

# **SAFETY RULES AND STANDARDS**

## SAFETY RULES AND STANDARDS

1. **Accident Reporting:** ALL ACCIDENTS MUST BE REPORTED TO YOUR IMMEDIATE SUPERVISOR, given in house First Aid or professional medical attention, and a written Report of Injury completed.
2. **Emergency Preparedness:** Safety precautions can only reduce the chances of emergencies, not eliminate them. However, if an emergency occurs, quick action must be taken to minimize the risk. This quick action must be based on a specific emergency action plan. For more information on our emergency action plan, please consult the Emergency Preparedness Program in this manual.
3. **Hazard Communication:** In an effort to minimize the incidence of chemically related employee illnesses and injuries, OSHA has enacted the Hazard Communication Standard. The purpose of this standard is to establish uniform work place requirements for communication of hazards and hazardous chemical information to all potentially exposed employees. Please see the Hazard Communication Program in this manual for more information on our hazard communication procedures
4. **Lock Out/Tag Out:** Violation of Lock Out / Tag Out procedures is grounds for immediate dismissal. For more information on our Lock Out/Tag Out policy and procedures, please refer to the Energy Control Program in this manual.
5. **Assured Equipment Grounding:** Be sure all electrical devices, power tools, and so forth are properly grounded. For more information on our equipment grounding and ground testing, please refer to the Assured Equipment Ground Conductor Program in this manual.
6. **Confined Space Entry:** Work in confined spaces requires the use of special precautions. For information on policy and procedures for confined space work, please refer to the Confined Space Entry Program in this manual.
7. **Respiratory Protection:** Respirators must be used when working in certain job tasks. For more information on policy and procedures for the use of respirators, please consult the Respiratory Protection Program in this manual.
8. **Hearing Protection:** Employees working in the plant may be exposed to excessive levels of noise. Please consult the Hearing Conservation Program in this manual for policies and procedures on hearing protection.
9. **Personal Protective Equipment:** As an employee you are required to wear appropriate work clothing, safety glasses, safety shoes, eye protection, respirator, and other protective equipment whenever the job calls for them and as directed by your supervisor. Please refer to the Personal Protective Equipment section of this manual for more information on when and how to choose, use, and care for personal protective equipment.

## **GENERAL RULES**

1. No running, horseplay, fighting, shoving, name calling, or scuffling is permitted.
2. Only authorized personnel are permitted to operate machinery and equipment necessary for operations.
3. Smoking is prohibited in certain areas as posted.
4. Visitors to the plant must check in at the office and be escorted at all times.
5. Listen to your supervisor's instructions. If you don't understand how to do the job safely, ask before starting work.
6. Each operator is responsible for the safety of their respective machine and safety equipment.

## **TAKING CHANCES**

1. Before commencing any work, care shall be taken to establish a safe procedure. All employees shall understand the procedures to be followed. **Under no circumstances shall safety be sacrificed for speed.**
2. Employees shall always place themselves in a safe and secure position. The care exercised by others shall not be relied upon for one's own protection.

## **WARNINGS**

1. Warning signs shall be heeded. Persons in dangerous situations shall be warned without being startled. Employees not required to be near potentially dangerous places shall keep away from them.
2. When working with another person, let them know before you drop a load or do anything that could cause injuries to others.
3. Warn anyone working below you.

## **REPORTING HAZARDOUS CONDITIONS**

1. Any unsafe condition or unhealthful working must be reported to your Supervisor, who is responsible for having the condition corrected prior to proceeding. A hazardous condition is anything that may cause injury or illness, property damage or interfere with public service. In addition to reporting such conditions, it may be necessary for you to guard it if it involves company facilities or public danger.
2. An employee who receives a report of any hazardous emergency condition shall obtain the name of the informant, exact location and nature of the trouble. They shall immediately refer this information to the proper person.

### **AISLES AND PASSAGEWAYS**

1. Adequate clearance shall be allowed for mechanical handling equipment in aisles, at loading docks, through doorways, or as required.
2. Permanent aisles and passageways shall be appropriately marked.
3. Keep material out of walkways.

### **MAINTENANCE**

1. Drinking fountains must be cleaned daily.
2. Work benches are not catchalls for personal belongings, fixtures, tools, spare parts, and odds and ends. They should be kept clean and in good repair.
3. Machines must be kept clean and in proper repair and adjustment.
4. Caution and hazard signs must be kept clear and cleaned regularly.

### **HOUSEKEEPING**

1. All places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly.
2. The floor of every workroom shall be maintained in as clean and dry condition as possible.
3. To make cleaning easier, every floor, working place, and passageway shall be kept free from any miscellaneous debris.
4. Pile or store material in a stable manner so it will not be subject to falling.
5. Clean up all liquid spills immediately or, outside the office, cover with Floor Dry or other anti-slip material until the floor can be cleaned.
6. Use waste cans for all general debris. Put oily rags, flammable or combustible waste into covered metal safety cans.
7. Never over fill trash cans; empty them more often or provide additional cans.
8. Work areas shall be kept clean and unobstructed as much as possible during working hours.
9. At the end of the shift or work day, clean your designated area, secure and put away all equipment in its designated place.

