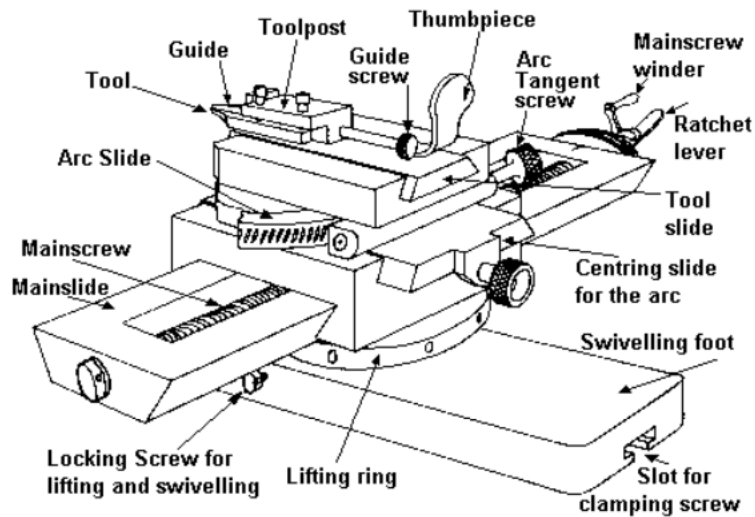


## Technical Reference

### The Sliderest

The Sliderest is the means of positioning and holding the tool against the work for cutting. Here is illustrated a sliderest for circular work here as it has some features, such as the lifting ring and swivelling foot that are not required on a straight line machine.



*An image of a rose engine sliderest. The main components for the straight line sliderest are very similar except that the swivelling foot and lifting ring are not required, the base being solid with a simple slot for positioning.*

The tool and guide are set in a toolpost which is on a free running slide which moves in the Z axis relative to the workpiece, controlled with a thumbpiece by the constant and even pressure of the thumb. The guide, which is adjustable to set the depth of cut, is kept rubbing gently against the surface of the work as the tool cuts a line of unvarying depth, following the surface of the work.

The slightest change in the pressure of the thumb would either cause the guide to dig in or the tool not to cut at full depth, resulting in a blemish in the pattern which would be quite unacceptable. For this reason it is fatal to stop work whilst cutting a large surface; when the craftsman returned to the work the pressure would be different and a streak would result which would show up as the work is turned in the light. Only a few people have a steady enough hand or the patience to acquire the skill of engine turning which takes many years.

The toolslide is carried on an arc slide which can be swivelled about the point of the tool using the tangent screw. A skilled engine turner will use the side of his hand to imperceptibly nudge the arc as cutting progresses across a slightly convex surface to produce an even pattern. The tool must at all times be perpendicular to the work surface to cut a line of even depth and with each half of the vee symmetrical.

The arc is normally carried on an extra slide which is used to finely position the centre of the arc at the surface of the work so that the tool may pivot about its point. This is most important for cutting over irregular curved surfaces. An example might be the handset of a telephone. We once engine turned sixty six 18 carat telephones all over (and matching tissue boxes)!

These three slides are carried on the mainslide which provides movement in the X axis relative to the workpiece. Where the cuts are essentially parallel (for straight line work) or essentially concentric (for circular work) the ratchet lever is used to advance the tool across the work in even increments by driving the mainscrew of the sliderest; thus a line is cut, then the ratchet is switched advancing the tool for the next cut, gradually building up a pattern.

The divisions of the mainscrew on the sliderest are sometimes used for calibration of instruments such as rulers.

The mainslide is carried on a lifting ring to adjust the height of the tool to match the centre height of the rose engine. If the tool was above or below centre the pattern would not radiate properly and would seem to spiral slightly, looking askew and untidy. (For straight line work the lifting ring normally has no relevance.)

The swivelling foot allows the sliderest to be positioned in many different ways for different types of work. On a straight line machine just a slot is provided for clamping in various angles and positions to the bed.