



MINISTRY OF HUMAN RESOURCES  
DEPARTMENT OF OCCUPATIONAL SAFETY AND HEALTH

# MACHINERY SAFETY BASIC e-GUIDE (MSBeG) :

## HAND INJURY

### 2025

# ACKNOWLEDGEMENTS

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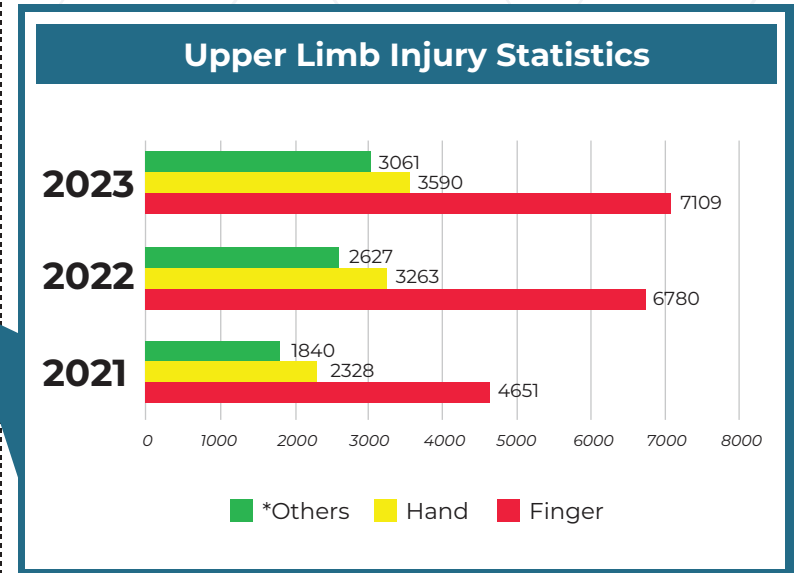
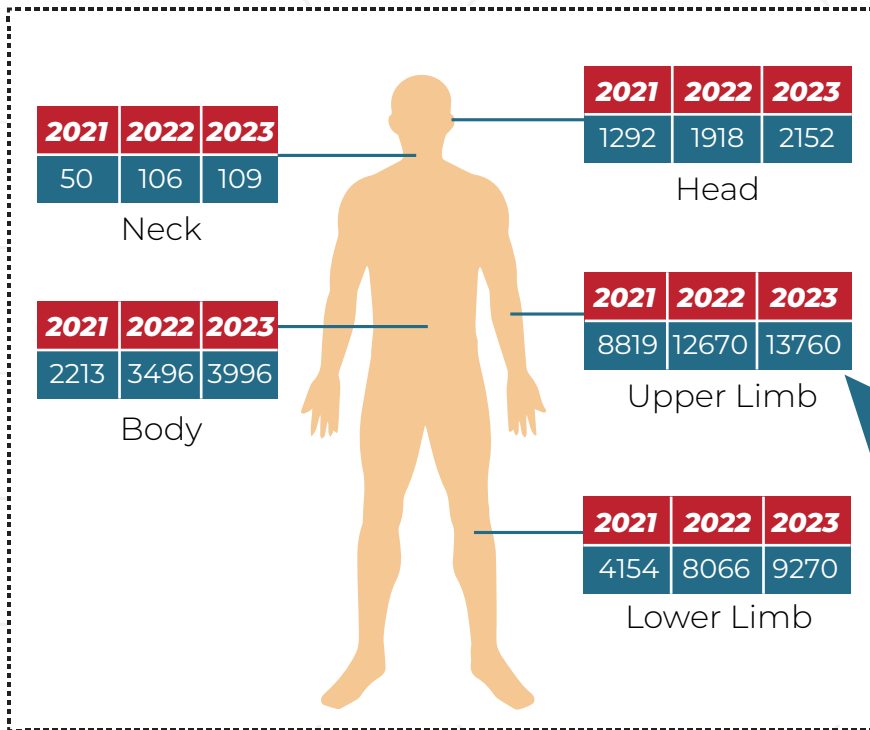
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- 2.0 UNDERSTANDING HAND INJURIES
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1.1

**DO YOU KNOW WHICH PART OF THE BODY IS FREQUENTLY INJURED???**

BASED ON NATIONAL OCCUPATIONAL ACCIDENT STATISTICS 2021 - 2023, THE HIGHEST INJURY LOCATION (BODY PARTS) **IS THE UPPER LIMB.**

Injury Location (Body Part)



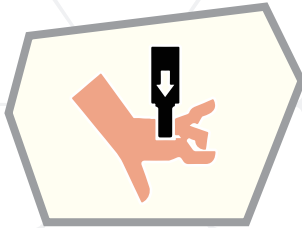
THE TREND OF HAND INJURY IS **INCREASING** BASED ON THE STATISTICS FROM 2021 UNTIL 2023

*\*Shoulder, wrists, finger nails, forearm, elbow, upper limb, upper arm, clavicle*

