

For this issue, I have been asked for “notes on the lathe”. This is fine, but to save someone being disappointed after spending big money on a lathe, I feel the subject should be given a bit more depth, and I have split it into two parts – buying it and using it.

Which Lathe?

Anyway, it is no good pontificating about the beast until you have one, so what do you choose? How big, how sophisticated, and so on? Well, from my own experience of owing a tiny “*Adept*”, through the Myford *ML7* to the Ward 2a “*Capstan*”, I would offer the following thoughts as a guide:

- a big lathe will turn very fine small work – whistles, and so on;
- a tiny lathe will have difficulty coping with even medium-size items;
- a good quality finish depends on the momentum and rigidity of the chuck, so the greater “mass” you have rotating, the better the finish will be.

So, our choice must be based on a ratio of cost/size/space/weight/sophistication.

Sophistication

We do not *need* a lathe that will cut your toenails, make tea and repair your trousers, whilst doing the otherwise *basic turning* work. I have only found the need for milling or screw-cutting half a dozen times in the 30-odd years in which I have had my Myford *ML7*. The “*Super 7*”, with all the fascinating accessories is just not necessary for 4mm modelling. Any “*Basic*” lathe in the ML 7–10 size/weight range is fine, and it does not have to be new. A second-hand machine that has not been abused will last out a lifetime, with minor adjustments. I have only taken a .001in shim out of the headstock bearings in 30 years, and have only

just had to stone the tailstock end of the bed because with the saddle adjusted snugly at the chuck end, it was getting tight at the tail.

Cost, size, space, weight are all based on personal circumstances, but from the point of view of weight, my Myford has been set up on a wooden chest of drawers in a Sergeant's Mess bunk, and used free-standing with no problems at all.

Having bought your lathe

Still in cost-saving mode, however – avoid buying sets of lathe tools. Obtain a good powered grindstone, position it *well* away from the lathe to avoid contamination by dust, and fashion tools to your own requirements from tool stock bar. You will probably find you only need four or five basic shapes. The rest of your fancy shaping can be done with hand-held scrapers made from worn-out files, ground “to taste”. One point – *always* have a file handle on your file when hand-turning, as it could be driven back into your palm if you catch it in the chuck or it digs in the metal. So be warned! The drawing above shows the basic lathe layout and names the parts. Figure 1 gives a selection of tools and Figure 2 shows basic tool setting.

Listening

Generally speaking, the larger the item being turned, the slower the machine must run, as it is the speed of the tool tip which is the governing factor. Listen to your lathe, as it “speaks” to you all the time:

- if the tool squeaks, it is usually set too low.
- if the motor labours and slows down, the tool could be blunt or with no undercut.
- if it chatters, the speed is usually too fast, the tool clearance angle is insufficient, there is too much overhang by the tool or by the job, or the bearings or tool slides are loose.

And so on.

Figure 2 - Basic tool setting

and scraper shapes (opposite)



Three
Corner



Round



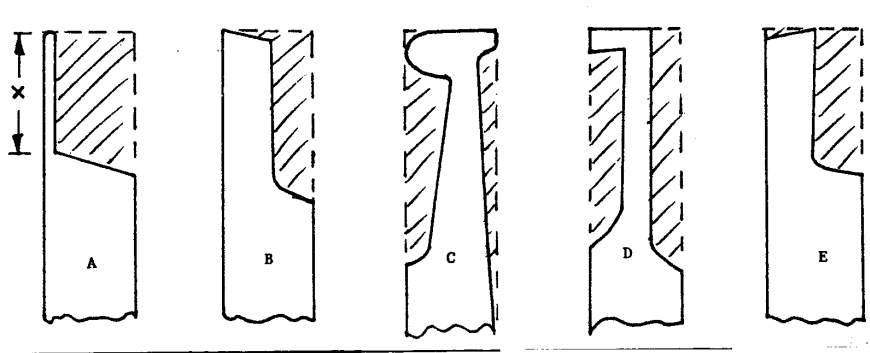
Half
round



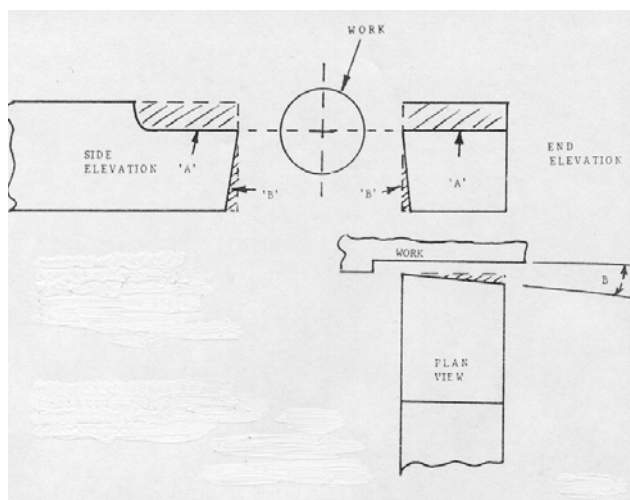
Shallow
oval



Shallow
half round



- A – for fine work, buffers, whistles, etc. Dimension “X” can be shorter for strength.
- B – for general purpose, left hand.
- C – for chimney and dome bases, etc.
- D – for boring
- E – for general purpose, right hand



And having imparted that minuscule amount of knowledge, I will leave you to play with your lathe. Within 10 minutes of starting the motor on my first lathe, fragments of shattered lathe tool were whistling round my ears like shrapnel – it is all part of learning!