30

SNIPS

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dealer's service

PRODUCT KNOWLEDGE

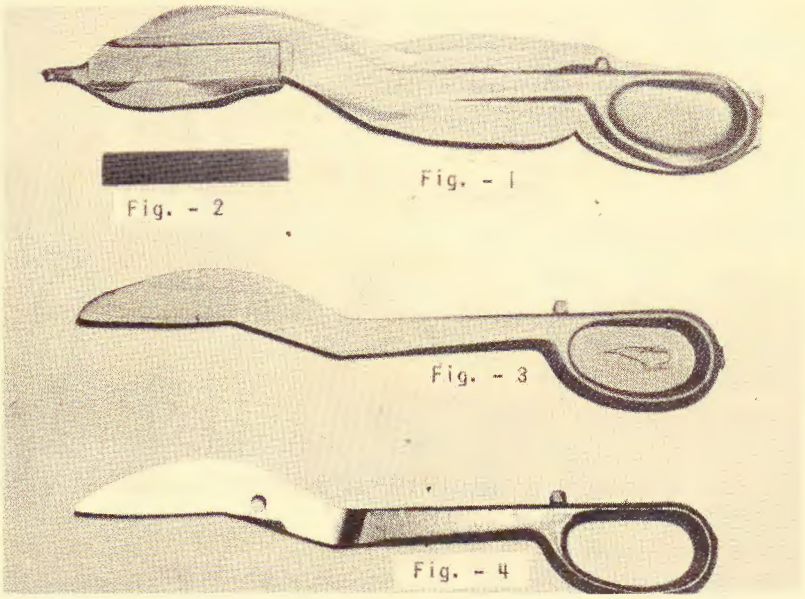
A Staple Item that Should Sell Every Day

While the history of the snip as manufactured in America dates back nearly a century and a half, it is interesting to note that, despite a constant striving for a higher standard, so exacting was the metal construction of these early snips that it is still used as a standard of comparison for snip manufacturers even today.

The principal changes have been in the process of manufacture and in finish but not in design.

HOW SNIPS ARE MADE

ILLUSTRATION—A



DROP FORGING

The actual manufacturing of the snip starts with the careful selection of the correct shape and size of steel. Special attention is given to the chemical analysis of the steel for the reason that it must not only meet the forging requirements, but must be one which can be given a closely controlled heat treatment—thereby assuring and guaranteeing a longer life to the snip.

The forging operation is actually the shaping of the steel bar, which has been heated to a white heat in a forging furnace and placed between two dies in a large forg-

ing hammer which pounds or hammers the heated metal into the general shape of snip. (See Illustration A, Fig. 1.)

LAID BLADE SNIP

This snip is so forged that an indentation or pocket is formed on the face or cutting side of the blade (see Illustration A, Fig. 1).

The tool steel bar (see Illustration A, Fig. 2) is then welded into this space, giving the blade extra long life and adapting it for cutting stainless steel and other types of heavy metal. This type of snip is known as the Laid Blade and is used mostly by professional sheet metal workers.

SOLID FORGED SNIP

The forging of this snip is much the same as the inlaid blade except that the entire snip is made from the same steel without the subsequent welding of the Laid Blade.

At this point of manufacture the forgings are specially heat treated—known as normalizing—to remove the stresses caused by the hammering, the metal has been subjected to in the forging operation. Actually this treatment is a conditioning process to ready the metal for subsequent machining operations.

TRIMMING AND CLEANING

The snip forgings are next placed in a large cutting die which is shaped exactly as the forging and again pressure is applied to remove the flash or surplus metal around the edges.

The snips are then placed in a large specially constructed revolving barrel known as a "Wheelabrator." As the barrel revolves a sharp cutting sand is blasted or forced into the barrel under heavy pressure and this operation thoroughly removes all the heavy forging scale which, if not fully removed, would seriously affect the subsequent heat treatment.