10. Proper housekeeping is the foundation for a safe work environment.
11. Air hoses, electrical cords, or any objects that could cause a tripping hazard need to be moved to a safe location when not in use.
12. Eliminate the practice of keeping excess materials at work places where possible.
13. Window sills are not storage areas.
14. Areas on, around, in front, and over electrical control panels and fire extinguishers are to be kept clear at all times.

### **LIFTING**

1. Lifting is part of almost everyone's job, but too often is done in an unsafe manner. The result is pulled muscles, slipped disks, and hernias.
2. Size up the load. Get help if you need it.
3. Keep your feet apart for balance as well as weight distribution.
4. Bend at the knees and keep your back straight, not necessarily vertical. Tuck your chin to keep in line with your neck and spine.
5. Get a firm grip on the object with your whole hand (not just your fingers) and draw the object close to you with the weight centered over your feet.
6. Tuck your elbows and arms for more power. Lift by straightening your legs and use slow easy motions. Avoid quick, jerky motions.
7. Avoid shifting with a heavy load. Point your foot in the direction you want to go.
8. When lifting above the waist, set the object down on a table or bench (be sure it will support the weight), re-grip, then lift again.
9. You may be as strong as an ox, but be careful how you lift, as well as what you lift. Even if your muscles were made of steel, there would still be a limit to the strain they could take.

### **TOOLS**

1. Use tools only for their intended purposes and in the correct manner.
2. Keep tools in good working condition. Damaged, excessively worn, or defective tools can cause injuries and shall not be used. Do not use broken or dangerously worn or dull tools.
3. Do not use tools until you have been properly instructed and authorized to do so.
4. Never remove machinery or equipment guards.

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5. Never make repairs to tools or equipment unless authorized to do so by your supervisor.
6. Take special precautions when using power tools in any location where space is limited. Get a good footing, use both hands, keep cords clear of obstructions, and do not over-reach.
7. Be sure power tools are turned off and motion stopped before setting down.
8. Disconnect tool from power source before changing drills, blades or bits, or attempting repair or adjustment. Never leave a running tool unattended.
9. All tools must be properly stored when not in use. This will protect them from unnecessary damage and eliminate the tripping hazard of electrical cords and extra tools in the work area.

### **Hand Tools**

1. Only authorized persons should use hand tools. The following safety precautions should be followed:
  - A. Inspect tools before using them.
  - B. Never use a tool for a job for which it was not designed.
  - C. Know how to use the tool, properly.
  - D. Use only tools that are in good condition.
  - E. Keep tools such as hammers and chisels well dressed to prevent injury from flying particles.
  - F. Store tools in the proper place.
  - G. Remove a defective tool from service.
2. Hammers -- Choose a hammer with a tight fitting head and handle in good condition. Hold the hammer handle close to the end, not near the head.
3. Screwdrivers -- Keep screwdriver heads in good condition. Do not use the screwdriver as a chisel or to pry.
4. Cutters
  - A. Are used for cutting at right angles only.
  - B. Lubricate the cutting edges.
  - C. Do not use as nail pullers or pry bars.
  - D. Adjust the bumper strap behind the jaws so the cutting edges have a clearance of .003 inches when closed.
5. Knives
  - A. Cut away from the body. If this is not possible, then protect the hands and body.
  - B. Use a rack or holder for the material being cut whenever possible. Do not leave knives lying on benches or in open tool boxes without protecting the blade in sheaths or holders.

6. Wrenches

A. Box and Socket Wrenches

- (1) Always use the correct size wrench for the job. Never overload the capacity of a wrench by using a pipe extension on the handle and do not strike the wrench with a hammer.
- (2) Use special heavy-duty and long handled wrenches if needed. Use penetrating oil first for stuck or rusted nuts.
- (3) Keep sockets clean to ensure good seating before using the wrench.
- (4) Avoid cocking the wrench or socket.

B. Open End Wrenches

- (1) Wrench must fit properly and be used correctly.
- (2) Open end wrenches are used for medium-duty turning.

C. Combination Wrenches

- (1) Combination wrenches are handy for speed. Use the closed end to loosen or for final tightening and the open end for speed.

D. Adjustable Wrenches (Crescent Wrenches)

- (1) Adjustable wrenches are good for light duty when the proper size of fixed opening wrenches is not available.

E. Pipe Wrenches

- (1) Keep the jaws sharp and clean.
- (2) Inspect the adjusting nut on the wrench frequently.

**Small Electrical Tools**

Ensure all tools and equipment used are safe and in good working condition.