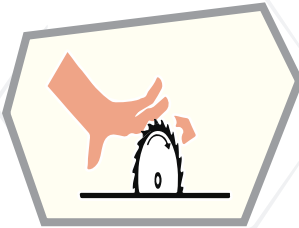
# 2.0 UNDERSTANDING HAND INJURIES

## 2.1

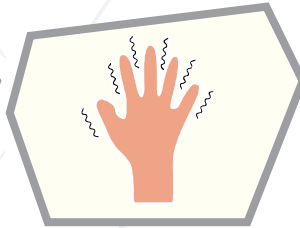
### UNDERSTANDING TYPE OF HAND INJURIES INVOLVING MACHINERY



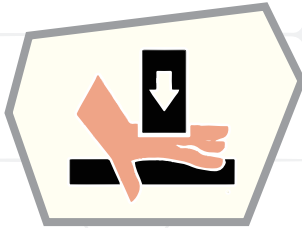
PUNCTURE



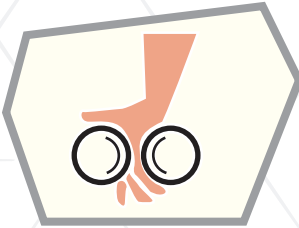
CUTTING



VIBRATION



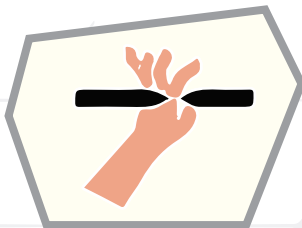
CRUSHING



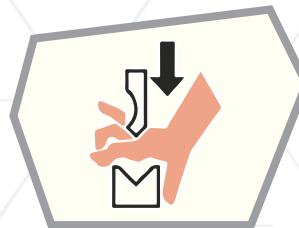
ENTANGLEMENT



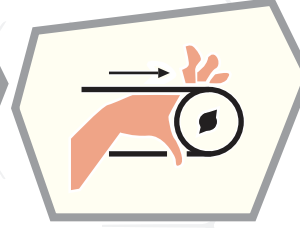
CHEMICAL



SHEARING



IMPACT



DRAWING-IN

**HAND SAFETY**  
**IS UP**  
**TO YOU!**



## 3.1

### RISK ASSESSMENT

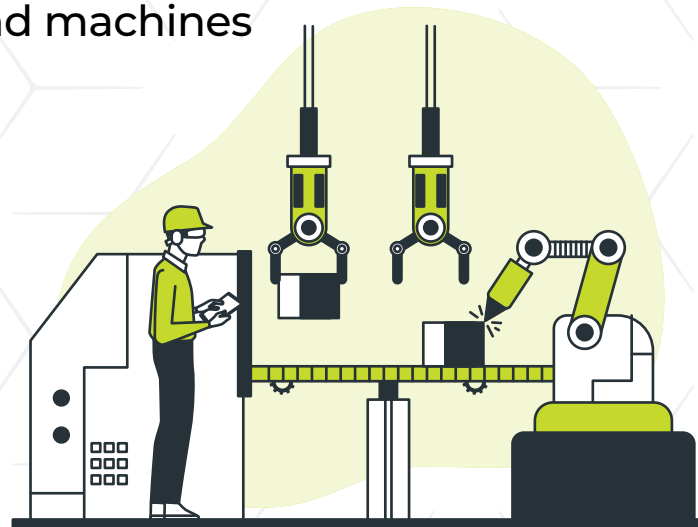
The process of evaluating the risks to safety and health arising from hazards at work and determining the appropriate measures for risk control

## 3.2

### MACHINERY RISK ASSESSMENT

Involves identifying, evaluating, and addressing potential hazards related to machinery, ensuring a systematic approach to quality management and continuous improvement

