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INSTRUCTIONS FOR

WIRE DRAWPLATES

Drawing wire through a drawplate changes its shape and reduces its diameter (or sectional area) while simultaneously lengthening the wire. Drawing will also increase the temper, or hardness, of the wire. A well-made drawplate is constructed from hardened tool steel with each hole perfectly formed. Any imperfection in an opening will impart a raised or depressed longitudinal mark on the wire being drawn. Each hole tapers from the back to the front of the plate (though the very last portion of this hole is bored straight) to facilitate the insertion of the wire. Each hole is marked with a number. This number does not belong to any system of measurement but is only for reference.

The drawplate is installed into a drawbench or a bench vise. When using a vise, the drawplate is clamped along its long side. Be careful not to clamp over any hole openings. You can use a piece of copper or other soft metal to protect the drawplate. In all cases, the wire is introduced through the back (unmarked) side of the drawplate. In order to insert the wire to be drawn into a hole that is smaller in diameter, the initial section of wire (a length of 1 to 2 inches) must be tapered. This taper can be achieved by filing this section of the wire. Alternatively, and more easily, this taper can be created using a rolling mill with grooves on both rollers for wire. Find an opening into which the wire fits snugly and adjust the rollers to engage the wire (the rollers should never touch each other). Roll the wire through about 2 inches. Reverse the direction of the rollers to remove the wire, rotate the wire 90 degrees, and roll it again to the same length. Then move to the next smallest groove, run the wire through for about $1^1/_4$", remove, rotate 90 degrees, and run through again to $1^1/_4$". Finally, perform this operation a third time, in the same manner, to about $^1/_2$". These rolling operations will result in a wire end with a stepped taper. These steps can be smoothed by hammering while rotating the wire.

Wire to be drawn must be lubricated beforehand with beeswax or paraffin, or a specialized lubricant such as our no. 330-060 Bur Lube. Silver alloy wire can be dipped into a liquid soap or coated in one of these wax lubricants. The wire with its tapered end is now inserted into the back of the drawplate through a hole that is slightly smaller in diameter than the wire and pulled through with a drawtong. This operation is repeated with successively smaller holes in the drawplate, though with each pass, the temper of the wire increases. When the wire becomes tough and springy, it must be annealed. It may also be necessary to re-taper the end of the wire.

When not in use, it is essential that you coat your drawplate in metal preservative or a lightweight oil to prevent rust, and cover.