

SAFETY IN MANUFACTURING

Machine Risk Assessment Survey

The main purpose of a risk assessment is to decide which machine should be given priority, and which parts of the machine should be safeguarded first.

MACHINE RISK ASSESSMENT SURVEY				
Company Name	Date of Survey	Survey done by: 1. 2. 3.		
Machine Name	Machine Function			
Identify and describe every hazardous machine motion or harmful condition to which the worker's body parts are exposed (e.g., rotating shafts, in-running nip points, shearing parts, reciprocating parts, punching action, impact hazards, flying debris, abrasive surfaces, electrical hazards, hot/toxic fluids, vapours, emissions, radiation). Be as descriptive and detailed as possible.	Describe the worst injury that would reasonably occur due to each hazard. Use the following descriptions as a guide: <ul style="list-style-type: none"> • Fatal • Major (normally irreversible: permanent spinal damage, loss of sight, amputation/ crushing, respiratory damage) • Serious (normally reversible: loss of consciousness, burns, fractures) • Minor (bruising, cuts, light abrasions) 	Estimated severity of injury: Minor = 1 Serious = 5 Major = 7 Fatal = 10	Estimated likelihood of injury (see Note 1): Unlikely = 1 Possible = 5 Probable = 7 Certain = 10	Estimated level of risk (see Note 2): Estimated severity × estimated likelihood
1.				
2.				
3.				
4.				

Note: Gathering this information may require repeated observations, especially when determining what the worker does when normal production flow is interrupted.

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RECOMMENDED SAFEGUARDING TO ELIMINATE OR REDUCE THE RISK TO AN ACCEPTABLE LEVEL (SEE NOTE 3)

1.	3.
2.	4.

Note 1. The following factors may be useful when estimating the likelihood of injury:

- Machine cycle speed
- Hand feeding with foot control
- Operator training and experience
- Boredom factor (repetition)
- History of jams and misfeeds resulting in frequent access to danger areas of the machine
- Previous injuries on this machine or machines of this type

Note 2. Use the estimated level of risk to set the priority for implementing safeguarding measures.

The higher the estimated level of risk, the more urgent it is to implement safeguarding solutions.

Note 3. Always follow the hierarchy of safeguarding controls regardless of the perceived level of risk.

HIERARCHY OF SAFEGUARDING CONTROLS

<p>Most effective</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>Least effective</p>	1. Elimination or substitution	<ul style="list-style-type: none"> • Eliminate human interaction in the process • Eliminate pinch points • Automate material handling
	2. Engineering controls (safeguarding technology)	<ul style="list-style-type: none"> • Mechanical hard stops • Barrier guards • Interlocked guards • Presence-sensing devices • Two-hand controls
	3. Awareness	<ul style="list-style-type: none"> • Lights, beacons, strobes • Computer warnings (PLC-generated) • Restricted space painted on floor • Beepers • Horns and sirens • Warning signs and labels
	4. Training and procedures (administrative controls)	<ul style="list-style-type: none"> • Safe work procedures • Safety equipment inspections • Training • Lockout
	5. Personal protective equipment	<ul style="list-style-type: none"> • Safety eyewear • Face shields • Hearing protection • Gloves • Respirators