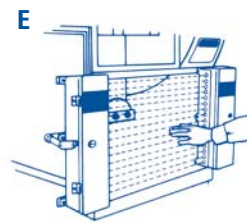
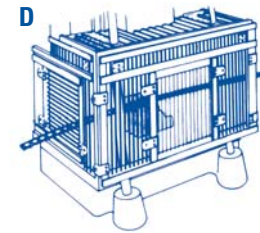
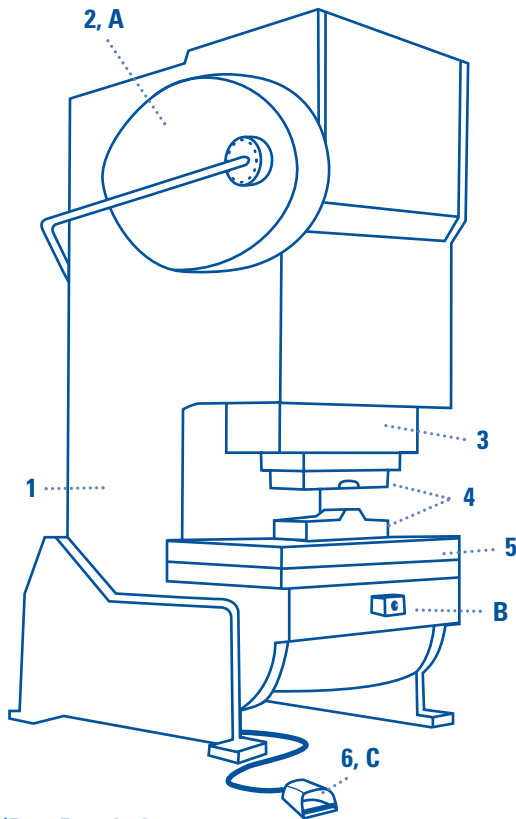


Equipment identification:

Date :

Punch Press

- POSITIVE CLUTCH (FULL REVOLUTION MECHANICAL PRESS)**
 - The slide action is controlled by a flywheel.
 - It is **impossible** to stop the slide until the cycle has been completed.
- FRICTION CLUTCH (PARTIAL REVOLUTION MECHANICAL PRESS)**
 - The slide action is controlled by a flywheel.
 - It is **possible** to stop the slide before the cycle has been completed.
- HYDRAULIC MECHANICAL PRESS**
 - The slide action is controlled by hydraulic rams.



Friction Clutch (Part Revolution Mechanical Press) Parts

- 1 Frame
- 2 Flywheel
- 3 Slide
- 4 Die Shoes
- 5 Bed
- 6 Pedal Control

Safety Devices

- A Flywheel Guard
- B Emergency Cut-Off Switch
- C Side- And Top-Capped Pedal Control
- D Guard
- E Photo detector Security Screen
- F Two-Hand Control



Association paritaire pour la santé
et la sécurité du travail
Secteur fabrication de produits
en métal et de produits électriques
www.aspme.org



Institut de recherche Robert-Sauvé
en santé et en sécurité du travail
www.irstst.qc.ca



It's About Making A Difference.
Industrial Accident Prevention Association
1-800-406-IAPA (4272)
www.iapa.ca

SELF-ASSESSMENT FORM
For Occupational Health And Safety

LEGEND

Preventative Measures

- ▶ Procedural Measures
- Orders/instructions

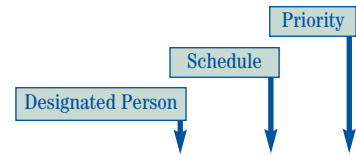
Priority Codes for applying risk measures:

- A. Immediate stoppage and resolution
- B. Resolution as soon as possible
- C. Resolution according to normal company procedures

The suggested preventative measures are based in part from the Occupational Health And Safety Regulations (RSST, S – 2.1, r.19.01), from An Act Respecting Occupational Health and Safety (Quebec LSST-S-2.1), as well as CSA Standard Z142-M 90 and EN 954 -1

Mechanical Hazards

Most likely injuries: Crushing, fractures, cuts and foreign bodies.



Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
Risk Factor: Access To Danger Zone (die shoes)						
On a Positive Clutch (Full Revolution Mechanical Press)						
▶ Install fixed guards.	<input type="checkbox"/>					
▶ Install moveable guards with an interlocking device that: - neutralizes the slide controls when the guard is opened, AND - maintains the guard in the closed position while the slide is descending, AND - does not provoke press start-up at guard closure.	<input type="checkbox"/>					
▶ Install two-hand controls (only for presses with a stroke rate of over 100 strokes per minute). The operator must simultaneously depress both buttons to activate one press stroke. For automatic mode, add fixed or moveable guards.	<input type="checkbox"/>					
▶ Install a clearly marked emergency stop button located near each operator.	<input type="checkbox"/>					
Risk Factor: Access To Danger Zone (die shoes)						
On a Hydraulic or Friction Clutch (Part Revolution Mechanical Press)						
▶ Install fixed guards.	<input type="checkbox"/>					
▶ Install moveable guards with an interlocking device that: - stops the slide controls when the ram descender slide descent is open and neutralizes the slide control when the guard is open, AND - maintains the guard in the closed position while the slide is descending, AND - does not provoke press start-up at guard closure.	<input type="checkbox"/>					
▶ Install photo detectors approved for safety device use (category 4).	<input type="checkbox"/>					
▶ Install two-hand controls where: - the operator must simultaneously depress both buttons to activate one press stroke, AND - the slide descent is halted as soon as the operator releases one of the buttons.. For automatic mode, add fixed or moveable guards.	<input type="checkbox"/>					

Mechanical Hazards (Continued)

Most likely injuries: Crushing, fractures, cuts and foreign bodies.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
Risk Factor: Access To Danger Zone (Die Shoes)						
On a hydraulic or Friction Clutch (Part Revolution Mechanical Press)						
▶ Install safety devices (e.g., two-hand controls, etc.) at a safe enough distance from the danger zone so that no one can reach the danger zone before the slide has stopped.	<input type="checkbox"/>					
▶ Install devices that maintain the workpiece in position relative to the die shoes (or bolster plates) without the need of hands.	<input type="checkbox"/>					
▶ Install a clearly marked emergency stop button located near each operator.	<input type="checkbox"/>					
Risk Factor: Involuntary Action On The Pedal Or Button Controls						
▶ Install recessed or flush-mounted control buttons.	<input type="checkbox"/>					
▶ Install a side and top-capped pedal control.	<input type="checkbox"/>					
▶ Install as many controls as there are workers simultaneously using the press. All workers must maintain their control devices depressed to initiate a press stroke.	<input type="checkbox"/>					
▶ Install a by-pass device in order to make any unused control devices inoperative.	<input type="checkbox"/>					
Risk Factor: Repeat Stroke						
On a positive-clutch (full revolution mechanical press)						
▶ Install a single-action mechanism that: - deactivates the pedal, the lever, the hydraulic power control unit or the control solenoid after each press stroke, AND - stops the start of a new cycle until the end of the previous cycle.	<input type="checkbox"/>					
▶ Install compression springs in the clutch mechanism. These must be located around a rod or within a guide and the space between the coils must be smaller than the wire diameter.	<input type="checkbox"/>					
▶ Replace defective parts by OEM parts. When this is not possible, replace with parts that meet or exceed OEM specifications. Using welded replacement parts in the clutch is forbidden.	<input type="checkbox"/>					
● Adjust the brake so the clutch does not knock nor make ratcheting noises.	<input type="checkbox"/>					
Risk Factor: Repeat Stroke						
On a friction-clutch (part revolution mechanical press)						
▶ Install an anti-repeat stroke device.	<input type="checkbox"/>					
▶ Install a dual-body safety valve in the clutch-brake hydraulic or pneumatic circuit.	<input type="checkbox"/>					
▶ Add a second switch to the braking system. In case of failure in one of the switches, the press trips in the top dead centre position and a new cycle cannot be actuated.	<input type="checkbox"/>					
Risk Factor: Repeat Stroke						
On a hydraulic clutch mechanical press						
▶ Install an anti-repeat stroke device.	<input type="checkbox"/>					

Mechanical Hazards (Continued)

Most likely injuries: Crushing, fractures, cuts and foreign bodies.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
Risk Factor: Accidental Selection Of Automatic Mode						
► Indicate the function of all buttons and function selector switches.		<input type="checkbox"/>				
● Lock the selector in single stroke mode and remove the key.		<input type="checkbox"/>				
Risk Factor: Accidental Descent Of The Slide During Start-Up						
● Apply lock-out procedures: - disconnect all sources of energy (except power supply to pneumatic counterweight) - dissipate (purge) all residual energies (except power supply to pneumatic counterweight) and wait for the flywheel to come to a complete stop - lockout all sources of energy - validate to ensure start-up is no longer possible and that all power has been dissipated (purged).		<input type="checkbox"/>				
● Place safety chocks between the slide and the bed.						
Risk Factor: Access To Press Moving Parts						
► Install fixed guards around moving parts: flywheel, belts, gears, counterweights, etc.		<input type="checkbox"/>				
Risk Factor: Flying Particles Or Fragments (Slivers)						
Keep the die shoes safe from cracking: ● properly adjust the clearance at the time of tooling up the die shoes.		<input type="checkbox"/>				
● Properly secure the die shoes on both the slide and the bed.		<input type="checkbox"/>				
Avoid an overload situation when more than one workpiece is fed at a time. ► Install a workpiece ejection system or a stripper plate to keep workpieces from adhering to the die shoes.		<input type="checkbox"/>				
► Install a detection device to monitor workpieces and waste movement during automatic feed mode.		<input type="checkbox"/>				
● Use grasping tools made of soft metal (e.g., aluminum or magnesium).		<input type="checkbox"/>				
● Wear CSA-approved safety glasses with lateral protection.		<input type="checkbox"/>				
Risk Factor: Handling Non-Deburred Plates						
● De-burr plate workpieces		<input type="checkbox"/>				
● Wear cut-resistant gloves.		<input type="checkbox"/>				
Risk Factor: Falling Metal Plate						
● Wear CSA-approved safety footwear with steel-capped toes and steel upper plate.		<input type="checkbox"/>				

