appeared on the inside of the V tool.

Do not rub the corner of the slipstone into the apex at this stage - keep away! - you're simply working on the flat inner face of the 'chisel'.



11: Continue working on the benchstone and occasionally switching to the slipstone until the white line attenuates and disappears.
There will still be some white metal at the apex, which we haven't touched.

12: When you think the white line has gone, **push the edge - straight in and out - of your piece of medium hard carving wood.**
You may see the white line reappear as the wood toughens up the cutting edges and further helps remove any burr. You can also use the side of the V like a chisel to take a few cuts from a corner of the wood.

13: Repeat for the opposite 'chisel'.

Finally:

14: When your white lines have disappeared from the side cutting edges: lower the handle a little and rub a few times on the finishing benchstone *exactly on each heel*.

This rounds over, softens, the heel so it slips more slickly through the wood, burnishing the cut without fear of the heel's scratching.

Selecting & Sharpening your V Tool:

Results:

✓ **At this point, you shouldn't be able to see the cutting edges of the chisels.**
You will, however, see a point of light at the unsharpened apex, which probably projects like a little hook.

✓ **Flat bevel? Edges square?**

✓ **Corners?** If you have rounded these over a little, don't worry: they are not very useful and it's not worth re-squaring the edge to regain them.

It's hard to photograph this late stage!
The white line of sides is nearly gone;
a point of light remains at the untouched apex.

Key Points

- **Go as carefully and slowly as you want.** This is not a race!
- **I repeat again: the white line and bevel scratches are reliable guides to what exactly you are doing and how well you're progressing.**
  The real 'secret' to sharpening is to 'read' what you see as you move through the process and make adjustments to the way you present blade to benchstone.

Your V tool is looking pretty sharp now except for that spot of light at the apex.

And to sharpen the apex, we return to the beginning, and the keel.

4.9 step 6: sharpening the apex

The V channel inside and the keel outside are slightly rounded.
A sharp keel tends to make the V tool 'jig' itself into a straight line groove. The rounded shape guides it easily around corners.

To keep this rounded quality, we sharpen the keel like a curved woodcarving gouge, with the benchstone side on.

Equipment:

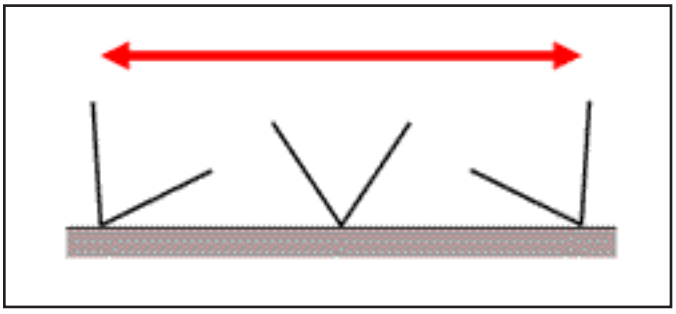
- **Finishing benchstone (Arkansas or equivalent ceramic)**
- **Angled Slipstone**
- **Light oil**
- **A piece of medium-density, carving wood** (Lime, Basswood, Mahogany, Walnut etc.) Choose something decent: no knots etc; the type of wood you'd normally carve.

Method:

Start with the finishing benchstone

1: Have the benchstone side on to you. Use plenty of oil. As you work, tuck your elbows in and keep the cutting angle consistent.

2: Carefully **lay the keel flat on the surface,** at your cutting angle (15-20°).



3: Move the tool a few inches from side to side as you rub the keel on the stone.

End view of the V tool as the keel, flat on the benchstone, is rubbed from side to side.

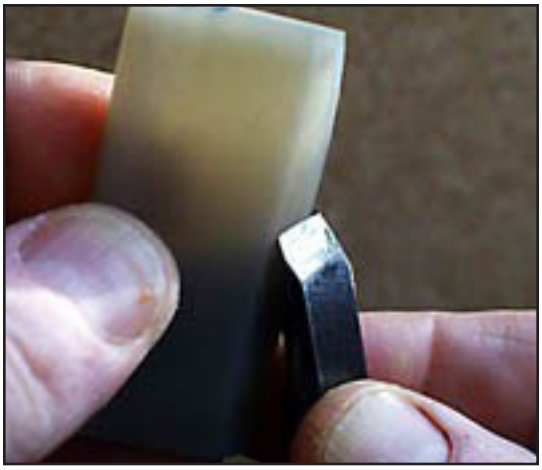
Do not work just on the cutting edge at the apex.
Work along the entire length of the keel, keeping it flat to the stone.

3: Very carefully hone the keel until the spot of light at the apex (with the hook) disappears.

Take up your angle edged slipstone.

4: Use the slipstone to clean the burr or wire edge from the inside of the angle.

Take care *to rub here exactly in the middle. You will form a notch if you work the slip to one side of the apex.*



5: Take a few cuts with your V tool into the piece of carving wood, as before.
This helps remove any wire edge.

6: Re-inspect

7: Continue sharpening on the benchstone, removing the burr with the slipstone, and cutting groves into the waste wood.

Eventually all the white line of reflected light will be gone: the tool should be cutting through the wood quite well.

You now need to assess your cutting edge.
Check the Results and Key Points sections below, and then go to the next step.
Before you do however:

Finally:

8: Soften the keel point itself, with a few accurate passes on the Arkansas stone.
(Reminder here: keel point).

Results:

✓ There should be **no white line**.

✓ **The line of the keel should be straight**.
This means uniform scratches from the finishing stone - none left from the grinder.

✓ **Edge square across**
As you sharpen the apex and remove the inside burr, you should find that any little 'hook' that may have formed at the apex is being pulled back and the edge is returning to being straight across.