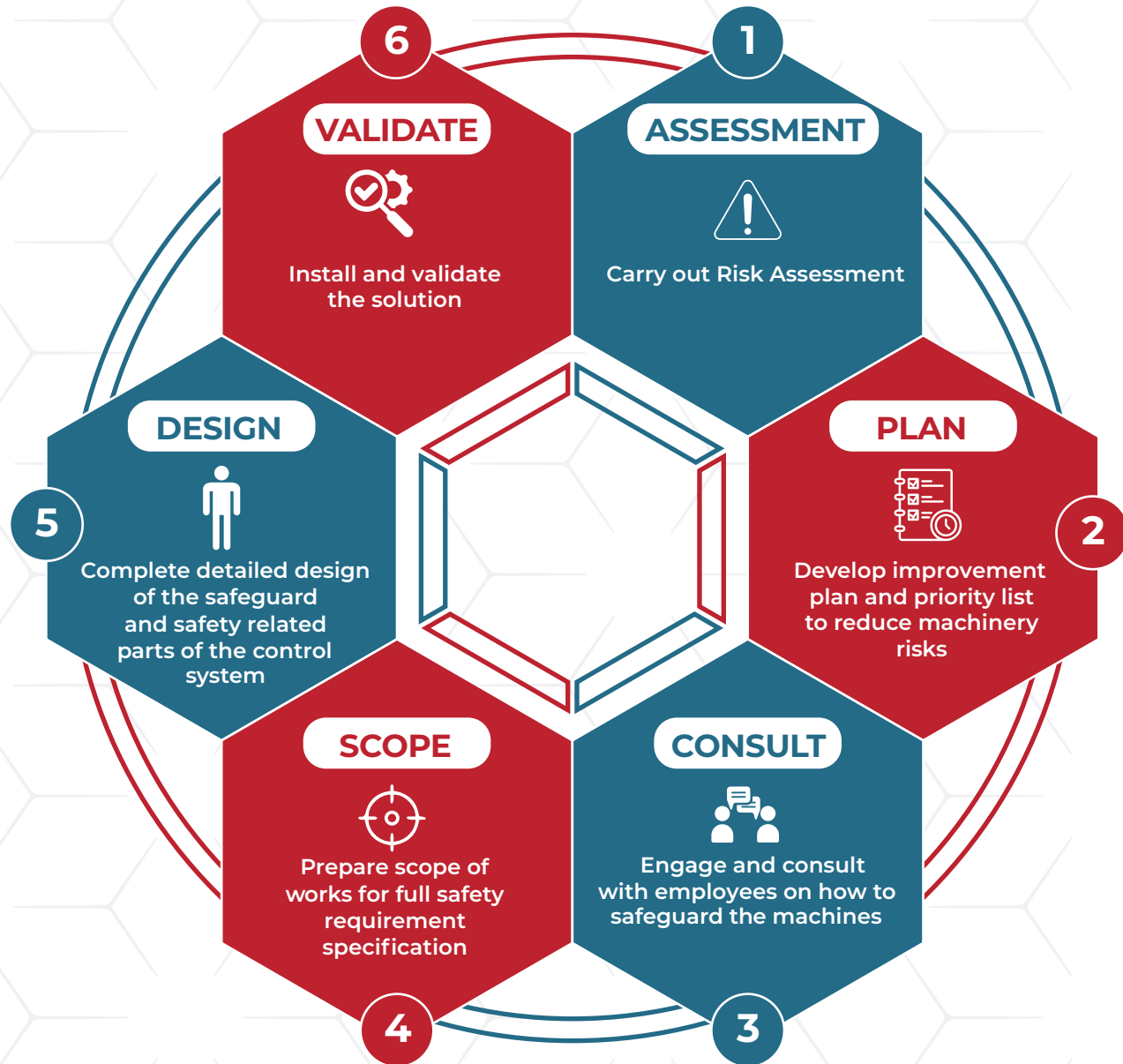
Strategies and machine-guarding techniques can be implemented to minimize or avoid danger and harm to employees and machines



# 3.0 RISK ASSESSMENT

## 3.3

## RISK ASSESSMENT PROCESS



## 3.4

### THE GENERAL PRINCIPLES OF PREVENTION

1

Avoiding risks

2

Evaluating the risks which cannot be avoided

3

Controlling the risks at source

4

Adapting the work to the individual, especially as regards to the design of workplace, the choice of plant and the choice of working and production methods, for the purpose, in particular to reduce monotonous work and work at a predetermined work-rate and to reduce their effect on health

5

Adapting to the technical progress

6

Replacing the dangerous by the non-dangerous or the less dangerous

7

Developing a coherent overall prevention policy which covers technology, work organisation, working conditions, social relationships and the influence of factors relating to the working environment