1. Use tools only for their intended purposes.
2. All electrical power tools, which are not double insulated, must be grounded.
3. Extension cords used with power tools must be grounded.
4. Make periodic inspections to ensure the tool is in good condition and safe. Also inspect electrical extension cords and other wiring to be certain they are properly maintained.
5. Do not remove any guards or expose the electrical motor.
7. Use appropriate safety glasses, face shields, gloves etc. when working with tools.

**Portable Grinders**

Portable grinding machines must be held firmly or securely mounted on substantial safe foundations in order to prevent severe vibration. Use portable grinders as bench grinders only when:

1. Securely clamped in place with band clamps.
2. There is ample clearance between the wheels and bench.

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3. Equipped with standard wheel and arbor end guards and tool rests.

Portable Grinders / Right angle head or vertical portable grinder requirements:

1. Cover the grinding wheel with a guard and allow a maximum exposure of 180 degrees.
2. Locate a guard between the operator and wheel.
3. Locate a guard to deflect broken pieces of the wheel.
4. Keep work rest adjusted within 1/8 inch of the wheel. Keep adjustable tongue on the top side of the grinder within 1/4 inch of the wheel.
5. Provide individual on/off switches for each grinder and ensure the grinder is grounded. Permanent grinders should be connected to their electrical supply system with metallic conduit or other permanent hard wire.
6. Provide a dust collection system to grinders if the operations produce large amounts of dust.

## **INDUSTRIAL MACHINES**

### **General**

1. Machinery ranks among the top four sources of disabling work injuries and accounts for approximately 10% of such injuries. Safe design of machines is paramount.
2. General safety precautions
  - A. Operation, adjustment, and repair of any machine should be restricted to experienced and trained personnel.
  - B. Safe work procedures must be established.
  - C. Supervisors must enforce safe working rules around machinery.
  - D. All new equipment must meet all applicable regulations concerning guarding, safety, electrical, etc.
  - E. Inspect all new equipment before allowing an operator to use it and correct all safety hazards before using it.
  - F. Do not use equipment which is unguarded or defective. Ensure guards are in place before using machinery.
  - G. Do not leave machines running when unattended.
  - H. Operators shall not wear loose-fitting clothes, jewelry, and neckties around equipment. Long hair, which may get caught in moving parts, shall be covered.
  - I. Do not adjust work while the machine is running.
  - J. Operators should use brushes, vacuum equipment or special tools when removing metal or wood chips.
  - K. Use proper hand tools with power equipment.
  - L. A power shut-off switch must be within the operator's reach for each machine.
  - M. When operating electric switches, stand on insulated mats and keep the switch panel fronts

- closed to protect eyes and face from possible flash.
- N. Do not start machinery, operate valves, or change electric switches until you have made sure it is safe to do so.

### **Machine Guarding**

1. Many industrial accidents can be prevented by adequately guarding machinery.
2. Guarding is a means of effectively preventing personnel from coming in contact with moving parts of machinery or equipment that could cause physical harm.
  - A. Guarding can be accomplished by protecting the danger zones by means of:
    - (1) Enclosures
    - (2) Fencing
    - (3) Point of operation guards
    - (4) Power transmission shielding/guards
    - (5) Guards at nip points or bites
    - (6) Restricting access to operating machines
  - B. Guards must be properly designed, substantial and secured in place.
  - C. Guards must allow access to areas that must be adjusted or lubricated.
3. Types of Guards
  - A. Fixed Guard
  - B. Interlocking guards
  - C. Automatic
  - D. Enclosure or barrier
  - E. Two hand trip
  - F. Distance
  - G. Electric eye
4. General safety precautions
  - A. Guards are required when the hazard is within 7 feet of the work surface.
  - B. Machines in a permanent, fixed location shall be secured to the work bench or floor to prevent walking or tripping.
  - C. Use lockout/tag out of equipment during cleaning, servicing, or adjustment.
  - D. Employees shall use individual keyed locks to ensure no other employee can turn on equipment while it is locked out.
  - E. Do not repair or adjust machinery while it is in operation. Never oil moving parts except on equipment fitted with safeguards for this purpose.

### **COMPRESSED AIR AND GAS**

#### **General:**

Compressed gases present a special type of hazard in the workplace. Few people realize the destruction that can be wrought if a cylinder bursts, or if the cylinder valve is broken or damaged. The sudden release of gas, which may be compressed at 2000 lbs. per square inch or more, creates an unguided missile with tremendous force. All compressed gases, regardless of their chemical properties, have an escape velocity sufficient to produce a propellant effect upon sudden release. Some common compressed

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gases are:

1. Inert/Non Flammable Gases
  - A. Argon
  - B. Helium
  - C. Nitrogen
2. Non Flammable Gases
  - A. Oxygen-cryogenic
  
3. Flammable Gases
  - A. Hydrogen
  - B. Acetylene

**General Safety Precautions**

1. Transport cylinders with the protective cap installed only on carts designed for that purpose. Emergency air packs may be transported individually using both hands.
2. Never allow cylinders to remain freestanding. Cylinders must be secured by chain, strap, rack, or other means so as to prevent falling or rolling. Never drop cylinders or allow them to strike against each other.
3. Never tamper with safety devices in valves.
4. Always open cylinder valves slowly.
5. Valves shall be closed when cylinders are not in actual use. The valve protection cap shall be securely in place whenever the cylinder is not connected, and until it has been secured against a wall or bench, or placed in a cylinder stand, and is ready to be used.
6. Full and empty cylinders shall not be stored together because an empty cylinder attached to a pressurized system can cause a serious suck back. Clearly identify full and empty cylinders.
7. Cylinders shall not be exposed to temperatures above 125 degrees F. They shall not be stored in direct sunlight or near sources of heat.
8. Do not place cylinders where they may become part of an electrical circuit.
9. Some gases (carbon dioxide, nitrogen, argon, helium) when present in high concentrations, such as during a major cylinder leak, act as an asphyxiant without other significant physiologic effects. In case of major leaks, leave the area immediately.
10. Never turn compressor air on yourself or anyone else.

Only experienced personnel will be allowed to handle toxic or explosive gases. Before using these gases, ventilation, sources of ignition, and other basic safeguards must be taken into consideration.

### Use of Compressed Oxygen

1. Do not use compressed oxygen:
  - A. to purge pipe lines, tanks, or any confined areas;
  - B. to supply head pressure in a tank;
  - C. in pneumatic tools;
  - D. in oil preheating burners;
  - E. to start internal combustion engines;
  - F. for ventilation;
  - G. for dusting clothing;
  - H. in any other way as a substitute for compressed air.
2. Do not use compressed gases to:
  - A. blow dirt, chips, or dust from clothing;
  - B. empty containers of liquids when the gas pressure is greater than the safe working pressure of the container;
  - C. elevate or transfer a hazardous substance from one container to another unless both containers are designed to withstand four times the pressure of the gas;
  - D. equip abrasive blast cleaning nozzles with an operating valve which must be held open by hand.
3. Miscellaneous Use Of Compressed Cylinder Gas
  - A. When using compressed gas to test a pressure vessel, install a pressure relief device in the supply line of the vessel being tested.
  - B. Do not use compressed gas from a cylinder or cylinder manifold where dangerous pressures may develop unless an accepted pressure regulating device is installed.

### Air Compressors, Portable Or Fixed

1. All wheels, belts, and moving parts on compressors must be guarded to prevent access.
2. Compressors on wheels must be prevented from rolling.
3. Safety valves must be popped at least weekly.
4. The tank must be drained daily.
5. Air compressors larger than 1.5 cubic feet or having pressure over 150 PSI require a IOSHA permit from the Unified Pressure Vessels Department.
6. Air tanks require a permit issued by DOSH.
7. Fixed groups must be anchored or restrained so as not to move while turning.
8. Fixed compressors must have a sign indicating they are automatic and might start at any time.
9. Pipes, hoses, and manifolds, which are used for delivery, must be of approved material and correct construction. **Exception:** Tanks smaller than 1.5 cubic feet with safety devices set to operate below 150 psi.

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10. Do not use compressed air to blow dirt, chips, or dust from clothing.
11. Never blow air at or into your face or others eyes, ears, nose, or mouth.
12. Always use side vent blow off muzzles.
13. When using compressed air, monitor noise and use hearing protection, if required.

## **HOISTS AND HOISTING OPERATIONS**

### **General Requirements/Operations**

1. All hoists must be inspected with special attention to load hooks, ropes, brakes, and limit switches. Hoisting equipment shall be inspected before use and at least once per day while it is in use.
2. Material hoists shall be erected following manufacturer's specifications shall be vertically plumb, and shall be placed on firm footing.
3. Material hoists are not designed for transporting workers, and no personnel shall be allowed to ride on material hoists.
4. Hoisting engines shall have sufficient capacity to handle the maximum load with reserve power for any emergency.
5. If it is necessary to position equipment in the street, they should be enclosed with barricades to protect the public. Warning devices should be placed around the barricades.
6. Mechanical brakes on hoists powered by internal combustion engines shall require foot or hand pressure to release the brake.
7. All hoists should be attached to their supports with shackles or the support hooks should have safety latches.
8. Provide positive stops on rails, tracks or trolleys or limiting devices on equipment rails, tracks or trolleys to prevent the overrunning of safe limits.
9. Hoistways shall be enclosed where workers could be exposed to movement.
10. Material hoist cages shall be substantially constructed with toeboards and heavy screen wire enclosures on unused sides. Enclosure material should be sufficient to keep tools, equipment and debris from projecting outside the hoist.
11. The rated capacity shall be legibly marked on the hoist, load block, or some equally visible space.