Key Points

- **Overworking the keel, either with slip or benchstone, will dip the apex back.** If this happens, you will need to rub the 'chisel' bevel as before to bring the apex forward.
- **You have at your hands now the stones to adjust the shape if you need to.**

For example:
If your V tool ends up with the edge dipping at the apex, or wavy, or in other ways unsuccessfully sharpened, don't be afraid to give it one or two perpendicular strokes on the finishing benchstone (step 2).
This straightens and cleans the edge back to reveal the white light from which you can start again with the finishing stones.

You'll work much more quickly a second or third time round as you hone your own sharpening skills.

The V tool should now be pretty much sharpened.
However the real test lies ahead... in the cutting...

Let's find out how well you have sharpened your V tool!

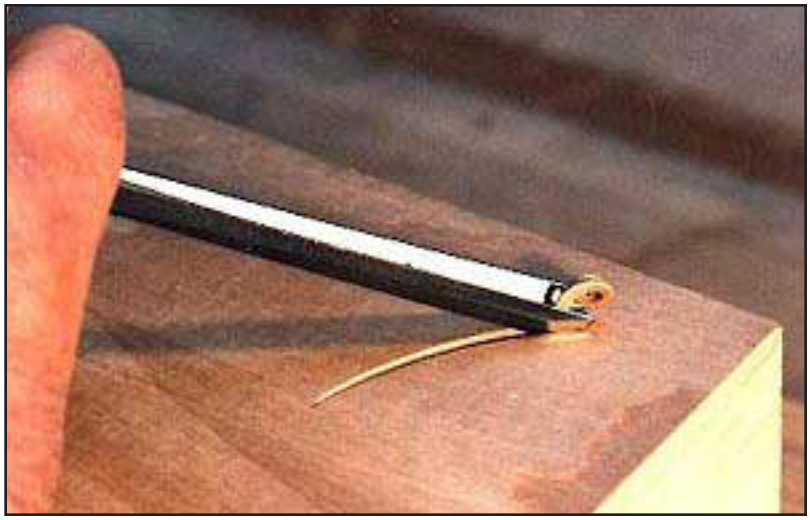
4.10 step 7: testing the edge

At the end of the day, there is only one way to tell how successful you've been at sharpening your V tool.
You must carve with it.
You might notice that I'm asking you to do this *before* stropping the tool.
Although stropping does indeed 'lick up' the cutting, it is best to see stropping as a refinement to an already sharp edge.

I want you to achieve the results set out below before moving on.

Equipment:

- A piece of **medium-hard, carving wood.**
(Lime, Basswood, Mahogany, Walnut etc.)
Choose something decent: no knots etc; the type of wood you'd normally carve.



Method:

- Test your V tool by **running lots of cuts on your piece of scrap wood**.
- Cut **across the grain** in particular, and run **grooves close together**.
- **Inspect** the V grooves carefully.

Why *across* the grain?
A sharp edge will sever wood fibres as it crosses them; a blunt edge will push them over and tear them.
You'll see the effect of a dull blade more readily by working across the grain rather than along it.

Why run the grooves *close together*?
The ridges between the grooves you cut across the grain will have short wood fibres. This makes them weak.
The pressure from a blunt cutting edge will easily crumble these ridges, whereas a sharp edge will leave them standing.

Results:

- ✓ **A polished groove with no 'snail tracks' or scratch marks?**
- ✓ **A clean root (bottom) to the V cut?**
- ✓ **A cutting angle of 15-20°?**
- ✓ **Flat bevels?**
- ✓ **Square cutting edge with corners?**

If not - keep reading...

Selecting & Sharpening your V Tool:

Key Points:

- You need **properly sharp cutting apex and edges** to leave a clean, polished cut. Dullness here will tear wood fibres and produce a ragged finish.
- You need the **flat bevels and low cutting angle** to ease the V tool through the wood with minimum effort and give you good tool control.
- You need the **narrow keel** for the V tool to sink and rise easily as you push it through the wood.

Something Wrong?

✓ **Cutting angle?**
(See my note on the cutting angle.)

An incorrect cutting angle is usually caused at the benchstone, rather than at the grinder:
The commonest cause is raising or lowering the handle as you rubbed the bevels or keel on the benchstone.

- **Too high?**

Although a cutting angle of more than 20° gives a tough edge, you have to push this unnecessarily thick wedge of metal through the wood. At this higher angle, you have less control of your running cuts .

What to do:
You need to reset the angle - step 3.
You can probably do this without touching the sharp edge at the apex - working just on the keel itself.
Keep the sharpening angle carefully fixed as you rub the bevel or keel on the benchstone.

- **Too low?**

A cutting angle of less than 15° gives a thin weak edge that will easily crumble when you start to push it into the wood.

What to do:
You will have to start from the beginning - step 1.
Grind back the cutting edge until you have sufficient metal to correctly re-set the keel angle.

✓ **Scratchy cut?**
This is quite common: It often happens that the 'reality' of wood causes microscopic bits of the cutting edge to crumble.
If your steel is good and the cutting angle correct, the cutting edge is in effect 'toughening up'.

What to do:
Inspect the groove carefully. Look for corresponding white spots or lines on the cutting edge and apex of the V tool.
You now know where to sharpen further.
Touch up the edge with the slipstone on the spot of light that corresponds with a scratch mark.

If you find larger amounts of white line, return to any of the previous finishing of bevels (step 5), or apex (step 6)

Often, you'll only need just a few strokes, 'just so' or 'just a touch' with the slip or benchstone to remove the offending white spot or line.

