

# Ask The Oracle

## Questions - to be answered in the next issue

Some textbooks, when dealing with crystallography, use a system comprising of four numbers with a bar over the third number enclosed within curly brackets to describe and identify crystal faces. For example,  $\{1\ 0\ \bar{1}\ 0\}$  and  $\{14\ 14\ \bar{2}\ 8\ 3\}$ . I have also come across an alpha notation for example  $\{h\ 0\ \bar{h}\}$  and symmetry classes described, for example, as  $3\ 2\ /m$ .

None of the text books that I have seen that use this system take the trouble to explain it.

Can anyone in the guild enlighten me on how this system works?



**Q: What are the different types and makes of Faceting Machine and what are the main differences between them, as I am looking to buy my first machine and would like to make an informed choice based on the pros and cons of each type.**

### Answer by Steve Smith

There are two main types of faceting machine, 'Mast type' & 'Floating head' type.

In the Mast type the faceting head is fixed to an upright metal rod .i.e. Ultra Tec, Facette, Graves etc.

The Floating head type has a separate, unattached, hand held faceting head which sits on a platform i.e. Raytech Shaw & Imahashi.



Mast type



Floating head type

There is no quick or easy answer to which type to buy or whether to buy a new or second-hand machine let alone deciding on the manufacturer.

The normal guiding factor is availability. If a machine becomes available within your budget have a look at it. Decide if it has been well looked after and if possible try it yourself first.

Unfortunately the same principals apply as when buying a used car – buyer beware.

Most manufacturers will try to steer you towards buying a new machine rather than an older one, even one they manufactured, this is because they do not know how it has been treated and they would recommend a manufacturer's overhaul as standard which is nice but could be expensive.

No machine, not even a new one, is perfect and some makes will suit you more than others, it's all down to personal preference, so try some out at shows or ask your Mentor if you could try theirs and discuss any issues they have had.

I have owned ten different manufacturers machines over the years and worked on or used a number of others as well.

Most problems with used machines can be worked around but can be daunting to the new cutter and will limit the type of cutting (competition) without help and a lot of trial and error.

Left or right handed machines work the same and do not require left or right handed people to use them – I have both in my workshop and have no problem working or teaching on either one.

Choosing commercial or homemade – Commercial machines are nice but most have faults that can cause problems. There is a machine on the market that cuts international standard competition stones, but I would not thank you if you gave me one because of countless manufacturing issues that people I know have had and then had great difficulty resolving. Homemade, this normally means hand crafted by an engineer who cares about the finished product rather than the profit line.

Personally I have a 4 year old Fac-Ette (which is my machine of choice, but could use 2" more in length so that I don't catch the index wheel nut when I use it at 90 Degrees. This is to suit the way I use the machine), a 30+ year old Seattle Fac-Ette that still cuts like a dream and a Ptarmigan Mk IV, which is a homemade machine, probably 20 years old, hand crafted by an engineer (my mentor and friend Jim Gemmell) to his own personal

requirements and it has cut a number of 95+ competition stones in International Competition.

I would advise anyone to look at a prospective machine on its merits and then decide. As I have said availability is a big factor with not many used machines being sold.

Remember, all machines will require practice to obtain their best results.

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