Ergonomic Hazards

Most likely injuries: Musculo skeletal disorders, backaches, fractures, strains and sprains, etc.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
Risk Factor: Handling Heavy And Bulky Workpieces						
▶ Supply mechanical handling devices (hoist, suction cups, etc.) suitable to the weight and dimensions of the workpiece.	<input type="checkbox"/>					
Install equipment:						
▶ to aid the feeding of workpieces, such as roller conveyor, roller-ball table, trestles, elevating table, etc.	<input type="checkbox"/>					
▶ to assist in removing workpieces, such as a gently sloping surface or motorized conveyor.	<input type="checkbox"/>					
● Ask for help from another worker when help is needed.	<input type="checkbox"/>					
Risk Factor: Straining Working Positions and Repetitive Movements						
▶ Supply reclining baskets, elevating tables or receptacles to assist in accessing workpieces.	<input type="checkbox"/>					
▶ Install a system of springs or air jets to assist in the removal of pressed pieces.	<input type="checkbox"/>					
▶ Install an adjustable stand to enable work height adjustments.	<input type="checkbox"/>					
Risk Factor: Strain During Tooling and Re-Tooling Of Die shoes						
▶ Supply a dolly with lift table.	<input type="checkbox"/>					
▶ Install a retooling system with retractable roller or ball tracks in the bed.	<input type="checkbox"/>					
Risk Factor: Insufficient Lighting						
▶ Install sufficient lighting to ensure good visibility in the work area	<input type="checkbox"/>					
Risk Factor: Static Standing Work						
▶ Supply appropriate seating if suitable for such work.	<input type="checkbox"/>					
▶ Supply anti fatigue mats.	<input type="checkbox"/>					

Chemical Hazards

Most likely injuries: Dermatitis, respiratory tract irritation.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
Risk Factor: Exposure To Lubricants						
● Consult the MSDS for the products in use.	<input type="checkbox"/>					
▶ Select lubricants that have little effect on health (skin and respiratory tracts).	<input type="checkbox"/>					
● Reduce lubricant spray as much as possible.	<input type="checkbox"/>					
▶ Collect air samples at workstations in order to evaluate the concentration of toxic substances.	<input type="checkbox"/>					
● Wear gloves that are approved for the products used. Ensure the gloves are also cut resistant and provide good grip to workpieces.	<input type="checkbox"/>					
● Use barrier lotions.	<input type="checkbox"/>					

Physical Hazards

Most likely injury: Hearing loss.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
Risk Factor: Impact Noise						
▶ Hone the die shoes frequently.	<input type="checkbox"/>					
▶ Install acoustic batting or screens around the noisy sections of the press.	<input type="checkbox"/>					
▶ Install vibration isolators under the press chassis.	<input type="checkbox"/>					
● Wear earplugs or earmuffs.	<input type="checkbox"/>					
Risk Factor: Noise From Air Nozzles						
▶ Install sound dampers on pneumatic valve nozzles.	<input type="checkbox"/>					
▶ Install silent-type air ejectors for removal of machined and waste pieces.	<input type="checkbox"/>					

Electrical Hazards

Most likely injuries: Electrocutation

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
Risk Factor: Contact With Parts Normally Or Accidentally Energized						
▶ Install an isolating switch near the punch press, with clear markings.	<input type="checkbox"/>					
● Apply lock-out procedures: - disconnect all sources of energy - lockout all power supply - validate to ensure start-up is no longer possible.	<input type="checkbox"/>					
● Never lockout an isolation switch in the ON position. The isolating switch must open the circuit (circuit in the OFF position) at all times.	<input type="checkbox"/>					
▶ Install control devices powered by very low voltage (30 volts or less).	<input type="checkbox"/>					
● Check the power supply cables insulation and the punch press grounding circuit.	<input type="checkbox"/>					

Notes:

Completed By: