the chances of glancing blows Moreover, in some positions, this is the only grip that is natural or even possible For regular use, a sponge rubber pad, forced down over the chisel, provides a protective cushion for the hand (Fig 32-6)

When shearing with a cold chisel, the workman should hold the tool at the vertical angle that permits one bevel of the cutting edge to be flat against the shearing plane

Workmen should wear safety goggles when chipping and should set up a shield or screen to prevent injury to other workmen from flying chips If a shield does not afford positive protection to all exposed employees, they should wear safety goggles

Bull chisels held by one man and struck by another require the use of tongs or a chisel holder to guide the chisel so that the workmen will not be exposed to injury Both workmen should wear safety goggles

Stamping and marking tools of special alloy and design are available If possible, marking tool holders should be used so that the workman does not have to hold his fingers close to the face of the tool being struck

Tap and die work requires certain precautions The work should be firmly mounted in the vise A wrench of the proper size should be secured The hands should be kept away from broken tap ends If a broken tap is removed by using a punch and hammer, the worker should wear safety goggles When a long thread is being cut with a hand die, the hands and arms should be kept clear of the sharp threads coming through the die

Hack saws should be adjusted in the frame to prevent buckling and breaking, but should 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 and tubing

Pressure should be applied on the downward 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

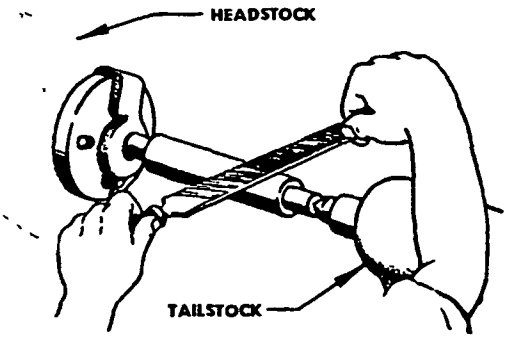


FIG 32-7 —Although filing on a lathe is not recommended (an accurately ground tool bit and careful workmanship will keep the amount of filing to a minimum), the recommended procedure is to grip the file handle in the left hand and use the right hand to hold the top of the file Be sure arm is kept out of range of driver plate and lathe dog or chuck

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 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