

35—Hand and Portable Power Tools

not be tight enough to break off the pins that support the blade. Install blade with teeth pointing forward.

Blades with 14 teeth to the inch should be used for cutting soft solid metal, 18 teeth for tool steel, iron pipe, hard metal, and general shop use, 24 teeth for drill rods, sheet metal, and tubing, and 32 teeth for thin sheet metal (less than 18 gage) and tubing.

Pressure should be applied on the forward stroke only. Lift the saw slightly and pull back in the cut lightly to protect the teeth. If the blade is twisted or too much pressure is applied, the blade may break and cause injury to the hands or arms of the user. Do not continue an old cut after changing to a new blade, it may bend and break.

Files. Selection of the right kind of file for the job will prevent injuries, lengthen the life of the file, and increase production. Files should not be used without a handle. Inasmuch as the extremely hard and brittle steel of the file chips easily, the file should never be cleaned by being struck against a vise or other metal object—a file-cleaning card should be used.

For the same reason a file should not be hammered or used as a pry. Such abuse frequently results in the file's chipping or breaking, causing injury to the user. A file should not be made into a center punch, chisel, or any other type of tool because the hardened steel may fracture in use.

The correct way to hold a file is to grasp the handle firmly in one hand and use the thumb and forefinger of the other to guide the point. This technique will give good control and ensure better and safer work.

A file should never be used without a smooth, crack-free handle, otherwise, if the file should slip or be struck by a revolving part of a machine, the tang may puncture the palm of the hand, the wrist, or other part of the body. Under some conditions, a clamp-on, raised offset handle may be useful to give extra clearance for the hands.

When work to be filed is placed in a lathe, the job should be done left-handedly, with the file and hands clear of the chuck jaws or the dog. See Fig 35-8.

Tin snips should be heavy enough to cut

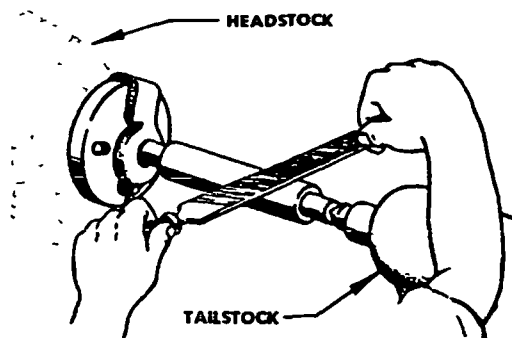


FIG 35-8 —Although filing on a lathe is not recommended (an accurately ground tool bit and careful workmanship will keep the amount of filing to a minimum), the recommended procedure is to grip the file handle in the left hand and use the right hand to hold the top of the file. Be sure arm is kept out of range of driver plate and lathe dog or chuck.

the material so easily that the workman needs only one hand on the snips and can use the other to keep the edges of the cut material pulled aside. The material should be well supported before the last cut is made so that the cut edges do not press against the hands.

Jaws of snips should be kept tight and well lubricated.

Workmen should wear safety goggles when trimming corners or slivers of sheet metal, because small particles often fly with considerable force. Leather or heavy canvas work gloves will help prevent hand cuts or scratches due to handling sharp edges of the sheet metal. When cutting long sheet metal pieces, push down the sharp ends next to the hand holding the snips.

Cutters used on wire, reinforcing rods, or bolts should have ample capacity for the stock, otherwise, the jaws may be sprung or spread. Also, a chip may fly from the cutting edge and injure the user.

Cutters are designed to cut at right angles only. They should not be "rocked" to facilitate the cut because they are not designed to take the resulting strain. This practice can also cause the knives to chip.

Cutters require frequent lubrication. To keep cutting edges from becoming nicked or chipped, cutters should not be used as nail pullers or pry bars.