Take care not to oversharpen and dip back the apex.
The last bit of the V tool can be a little frustrating and sometimes you'll think you are making matters worse!
Keep persevering.

The pattern is:

- **Go back and forth between the finishing stones (bench and slips), and your test wood.**
- **When the cutting edge is invisible and your V grooves clean.... Stop!**

And when you've got it cutting well, we can make it cut even better!

4.11 step 8: stropping

Stropping is the final stage in sharpening: polishing the bevels, keel and edge. Here you render them slick and at their sharpest.
You should arrive at this point with a V tool that is already sharp and cutting well.
Stropping abrasive is very fine; it only removes the tiniest amount of metal, compared to benchstones. Use your strop to give that extra touch of keenness to an already sharp edge. Choose your stones to sharpen a dull one.

If you do use a power strop or polishing wheel at this point, the harder the material from which it's made, the better.
Do the very minimum to avoid overstropping and rounding the bevels and keel.

Read through the method carefully first.

Equipment:

- **Benchstrop**
- **Angled V slipstrop**
- **Clean rag or paper (kitchen) towel**

Method:

Start with the *outside* of the V tool, and the *benchstrop*

1: Deal with each 'chisel' in turn.

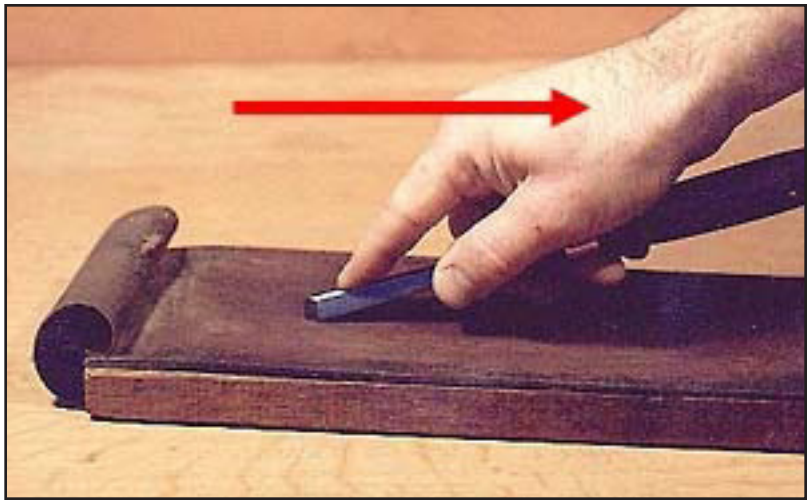
2: Have the benchstrop end on to you.
To allow for the softness of the material, always place the blade on the strop **at the lowest cutting angle.** (15°)
Position and keep the hand supporting the strop well clear of the path of the V tool.

3: Exert pressure with your index finger a little back from the cutting edge.

4: Start the stroke at the **far end** of the strop.

5: Pull the V tool towards you, pressing down and keeping the angle consistent.

*I'm **dragging** the cutting edge to prevent it cutting the leather. It is easy to dig into the leather as you return for the next stroke.*



Selecting & Sharpening your V Tool:

✓ **Watch out for that hand supporting the benchstrop when you come back for the next stroke!**

6: Lift the tool and replace it for a second stroke without cutting into the leather

7: Repeat like this at least 20 times.

8: Repeat on the opposite side.

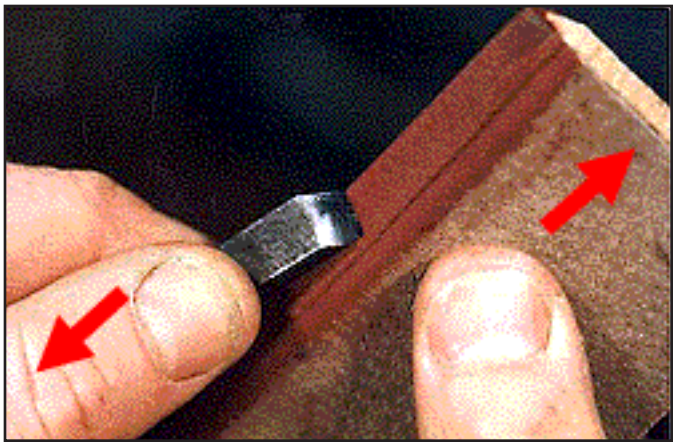
9: Repeat, stropping directly on the keel - keep the angle low!

Turn now to the *inside* of the V tool and the *angled V slipstrop*

10: Place the angle of the slipstrop right inside the V, up to the keel.
Keep the angle of the slipstrop against the blade low.
You'll have to work one side at a time if the slipstrop angle is slightly narrower than that of the V tool.

11: Push the strop forwards so that the cutting edge drags across the leather.

Always work this way and you'll avoid cutting the leather.



✓ ***Watch out for that thumb holding the slipstrop when you come back for the next stroke!***

12: Repeat 20 times, covering all the inside surfaces and apex.

13: Carefully wipe any strop abrasive from the blade with the cloth or paper towel.

14: Test in your carving wood. Re-stop if necessary.

Results:

✓ **The tool should now sing along with a happy 'zzzipp', as it cuts the wood.**
Don't be afraid to strop more if your 'zzzipp' is only spelled with one 'z'.
If the wood grain is tearing, then you need the finishing stones rather than the strop.

Key Points:

- **Keep the stropping angle down**. Do not raise the tool handle and strop just on the cutting edge - this action will raise the cutting angle.
- **Keep the bevel flat to the leather** through the whole stroke.

✓ **Here's a checklist to print out: a summary of the steps you've just followed.**

Congratulations!
If you started with a well-made V tool, followed each step carefully and satisfied the objectives of each step then you will now have in your hand a correctly sharpened, keen-edged woodcarving tool.

