

Manufacturing

필리핀



# Prevention of Trapping

I Card Book I



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# Safety Management for Business Owners and Safety Regulation for Workers

## ✓ Safety Management Required for Business Owners to Engage in

- » Issuance of Personal Protective Gear Suitable to Working Conditions
- » During repairs and inspections of machinery equipment, owners must ensure the operators comply by shutting down the power, and otherwise to have them prohibited from approaching
- » Attachment of protective device (cover, protective barrier, etc.), to arbitrarily relieve and to ensure not using

## ✓ Safety regulation for workers to comply with

- » To put on personal protective gear suitable to assigned operations
- » To shut off the power prior to operations, such as repair, inspection and cleaning, and for a person in charge to store the key after locking up the locking device for the power switch
- » [Operation Prohibited during Inspection] Posting of signs and public notices
- » Prohibition of arbitrary relief of protective devices



### 3 Key Safety Regulations to Keep in Mind

- ① Preventive measure for **fall** risks!
- ② Preventive measure for **trapping** risks!
- ③ Issuance/wearing of required safety **protective gear**, and around-the-clock inspection!

## [ Manufacturing Business-related Signs ]



**P010**

Do not touch



**PIC209\*\***

Access prohibited



**W019**

Warning of the risk  
of crushing



**W030**

Hand crushing  
between press  
brake tool



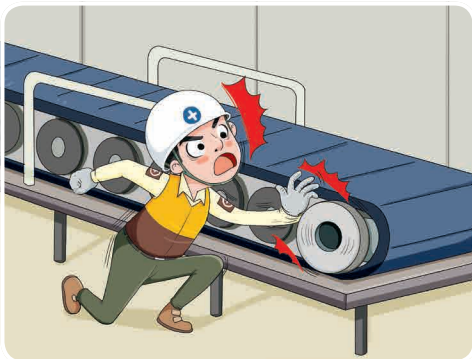
**M027**

Check guard



**E020**

Emergency  
stop button



## Trapping while removing foreign substances from the surface of conveyor roller

### Cause of Accident

- » Performing foreign substance removal works while in operation

### Preventive Measure

- » Operation stoppage during atypical jobs, such as cleaning
- » Placement of supervisor

## 2 Crane



### Trapping during overhead crane repair works

#### Cause of Accident

- » Failure of operation stoppage during maintenance works

#### Preventive Measure

- » Placement of guardians and contact prevention measures
- » Operation stoppage during maintenance works on the runway



## Trapping when a forklift is backing up in dark locations

### Cause of Accident

- » Failure to secure clear view due to low illumination within the service section

### Preventive Measure

- » Installation of illumination lights to secure views
- » Placement of supervisor

## 4 Elevator/Lift



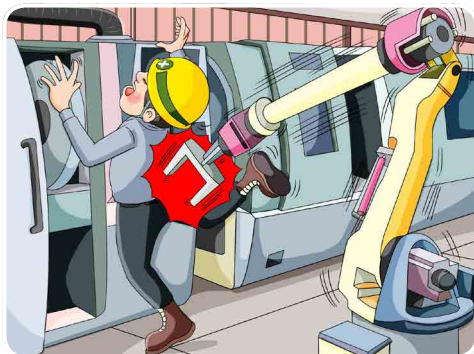
### Trapping by the descending carrier during the cleaning works of the lift pit

#### Cause of Accident

- » Failure of operation stoppage during cleaning works of the pit

#### Preventive Measure

- » Operation stoppage during atypical jobs, such as cleaning
- » Installation of lumber or hardwood at the elevator shaft



## Trapping by a robot during the inspection within the work area

### Cause of Accident

- » Performance of inspection works while a robot is still in operation
- » Failure to install a fence at some parts of operation range

### Preventive Measure

- » Operation stoppage during inspection works and installation of LOTO
- » Extended installation of fences within the operating radius

## 6 Mixing Machine



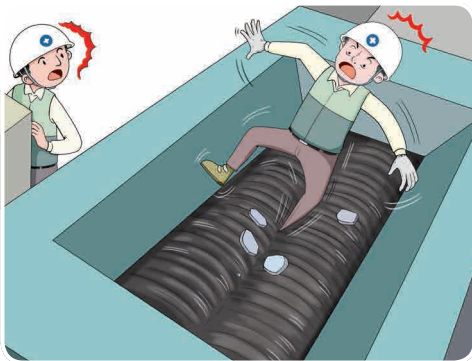
### Trapped between rotation axes and inner wall during the cleaning of concrete mixer

