

Equipment identification:

# Shearing Machine

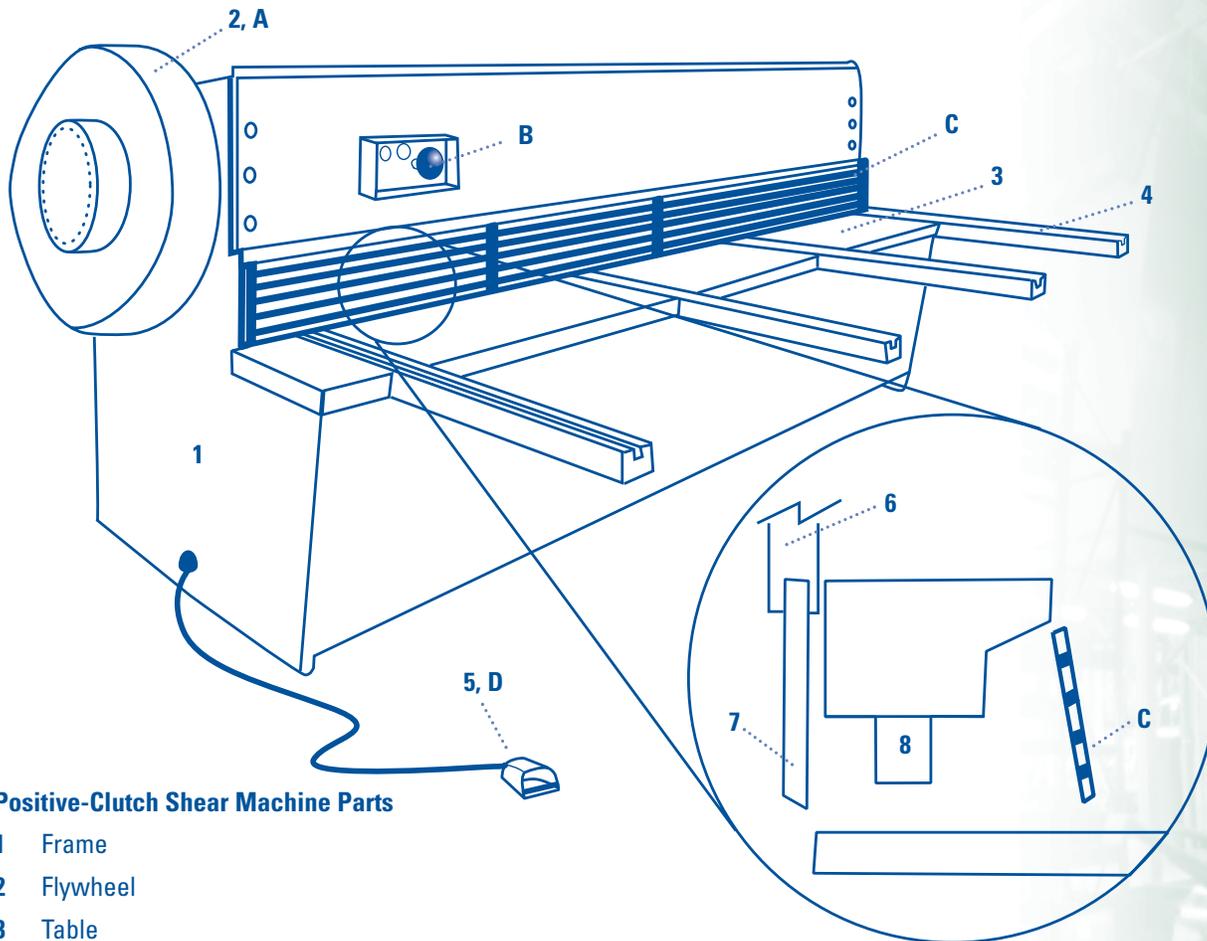
Date :

## POSITIVE-CLUTCH SHEAR MACHINE :

- The shear action is controlled by a flywheel.
- It is impossible to stop the shear until the cycle has been completed.

## HYDRAULIC SHEAR MACHINE :

- The shear action is controlled by hydraulic rams.



### Positive-Clutch Shear Machine Parts

- 1 Frame
- 2 Flywheel
- 3 Table
- 4 Support Guides
- 5 Pedal Control
- 6 Slide
- 7 Shear
- 8 Hold Down

### Safety Devices

- A Flywheel Guard
- B Emergency Stop Switch
- C Guard Protecting Against Hold Down And Shear
- D Side- And Top-Capped Pedal Control



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**SELF-ASSESSMENT FORM**  
For Occupational Health And Safety

## LEGEND

### Preventative Measures

- ▶ Procedural Measures
- Orders/instructions

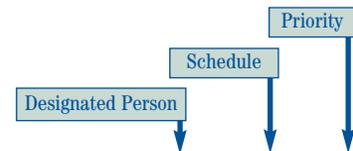
### Priority Codes for applying risk measures:

- 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 Workplace Health And Safety Regulations (RSST), from An Act Respecting Occupational Health and Safety (Québec LSST, S-2.1), as well as CSA Standard Z142-02 and EN 954-1.

