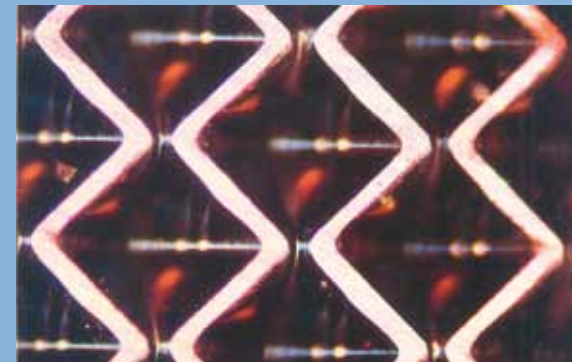
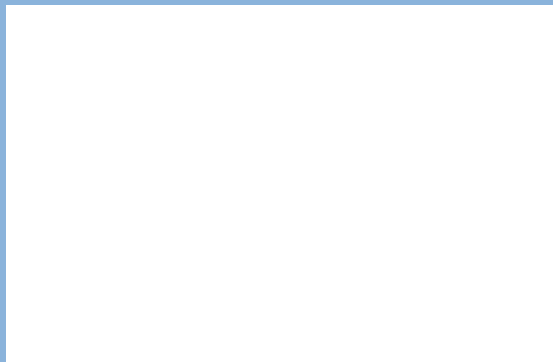


Burr Cutter

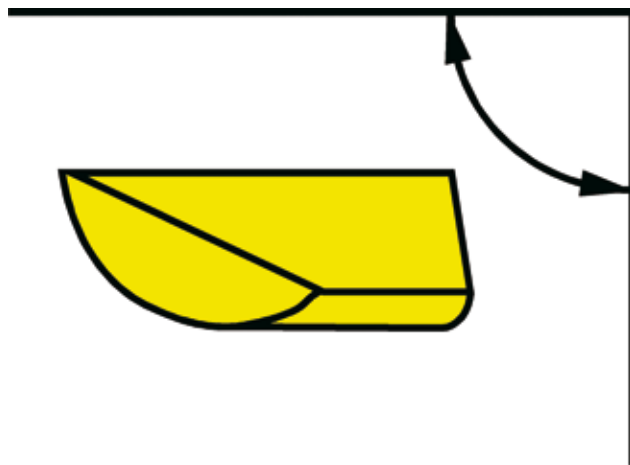
The burr cutter is used to remove the burr produced during engraving. The 90° wedge angle of its cutting edge is not as acute as that of the stylus and therefore not as sensitive.



Normal Wear

When used in the engraving system, the diamond of the burr cutter is looped in on the diameter of the printing cylinder. If the burr cutter is new, this happens relatively quickly but slows as a result of the occurring balancing force.

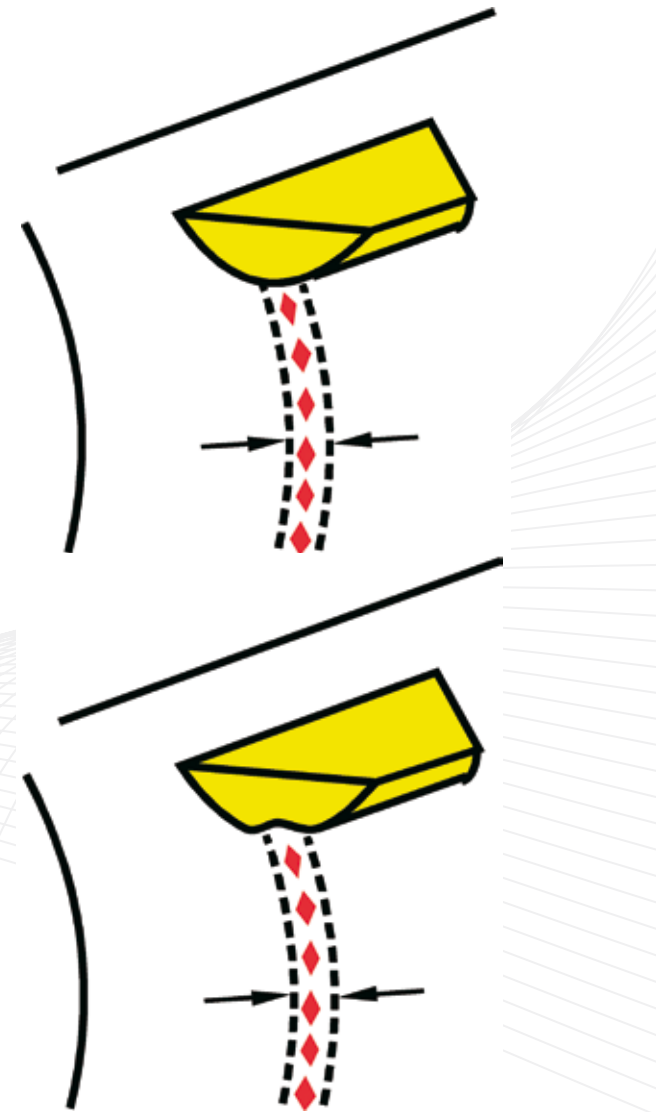
The speed at which assimilation to the cylinder diameter occurs depends on the surface roughness of the copper cylinder used and on the actual quality of the copper. Since these parameters differ from company to company, it is not possible to make generally applicable statements in this context.



