VERTICAL METAL BAND SAW

Equipment Identification:

Completed by: Date:

MACHINE ACTION TOOL

The purpose of this technical sheet is to provide information on the main risk factors associated with vertical band saws and to propose different ways to control them.

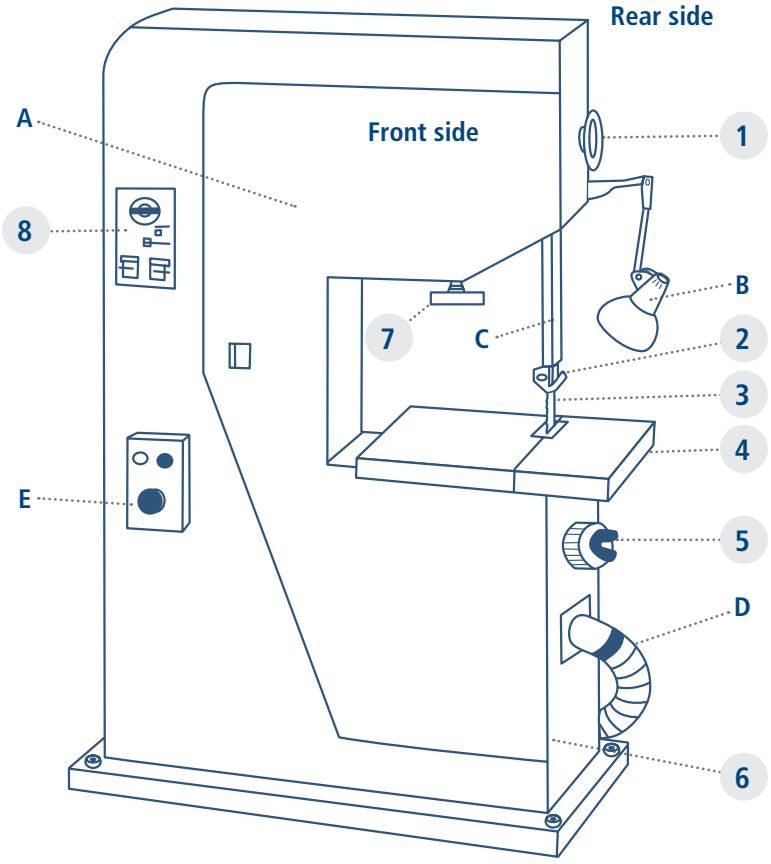
SAWING STATION

Saw station components

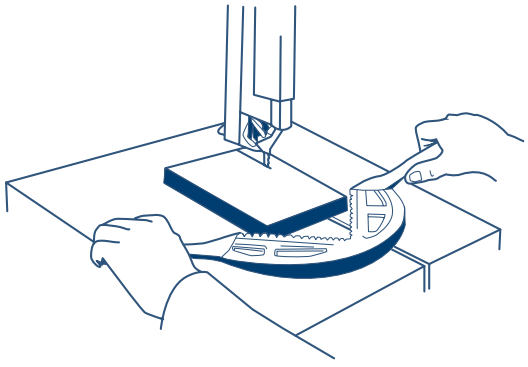
1. Knob to adjust the height of the blade guide and guard assembly
2. Upper blade guide
3. Saw blade
4. Table
5. Variable blade speed knob
6. Frame
7. Blade tension hand wheel
8. Saw band welder

Safety features

- A Interlocked door to prevent access to the wheels and the blade
- B Adjustable light
- C Adjustable blade guard
- D Dust collection duct
- E Emergency stop button



EXAMPLE OF A PUSHING TOOL



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HOW TO USE THIS DOCUMENT?

In the manner of an audit:

- Systematically review potential risk factors and identify those that are present.
- For each of the identified risk factors, review the proposed prevention measures to select those that seem most appropriate.

For training purposes:

- Target the instructions within the set of prevention measures.
- Provide the necessary means to comply with the instructions.
- Pass on instructions to workers and ensure their implementation.

CAUTION

This document focuses only on mechanical and electrical risk factors. However, there may be other risk factors when using this machine, including those of a chemical, biological or ergonomic nature.

DESCRIPTION

The vertical band saw cuts metal by running a toothed blade on one side that forms a continuous band. It is particularly useful when complex cuts are required as it allows cuts that are not straight.

INJURIES

The most frequent injuries with this machine are crushing, pinching, cuts, fractures, amputations, electrification and burns.

RISK FACTORS

#	MECHANICAL	PRESENT? (Yes / No)
1	Access to the moving blade near the point of operation	
2	Access to moving parts (wheels, unused section of the blade, drive belts, etc.)	
3	Accidental starting of the saw during blade change, maintenance, or repair	
4	Access to the cutting edges of a workpiece or saw blade when not in use	
5	Sawdust projection	
6	Projection of fragments due to blade breakage	
7	Sudden upswing of a long cut part	
8	Falling object	
9	Falling, slipping	
#	ELECTRIC	
10	Contact with elements usually or accidentally energized	