# Mechanical Hazards

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



Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Access To Danger Zone (Shear And Hold Down) On a positive-clutch shear machine</b>						
▶ Install fixed guards.	<input type="checkbox"/>					
▶ Install moveable guards with an interlocking device that: - neutralizes the shear descent when the guard is opened, AND - maintains the guard in the closed position while the shear is descending, AND - does not provoke shear start-up at guard closure.	<input type="checkbox"/>					
▶ Install a clearly marked emergency stop button located near each operator.						
<b>Risk Factor: Access To Danger Zone (Shear And Hold Down) On a hydraulic shear machine</b>						
▶ Install fixed guards.	<input type="checkbox"/>					
▶ Install moveable guards with an interlocking device that: - neutralizes the shear descent when the guard is opened, AND - maintains the guard in the closed position while the shear is descending, AND - does not provoke shear start-up at guard closure.	<input type="checkbox"/>					
▶ Install a clearly marked emergency stop button located near each operator.	<input type="checkbox"/>					
<b>Risk Factor: Accidental Descent Of The Shear During Maintenance And Repairs</b>						
● Apply lockout procedures: - disconnect all sources of energy - dissipate (purge) all residual energies 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 blocks under the slide.	<input type="checkbox"/>					

# Mechanical Hazards (continued)

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

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <small>N/A</small> <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Accidental Descent Of The Shear During Start-Up</b>						
▶ Install a safety device to prevent a premature descent of the shear.	<input type="checkbox"/>					
<b>Risk Factor: Repeat Stroke</b>						
<b>On a positive-clutch shear machine</b>						
▶ Install a single-action mechanism that: - deactivates the pedal, the lever, the hydraulic power control unit or the control solenoid after each shear 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 spires 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. Do not use welded replacement parts for the clutch.	<input type="checkbox"/>					
● Adjust the brake so the clutch does not knock nor make ratcheting noises.	<input type="checkbox"/>					
<b>Risk Factor: Repeat Stroke</b>						
<b>On a hydraulic clutch shear machine</b>						
▶ Install an anti-repeat stroke device.	<input type="checkbox"/>					
<b>Risk Factor: Rear Access To Danger Zone</b>						
<b>On a positive-clutch shear machine</b>						
▶ Install moveable guards with an interlocking device that: - neutralizes the shear descent when the guard is opened, AND - maintains the guard in the closed position while the shear is descending, AND - does not provoke shear start-up at guard closure.	<input type="checkbox"/>					
▶ Install a clearly marked emergency stop button located at the rear of the machine.	<input type="checkbox"/>					
<b>Risk Factor: Access To Danger Zone From Behind The Shear</b>						
<b>On a hydraulic shear machine</b>						
▶ Install moveable guards with an interlocking device that: - neutralizes the shear descent when the guard is opened, AND - maintains the guard in the closed position while the shear is descending, AND - does not provoke shear start-up at guard closure.	<input type="checkbox"/>					
▶ Install photo detectors approved for safety device use (category 4).	<input type="checkbox"/>					
▶ Install a clearly marked emergency stop button located at the rear of the machine.	<input type="checkbox"/>					



# Ergonomic Hazards

Most likely injuries: musculo-skeletal disorders, backaches.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Handling Heavy And Bulky Workpieces</b>						
▶ 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 workpieces, such as: ▶ roller conveyor, roller-ball table, trestles, elevating table, etc	<input type="checkbox"/>					
▶ Ball-bearing system on table and guides to help position the workpiece	<input type="checkbox"/>					
▶ Gently sloping surface or motorized conveyor to assist in removing workpieces.	<input type="checkbox"/>					
● Ask for help from another worker when help is needed.	<input type="checkbox"/>					
<b>Risk Factor: Insufficient Lighting</b>						
▶ Install sufficient lighting to ensure good visibility for reading ruler measurements, plans, etc.	<input type="checkbox"/>					

# Chemical Hazards

Most likely injuries: Dermatitis.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/>	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Exposure To Lubricants</b>						
● Consult MSDS documentation.	<input type="checkbox"/>					
▶ Select lubricants that have little effect on skin.	<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"/>					

Notes:

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# Physical Hazards

Most likely injury: Hearing loss.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/> N/A	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Impact Noise</b>						
▶ Install damping pads under the plunger pistons.	<input type="checkbox"/>					
▶ Sharpen the shear regularly.	<input type="checkbox"/>					
▶ Install a gently sloping off-cut chute to limit the height of cuts drop.	<input type="checkbox"/>					
▶ Install damping materials in the chute and, in bins, when used.	<input type="checkbox"/>					
▶ Install acoustic batting around the noisy sections of the shearing machine.	<input type="checkbox"/>					
▶ Install vibration isolators under the shear frame.	<input type="checkbox"/>					
● Wear earplugs or earmuffs.	<input type="checkbox"/>					
<b>Risk Factor: Noise From Air Nozzles</b>						
▶ Install sound mufflers on pneumatic valve nozzles.	<input type="checkbox"/>					

# Electrical Hazards

Most likely injuries: Electrocution.

Preventative measures	Applicable <input checked="" type="checkbox"/>	Not applicable <input type="checkbox"/> N/A	Notes	Desig.	Sched.	Prior.
<b>Risk Factor: Contact With Parts Normally Or Accidentally Energized</b>						
▶ Install an isolating switch near the machine shear, with clear markings.	<input type="checkbox"/>					
● Apply lockout procedures: - disconnect all sources of energy - lockout all sources of energy - validate to ensure start-up is no longer possible.	<input type="checkbox"/>					
● Never lockout an isolating switch box 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 shearing machine grounding circuit.	<input type="checkbox"/>					

Completed By: