

# **Jay Industries, Inc.**

## **Mechanical Power Press Employee Safety Manual**

The power press is an extremely powerful machine capable of exerting force in excess of 3,000 tons per square inch. It requires your utmost attention for safe and efficient operation.

This manual covers basic information only and is not intended to replace on the job training and supervision.

Annually, about 4,000 power press operators suffer a lost time injury and 49% of all injuries suffered result in an amputation.

Reduce your risk of injury by following established safety procedures.

### **Power Press Operations**

Power presses are used to punch, shear, or form metal. The press has a stationary bed or anvil, a slide, and a frame.

Most power presses shape metal that is placed into the press, at the point of operation. The worker then presses a palm button or foot switch to activate the press. The metal is removed manually or automatically, the parts and scrap sorted, and the process is repeated.

Power presses are efficient and effective, and used to make parts for products that people use every day. Power presses come in a variety of shapes and sizes, from a few feet tall to several stories in height.

There are two types of presses, Full Revolution and Part Revolution.

Full Revolution power presses cannot be stopped until the press has performed a full stroke. Emergency brakes and light curtains do not function properly on these presses because they cannot stop the press in the middle of its cycle. At this time, Jay Industries, Inc. does not have any full revolution presses in operation.

Part Revolution power presses can be stopped in mid-stroke if there is a problem. The press can be stopped by activating the emergency brake on the machine.

### **Power Press Hazards**

A power press can present seriously hazards to its operator, resulting in the amputation of fingers, hands, arms or other disabling injuries. Proper safeguards, employee training, press maintenance, safe procedures and regular inspections are very important to reduce hazards.

For press operators, the greatest danger is at the point when metal is inserted, held, or withdrawn by hand. This is the point of entry. Safeguards are designed to eliminate the possibility of operators or workers placing their hands or any body part in contact with hazardous moving parts. Operators should never tamper with or remove safeguards.

Press operators must know their machine, such as how to use press controls, possible pinch or crush points, where moving parts are located, and how to use safety devices. Operators and press maintenance must be trained on how to lock out presses, how to remove stuck or jammed parts, and who they should contact about problems. They must also know how to use their Personal Protective Equipment.

### **Power Press Safety Practices**

Hands and limbs can be bruised, cut or amputated by the force of a power press. It is extremely important to monitor hand and body placement even when the press is not operating. When placing or removing metal on the anvil of the press, observe the proper safety distance from the nearest pinch point, as established by press procedure or the supervisor. It is specific for each press. Be sure the anvil is clean and that metal is properly seated before you activate the press. Since not all presses can be stopped once the clutch has been activated, it is necessary to maintain a safe distance at all times. If a part becomes lodged, use only the tongs or tools approved by your supervisor to remove it.

Even though a machine may not be operating, never assume that it is safe to reach inside the press for any reason. Uncontrolled energy can build up and unexpectedly activate the press. Any injury is not worth the time saved by a short cut.

If a problem occurs while you are operating a power press, be sure to notify the proper personnel. Only trained and qualified mechanics should repair or perform maintenance on a power press after it has been locked out.

Know and follow the best safety practices at your job, which includes becoming familiar with the press you operate, using safeguards, and taking steps to prevent injuries.

Before you begin work, perform a hazard analysis of your work area. Check the machine for unusual conditions, such as leaking oil, wobbly wheels or frayed cords. Talk to the operator the prior shift. Ask if there are any problems you should know about.

Perform a test-run on your press. See that the operation buttons and e-stops are working. If a problem comes up, inform the proper person. If you ignore a problem, you may put yourself and your co-workers at risk.

When a problem occurs that requires breaking the plane of moving parts, lock out/tag out procedures must be followed. They are vital to protect hand, arm and body injuries at the point of injury.

Good housekeeping is a priority for a safe working environment. Keep the floor clean and free of debris and oil, in order to avoid a slip, trip and fall. Only the materials necessary to perform your job should be in the work area.

### **Personal Protective Equipment**

Projectiles are a potential hazard when operating a power press. Improperly placed material, pieces of debris, or exploding dies can be ejected from the press when the ram is engaged. Safety glasses with side shields should be used to keep projectiles from hurting your eyes.

Extremely high noise levels are common in the press room. If an 8 hour time weighted average exposure of 85 decibels or more is present. Remember, the damage incurred from hearing loss can be irreversible.

When handling metal stock and parts, be sure to take the proper precautions to protect your hands. Gloves should be utilized to protect yourself against cuts and abrasions from sharp materials. There are situations where gloves can be hazardous, such as when a glove is caught in a pinch point, bringing your hand into a harmful area. To stay safe, talk to your supervisor about the proper PPE for the job.

### **Power Press Safeguards**

Safeguarding can be achieved by using either a guard creating a physical barrier between you and the press, or a device that operates to keep your hands away from the point of entry. Each power press has guards or devices that are specific to the design and hazards of that press.

Barrier guards are put into place to eliminate contact with the moving parts of the press or to deflect possible projectiles. Keep these guards in place and be sure they are securely attached before you operate the power press. Modifying or disabling a guard can put you and your coworkers in danger.

Two-hand controls are designed to ensure your hands are away from the gate as the power press is activated. These controls require concurrent pressure from both hands to activate the press.

Although your hands are a safe distance from the press, you must be aware of other variables that could harm you. Loose clothing, jewelry, and long hair can be caught in a pinch point or roller. Keep your attire neat and tucked in to avoid accidental contact with the press.

Foot controls allow the worker to manually activate the press cycle by pressing down a foot switch or pedal, leaving the hands free during the press stroke. Since the foot pedal allows your upper body to move freely as the press is activated, you must be attentive to your hand and body positioning. Foot switches can be inadvertently activated while your hands are at the point of operation.

To avoid accidentally activating the foot switch, make sure the floor is clear of trip hazards such as air hoses or extension cords. Inspect the pedal to be sure the guard is fixed and in place and there is sufficient grip on the non-slip pedal.

Pressure-sensing devices or light curtains detect when a person or object interrupts the field of the sensor. When the sensing field is interrupted, the machine will automatically stop. Although these devices are very effective in reducing hazardous exposure, the same safety precautions must be observed, because nothing is failsafe. By maintaining proper distances, you will protect your own safety, even if a light curtain malfunctions.

Pullbacks or restraints function to pull the operator's hands away from the area of the closing dies during each stroke of the power press. When using a pullback, be sure the wrist bands are secured on both your wrists and pull back has been adjusted for your size and for the particular die in the press. At this time, Jay Industries, Inc. does not utilize pullbacks or restraints.

### **Summary**

1. Know the operation of your press, so that you can detect inconsistencies or problems.
2. Perform a hazard analysis of your work area before every shift and after a job change.
3. Ensure that your work area is clean and that all materials and tools are in their proper places.
4. Observe and utilize all machine safeguarding. Inspect barrier guards and safety devices before each use, to maximize your safety.
5. Use the proper Personal Protective Equipment and appropriate safe attire for your job.

One incident could alter your life forever, so take control, be aware of hazards, and observe safe work practices. Following these guidelines will make a powerful impact on your safety.

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