I hope you've been able to see the logic of my approach, and in the steps we took to sharpen your V tool. And I hope all have gone happily!

However:
You may not have got everything as perfect as you'd like!

- **Don't forget:** you are learning a skill here and you *will*, already, have learned a great deal.

- **If you have followed and copied me carefully, you must be close to a good result.**
Go back and follow each stage carefully again to see how you can fix things that are not quite right.

And remember:

✓ **Carving tools are a means to an end.**
Don't go to extremes of perfection: you can carve perfectly well if you have a *little* hook, or a *slightly* wavy edge.
This is no excuse for not bothering to achieve a goal or not taking pride in sharpening your tools correctly. Do the best you can. Continuously try to improve every time you have the opportunity to sharpen your V tool.

Now that you have a correctly sharpened V tool, you'll need to know how look after it and maintain that lovely edge.

Go on to read about keeping your V tool sharp.

You are likely to use other V tool shapes some day.
To complete the sharpening picture, I need to make a few notes about these.

4.12 other shapes of V tool

The V tool we have sharpened - straight, 60°, and with the cutting edge square across is in my opinion the most useful size and shape for general carving.

In section 2.3 I discussed alternative V angles, widths and longitudinal shapes.
I will now make some brief notes on these, and variations to the 'square end rule'.

If you have followed the steps and successfully sharpened this V tool, you'll recognise all other shapes and sizes as being essentially the same, and I predict you'll have no problems.

- **Different V angles**
- **Different sizes**
- **Different longitudinal shapes**
- **Different ends to 'square': 'winged' & 'nosed'**

Different angles of V tool:

- **45° V tool:** There is a lot more metal at the acute junction of the 45° V tool.
The upshot is that, relative to the side bevel, the keel of the 45° V tool will appear much longer than that of the 60°
Just ignore this different appearance and shape all the cutting angles correctly and sharpen as for the 60°.
If you cannot find one to buy, you can **reshape an angle edged slipstone** with a grinder or benchstone to fit into the tight apex of the 45°

- **90° V tool:** The 90° angle means that the V channel is more accessible; you can use the same angle-edged slipstone you needed for the 60° V tool.

Large and Small V tools:

The step by step sharpening process is the same for sharpening these, but the work is writ larger or smaller.

- **Large V tools:** can take quite a while to sharpen correctly.
Since the larger tool will be used for heavier work, probably with a mallet, make the bevels of such tools tougher by **increasing the cutting angle**, say to 20-25°.

- **Small V tools:** are oversharpened very quickly and easily - because so little metal must be removed.
So take extra care - use a **magnifying glass** to examine the end more clearly.

Bent V tools:

- **The main problem beginners have is how to hold these, sometimes awkwardly, shaped tools, and present them accurately to the benchstone or grinder.**
Let me just say that it *can* be done!

Otherwise, follow the same step by step process for straight V tools.

- **Make an exception to the 'flat keel and bevel' rule:**
Instead of straight, curve the keel of your bent V tool a little; it will slip down and scoop into hollows more easily.

To curve the keel: sharpen the whole edge first. *Then* go back to the finishing benchstone and reshape the keel on the finishing stone. Make the curve by taking metal away towards the keel point.
Leave the side bevels flat.

'Winged' and 'Nosed' V tools:

Unless you have a particular application, 'square across the end' is the most useful shape for your V tools.
There are, however, two other options, so-called:

- **'Winged' and**
- **'Nosed' V tools.**

Neither of these configurations is 'wrong': they have their advantages and disadvantages.
Please don't bother with them just for the sake of completing your set!

However, you may well need tools like this at some time, so let's have a quick look:

Winged V tools - where the corners protrude beyond the apex.

Note the long corners.
You'll give a slicing cut to the wood fibres if you curve the cutting edges rather than leave them straight,

- **When would you use it?**

  Winged V tools run grooves very cleanly, almost without regard to changing grain direction: the surface of the wood is cut by the winged corners first, then the rest of the edge follows with a slicing action.

  In Finland, all the master carvers sharpen their V tools this way. They use them solely for running the long, shallow decorative grooves of the traditional Finnish acanthus leaf carving - and this is where a winged shape excels.

- **If they are *that* good, why not always use a winged shape?**

  The downside of the winged end is that the protruding corners can 'get in the way'.
  In general carving, you quite often need to end your V groove against 'walls' of wood - the edge of a leaf for example - and the protruding corners will foul and mark them.

  A squared-off end will cut perfectly good grooves and serve well across a broader range of work.

  So, again, for comprehensive use: decorative lines *and* your general carving, my advice is to keep the end of your V tool square across.
  But - and here I revert to my hippy roots - if open-ended grooving is your thing, consider winging a V tool.

Selecting & Sharpening your V Tool:

Sharpening:

Apply the same principles and step by step procedure as for the square ended V tools but:

To get the winged shape you must initially set (grind) the edge to an angle (45°).

Maintain it as you sharpen on the benchstones by swinging the handle to the side.

The handle is swung to one side. Put more pressure towards the apex, and away from the corners, and you will curve the cutting edges.

Nosed V tool - the apex protrudes beyond the corners

To make the apex of a nosed tool protrude, you remove - sharpen back - the corners.

A tool for a particular carving job, it is the very nose, the apex, which is important. You won't need more than a few widths to cover what you'll need to achieve.

When would you use it?

Not very often!
Nosed V tools cut V grooves badly: the protruding apex levers the chip of wood up before it is cut, leaving a rough surface.
Also like winged tool, you cannot run up to a wall of wood so neatly.

