



Mounting to the Machine

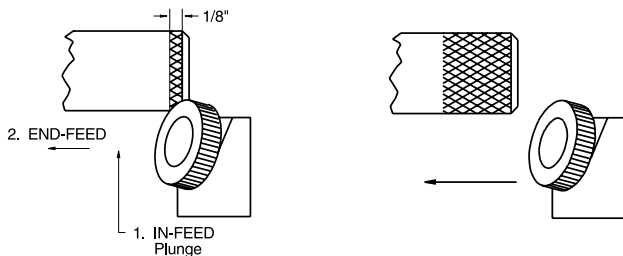
Clamp the shank at right angles to the axial center line of the machine. The knurl wheel of the knurling tool head should be set exactly on center.

To adjust center-height:

1. Loosen the lock screw.
2. Turning the adjustment screw adjusts the head up or down.
3. Turn adjustment screw until the center height is aligned.
4. Lock head back in place by tightening the lock screw.

Knurling Adjustment Set Up

With the machine spindle rotating slowly, In Feed (Plunge) the tool to make a slight impression for the full width of the cutter. This impression should be equal on both wheels when using Diamond Knurling Head. Misaligned patterns can be corrected by turning the fine adjustment screws in opposite directions. (See Knurling Adjustments)

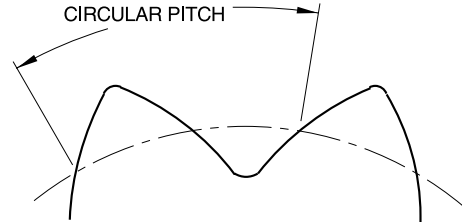


Starting the Knurl

Start the machine, In Feed (Plunge) so that the full depth of knurl is being cut 1/8" on the part to full knurl which is 35% of the circular pitch (see formula). Then, continue longitudinally (end feed) with automatic feed. See the Speed and Feed for approximate feed rates. **IMPORTANT, ALWAYS USE A STEADY FLOW OF COOLANT TO KEEP THE WHEELS COOL AND FREE OF CHIPS.**

The Circular Pitch System

Circular pitch knurling is related to the distance between the teeth on the circumference of the work blank. It is usually expressed in terms as the number of teeth per inch, TPI, although sometimes erroneously referred to as pitch.



Tooth Depth

Depth of tooth is 35% of circular pitch knurl which will vary, accordingly to material, speed, and feed used in knurling.

$$\text{Circular pitch} = \frac{1.000}{\text{TPI}}$$

Tooth Depth Examples

Find the circular pitch and depth of tooth for a straight tooth knurl and has 20 TPI.

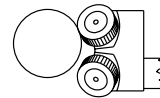
$$P = \frac{1.000}{20 \text{ TPI}} = .0500 \text{ Circular Pitch}$$

$$\text{Tool Depth} = .0500 \times 35\% = .0175$$

Knurling Head Adjustments



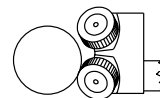
R.H. Spiral



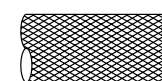
- Knurl tool is too low.
- Top wheel is cutting a deeper R.H. Diagonal Knurl
- Turn the Fine Center Adjustment Screw until both wheels are on center and touching simultaneously.



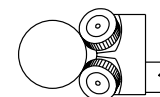
L.H. Spiral



- Knurl tool is too high.
- Bottom wheel is cutting a deeper L.H. Diagonal Knurl.
- Turn Fine Center Adjustment Screw until both wheels are on center and touching simultaneously.



Diamond Knurl



- Tool is center.
- Both wheels are touching simultaneously, cutting a perfect Diamond Knurl.