12. Operating controls shall be plainly marked to indicate the function or direction of travel or motion.
13. Each cage controlled hoist shall be equipped with an effective warning device.
14. Hoist operation shall be directed by one designated person, with a set of signals worked out before the operation is started.
15. Appropriate operating rules shall be established and posted at the operator's station of the hoist.
16. Only those persons whose duties require them to be present shall be in the hoist room or station.
17. The hoist operator shall be informed of changes, which affect safe hoisting operations.
18. Material hoists should not be lifted over workers. Do not walk or stand under a suspended load.
19. No one shall be permitted to oil the hoist while it is in operation.
20. Pick up a load only when directly under the hoist.
21. Unless used with other safety devices, do not use the hoist to lift, support or transport people.
22. Sheaves:
  - a. Sheaves carrying ropes that can be momentarily unloaded shall be provided with close-fitting guards or other suitable devices to guide the rope back into the groove when the load is applied again.
  - b. Flanges on hoist drums with single-layer spiral grooves shall be free of projections that could damage a cable.
  - c. Pockets and flanges of sheaves used with hoist chains shall be of such dimensions that the chain does not catch or bind during operation.
  - d. All running sheaves shall be equipped with means for lubrication.

### **Hoisting Chains and Ropes**

1. Use chains and ropes that are of sufficient strength to safely lift or otherwise handle the loads. The maximum allowable working loads shall be based on manufacturer's tables.
2. Use chain, rope and fiber rope of sufficient length on hoisting drums for the entire range of movement of the application with no less than two full wraps of rope on the drum at all times. Use limit switches to restrict the downward limit of travel if this is not practicable.
3. Rope ends shall be securely attached to the drum or by a socket arrangement approved by the crane or rope manufacturer.
4. If wire ropes are to provide safe service, they must be kept in proper condition. They must be lubricated regularly to keep them free from corrosion and excessive wear. Because they are coated with lubricants, they should be kept away from fire and fire hazards.
5. Wire ropes shall be inspected regularly and provide an adequate safety margin for all expected loads.

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6. One of the most common causes of failure of wire rope is kinking. Care should be taken not to kink the rope, especially while unreeling when it is first installed.
7. Fixtures should be attached with wire rope clips.

### **End Attachments**

1. Socketing shall be done in a manner specified by the manufacturer of the rope.
2. Eye splices shall develop maximum splice efficiencies as set forth in manufacturer's tables.
3. Rope clip attachments shall be made with U-bolts on the dead or short end of the rope and the saddle on the live end.

### **Electric Hoists**

1. Control cords should be of distinctly different contours so that even without looking, the operator will know which control is for hoisting and which is for lowering.
2. Inspect control cords frequently.
3. Push button control circuits shall be limited to 110-120 volts.
4. Each overhead electric hoist shall be equipped with an effective enclosed-type limit device which will stop the travel before the hook/load block passes the highest and, where applicable, lowest point of safe travel.
5. Electrically powered hoists should have magnetic release brakes that will be automatically applied when the controlling mechanism of the machine is in the stop position.

### **Hand-Operated Chain Hoists**

1. There are three general types of chain hoists:
  - a. spur-gear
  - b. differential
  - c. screw geared
2. The spur-gear is the most efficient as it will pick up a load with the least effort. The differential type is the least efficient.
3. Screw-gear and differential hoists are self-locking and will automatically hold a load in position. An automatic brake is required with a spur-gear hoist.
4. Chains used with the hoist shall be of the best quality of welded steel with a load safety factor of 5. Chain hoists should be of stronger capacity than the regular work required.

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5. Supports for hoists must be strong enough to carry the load imposed on them.
6. Follow manufacturer's recommendations for chain, rope, and sling inspection.

### **WELDING AND BURNING**

1. Before welding, be sure there are no explosive or flammable materials that might be ignited during the welding operation.
2. Always clear area below cutting or welding operations so you do not drop slag on employees, hoses or cables.
3. Use leak proof welding and burning goggles for eye protection and to prevent flash burns. Always wear eye protection to guard against slag while chipping, grinding, and dressing welds.
4. Use only manual electrode holders specifically designed for arc welding.
5. Make sure all electrical parts are fully insulated.
6. Place cables, leads, and connections so there are no fire or tripping hazards.
7. Shield all arc welding and cutting preparations with noncombustible or flame proof screens wherever practical.
8. Keep a suitable fire extinguisher readily available when welding, cutting or heating on the job.
9. Be sure proper ventilation is provided whenever welding, cutting or heating is performed in a confined space.
10. Be sure the floor is dry when using electrical welding equipment to avoid an electrical shock hazard.
11. Welders are not allowed to carry or use Butane lighters except as authorized.

**Proper Shade Numbers Selection Guide**

These recommendations may be varied to suit the individual's needs.