8

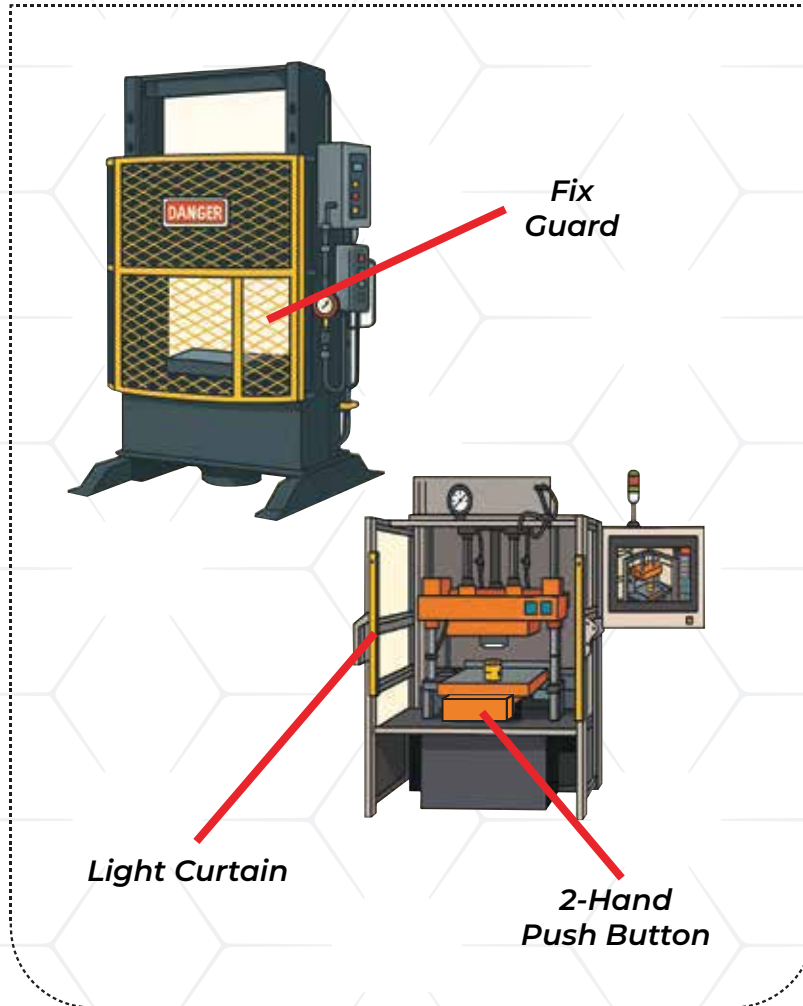
Giving priority to collective protective measures over individual protective measures

9

Giving appropriate instructions to employees

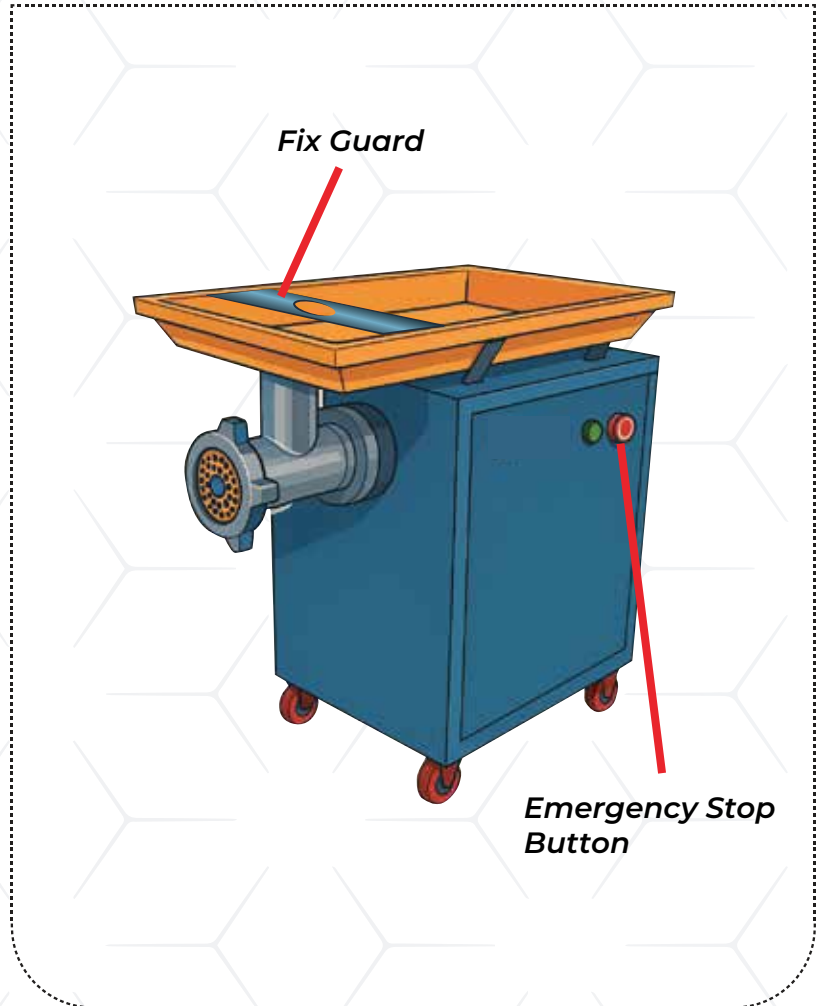
# 4.0 MACHINE GUARDS & PROTECTIVE DEVICES

