



Welding Lab Safety Manual

General Safety

You are not permitted to work on any machine or equipment until you have received the necessary safety instructions.

You are not permitted to work on any machine or equipment before, during, or after class hours unless you have received permission and there is an instructor in the shop.

Guards or safety devices *shall not be* removed from any machine and must always be used. If for any reason a safety device is removed or if the machine is defective in any way, do not work on the machine until corrections are made by the proper authorities.

Machinery must never be oiled, cleaned or adjusted while in motion. Some part of your body, clothes, or equipment may get caught by the machine, causing serious personal injury.

Only the operator of a machine may stop and start the machine.

Only the operating students and the instructor are permitted within the defined safety zone around the machine.

If you are engaged in any activity where hazards such as flying particles, corrosive substances or blinding light exist you must use suitable eye protection such as face shields, helmets and goggles.

Become thoroughly familiar with all fire signals, fire drill procedures, & fire exits. In case of a fire walk quietly to the nearest posted exits.

Rags containing oil, gasoline, paint solvents, and combustibles must be put in covered metal containers, otherwise fire could result from spontaneous combustion.

Wipe up immediately any liquid or grease spilled on the floor to eliminate the danger of fire, slips, and falls.

Do not lift any object heavier than you can safely handle. Squat down in picking up heavy objects. Use the leg muscles and keep the back nearly vertical and the knees straight. This procedure will prevent a rupture or spine injury.



Long pieces of material should be handled very carefully so that they will not cause others injury. Good safety practice requires that long pieces of materials (six feet or more) must be carried with a person (student) at each end. Shorter pieces may be carried by one person, provided he or she keeps the front end high enough to avoid striking anyone.

Do not place articles on windowsills, stepladders or other high places as they may fall and injure someone below. Never throw anything out of a window.

Safety procedures require the elimination of playing, clowning, running and participation in non-productive activities. Playing and scuffling, sometimes referred to as horseplay is extremely dangerous. A playful push may cause a bad cut with the sharp edge of a bench or the corner of a machine or other objects.

Call attention of the instructor to anyone whom you have knowledge of violating a safety practice, intentionally or otherwise. Do not consider this as "snitching" as it may prevent serious injury to yourself or your classmates. In addition report any unsafe equipment or unsafe conditions.

In case of accident, however slight, inform your instructor at once. Infection may result from uncared for cuts and scratches.

Keep your mind on your work. A lapse of attention may mean a serious accident.

Welding Shop Practice

Secure the permission of the instructor before operating any power machine or equipment.

Make sure that all other students are clear of the machines before turning on the power, or while the machine is operating. This precaution will eliminate any accidental contact.

Start your machine and stay with it until you have turned it off and it has come to dead stop. This will prevent another student from approaching an unattended machine in operation.

Notify the instructor if the guards or steady rests are too far from the grinding wheel. (1/8" or greater).



Be sure you have proper clothing for welding; that is, high topped, close-toed leather shoes, trousers with no cuffs and heavy cotton or wool shirts. This helps prevent serious burns.

The floor, aisles and passageways should be kept clear of stock, tools and materials to prevent slips and falls.

Gasoline must never be used near flames or potential sparks in order to guard against grave personal injuries.

Goggles or face shields must be used for any activity in which the hazards of flying chip particles or blinding light exist. Remember you may eat with your false teeth and walk with a wooden leg, but you can't see with a glass eye.

If in doubt about any tool, operation, or procedure, check with your instructor.

It is possible to get a shock from the high frequency current when using an inert arc-welding machine. Proper clothing and gloves will prevent this.

Use caution so as not to pinch fingers between the guard and the metal being cut in the power shear.

Be sure the work is clamped solidly before operating a power saw or cut off saw.

Hand tools and bench work

Keep the handles of tools free from oil and grease in order that they will not slip from your grasp and possibly strike another student.

Striking two hardened pieces of metal together for example, striking two hammers together or a file against a metal vise, may cause chips to fly and strike someone.

Wrenches with badly worn, chewed, and sprung openings should not be used, as they may slip causing hand injury.

All files must be securely fitted with handles. The pointed tang can cause painful hand injury.

Keep both hands behind the driving edge of a screwdriver or hand scraper to prevent cuts.



Sharpened or pointed tools should not be carried in pockets. Carry such tools in your hands face down and do not carry too many tools at once. Prevent accidents.

When you are using a knife, cut away from your body or hands, and be sure to stand at a safe distance.

Mushroomed heads on chisels, hammers, punches, and similar tools must be ground off before the tools are used. Flying particles loosened by a sudden shock on the ragged edge of a mushroomed tool may cause painful injury.

To prevent your work from slipping or falling on the fingers or feet, keep it securely fastened in the vise or clamped while you are working on it.

Tools & materials should not be left protruding from a vise or workbench. Passing students could be injured.

Keep tools sharp at all times. Dull tools are dangerous. Do not test the sharpness of tools on your fingers. Don't be the victim of hand and finger lacerations by careless handling of sharpened tools.

Extend the handle toward a student receiving a sharp tool from you.

Oxygen-acetylene welding

Never use valve-protection caps for lifting cylinders from one vertical position to another. Valve protection caps are designed to protect valves from damage only.

Cylinders must never be used as rollers or support for material or machinery even if they are assumed to be empty. The gas in the cylinders is under very high pressure.

Keep cylinders from being knocked over while in use. Use a suitable cart, chain, or other steadying device.

Never allow cylinders to come into contact with live wires, third rail, or ground wires from electrical equipment. Acetylene is a fuel gas and is extremely flammable.

Keep cylinder far enough away from welding or cutting work so that sparks, hot slag, or flames will not reach them.