Sometimes, though, you need to run a V groove right into a recess, perhaps when you're carving hair.
It's then you might find the corners get in the way.
Run your V grooves with your regular tools and turn to the nosed V tools to finish off into the recess.

Alternatively, you can finish the ends of V grooves with a skew chisel.

Selecting & Sharpening your V Tool:

Sharpening:

Apply the same principles and step by step procedure as for the square ended V tools but:

To get the nosed shape you must grind and sharpen the edge at an angle (45°): opposite to that for shaping the winged V tool.

Don't worry if the edges aren't quite straight or the corners rounded, it is only the apex which matters.

You can make the cutting angle lower than normal (10-15°) since the aim is to get into a recess.

Whatever the shape and size of your V tool, you must look after it.

5

Next Steps

Selecting & Sharpening your V Tool:

5.1 maintaining sharpness

Now you've got your V tool sharp and cutting well, you'll want to keep it so.

As you carve, it is inevitable that you will need to touch up wear and tear to the apex and cutting edges with bench or slipstone now and then. You will notice wear when the groove in the wood appears scratched or torn.
Because I've broken down the sharpening process into steps, you can track back and work specifically on any particular step: flattening the bevels, restoring an edge, or refining a keel, for example.

Two habits will help maintain your V tool in good working order:

- ✓ **Stropping the bevel and cutting edge frequently.**
  This means keeping your strops to hand, and **using them!**

- ✓ **Keeping an eye on the cutting angle.**
  There's a special note on this here.

Questions & Concerns:

- How often do I need to strop?
- How can I tell the tool needs stropping?
- Can I use my power strop?
- Watch out for this!

1. How often do I need to strop?

This is always difficult to answer because it depends on the work that the cutting edge is called on to do: the way it's being used; the hardness of the wood, and so on.
When I say 'frequently', I mean *stropping on a regular basis*, whether you think the tool needs it or not.

- **As a guide:** if you are using the V tool continuously in a medium-density wood, you might strop every 10 minutes
- **Strop more frequently with newly sharpened tools** - which tend to 'settle in' as the edge fully consolidates and firms up.
- **Don't wait until your tool needs stropping - pre-empt! Stop to strop!**
- **Remember: Stropping is not the way to resurrect a blunt V tool.** If the tool is scratching or tearing and you can see white lines or dots on the edge, you need the finishing stones, not your strop.

2. How can I tell the tool needs stropping?

Mostly, it's a 'feel' for the way the tool is cutting, a sense for dullness in the edge that you will develop with experience,
My best advice is:

- ✓ **If you even *think* the tool might be a little dull - stop to strop!**

3. Can I use my power strop?

I have no objection whatsoever to using power belts and wheels - for honing and polishing - **provided they achieve the results you want**.
All too often though, a user won't fully understand the most efficient state for carving tools and will get a result by default rather than by design.

I've taken care to show a painstaking, methodical way of sharpening your V tool correctly.
It is the best way to learn.
When you understand the fundamentals well enough to begin experimenting, then, by all means, explore find quicker ways of getting things done.

Watch out for this!
After a lot of stropping, the slight softness of the leather will start rounding over the bevels, both keel and sides.

✓ You will notice a corresponding rising in the cutting angle, but probably not until you return to using the V tool after an absence.

An excessively high cutting angle - at the keel and the bevels - is one of the main causes of a poorly cutting V tool.
The edge will be sharp but the tool will not feel as if it is cutting well. It will seem harder to push through the wood... the handle may seem higher when you're cutting... you'll feel less in control.
Improper power stropping rapidly causes this to happen.

What to do:

- Go back to your finishing benchstone and **flatten the bevels**: the keel and sides.
- You will normally **not need to re-hone the cutting edge itself** - after all, you've been stropping that regularly - unless it is notched or scratching.
- **Remember: keep the stropping angle low to avoid rounding the bevel and raising the cutting angle.**

You are keeping your V tool sharp. But are you still looking after it?

5.2 looking after your V tool

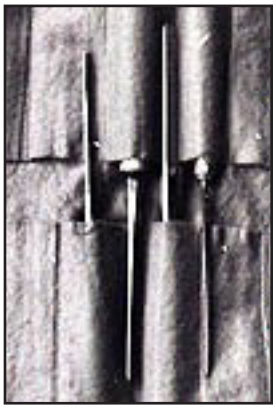
I've been amazed how often the V tool gets abused or neglected, despite all that time spent maintaining it.

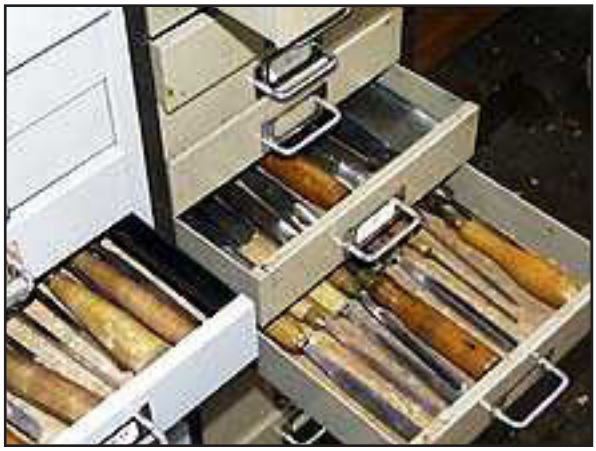
Take care of your V tool!
This has to do with love and respect for the tools of your trade as much as saving yourself time and effort.

✓ **Don't let the delicate cutting edge clash into another tool or metal clamp.**
Line your carving tools up at the back of the bench when you're not using them.

✓ **Keep your V tool in a dry atmosphere.**
Bring it inside the house.
If you are not using the V tool for a while, wipe it over with an oily rag.

✓ **Store your tools in a tool roll or drawer.**
Put your V tool away in the condition you'll want it when you next take it out...





You've got the V tool at last, bright-eyed, keen-edged and ready to go. Now what?

5.3 where to go from here

You've got your V tool sharp and well shaped.
Great! And now?

Well, next you have to get carving with it!

At the end of the day, you will want to be able to handle and use your well-tuned V tool like a professional carver.
And this will probably mean being shown by a professional carver...

1-on-1 Personal Tuition with Chris Pye

I offer 1-on-1 tuition in all aspects of woodcarving in my studio in England, and it's easy to arrange and, as an intensive learning experience, great value for money!

Besides refreshing or demonstrating what you have learned here, I can show you the best way to hold and cut with the V tool - what you can make it do for you. V tool exercises and decorative patterns will make you fully competent and familiar with this tool.

Besides this, the carving world is your oyster: I just hold the air-line while you dive!

Find out more here.

Whether I meet you and help you with your carving or not, I hope you have found this manual useful.
Please don't forget your undertaking to make a donation to a charity on my behalf!

And keep in touch with the by subscribing to the free Chris Pye: Woodcarving website newsletter.

Joy and success in your carving!

Chris Pye

6

Checklists for Printing

Checklist 1:

How well-made is *your* V tool?

1. **Steel:** Good, well-tempered?
2. **Finish:** Polished or 'black outside' - clean?
3. **Blade:** fitted in line with the handle?
4. **Sides walls ('chisels'):** of equal thickness?
5. **Side walls:** relatively thin?
6. **Inside V groove:** aligned along the axis of the tool?
7. **Inner faces of the V:** dead flat; no bellying?
8. **Keel:** a narrow uniform line?

Checklist 2:

Equipment to sharpen your V tool:

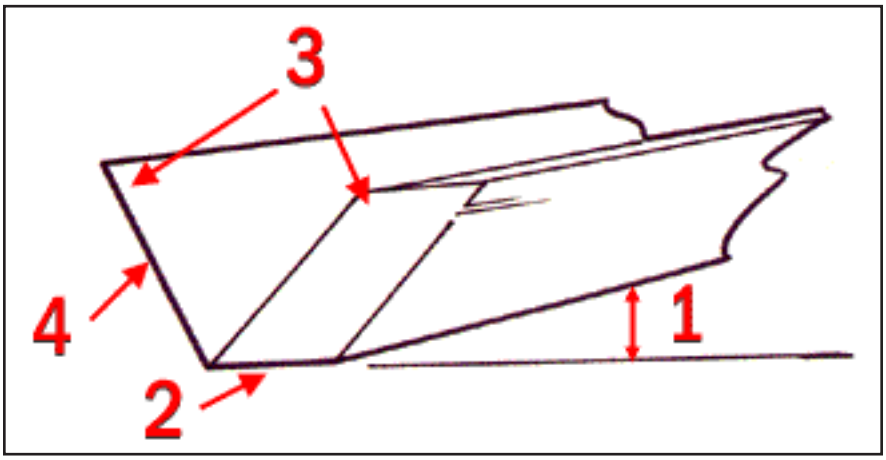
1. **Bench Grinder (optional).**
2. **Coarse/Fine Carborundum BENCHSTONE (8” x 2”) - flat?**
3. **Translucent Arkansas BENCHSTONE (8” x 2”) - flat?**
4. **Angle-edged, translucent Arkansas SLIPSTONE - well-shaped?**
5. **Light machine oil (3-in-1, sewing machines, bicycles etc).**
6. **Benchstrop (12” x 4”).**
7. **Angled slipstrop**

Checklist 3:

This is how you want your V tool to end up:

Numbers relate to the figure below.

1. **A cutting angle of around 15-20°**
2. **Flat bevels; straight keel.**
3. **Edge square across.**
4. **Keen cutting edge and apex.**



Checklist 4:

Monitoring your Progress:

Look frequently for your two guides to success:

1. **The white line of light**
   reflected from the cutting edge

2. **Bevel scratches**
   from different quality and direction of abrasives.

Checklist 5:

Sharpening Stages

Steps as in instructions.

1. **Step 1 - Square the edge**
   (Grinder or Coarse Benchstone)

2. **Step 2 - Polish the edge**
   (Fine Translucent Arkansas Benchstone or equivalent)

3. **Step 3 - Set the keel angle**
   (Grinder or Coarse Benchstone)

4. **Step 4 - Set the bevel angles**
   (Grinder or Coarse Benchstone)

5. **Step 5 - Sharpen the sides**
   (Fine Translucent Arkansas Benchstone and Angle-edged Slipstone, or equivalent)

6. **Step 6 - Sharpen the apex**
   (Fine Translucent Arkansas Benchstone and Angle-edged Slipstone, or equivalent)

7. **Step 7 - Test the edge**
   (Medium-density Carving Wood

8. **Step 8 - Strop inside and out**
   (Bench and Slipstrops)

7

Learning to Carve with Chris Pye

7.1 One-2-One Personal Tuition with Chris Pye

Do you want to improve your woodcarving skills?

✓ **Would you like to boost your confidence as a woodcarver?**

✓ **How about taking on some new projects, or carving those things of which you feel deeply capable?**

You can. And it's very easy to arrange!

Here's the opportunity: Benefit from my extensive woodcarving and teaching experience through personal, one-on-one woodcarving tuition with me, Chris Pye, in my fully-equipped carving studio.