<b>Welding operation</b>	<b>Shade No.</b>
Shielded metal-arc welding-1/16, 3/32, 1/8, 5/32 inch electrodes	10
Gas-shielded arc welding (nonferrous)-1/16, 3/32, 1/8, 5/32 inch electrodes	11
Gas-shielded arc welding (ferrous)-1/16, 3/32, 1/8, 5/32-inch electrodes	12
Shielded metal-arc welding: 3/16, 7/32, 1/4-inch electrodes	12
5/16, 3/8-inch electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy) 1/2 inch and over	6 or 8

**Note:** In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

## **PAINT SPRAYING**

### **General**

1. Paint spraying should be done in an approved spray booth or enclosure.
2. Check with the Air Pollution Control District before operating a paint spray booth; you will probably require a permit. ***Recent legislation has changed the types of spray guns that can be used. Check with your district to see which one is acceptable.***
3. In most cases respiratory equipment is required and shall be used by the employee doing the spraying. (See Respirator Program)

### **Spray Booths**

1. All spray booths will be constructed to meet NFPA (National Fire Protection Association) and UL (Underwriters Laboratory and/or approving body) requirements.
2. Spray booths shall be designed to sweep or guide air currents toward the exhaust outlet.
3. Forced ventilation or local exhaust in conformance with NFPA requirements will be used.
4. An independent exhaust duct system shall discharge to the building exterior.
5. Electrical equipment must be explosion proof.
6. Spray booths should be protected by automatic sprinkler systems.
  - a. The sprinkler head should be protected to prevent the build up of paint. (This is usually done by placing a plastic bag over the head).
7. Flammable materials should not be stored in paint spray booths.

### **Spray Booth And Equipment**

1. Only trained, authorized personnel are permitted to operate this unit and equipment.
2. Observe all posted and/or established warnings, regulations and safety guidelines, especially when cleaning.
3. All equipment must be grounded. Do not remove or alter grounding prongs on plugs.

## **FIRE PREVENTION**

1. Smoking is permitted only in areas designated by Senior Management.
2. All smoking materials shall be extinguished in ashtrays or designated receptacles.
3. Cigarette butts and ignition sources shall not be disposed of in trash cans.

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4. All extension cords, electrical cords should be examined on a routine basis to make sure they are in good working condition. All frayed electrical cords should be noted and reported to Senior Management or maintenance personnel for replacement.
5. Heat producing equipment such as pots, ovens, and portable heaters should be unplugged at the end of each work day.
6. Flammable and combustible substances should be stored away from ignition sources such as pilot lights and heat radiating sources such as ovens, or portable heaters.
7. The office area and lunchroom shall be kept clean and free of unnecessary combustible materials.
8. Portable fire extinguishers can be used for small fires. Employees should familiarize themselves with the operation and location of fire extinguishers in their work areas. In most cases, fire extinguishers are operated by pulling a safety pin on the handle and aiming the nozzle at the base of the fire while squeezing the trigger.
9. If an emergency situation develops, a Supervisor should be told immediately so the appropriate action can be taken and the fire department notified.

#### **OFFICE SAFETY**

1. Report unsafe electrical cords, faulty electrical or other equipment or any other hazardous conditions to the responsible supervisor in the area.
2. Keep floor free of tripping hazards such as telephone cords, electric extension cords and paper cartons.
3. Pull out only one drawer of a file cabinet at a time to avoid its tipping over (unless the cabinet is securely fastened to the wall or to other cabinets).
4. Keep drawers of desk and file cabinets closed when not in use.
5. Store material on shelves carefully to prevent its falling. Place heavy objects on lower shelves.
6. Walk cautiously up and down the stairs, and always use the handrail. Never use the stairs when both hands are being used to carry objects.
7. Never put broken glass or other sharp objects in wastepaper containers. Also chemicals, batteries or matches should not be discarded with waste paper. Use the special containers provided.
8. Consider your safety when you dress for the job. Loose fitting clothing, dangling bracelets, rings and ties may cause serious injury to employees operating or working around office machines.

9. Do not attempt to clean, oil or adjust any machine that is running or plugged in. If the machine is not equipped with a starting switch that can be locked in the "off" position, disconnect it from its power source by removing the plug from the electrical receptacle.
10. Make certain you use solvents and other volatile or toxic substances only with adequate personal protection and in well ventilated areas and never use them to clean desks or other office surfaces.
11. Do not use portable ventilation fans unless they have protective guards or are securely placed at least seven feet above the floor.

## **FIRST AID**

First Aid is the immediate and temporary care given to the victim of an accident or sudden illness until the services of medical personnel can be obtained. Often, an accident victim is hurt, rather than helped, by persons who want to do something, but who do not know how to give First Aid properly. Good "First Aiders" must be able to find out what the injuries are, know how to give temporary care for the injuries, and know how to transport the victim without causing further injury. It is important to know not only what to do but also what NOT to do. Unless it is known that the injury will not be further aggravated, injured persons should not be moved. Improper, careless moving may increase the severity of the injury and may even cause death.