## CRUSHING/IMPACT



Example Industry:  
**Metal**

## CRUSHING



Example Industry:  
**Food**

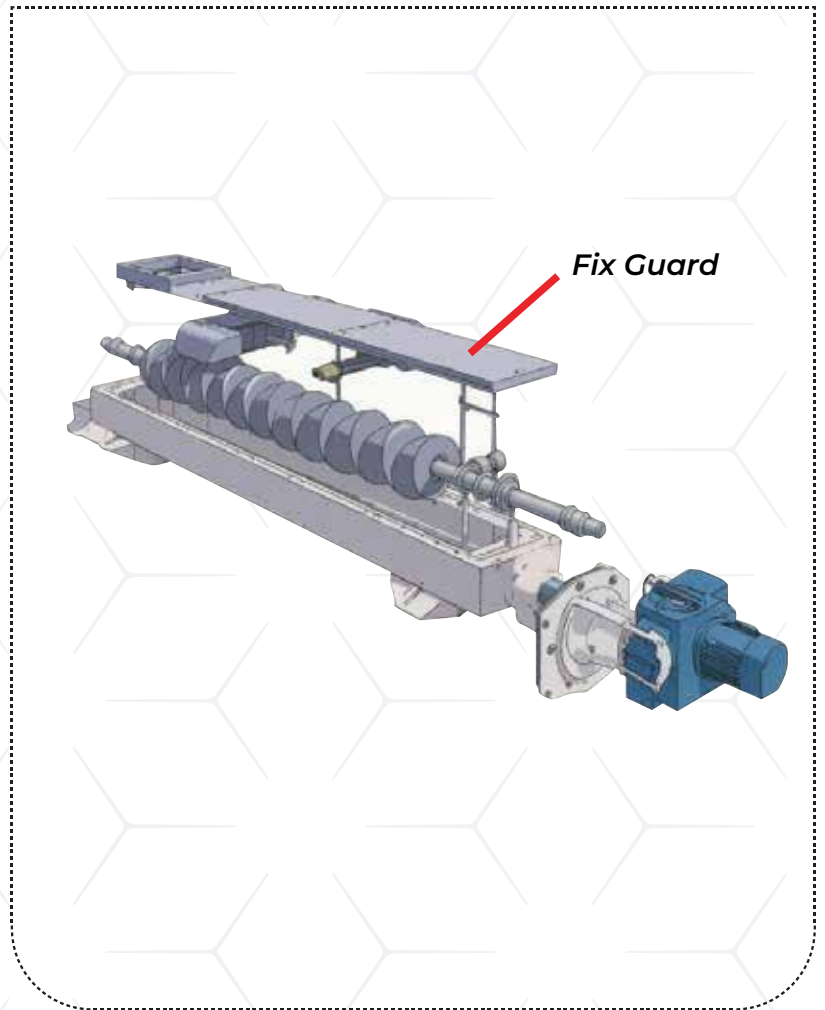
# 4.0 MACHINE GUARDS & PROTECTIVE DEVICES