> ***"Thanks Chris, for the great day I spent with you in your workshop. You immediately put me at ease and quickly discovered the weaknesses (and strengths) in my lettercarving. It made a great difference to watch and be shown how to carve what I regarded as a difficult part of a letter. You have great patience, and with your inspiration and encouragement, I can see myself spending a lot of my retirement time with a chisel in my hand!"***
>
> **Gordon McConnell** (Gordon_McConnell@hotmail.com)

- You get my *full* attention, full time - unlike a shared class.
- Together, we work out exactly what you need in order to move your woodcarving to the next level, and *focus* on it.
- We pick a date to suit *you*.
- Bring your own tools and materials or use mine in the comfortable, fully-equipped workshop.
- I'm there to *support your woodcarving*: you get to know me and we keep in touch afterwards.
- You also get to enjoy great home-made soups for lunch...

Accomodation is readily available locally and many students find that mixing an enjoyable holiday or a working trip with the opportunity of increasing their woodcarving skills.
A great and inspiring combination!

We can look at anything from sharpening to lettering; from professional ways of holding and carving with your tools to ornamental carving, or carving in the round - mixing and matching a schedule.
It doesn't matter whether you have no previous knowledge of carving, need to undo bad carving habits, or want to take some aspect of your work deeper - I'm here to help **you**.

> ***"Thank you so much for your great efforts over the last few days. I thoroughly enjoyed my course, your teaching, the environment (and the soup!) and feel that I have learned so much - and not just about letter carving."***
>
> **Andy Wilkins** (andy2mwilkins@tiscali.co.uk)

Selecting & Sharpening your V Tool:

The Welsh Marches and Herefordshire where I live is a jewel: a rich and satisfying area to visit and holiday. For example, Hay-on-Wye (the 'Town of Books') is 5 miles away; there is fine walking in the Black Mountains and Brecon Beacons, and canoeing down the River Wye; there are castles, churches historic towns in easy reach; and much, much more.

What about calling in for a day, 3 days, a week of intense and satisfying woodcarving tuition while vacationing in the area?

> ***"I wanted to thank you for a great day last week, and for sharing so much of your expertise with me. It was truly one of the most enjoyable days I've had for a long time."***
>
> **Anne Shehab** **(anneshehab@yahoo.com)**

- **How It Works...**
- **What We Can Do**
- **Cost: 1-on-1 Personal Tuition Fees**
- **Class Size & Times**
- **Location**

How It Works...

- **First email me** to say hello and tell me what you have in mind, when you are visiting this part of England - whatever.

- If you prefer, I'll send you my phone number and we'll arrange to talk:
I see myself, and my expertise in woodcarving, at *your* service, so it is important for me to get a good idea of how I can help you.
We'll discuss where we start; what your aims and goals are; what you feel you need to work on in your carving, and so on - building up a picture and customizing a personal 1-on-1 'course'.

- We will leave a little flexibility in the schedule because, in practice, there will always be new things arising. And we'll make notes and discuss things to follow up when you get home.

- I'll help with advice on local B&B's, or travel arrangements for example.

- When we are both happy with what we'll do and when we'll do it, you pay a 50% deposit in advance to book.

A happy carving student tuning his sharpening skills:

- You come along and have a great time learning and carving.
Through demonstration and supervision I help you move a little closer to your goal of being a competent and successful carver.

I *may* be working on my own carving while you are engaged in practising something - it's not a good idea for me to be peering down your neck *all* the time - and it's of additional benefit to watch a professional at work anyway. Whatever, I will be monitoring and directing you do at all times - I am known to be very friendly and patient!
The time goes quickly and enjoyably; the work is often challenging and the learning intense. So, value for money: this is your fast track...

✓ **Very importantly: your time with me does not end when you leave. I am interested in your progress and you are free, encouraged, to *keep in contact for further advice and support when you get home*.**

So:

✓ Email me now if you'd like to benefit from this great opportunity: 1-to-1 woodcarving tuition.

"Thank you for an excellent coaching session last week. I really enjoyed the week and your company and advice. I'm now fired up to do more and will send you some photos of my future efforts once they are complete."
Ian Callaghan (ian@callag.demon.nl)

What We Can Do:

I hope it's clear that what you work on in fast track, 1-to-1 personal tuition depends on what *you* want to achieve, or need, to be a more successful woodcarver, and I will help plan your time.

In the main, I seem to run two types of workshop:

1: Introductory:

- Never touched a carving tool?
- You'd like to carve, don't really know where to start but want to start well?
- You've taught yourself but are unhappy about what you've been doing; actually, you are not sure what you *are* doing?

Selecting & Sharpening your V Tool:

✓ **We'll start at the beginning with exercises and small projects.**

✓ **You'll gain a good foundation in tool handling, techniques and practices: fundamental woodcarving skills and understanding to serve you well through a lifetime's carving.**

2: Specific:

- You've some experience at carving but would like to learn, say, lettering?
- How about improving your relief carving?
- Sharpening still bothering you?
- Carving in the round makes you nervous?
- Perhaps you have a specific project: a carved element for furniture, a fan or moulding for example?
- Or a mix?

✓ **We concentrate on a particular subject.**

✓ **I'll provide whatever you need: tools, materials, equipment and experienced teaching and carving knowledge. You provide the enthusiasm.**

By discussing your needs first of all, we can be sure you make the very best use of your time.

I always prefer you to bring as much of your own kit as possible so that we can check over the essential skills such as sharpening or handling tools, and you can take the results with you!

✓ Email me any time to have a preliminary chat about what you might like to do.

"Just to let you know that our time together last July is still remembered vividly and that I am getting in a bit of carving practice."