Generally speaking, grinding down of the burr cutter on the cylinder diameter is beneficial to the cutting characteristics of the cutter because a precisely assimilated cutting edge also produces a good cutting result. Likewise, a change of diameter after a long period of engraving cylinders of the same diameter may have a negative effect on burr cutting.

If, after engraving for a long period of time, the cylinder diameter is changed from small to large, the burr cutter must often be re-adjusted or even changed in order to achieve optimum results. Reason: At the point where the burr cutting track should be, the copper surface does not make contact with the burr cutter diamond owing to the ground out concave channel. The burr produced can therefore no longer be cut away. The sharp edges of the ground out channel do, however, make contact with the copper surface. These edges act like a turning tool and cut fine grooves out of the copper.

There are virtually no problems associated with changing from a large to a smaller cylinder. Although the burr cutting track is inside the ground out concave channel, the burr cutter diamond has full contact with the copper surface on account of the larger radius of the ground out channel. There are no dangerous cutting edges.



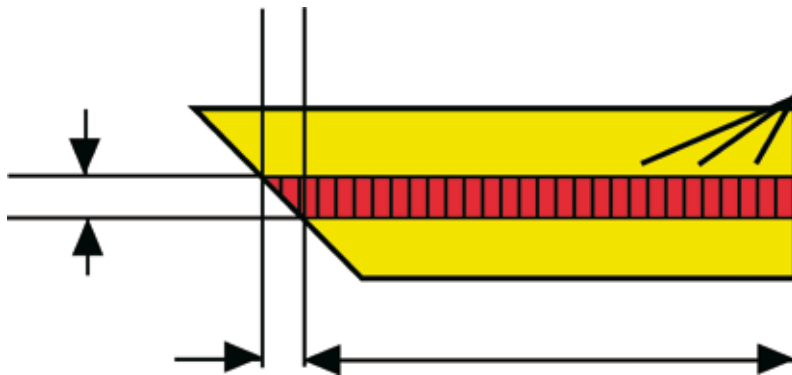
In case the cylinder diameter is changed continuously, there will be no problems regarding the burr cutter and its cutting efficiency. The different diameters which are processed over short periods prevent channel formation.

Incomplete removal of the cut burr despite optimum setting of the bearing channel position is an indication of burr cutter wear. The cut surface, which should be bright, shiny and perfectly flat with a properly working burr cutter, partly projects above the surface of the copper and has dull, pressed out areas.

Such burr cutters must be re-adjusted or changed. Whether the poor burr cutting results can be improved by re-adjusting or by changing and regrinding the burr cutter depends on the degree of cutter wear. This can be determined by analyzing the above mentioned wear characteristics, taking the number of previous re-adjustments into consideration.

Broken Burr Cutter

Damages which cannot be attributed to normal wear of the burr cutter are very rare. Setting the burr cutter holder down hard on the cylinder surface can damage the cutting edge of the burr cutter. The resulting notches leave scoring. This scoring has a detrimental effect on the removal of ink from the rotating cylinder during gravure printing and is an additional cause of premature doctor blade wear. Impurities in the copper can also contribute to destroying the burr of the burr cutter. The distance between these lines corresponds to the forward feed steps of the engraving system.



Scoring with the consequences described above also occurs when the displaced cell material is removed. The extent to which the burr cutter diamond is worn can be seen in reflected light with the aid of a magnifying glass. Such damages on the diamond can only be eliminated by regrinding the burr cutter diamond.

Correct handling

Although the burr cutter is far less sensitive than the stylus, the rules for handling styli should also be applied to burr cutters. It is essential to avoid touching the burr cutter diamond with fingers or any other objects. The burr cutter should not be cleaned unless absolutely necessary, and if so, just like the stylus using elder pith only.