## SHEARING



Example Industry:  
**Metal, Paper, Wood**

## ENTANGLEMENT



Example Industry:  
**Agriculture, Mining, Food**

# 4.0 MACHINE GUARDS & PROTECTIVE DEVICES

## CUTTING



Example Industry:  
**Metal, Wood**

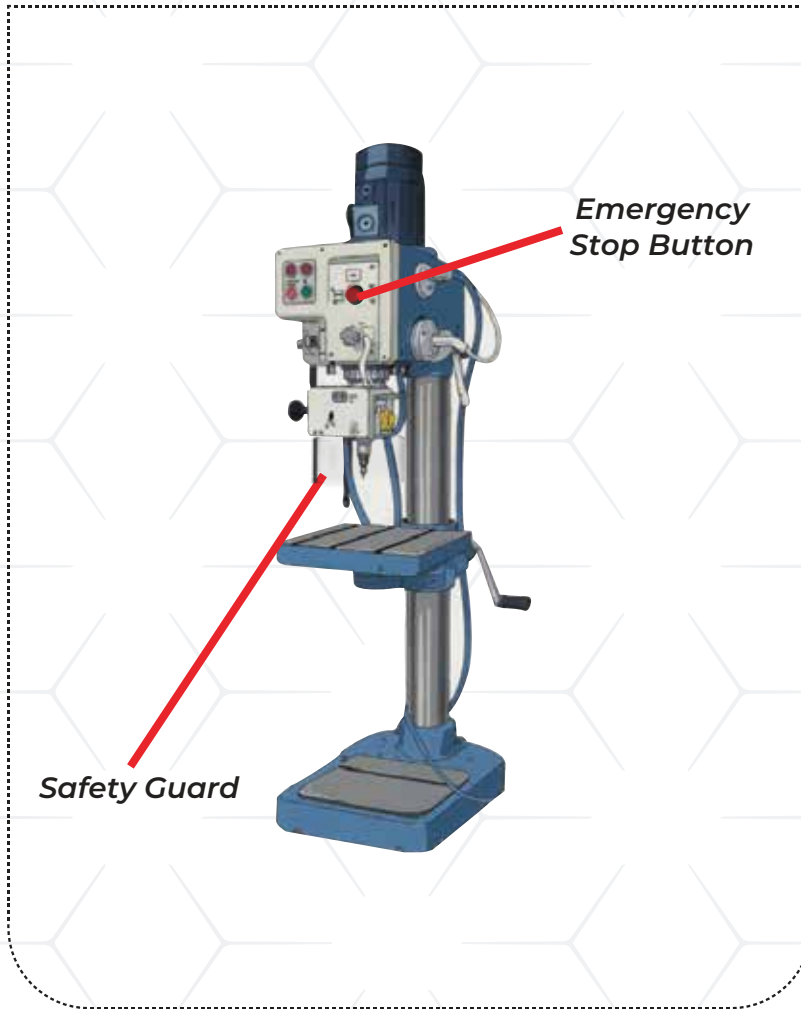
## IMPACT



Example Industry:  
**Plastic**

# 4.0 MACHINE GUARDS & PROTECTIVE DEVICES

## ENTANGLEMENT



Example Industry:  
**Paper, Metal, Workshop**

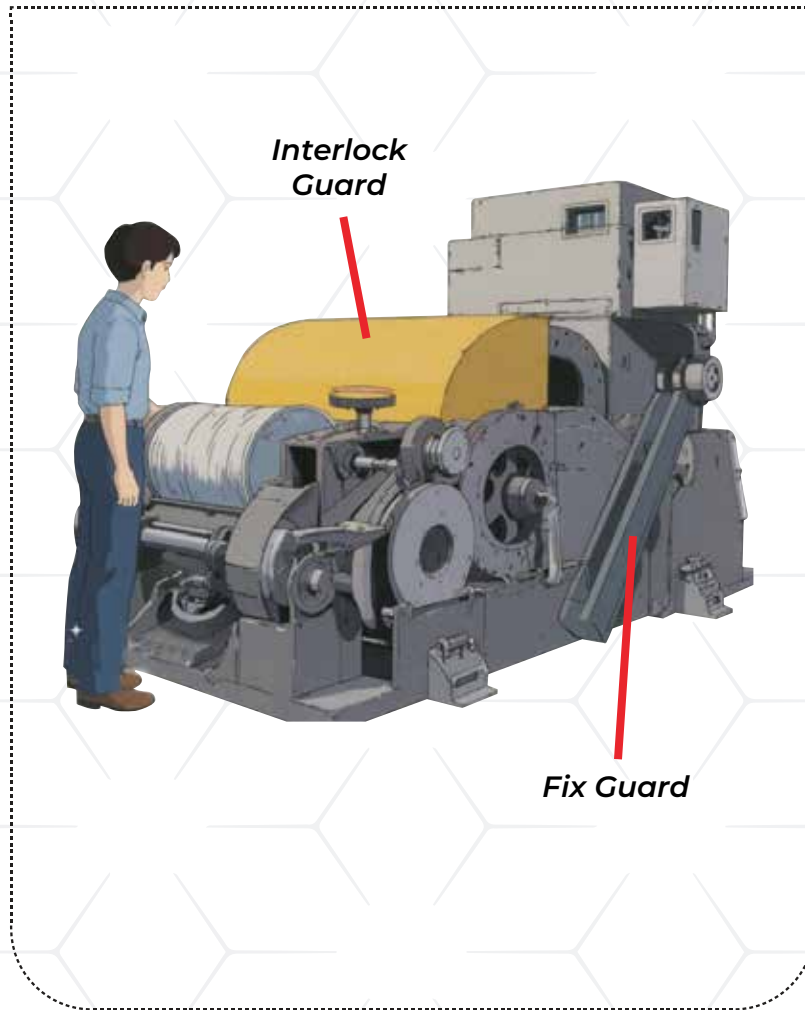
## ENTANGLEMENT



Example Industry:  
**Paper, Metal, Workshop**

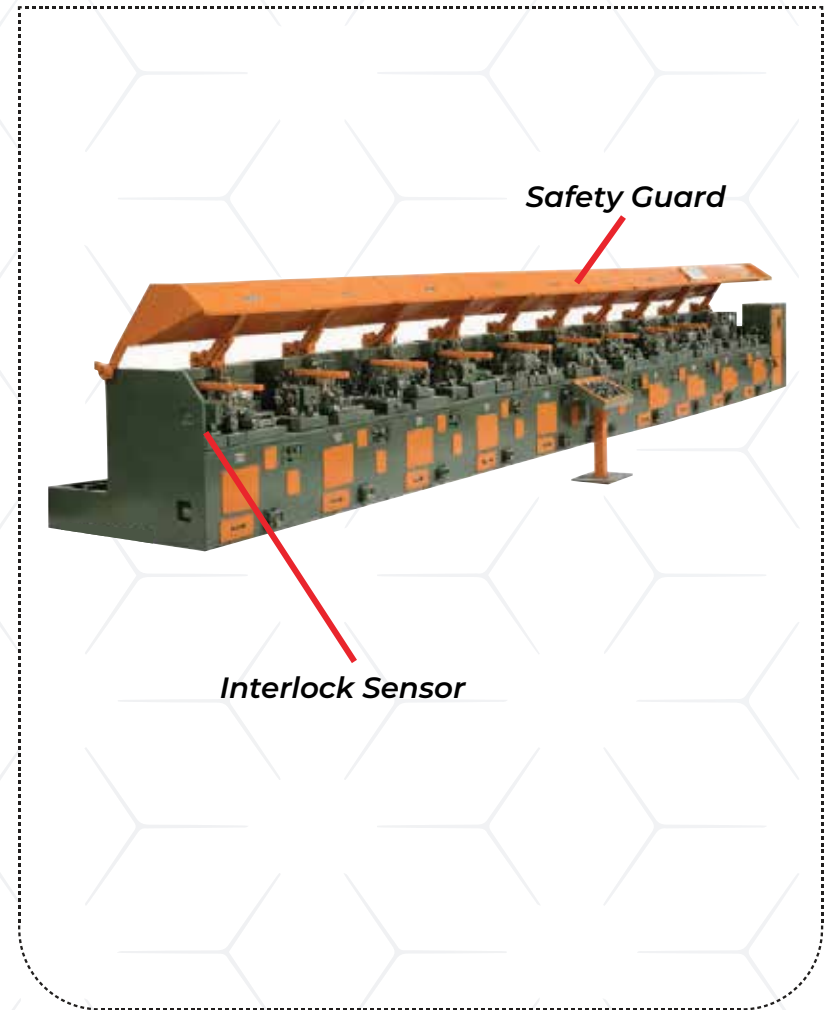
# 4.0 MACHINE GUARDS & PROTECTIVE DEVICES