HEAT TREATMENT

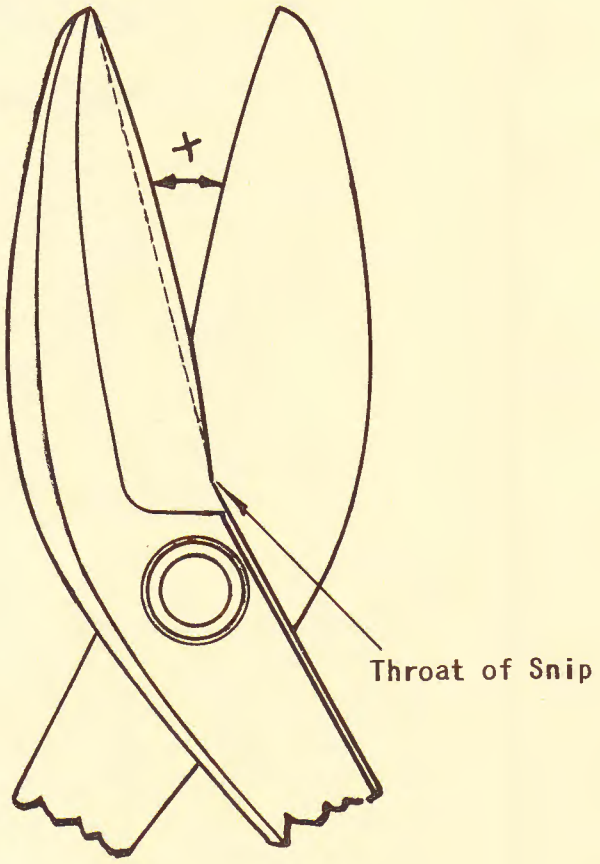
The hardening or heat treatment of the snip is a very important and exacting operation; up to this point in the manufacturing process the snips are in what is terms the "soft." The proper degree of hardness and toughness in the metal depends on the amount of heat and length of time they are heated. This process is laboratory controlled to guarantee the utmost efficiency of the snips.

GRINDING

This operation is likewise of extreme importance. For in the manufacture of a high-grade snip, extreme care is used to obtain the maximum cutting ease and to also prevent the shearing point of the snip from pushing the metal out of the blades when cutting. To accomplish this, it is necessary to crown or curve each cutting edge (see Illustration B).

This crown or curve on the blade edge compensates for the change in angle (see X in Illustration B) which would occur as the snip blades are closed if the edges were made straight. And while the (X) angle does change slightly as the crowned blades are closed, the change is not enough to affect the cutting ability of the snip. The angle formed by crowning is such that the metal is gripped rather than pushed out as it would if the edges were straight, thereby allowing greater cutting capacity.

ILLUSTRATION—B

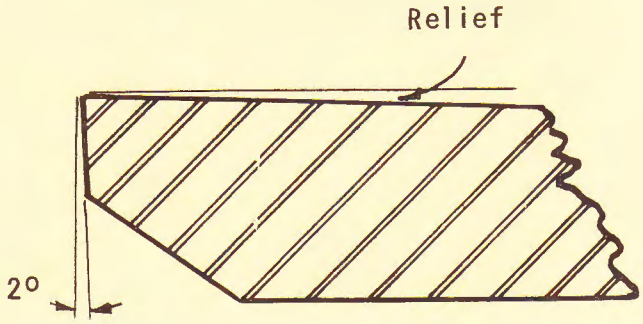


It should be noted that the object in designing a snip is to keep the throat of the snip, as illustrated, as close as possible to the pivoting—bolt and nut—point and provide for cutting in the throat of the snip when the handles are separated for a normal hand opening. And yet while it is still possible to move the throat closer to the pivoting point, by doing so there would not be sufficient clearance for the cut portion of the metal to ride over the pivot bolt. It other words if the throat is placed too close to the pivoting point, the metal, as it is being cut, would not slide smoothly but would have a tendency to crimp or grab and therefore would necessitate starting over again each time a cut was made.

It is likewise important to know that the narrow cutting edge of the blade is carefully ground to approximately a 2 degree angle from the cutting side of the blade. Referred to as the "rake" of the blade, it not only increases the keenness of the edge but it likewise prevents the sheet metal from bending or binding as it is sheared.

The face of the blade is also ground with a relief, as shown in Illustration C in order to assure clearance of the blade and the metal as it passes the shearing point and it also assures contact of the cutting edges only.

