Ironworker – power shear

The ironworker is used by ONE PERSON to shear plate, angle iron, and punch holes. The capacity of the shear is ½" x 3" , 3/8" x 8", or ¼" x 12". The capacity for angle iron is ¼" x 3" x 3", and the capacity for punching holes depends on the blades or dies being used about every ten cuts. A sliding stop is provided when several pieces need to be sheared the same size. Keep fingers clear of blades and cam lock. Place one hand on cam lock handle and the other hand on the metal when ready to shear plate. The shear is used to cut (sheet and plate only). Do not attempt to punch a part of a hole – full holes only.

Soldering Furnace and Coppers

Because of toxic fumes that are produced from flumes that are used, always turn ventilating fans on before working in this area. Secure the soldering copper in a vise when it is necessary to file the tip. Stand to one side while lighting the pilot. Light only the pilot, being sure the main jets are off. Pick soldering coppers up by the wooden handle, nowhere else. Do not pass hot soldering irons from one person to another. The coolest temperature a soldering copper can be used is if it melts solder – the hottest is when a green flame appears from the heating of the copper. Do not allow the copper to heat after the first green flames appear. Keep the tip of the soldering copper clean and shiny by tinning frequently. When finished, place the copper on the rack under the table. Remove all fluxes, acids etc., leaving the area clean.

Drill Press

All work should be held with a clamp or vise. If clamping work to the table, always use a block of wood on top of the table to avoid drilling into the drill press table. Tighten drills with a chuck key, as tight as you can, but remove the chuck key from the chuck when not in use. Use a brush to remove drill curls and chips. Tighten all adjustments before turning on power. Make sure the drill is sharp and keep it cutting at a constant rate of speed (make chips not dust). Ease up on the pressure when the drill is breaking through the work. Turn the drill press off if the drill seizes in the work. When finished, remove all oil and chips from the drill press table with a brush. Remove all oil from the floor to avoid slipping. ONLY ONE PERSON should operate this machine at a time. Select the proper RPM according to the material and diameter of drill bit. Use the formula CSx4 divided by the Diameter = the appropriate RPM.

$$\frac{CS \times 4}{\text{Diameter}} = RPM$$