## DRAWING



Example Industry:  
**Paper, Metal, Wood**

## DRAWING



Example Industry:  
**Metal**

5.1

5 STEPS TO HAND SAFETY

Work Safely - Protect Your Hands



**MAKE A PLAN**

*THEN FOLLOW THE PLAN*

Think through your task before picking up the first tool

**1**



**CHOOSE THE RIGHT TOOL**

*USE THEM CORRECTLY*

Once you have a plan, choose the best tools and techniques for the job

**2**



**WEAR THE RIGHT GLOVES**

*ALWAYS, ALWAYS, ALWAYS*

There are different gloves for different tasks. Wear the right one!

**3**



**BE AWARE**

*ARE YOU IN THE LINE OF FIRE?*

Situational awareness can help keep you and others safe

**4**



**REPEAT**

*CONSISTENCY MATTERS!*

Follow these five steps every time

**5**

5.2

DO'S & DON'TS TO ENSURE SAFE USE OF MACHINERY

✓ DO'S



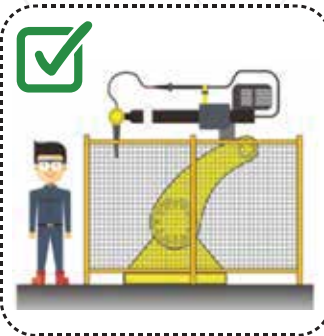
Wear Hand Protection



Install Machine Guarding



Install Guarding at Rotating Part



Install Guarding to Protect Employee

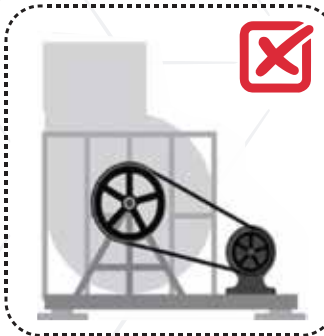
✗ DON'TS



Work without PPE



No Machine Guarding



No Guarding at Rotating Part



No Guarding to Protect Employee

# 6.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

## 6.1

## PPE MANAGEMENT

01

### PPE SELECTION

- Appropriate according to risk assessment

02

### PROCUREMENT

- Purchasing inappropriate PPE may contribute to serious workplace incidents

03

### STORAGE

- Dry and clean space
- Easily accessed
- Not exposed to potentially damaging condition

04

### LIFESPAN

- PPE record keeping

## TOP 8 TIPS FOR HAND SAFETY

01

**Choose the right glove for the job**

02

**Use gloves as intended and don't take them off**

03

**Remove jewellery from hands and wrists**

04

**Ensure a proper fit**

05

**Know when to replace a glove**

06

**Follow donning and doffing procedures**

07

**Be alert and aware**

08

**Use tools & machinery properly**

# 6.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

## 6.2

## TYPE OF HAND PROTECTION

1.



### MACHINE KNIT

For cut hazard

2.



### UNSUPPORTED

For handling chemicals

3.



### LEATHER

For handling abrasive material

4.



### ACTIVITY/MECHANICS

For welding, brazing, operation involved high temperature

5.



### COTTON

For handling very slippery materials

6.



