

Hamilton Woodturners Club

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TUTOR'S COMMENT

In this week's TT I have included a set of charts that explain drill speeds for the various types of drill bits we have in our workshop.

All members are asked to keep these mini-charts handy for reference whenever drilling. Lots of drill bit care is needed.

Sadly most of our Forstner style bits are now quite blunt having been repeatedly overheated during use. Many of the bits display a bluing colour - a sure sign of overheating.

"Bluish colours indicate that these bits have lost their temper and the steel is now soft and unlikely to hold a sharp edge even if they were expertly 'sharpened'. In the past it has proved to be grossly uneconomical to have a dealer sharpen the bits in our range of Forstner sets.

Until funding can be allocated to replacing the sets it may be wise to think about turning projects where Forstner bit drilling will not be required.



TONY enjoys cooking so his newly-turned mortar and pestle will come in handy for crushing those herbs and spices. This little corker is made from rata wood gathered during a recent trip to the South Island.



BILL mastered the knack of triangulating three tiny mirrors to assemble his natty mini kaleidoscopes. Getting these tricky bits to fit the barrel is an achievement in itself. Goodonya Bill.

SATURDAY MORNING free session for all club members. The workshop is open tomorrow morning 7th May 9.00am to 12 noon Duty officer **STEPHEN HAWLEY**

Drilling wood with the correct speed.

The most common question about using drill bits in our club workshop is: "What speed do I use?" This is a topic that ALL of our club members MUST know about to be able to make the right decisions.

Remembering the rules seems to be the most difficult aspect for most of our teams.

So, in this week's TT I have added relevant information in chart form for each of the different kinds of drill bits. **(Compulsory reading !!!)**

Well, what is the best speed?

The best speed for drilling wood, yes **wood**, (*there are different rules for drilling metal*) depends on the diameter of the bit to be used and the material that is to be drilled. i.e. Softwood or hardwood.

General rule: The bigger the bit the slower the speed. Twist bits up to 10mm diameter could be drilled into softwoods spinning at 3000 rpm. BUT... if the same bit is used on a hardwood then you should drill much slower, say 1500 rpm.

So what's all the fuss about?

Drilling at speeds that are too fast will surely lead to an overheated drill bit, maybe burnt wood as well, and sadly, **the ruination of the bit.**

However, in an opposite way if you drill too slowly the wood will tend to rip-tear out the wood fibres and your project will look anything but good.

A drill bit has to work much harder to make a hole in **hardwood of greater density** so it follows that a slower speed must be used.

If you see burn marks then you are very likely drilling too fast. If you see chewed/torn wood then increase your drill speed.

On the following page you will find a set of charts outlining correct speeds for the various types of drill bits we have in our workshop.

A useful idea would be for all members to print a copy of these charts and have them in toolboxes for quick reference,

Save a copy of these charts for future reference

Speed chart for Twist Bits

| Twist Drill Bit Size | RPM for Softwoods | RPM for Hardwoods |
|----------------------|-------------------|-------------------|
| 1mm – 5mm | 3000 | 3000 |
| 6mm - 10mm | 3000 | 1500 |
| 11mm - 15mm | 1500 | 750 |
| Greater than 15mm | 750 | 500 |

Speed chart for Brad Point Bits

| Brad Point Bit Size | RPM for Softwoods | RPM for Hardwoods |
|---------------------|-------------------|-------------------|
| 3mm | 1800 | 1200 |
| 6mm | 1800 | 1000 |
| 10mm | 1800 | 750 |
| 13mm | 1800 | 750 |
| 15mm | 1800 | 500 |
| 19mm | 1400 | 250 |
| 22mm | 1200 | 250 |

Speed chart for Spade Bits

| Spade Bit Size | RPM for Softwoods | RPM for Hardwoods |
|----------------|-------------------|-------------------|
| 6mm – 13mm | 2000 | 1500 |
| 15mm – 25mm" | 1750 | 1500 |
| 28mm – 38 | 1500 | 1000 |

Speed chart for Forstner Bits

| Forstner Bit Size | RPM for Softwoods | RPM for Hardwoods |
|-------------------|-------------------|-------------------|
| 1mm – 10mm | 2400 | 700 |
| 13mm-15mm | 2400 | 500 |
| 19mm-24mm | 1500 | 500 |
| 28mm – 1 1/4" | 1000 | 250 |
| 35mm – 50mm | 500 | 250 |

It's another DEMONSTRATION DAY.



Thursday session club member, COLIN MCKENZIE, showed us how to turn one of his favourite turning projects **a wave bowl**. The project required a block of hardwood **140mm X 140mm X 90mm** and a suitable spigot to hold it on the lathe. COLIN presented the ideas step-by-step until completion. Full explanations helped to clarify the process. PHOTOS above show a full muster of Tuesday-ites plus a couple of others all taking in the demo with enthusiasm; a shot of our COLIN; then a picture of the completed wave bowl. Heaps many thanks to you COLIN.



GRAEME and his humming tops. The trick is to cut the air intake hole correctly.

The one on the left produces the sound of a B Flat major.



A wig stand: An excellent turning project carefully made by **DAVID COWLEY**.

A variety of wood used to turn this special project.



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