### **Treatment**

Great haste in giving First Aid is usually unnecessary and may be harmful. However, there are two kinds of cases where great speed is necessary: cases of severe bleeding and cases where breathing has been suspended which requires artificial respiration. Control of bleeding and restoration of breathing are largely dependent on immediate action for success. In other cases than these, do not rush: plan the action first and carry it out carefully and thoughtfully.

### **CPR**

Employees who are trained in First Aid shall also have CPR Training. This training shall be obtained from a certified organization such as the American Red Cross. A list of all First Aid personnel who are trained and certified in CPR shall be maintained by the Safety director who will keep them abreast of all new information and any training or recertification they may require.

## **FORKLIFT SAFETY**

### **Engineering Principles**

1. You shall always follow manufactures guidelines & operation rules, and company safety rules.
2. Engineering Principles are based on OSHA regulations and accepted industry guidelines.
3. Lever Principle
  - a. The lever principle is based on counterweight load operations, where two objects are balanced on a fulcrum. The weight can be shifted by moving the fulcrum closer to or farther away from the load.
  - b. The counterweight load is balanced on the fulcrum.

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- c. The fulcrum is composed of the front two tires.
5. Load & Lift Capacity
- a. The load capacity is based on the load center of what you are carrying. As the load center increases, the load capacity decreases.
  - b. The load center is found by measuring from the center of the load to the vertical face of the forks. For example: The standard size of a pallet is 48X48. 48 divided by 2 is 24. So an evenly centered load on an average sized pallet is 24 load center.
  - c. Load capacities and maximum height of the load is found on the data plate. The data plate tells you how high you can safely lift the load. For example: A 5000 lb. load at a 24" center can be safely lifted to the maximum height of the forklift if the load is kept vertical.
  - d. Generally the data plate gives three lifting capacities. For example: 5000 lbs at a 24" load center, lbs at a 36" load center, lbs at a 42" load center.
6. Center of Gravity
- a. The center of gravity for a forklift is located towards the rear of the forklift. The higher you lift a load, the more the center shifts toward the forks. If you lift too heavy a load, or tilt a heavy load, you'll shift the center of gravity too far, and tip the lift truck over.
  - b. There is also a *stability triangle* that helps to balance the forklift. The stability triangle is a three part system composed of a pivot pin, and the two front wheels.
  - c. When you have a load on the forks, the center of gravity moves toward the forks, making a combined center of gravity. If this center of gravity shifts out of the imaginary lines of the triangle, the forklift will turn over.

*If you observe safety rules, operate equipment with care and exercise good judgment the equipment will serve you well and safely.*

### **OSHA Operating Rules**

1. Only authorized personnel may operate a forklift.
2. Inspect forklift daily.
3. Do not allow anyone to ride on the sides, rear or forks of the vehicle.
  - a. If it is necessary to have someone on the forks, make sure they are in a safety platform to prevent anyone from getting their hands caught in the mast.
4. Drive at normal walking speed.
5. Forklifts are engineered to be operated slowly, not by speeding.
6. Do not drive up to someone standing by a wall, a bench, or any other obstacle.
7. When parking, be sure to bring forks to the floor, turn off motor, remove key from ignition, and

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- put on parking brake.
8. Be aware of pedestrians, remember they have the right-of-way.
  9. Pedestrians have the obligation to watch where they walk, but forklift operators have the responsibility not to cause accidents.
  10. If you are driving forklift equipment onto truck or trailers, make sure the floor will safely hold the weight of the truck and load.
    - a. Trailers without trucks should be secured by a stabilizing jack to prevent overloading of the front of the trailer.
    - b. Always chock trucks and trailers if you are driving equipment into the vehicle.
  11. *Do not smoke* when driving, refueling, or doing any battery charges.
  12. Notify supervisors of *all* accidents.
  13. Do not block emergency fire equipment or exit doors.
  14. Be alert for hazards, and do not cause hazards by the way you operate or park your equipment.

## Operator Maintenance Procedures

1. Don't use unsafe equipment. An unsafe vehicle is defined as having any of the following conditions:
  - a. Horn defective
  - b. Brakes defective
  - c. Parking brake defective
  - d. Steering wheel has more than two inches of play
  - e. Leaks in fuel, oil hydraulic or transmission systems
2. Check fuel, oil and radiator before operating.
3. When operating an electric forklift, make sure battery is checked on each shift.
4. Before charging batteries, make sure battery water level covers the top of battery plates, as this ensures a good charge and you won't ruin your battery.
5. When charging batteries:
  - a. Follow company safety rules
  - b. Always wear eye protection
  - c. Make sure ignition key and battery charger are turned off when plugging charger into forklift to prevent sparks from causing explosions
6. Once a day run the mast all the way to the top to lubricate pistons and rubber parts.
7. Periodically check the tension on the mast chains to ensure the tension on both chains is equal. It is unsafe to operate forklifts with mast chains of unequal tension.