ILLUSTRATION—C



Modern methods provide not only for grinding of the cutting edge but also include Cam Grinding on the bearing surfaces. Cam Grinding the faces of the blades provides bearing surfaces which assure definite contact of only the shearing edges of the blade. This is important in the manufacture of snips.

POLISHING

The polishing of the snip is performed by skilled tradesmen who must exercise extreme care in applying the high finishes so that they will not distort the angles already established through grinding.

After polishing the snips are then matched and assembled with a bolt and a specially constructed Elastic Stop Nut. The purpose of the special nut is to assure its holding at the exact point it is set. A nylon plastic insert shrinks against the bolt thread to keep the nut from turning. The snips are assembled and minutely adjusted by trained personnel so that each snip has a true, even shearing action throughout its full length of cut.

In the manufacture of good snips, the object is to supply a product that will meet severe inspection standards. For example to test their utility the 3″ Cut Snip must cut .0239 (24 gauge) stainless steel; .0359 mild steel and also completely sever a 6D (.113) steel wire nail. These tests must be executed without distorting the snip in any way and without showing any nicks along the cutting edges.

While the finish of the snips adds much to the appearance, judging snips by their finish only is not unlike selecting your friends by the clothes they wear and while finish is important it should only be the beginning for the quality of the snip lies under the finished surfaces. The clean cutting, the ease of operation, shearing action, durability, steel content, etc., more nearly evidence superior workmanship and superior product.

Generally speaking, the cutting capacity of the snip relates to the over-all length and snips are supplied with cutting capacity ranging from 1¾″ up to 8″. It is, therefore, important that care should be used in selecting the proper size snip for the use intended. For example, a snip having an over-all length of 12 or 13 inches will normally cut up to 3″ and will cut metal of approximately 20-gauge weight. To cut metal of this weight with a snip having a smaller capacity and not designed for this purpose will, of course, greatly reduce the cutting life of the blades, etc.

Like all items of manufacture, as stated above, snips while having great utility value should be used within the limits of their intent.

And finally, always use snips for such work as is adapted to their size, and don't use the snip for cutting wire—use pliers instead.

Information supplied by The Peck, Stow & Wilcox Company, Southington, Connecticut

QUICK QUIZZER

Q. Name two principal types of tin snips.

A. Straight and the combination of circular and straight.

Q. How are both used?

A. They are used in the cutting of various shapes in sheet metal.

Q. What is the most applicable to odd shape cut?

A. The one having the combination circular of straight edge blades.

Q. What are the materials used in tin snips?

A. Cast iron and forged steel.

Q. In the better grade or the forged steel is there more than one type?

A. Yes. The one where the blade is made of one piece and the one where the cutting edge is a piece of very high grade tool steel welded on the body of the blade.

Q. What is the best material that could be used for manufacturing of snips?

A. The best material for this purpose is bar crucible steel. Such steel is so expensive that snips cannot economically be made entirely from it. So the cutting blade of the best snips are inlaid with it.

Q. What is the purpose of a duck-bill snip?

A. A duck-bill snip is specially designed for cutting out intricate patterns in curves. They will cut straight, circular or irregular without bending the metal.

Q. What is an aviation snip?

A. An aviation snip is a general purpose type, cuts right and left hand, circular, and irregular shapes. The blades are serrated to prevent metal slipping while cutting. The snip is so designed to give compound leverage and does twice the cutting with half the effort.

The following do's and don'ts are suggested and should be borne in mind:

1. Do make straight up and down cuts. (Keep the shearing edge perpendicular to the surface of the metal being cut.)
2. Do keep the nut adjusted for easy movement of the blades.
3. Do keep the joint and bolt well oiled.
4. Do take care to sharpen properly and as frequently as necessary to give easy cut. (Being careful to maintain the original crown and also to grind edge at approximately a 2 degree rake away from inside edge.)
5. Don't grind too fine an edge. (1/16" is about right.)
6. Don't twist the snips sideways when cutting.
7. Don't try to grind inside bearings. Most manufacturers would prefer, if bearing grinding is necessary, that the snips be returned to the manufacturer for machine grinding.
8. Don't use the blade for prying or bending purposes.