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1 ACCESS TO THE MOVING BLADE NEAR THE POINT OF OPERATION

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
TECHNICAL MEASURES			
Install a guard on the exposed part of the blade so that it is: • adjustable according to the height of the workpiece • attached to the upper blade guide • easily maneuverable.	☐		
Install a brake (mechanical, electrical) to stop the blade movement quickly.			
Install an easily accessible and clearly identified emergency stop button. This must cut off the power to the saw, but also to the welder/blade grinder when installed. The emergency stop must also activate the brake, if the machine is equipped with one.	☐		
Add a portion of fixed or adjustable guard under the work table to make the blade inaccessible.	☐		
INSTRUCTIONS FOR THE USER			
Adjust the upper blade guide and protective guard assembly as close as possible to the part (1 to 4 mm). Only the point of operation must be accessible.	☐		
Use a push stick/tool to keep hands away from the blade.	☐		
Use a brush to remove sawdust. Do not use hands.	☐		
Lower the upper blade guide assembly against the table at the end of the job.	☐		
Wear close-fitting clothing.	☐		
Never leave the saw running unattended.	☐		

2 ACCESS TO MOVING PARTS (WHEELS, UNUSED SECTION OF THE BLADE, DRIVE BELTS, ETC.)

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
TECHNICAL MEASURES			
Install fixed and/or interlocking guards so that moving parts are inaccessible.	☐		

3 ACCIDENTAL STARTING OF THE SAW DURING BLADE CHANGE, MAINTENANCE, OR REPAIR

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
TECHNICAL MEASURES			
Install one or more interlocking guards to prevent access to the moving parts. The interlocking device: • must stop the movement of the saw **AND** • must override the start command when the guard is open **AND** • must not cause the saw to restart when the guard is closed **AND** • must not be easily by-passed.	☐		
INSTRUCTIONS FOR THE USER			
Apply the lockout procedure specific to the equipment during maintenance or repair: • isolate energy sources • dissipate residual energy (wait for the equipment to stop completely) • lock out the isolation devices • make sure that no start-up is possible. Note: When changing the blade, the machine must be in lockout if the guard is not equipped with an interlocking device.	☐		

Remarks

4 ACCESS TO THE CUTTING EDGES OF A WORKPIECE OR SAW BLADE WHEN NOT IN USE

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
INSTRUCTIONS FOR THE USER			
Handle the blade and parts with cut-resistant gloves. Do not wear gloves while sawing.	☐		

5 SAWDUST PROJECTION

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
TECHNICAL MEASURES			
Install a dust collection system.	☐		
INSTRUCTIONS FOR THE USER			
Use an industrial vacuum cleaner to clean the machine rather than compressed air gun.	☐		
Remove the sawdust with a brush. Never blow with your mouth towards the sawdust to remove them.	☐		
Wear CSA approved safety glasses with side shields.	☐		
Wear tight-fitting long-sleeved clothing.	☐		

6 PROJECTION OF FRAGMENTS DUE TO BLADE BREAKAGE

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
INSTRUCTIONS FOR THE USER			
Refer to the selector table on the saw to choose the proper pitch and speed of the blade.	☐		
Adjust the tension of the blade according to the width of the blade, as indicated by the scale on the tension indicator.	☐		
Check the condition of the blade (presence of cracks, quality of the weld of the bandsaw, etc.).	☐		
Check the orientation of the teeth.	☐		
Adjust the upper blade guide and protective guard assembly as close as possible to the part (1 to 4 mm). Only the point of operation must be accessible.	☐		
Reduce the pressure exerted by the workpiece on the blade at the beginning and end of the cut.	☐		
Perform a "no load" test following a blade change.	☐		
Stop the saw in case of unusual noise.	☐		
Clean the swarf brushes to keep the blade clean.	☐		
Regularly check the condition of the packing (rubber tire) on the wheels.	☐		
Lubricate the blade (wax, cutting fluid).	☐		
Wear CSA approved safety glasses with side shields.	☐		

Remarks

7 SUDDEN UPSWING OF A LONG CUT PART

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
INSTRUCTIONS FOR THE USER			
Use a stand for sawing long parts.	☐		

8 FALLING OBJECT

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
TECHNICAL MEASURES			
Anchor the saw frame securely to the floor.	☐		
INSTRUCTIONS FOR THE USER			
Make sure there are no objects on the table that could potentially fall.	☐		
Wear CSA approved safety shoes with steel toe caps.	☐		

9 FALLING, SLIPPING

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
TECHNICAL MEASURES			
Repair and clean the floor: uneven surface, holes, slippery floor, presence of sawdust, etc.	☐		
INSTRUCTIONS FOR THE USER			
Replace the cutting fluid with a specially designed wax.	☐		

Remarks

10 CONTACT WITH ELEMENTS USUALLY OR ACCIDENTALLY ENERGIZED

PREVENTIVE MEASURES	Applied ☑	Not applicable n/a	NOTES (responsible / schedule / priority)
TECHNICAL MEASURES			
Install and identify a circuit breaker or outlet near the saw.	☐		
INSTRUCTIONS FOR THE USER			
Apply the lockout procedure specific to the equipment during maintenance or repair: • Isolate energy sources • Dissipate residual energy (wait for the equipment to stop completely) • Lock out the isolation devices • Make sure that no start-up is possible.	☐		
Check the insulation of the power cables and the grounding of the electrical circuit of the saw.	☐		

Remarks

NEED ASSISTANCE?

Do not hesitate to consult your MultiPrevention consultants if you have any questions about this sheet or about occupational health and safety.

REFERENCES

The proposed preventive measures come in part from the Regulation respecting occupational health and safety (RROHS, S-2.1, r.13), the Quebec Act respecting occupational health and safety (AOHS, S-2.1) and the European standard EN 13898: *Machine tools - Safety - Cold sawing machines*, Brussels, 2010, 58 p.

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MARCH2023