

Q: I want to cut and inlay a ring of ‘tear-drop’ shapes to make a pattern similar to this Rose Window. How could I do this - and what shape rosette would I need?

A: For the background I would suggest a plain rosette of convex bumps, e.g. a D12, the number of bumps being chosen to match the number of ‘tear-drop’ shapes you wish to inlay.

The rosette for the elongated inlay recesses needs to generate a tear-drop shape of the size you require for your project; so calculate its dimensions by deciding the size of the central ‘window’ and the width of the margins that will separate the inlaid elements; then draw a tear-drop of actual size; mark a centre on the drawing and from this centre extend radial lines at intervals of, say, 10° . Supposing the length of your tear-drop to be 1” and supposing your average rosette

diameter to be 7”, mark each radial line with a point $6\frac{1}{2}$ ” from the point at which it crosses the periphery of the ‘tear-drop’ drawing. Draw a line to join all the points on the extended lines and this will be the profile of your rosette.

Glue the drawing to a sheet of suitable material to make into a rosette (acrylic sheet about $\frac{1}{4}$ ” thick is ideal). Mount it on a faceplate and centre it to the dot marked in the centre of the actual size drawing of the ‘tear-drop’, then drill and bore out a hole to fit onto the rosette-holder of your rose engine. Remove from the faceplate and cut the outer profile by saw, file and abrasive, until it is perfectly smooth and exactly on the drawn line.

Making a rosette by this method for a shape that may be used only once or twice is a laborious process. However, if you are likely to want to make several rosettes of special shape, a quicker method is available. You can make a **ROSETTE DESIGNING INSTRUMENT**, a simple pantograph-type machine that will draw a full-sized rosette shape from a smaller profile of the size required for the finished pattern. This system was devised by M. de la Condamine in the 18th Century and it is described fully in my book: ‘**Holtzapffel Volume VI**’ for which details may be seen on:

http://www.ornamentturning.info/H-V6_contents-1.htm

Next, mount the rosette on your rose engine, align it with the multi-lobe rosette you have chosen for the background, mount the Eccentric Chuck and align that also so that the chuck slide is horizontal when the rubber is exactly on the point of the ‘tear-drop’. This alignment must be done carefully and, to make sure it is correct, it is recommended that you first test the alignment by cutting the pattern on a piece of scrap wood, removing it from the lathe and checking it thoroughly before cutting the actual piece. Also check that one of your inlays fits precisely while still at the scrapwood stage.

Cutting the outlines of the ‘tear-drops’ should be done with a fine engraving drill (sharpened on the tip and on the cutting flank). Supposing your pattern is to consist of 12 ‘tear-drops’; set the slide-rest radius to half the length of the ‘tear-drop’, set the slide of the Eccentric Chuck to a radius equal to that of the central ‘window’ plus the margin plus half the length of the ‘tear-drop’; cut the profile of the first ‘tear-drop’ to the depth required for inlay, then index the chuck nosewheel by $\frac{1}{12}$ th (8 divisions of 96 or 10 divisions of 120) and cut the next, and so on. The fine engraving drill is then replaced by a narrow square-ended drill, the radius of the slide-rest reduced by a little over half the width of the square-ended drill; material should then be removed to inlay depth but the drill should not be allowed to go far enough into the point of the ‘tear-drop’ to erode its shape, so a ‘U’ shaped cut is employed for this and subsequent cuts taken at decreasing radius of the slide-rest until all material is removed to inlay depth. The excavation may be finished by hand scraping and then the inlays may be glued in place.

The rosette may be used to make your inlay pieces (it is advisable to make them in advance and to make a couple of spares in case of breakage). The set-up with the Eccentric Chuck is used and the inlay material glued onto a scrap-wood chuck; all that is necessary is to restore the settings to those used to cut the ‘tear-drop’ shape with the fine engraving drill, then increase the slide-rest radius by $\frac{1}{16}$ th” (this will cause the fine engraving drill - which is $\frac{1}{8}$ ” diameter - to cut outside the profile of the inlay, instead of inside it, as already done for cutting the recesses in the workpiece.

