

Q: What Rosette profiles should I choose for my new Rose Engine?

A: The choice of rosettes is difficult as everyone has different ideas as to what is beautiful and the choice will also be dictated by the sort of work you intend to do. Holtzapffel developed a range of profiles, some of which are illustrated in Vol.5 on page 331. You might want two or more of each of your chosen types, each with a different wave-count; e.g. the most popular is the F type of which you could have F3, F4, F5, F6, F8 etc. You might design other shapes not within the range defined by Holtzapffel and for a better understanding of how to go about this you would do well to refer to the 'Investigation on the Lathe' by M. de la Condamine (Chapters II and III of the Eleventh Part of 'L'Art de Tourner' by Plumier, Paris, 2nd Edition 1749).

Some things you should consider:

- 1. perceived beauty vs. symmetry;** a pattern having an odd number of repeats is thought by some to be more beautiful than one having an even number, however, an asymmetrical pattern often does not sit well within a symmetrical form.
- 2. the phasing of your patterns;** you need the facility to divide each rosette at least by half a wave, so your click plate needs to have sufficient ranges to support all your rosettes. For this reason it is well to avoid counts of the larger prime numbers like 7, 11, 13 etc. as the means of phasing them will take up valuable space on the click plate. On the other hand, most OT rosettes have low wave counts so to divide, say, a 5-wave rosette you need the facility to shift by 1/10th of a circle, e.g. by 12 clicks in the 120 range. That means the ranges must be quite long, unlike those on a jewellery trade rose engine which have high wave-counts. You may wish to phase by a half and/or a quarter and/or a third of a wave and you may wish to do the 'watered silk' effect, which needs a range of very fine divisions (say, 192 or 288). With care some effects can be achieved with the tangent screw; e.g. a 'Vandyke' effect by 1, 2, 3, 4, 5, 4, 3, 2, 1 turns of the screw. If you choose only rosettes with counts of, say: 2, 3, 4, 5, 6, 8, 10, 12, 16, 18, 20 & 24, you can get by with as few as 3 click ranges: 96, 120, 144. Make the ranges as long as you can fit in (say, as much as 90° each; just leaving enough space for the tangent screw). The most you could need to phase would be a 2-count rosette and to phase it by half a wave you would need to shift by 90°.
- 3. The amplitude of the rosettes;** you need to consider what diameters of work you will do. Amplitude of 1/8" could be too much for a pattern of 1" diameter but barely enough for a pattern of 7" diameter. High amplitude profiles make it difficult for the rubber to climb and to fall without vibration so the amplitude needs to be a compromise: just sufficient for the largest patterns you intend to cut and not too much for the smallest patterns; for these the amplitude may be reduced by an amplitude adjusting mechanism. This is why the best rose engines have rosettes of 7" or more diameter; because the larger the diameter in relation to the amplitude, the easier the rubber will follow the profile.