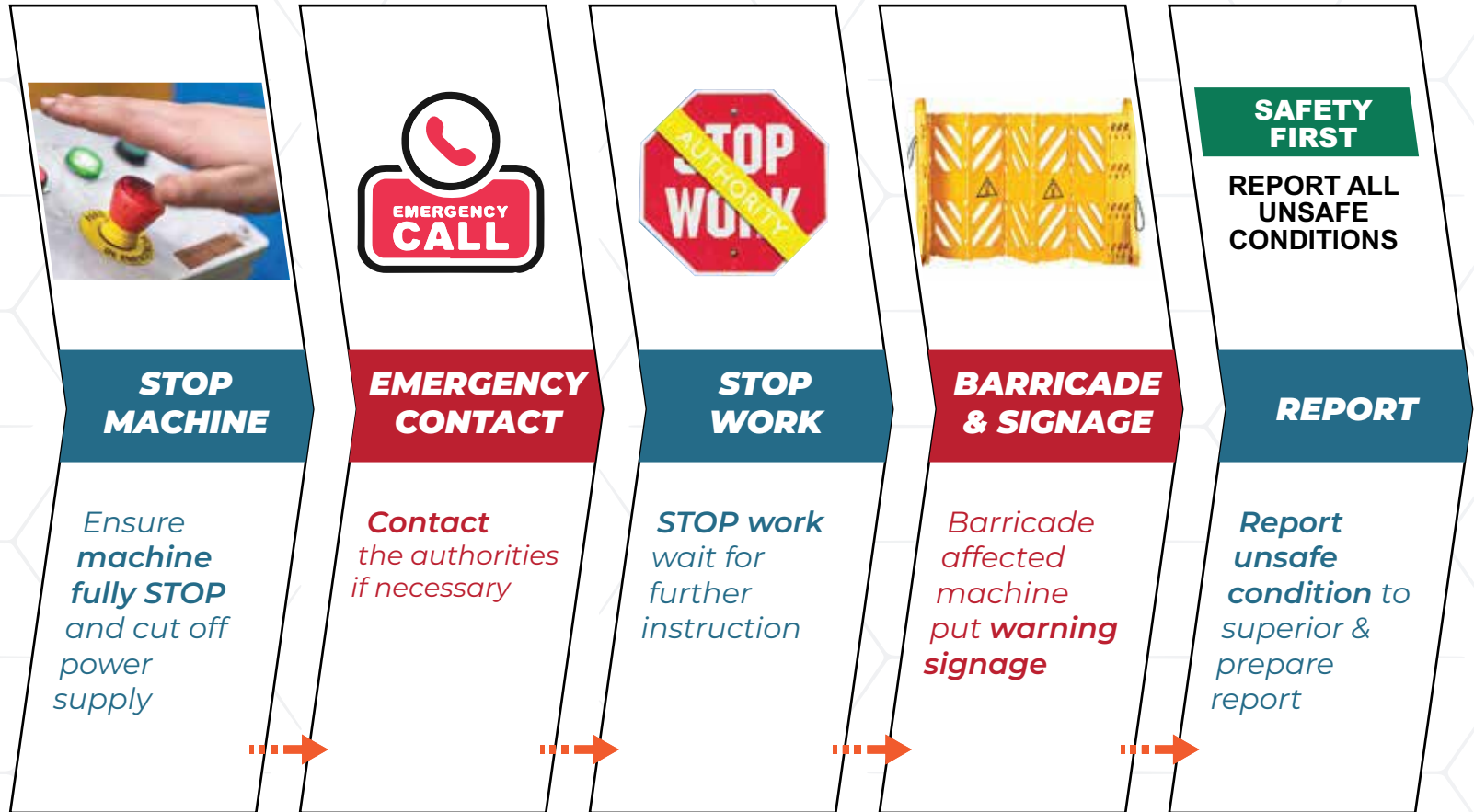
### SUPPORTED

For used when possible contact with electrical equipment

# 7.0 EMERGENCY PROCEDURE

## 7.1

## EMERGENCY PROCEDURE



## 7.2

### EXAMPLE OF EMERGENCY SITUATION ON MACHINERY DURING OPERATION



Situation:  
MISALIGNMENT



Situation:  
FIRE,  
OVERHEATING



Situation:  
LEAKING OF OIL,  
AIR, WATER



Situation:  
PROCESS UPSET



Situation:  
NATURAL  
DISASTER



Situation:  
SAFETY DEVICE  
MALFUNCTION

# 8.0 INSPECTION PROCEDURE

8.1

## BEST PRACTICE

### Before You Start Work...



#### CHECKLIST

Before starting any work or operating any machinery, **fill out a checklist especially on safety features (guarding, sensor, limit switch) and do a visual inspection**



#### FUNCTIONING TEST

**Do physical examination and functioning test for safety features** to avoid accident during operation



#### REPORT AND RECORD

**Documenting** the finding

**BEST PRACTICE**

9.1

REAL LIFE EXAMPLES



**CAUGHT IN BETWEEN**

*Employee had a hand injury (Food Industry)*



**CUT BY BAILING MACHINE**

*Employee had 2 fingers cut injury (Palm Oil Mill Industry)*



**CRUSHING BY MACHINE**

*Employee had punctured hand cut (Palm Oil Mill Industry)*

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