

## Section #1 Acetal, Nylon #5 Polyolefins

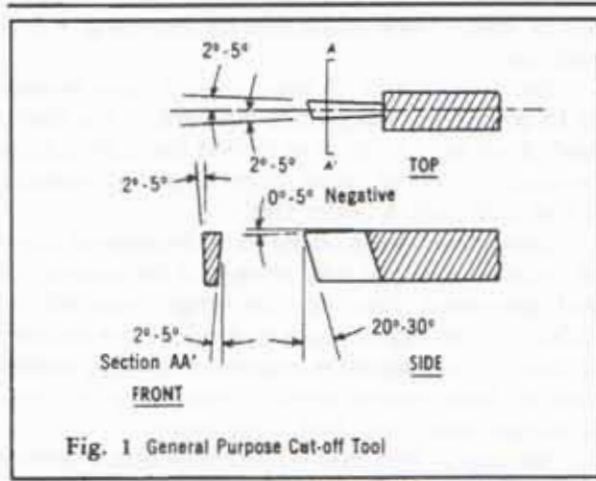


Fig. 1 General Purpose Cut-off Tool

### Clamping

Grip plastic only as tight as necessary to prevent slippage in the collet or chuck, and insure that the clamping force is distributed evenly and symmetrically over the material.

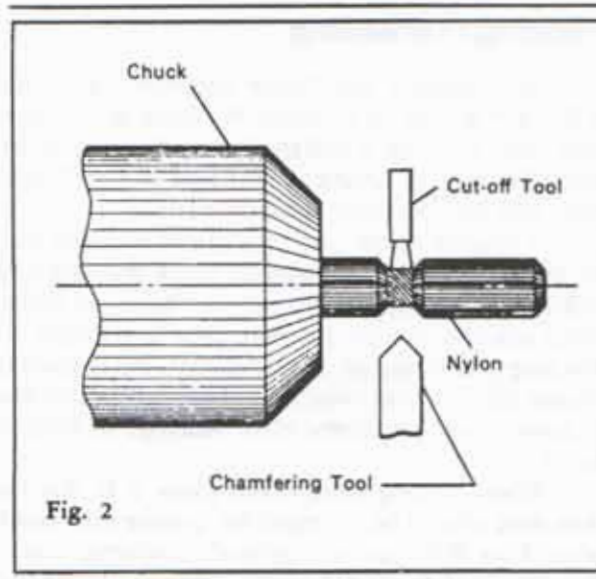


Fig. 2

### Coolants

High speed cut-off operations require coolants to compensate for the low heat absorption of plastics.

Various mixtures and methods can be used as coolants, but the five basic methods are: water-soap solution; water soluble cutting oil; and air jet, air mist, or vapor. Many other combinations can be mixed using water-soap solution and soluble cutting oil.

### Blanking/Piercing

Quality plastic parts can be cut quite easily from stock strip on conventional punch press equipment. With properly designed punches and dies, .006" to .125" thick strip stock can be blanked and pierced at speeds up to 300 strokes per minute.

In all blanking operations, special consideration must be given to die design to prevent extrusion of the material at the edges of the cut. Minimum punch and die side clearances, accurately aligned, produce best results.

Plastics extrude more and recover more than metals. Therefore, the part size produced is usually slightly changed from the actual dimension of the die. The size change will depend upon stock thickness and area of the part. It must be remembered that however slight this flow might be, it nevertheless represents a change that must be allowed for.

Tolerances to  $\pm 1/64$ " are easily met with thermoplastics. As tolerances become more critical, however (down to 12 mils), die design must allow for recovery. A test die can be made for checking the actual recovery for a specific configuration prior to production.

Often parts such as washers, grommets, and cams  $3/32$ " or less in thickness, can be produced more economically by punching, blanking, or stamping from extruded strip or profile shapes.