*The keys to safety are a good attitude, to think about safety, and to not take short cuts.  
Take time for safety, because safety matters, and you matter!*

## PALLET JACKS

1. Check equipment for defects before starting work. Make sure safeties, catches and brakes are in working order. Report all mechanical or hydraulic problems to your supervisor immediately – do not use a malfunctioning device.
2. Familiarize yourself with the manufacturer's special instructions for safety. Review and check out emergency stopping procedures and load lowering requirements.
3. Plan what you intend to accomplish in advance. Before you move a loaded lifting device that has casters or wheels for mobility, make sure the load is secure and the lifting mechanism is set at the lowest operating position. Only move loads over level and even surfaces.
4. Do not exceed the device's capacity of lifting loads, heights, and traveling limits. Block wheels

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and casters before lifting.

5. Check the attachment points of the tackle blocks and make sure they are strong enough to support the load.
6. Position the lift directly under the final position to which the equipment or materials are to be raised.
7. Check balance and load distribution to prevent the lift from tipping or overturning.
8. Make sure only properly instructed personnel operate the lifting device.
9. Never indulge in horseplay or practical jokes with lifting equipment.

## **AERIAL LIFT SAFETY**

### **Preparation**

1. Only employees who have been trained on the equipment will be permitted to work with, on, or near aerial or scissor lifts.
2. The equipment must be inspected at the beginning of the day and periodically throughout the day, paying special attention to braking and safety devices.
3. The lift platform will be kept clear of clutter and debris.
4. Employees must clean mud and grease off their shoes before entering the work platform.
5. Operators must read and understand the safety and operation notices on the equipment to insure equipment is operated within its safe capacity.

### **Operations**

1. Be aware of surroundings to avoid overhead or side obstructions. Post a spotter when moving equipment through tight quarters.
2. Exercise particular caution when backing up, and always use a spotter to assist in backing.
3. Make sure the floor or ground on which you intend to drive is strong enough to support the weight of the machine.
4. Follow manufacturer's recommendations regarding advisability of moving the lift with the platform elevated. Movement of the machine with the platform elevated is not recommended unless the surface over which it will travel has been observed by a ground-level spotter to be completely smooth, level, and free of any debris or obstruction.
5. Avoid electrical lines and overhead cables, pipes, joists, etc. when raising or lowering the lift.
6. Monitor movements and behavior of other people in the work area.

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7. The lift must be moved smoothly and deliberately, to avoid injury to workers in the bucket.
8. The area surrounding and beneath lift operations must be kept clear of personnel and equipment.

### **Employee Safety on the Lift**

1. Employees must exercise caution when entering or exiting the work platform.
2. Employees must not attempt to enter any part of the vehicle when it is in motion.
3. Make sure all entry gates are closed and all guardrails are up before the lift is raised.
4. Keep at least one foot on the platform at all times. Do not straddle the top rail or enclosure.
5. Use required restraint system or other personal protective equipment.
6. If you are using power tools while on the lift, make sure tools and lift are properly grounded to prevent electrical shock.

### **CHERRY PICKER AND BOOM TRUCK SAFETY**

#### **Preparation**

1. Only employees who have been trained on the equipment will be permitted to work with, in, or near cherry picker/boom truck vehicles.
2. The equipment must be inspected at the beginning of the day and periodically throughout the day, paying special attention to braking and safety devices.
3. The cab and bucket will be kept clear of clutter and debris.
4. Employees must clean mud and grease off their shoes before operating the vehicle or entering the bucket.
5. Operators must read and understand safety and operations notices on the equipment to insure equipment is operated within its safe capacity.

#### **Operations**

1. Secure the turntable and/or lower the boom before traveling.
2. Be aware of surroundings to avoid overhead or side obstructions. Post a spotter when moving equipment through tight quarters.
3. Exercise particular caution when backing up, and always use a spotter to assist in backing.

4. Make sure the floor or ground on which you intend to drive is strong enough to support the weight of the machine.
5. Unless lifting within “on rubber” capacities, operate with outriggers fully extended so as to remove all weight from the machine’s tires.
6. Avoid electrical lines and overhead cables, pipes, joists, etc.
7. Monitor movements and behavior of other people in the work area.
8. The boom and bucket must be moved smoothly and deliberately, to avoid injury to workers in the bucket.
9. The area surrounding and beneath bucket operations must be kept clear of personnel and equipment.

**Employee Safety in the Bucket**

1. Employees must exercise caution when entering or exiting the cab or bucket.
2. Employees must not attempt to enter any part of the vehicle when it is in motion.
3. Make sure all entry gates are closed before the bucket is raised.
4. Keep at least one foot on the floor of the bucket at all times. Do not straddle the top rail or enclosure.
5. Use required restraint system or other personal protective equipment.
6. If you are using power tools while in the bucket, make sure tools and bucket are properly grounded to prevent electrical shock.
7. Take up only the workers, tools, and materials required to complete the immediate task.