#### Cause of Accident

- » Arbitrary operation of equipment during inner cleaning works
- » Malfunction of interlocking device installed at the access door

#### Preventive Measure

- » Ensure to lock the starting device during cleaning works
- » Functional restoration of interlocking device



## Trapped by shredding blades during removal of foreign substances from the plastic waste breaker

### Cause of Accident

- » Performance of removal works of foreign substances from shredding blades while in operation

### Preventive Measure

- » Power shut-off during foreign substance removal works
- » Installation of safety work plate for repair works

## 8 Food Processing Machine



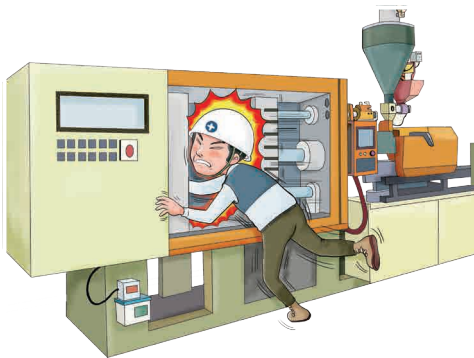
### Trapping during cleaning works of seasoning mixer

#### Cause of Accident

- » Performance of inner cleaning works while the operation is not suspended

#### Preventive Measure

- » Prohibition of cleaning works while in operation
- » Ensure to lock the starting device, and install signs



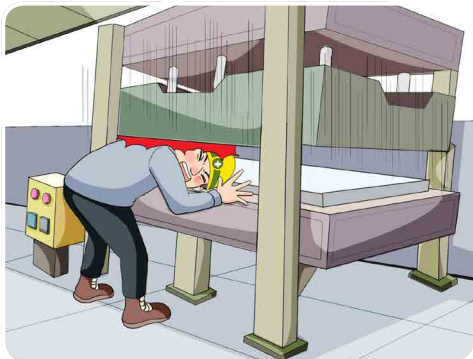
## Trapping between molds during installation of molds at injection molding machine

### Cause of Accident

- » Open holes at the lower part of protective door
- » Implementation of inner rearrangement works during automatic operations

### Preventive Measure

- » Installation of protective doors and interlocking device
- » Operation stoppage during maintenance works



## Trapping between molds during mold adjustment works at the oil-hydraulic press

### Cause of Accident

» Failure of operation stoppage during mold adjustment works at the press

### Preventive Measure

» Implementation of operation stoppage during adjustment works and installation of safety blocks



# Key Points to Prevent Trapping Accidents

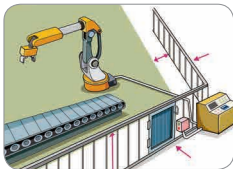
## • During typical works (normal hours)



### ► Protective measures for dangerous machinery for trapping

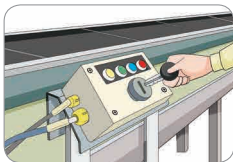


Installation of protective cover

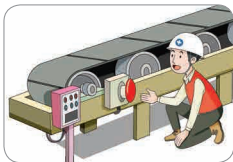


Installation of fences

### ► Power shut-off device (emergency shutdown device)



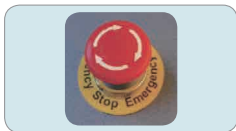
Removal of key  
(power shut-off) from  
key-type starting device



Installation of emergency  
shutdown switch (full-code type,  
etc.) and verification of normal  
operation

## ● During atypical works (maintenance/repair)

### ▶ Operation stoppage of dangerous machinery for trapping



Mandatory power shut-off prior to commencement of operation

### ▶ Installation of LOTO (Lock-Out/Tag-Out)



### ▶ Placement of supervisor (guardian)





# LOTO (Lock-Out/Tag-Out)

## ● LOTO-applicable Jobs

### When engaging in maintenance works of machinery/ facility at workplaces

- » When removing or temporarily suspending the use of safety device of machinery equipment
- » When parts of worker's body approach the dangerous area or near the operating section of machinery while the machinery equipment is in operation
- » When there are risks for unexpected mobilization due to mal-operations during maintenance works

## ● Procedures of LOTO Operations

