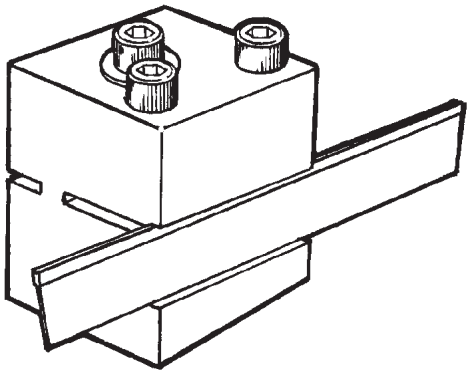

SHERLINE PRODUCTS
INCORPORATED 1974

Cut-off Tool and Holder

P/N 3002

After completing a part in the lathe it is frequently necessary to separate the part from the excess material used for chucking. This operation is best accomplished with the use of a cut-off tool or "parting tool" as it is sometimes called. The Sherline cut-off tool and holder consists of a very slender high speed tool steel cutting blade mounted in a special tool holder. The thinness of the blade (.040") enables it to feed into the part quite easily and at the same time minimizes the amount of waste material. The turning speed for parting should be approximately one-half the normal turning speed for any given material. One word of caution; never use a parting tool on a part mounted between centers. The part may bind on the cutter and result in a scrapped part or a broken cutting tool.

Instructions for use

Always try to lay work out so the cut-off tool is used as close to the spindle as possible. Set blade height by sliding the blade in its slot in the tool holder. It should be set so the tip is aligned with the centerline of the part being cut. An unusual diameter may require a shim to be placed under the front or rear of the holder to accomplish this.

NOTE: ALWAYS USE CUTTING OIL WHEN USING THE CUT-OFF TOOL. The cut will be made much smoother, easier and cooler.

Speed should be slower than normal turning speed and feed rate should be a little heavy so the chip will not break up in the slot. If speed and feed are correct, there will not be any chatter, and the chip will come out as if it were being unrolled. Coolant (cutting oil) plays a major role in this occurring properly.

If the tool chatters, first check to see if the work is being held properly. Then decrease speed (RPM) or increase feed rate or both. Once the blade has chattered, it leaves a serrated finish which causes more chatter. Sometimes a serrated finish can be eliminated by turning the spindle off, adding a liberal amount of cutting oil, bringing the blade up so there is a slight pressure on it without the spindle turning, and then turning by hand or as slowly as possible with the speed control.

Sharpening Instructions

To sharpen the blade, use the tool support on the grinder set in such a way that it will produce a 8° to 12° angle on the side of the blade (top to bottom). (See Figure 1.)

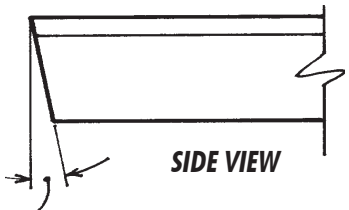

FIGURE 1—Side view of blade. When used on angled holders like the 3002 a side angle closer to 12° is suggested.

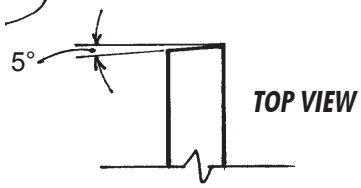

FIGURE 2—Top view of blade (enlarged) when ground for "parting off".

If you are sharpening the blade to "part off", the blade should have an additional angle of approximately 5° when viewed from the top with the point on the right. (See Figure 2.) Normally the angle would be as high as 15° but the .040" thickness of the blade would not be rigid enough and the blade could bend. If you want to cut grooves, don't put any angle on the blade when seen from the top.

If the cutting edges on the sides get dull, grind off the end of the blade until you get into new material where the edges are sharp to the cutting end. New blades are available as P/N 30860 from Sherline Products.

—Joe Martin,
President and Owner

Rear mounting block, P/N 3016

The rear mounting block is a simple spacer block that allows you to mount the cut-off tool and holder to the table on the back side of the part. Because the part is rotating "up" on the back side, the tool must be flipped over in the holder. The mounting block raises the tool holder the amount needed to put the tip of the tool back at the right cutting height. This will save you time by being able to leave the cut-off tool holder mounted to the table while you use the regular tool post in its normal position on the front side of the part.

Cut-off Tool and Holder Parts List

NO. REQ.	PART NO.	DESCRIPTION
1	30850	Cut-off Tool Holder
1	30860	Cut-off Tool Blade
1	40250	Tee Nut
1	40660	3/16" Washer
2	40710	10-32 x 1-1/4" Skt. Hd. Cap Screw
1	40740	10-32 x 7/8" Skt. Hd. Cap Screws