

Crossing Plate Questions

Q: I can't work out what the worm and wheel is for unless it is for phasing distances that are not available from any of the ranges on the Crossing Plate. Also, I see some Crossing Plates have 'v' notches and others have slots; and some have very fine divisions leaving little material in between the slots.

A: You need the facility to mount your rosette (singly or as one of a barrel of rosettes) so that it (rosette or barrel) may be free to rotate around the mandrel but also capable of being clamped to the mandrel in any position. So you need two large diameter discs clamped together concentrically: a Fixed Disc that can be joined to the mandrel; preferably connected to it by a worm & wheel for fine adjustment; and a Crossing Plate, which is a Movable Disc capable of being held by a detent to the Fixed Disc so the whole assembly may be clamped to the mandrel in any chosen orientation.

The preferred method is for the Movable Disc (the Crossing Plate) to have wedge-shaped divisions cut into its periphery, into which a detent, anchored to the Fixed Disc, may be pressed (by a spring). These wedge-shaped slots, cut to match perfectly the angle of the detent point, are superior to the straight or 'v' points seen on some machines, as the latter are prone to vibration. The chosen division then determines the position of the rosette profile in relation to the position of the workpiece

mounted on the mandrel and fine adjustment by the worm & wheel can provide perfect alignment.

All this is very fine talk, but making an effective Crossing Plate attachment is easier said than done.

You are no doubt familiar with the method of using 'rosette with multiple fixing holes' for phasing. This goes part-way to solving the problems. Another quick method is to mount the work on an Eccentric (or Rectilinear) Chuck, cut your first pattern, then move the chuck nose-wheel the chosen distance for each phase.

However, one of the most important techniques is to be able to align the chosen rosette with the orientation of the workpiece. Thus, cuts in a series will be aligned and not veering off drunkenly in uncontrollable directions.

So long as you make provision for clamping the two discs together in any orientation, it is possible to make fine adjustments without the trouble of making a worm & wheel. This can be done simply by cutting 3 or more segment slots in one plate and making clamping screws for the other. The Eccentric (or other ornamental chuck, or a feature on the workpiece) may be set precisely level while, by sliding the plates, the rubber is matched with one of the lowest troughs of the rosette profile. Then the mandrel must be clamped in place and all the cuts that follow will be in perfect alignment.

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