Chris Knight (cjk@members.v21.co.uk)

Cost: 1-on-1 Personal Tuition Fees

Besides the undivided attention, expertise and patience of a well-known and respected master woodcarver, tuition fees include light lunch, refreshments, materials, and use of all tools & equipment.

- **1 day:** **£160**
- **3 days:** **£435** **(less 10%)**
- **5 days:** **£640** **(less 20%)**

Selecting & Sharpening your V Tool:

Terms:

✓ You can pay by cheque or direct wire transfer, in £GB (pounds sterling). If you wish to pay in another currency, please contact me.

✓ You must send me a deposit of 50% in advance to book the dates we arrange.

This **deposit** is a bona fide gesture, confirming our arrangements:

- It may happen that problems develop with your plans, or the weather. In this case and there is enough warning, we can usually re-schedule another date, or I will return your deposit.
- If you fully cancel at the last minute, then I will deduct 10% from your deposit for loss of time etc.
- If for some unforeseeable reason - which hasn't happened yet!- I need to cancel your course myself, I will return your deposit in full but, I'm afraid, I cannot enter into any question of compensation.

✓ Email me any time to about any aspect of payment, terms or costs.

"Thanks again for your interest and teaching. I came away invigorated and excited - someone who is no longer relying solely on the map, but has crested a hill and can see the landscape ahead."

Fred Yocum **(theyocum@dejazzd.com)**

Class Size & Times:

Class Size:

In addition to personal 1-to-1 carving time with me, you are welcome to come and carve with a friend!

The maximum number in a class is 2 persons and the total cost is reduced by 25%.

Times:

- Our working day starts about 9:00am.
- Clean up is about 4:30pm
- Finish at 5:00pm.
- We break and share a light lunch around 12:30 - 1:30pm.

✓ **Remember: my time is *yours*!**

If you have individual needs, want to adjust times to suit - anything at all about personal 1-on-1 woodcarving tuition - feel free to email me.

Looking forward to meeting you!

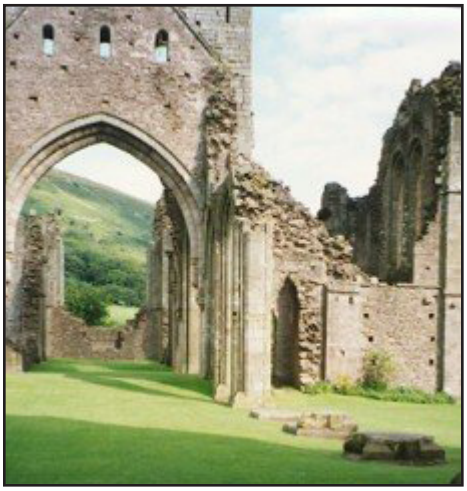
Chris Pye

Location

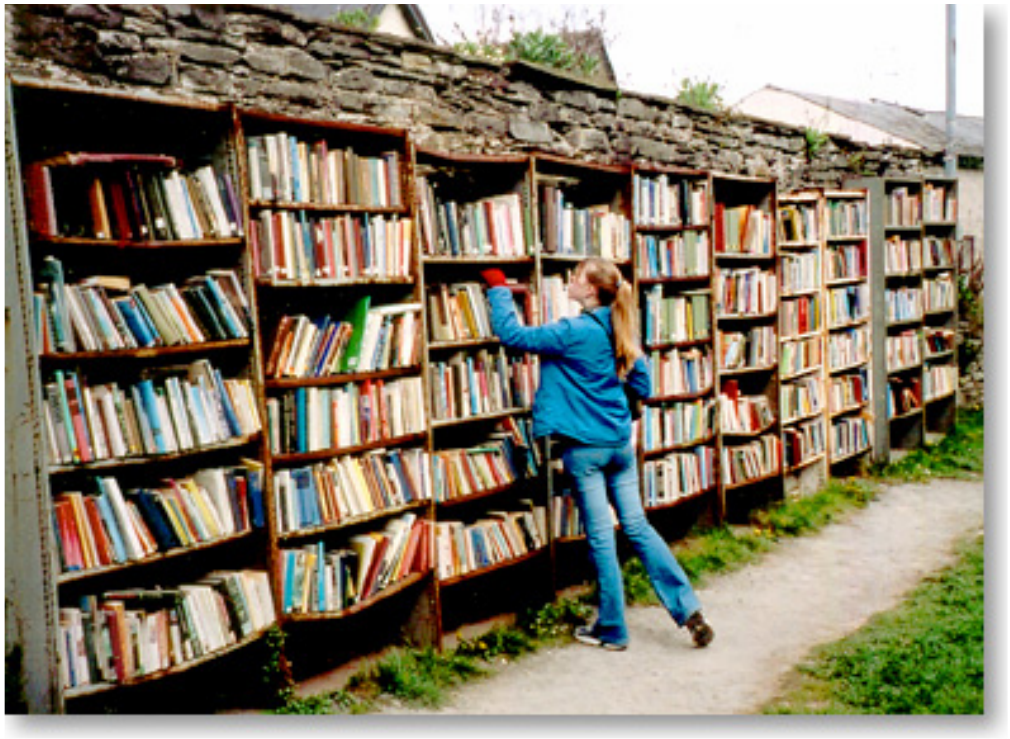
Just a little taste of the lovely area in which I live and which students, their friends and family enjoy while having 1-on-1 personal tuition...

Hay Bluff and the Black Mountains:

Llanthony Priory:



Hay-on-Wye, the Town of Books':



"Thank you so much for your time and effort in teaching me last week - I so enjoyed it! In fact I was so keyed up the following day that I had to buy myself a small notebook and jot down all the ideas I was having for small designs which would incorporate the things I had to practise!"

Sue Holman (harrowbeer@btinternet.com)